



RACGP

Royal Australian College of General Practitioners

*Guidelines for preventive
activities in general practice*

9th edition



Guidelines for preventive activities in general practice, 9th edition

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The Royal Australian College of General Practitioners Ltd
100 Wellington Parade
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Royal Australian College of General Practitioners

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Red Book Editorial Committee

Professor Nicholas Zwar

Chair, Red Book Editorial Committee
School of Public Health and Community Medicine,
University of New South Wales, New South Wales

Dr Evan Ackermann

Chair, RACGP Expert Committee – Quality Care

Professor Mark Harris

Centre for Primary Health Care and Equity,
University of New South Wales
RACGP Expert Committee – Quality Care

Dr Meredith Arcus

Deputy Executive Director, Medical Services,
Sir Charles Gairdner and Osborne Park Health Care
Group, Western Australia

Associate Professor Pauline Chiarelli

School of Health Sciences, University of Newcastle,
New South Wales

Professor Chris Del Mar

Faculty of Health Sciences and Medicine,
Bond University, Queensland

Professor Jon Emery

Department of General Practice,
University of Melbourne, Victoria

Associate Professor Michael Fasher

Adjunct Associate Professor, University of Sydney,
New South Wales; and Conjoint Associate Professor,
University of Western Sydney, New South Wales

Associate Professor John Furler

Department of General Practice,
University of Melbourne, Victoria

Dr Caroline Johnson

Department of General Practice,
University of Melbourne, Victoria
RACGP Expert Committee – Quality Care

Professor Claire Jackson

Director, Centres for Primary Care Reform
Research Excellence
Professor in Primary Care Research, Chair,
Metro North Primary Health Network
Past President, The Royal Australian College of
General Practitioners (2010–12)

Associate Professor John Litt

Department of General Practice,
Flinders University, South Australia
Deputy Chair, RACGP Expert Committee –
Quality Care

Professor Danielle Mazza

Department of General Practice,
School of Primary Care,
Monash University, Victoria
RACGP Expert Committee – Quality Care

Professor Dimity Pond

Professor of General Practice,
School of Medicine and Public Health,
University of Newcastle, New South Wales

Associate Professor Jane Smith

Head of General Practice Discipline,
Faculty of Health Science and Medicine,
Bond University, Queensland

Professor Nigel Stocks

Head of Discipline – General Practice,
University of Adelaide, Adelaide

Dr Christine Walker

Executive Officer, Chronic Illness Alliance

Professor Tania Winzenberg

Chair, RACGP Expert Committee – Research
Professor of Chronic Disease Management,
Menzies Institute for Medical Research and Faculty
of Health, University of Tasmania, Tasmania

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Contributors

Associate Professor Lena Sanci
Department of General Practice,
University of Melbourne, Victoria

Professor Lindy Clemson
Professor in Ageing and Occupational Therapy,
University of Sydney, New South Wales

Dr Magdalena Simonis
RACGP Expert Committee – Quality Care

Reviewers

We gratefully acknowledge the expert reviewers and representatives from the organisations who contributed scholarly feedback.

Members of RACGP Aboriginal and Torres Strait Islander Health

Associate Professor Anne Abbott
School of Public Health and Preventive Medicine,
Monash University, Victoria

Dr Stuart Aitken
Gold Coast Sexual Health Clinic, Queensland

Professor Craig Anderson
George Institute for Global Health, New South Wales

Associate Professor Nick Antic
Clinical Director of the Adelaide Institute
for Sleep Health
President Australasian Sleep Association,
South Australia

Professor Kaarin Anstey
ANU College of Medicine, Biology & Environment,
Australian Capital Territory

Associate Professor Kristine Barlow-Stewart
Genetic Medicine, Northern Clinical School,
Sydney Medical School, New South Wales

Professor Adrian Bauman
School of Public Health, University of Sydney,
New South Wales

Dr Glenise Berry
Australian & New Zealand Society for Geriatric
Medicine, New South Wales

Associate Professor Mark Bolland
School of Medicine, University of Auckland,
New Zealand

Dr Chris Bourne
Sydney Sexual Health Centre,
Sydney Hospital, New South Wales

Professor Hanny Calache
Centre for Population Health Research,
Deakin University, Victoria

Professor Henry Brodaty
Dementia Collaborative Research Centre,
University of New South Wales and Prince of Wales
Hospital, New South Wales

Professor Ian Caterson
Boden Institute, Charles Perkins Centre,
University of Sydney, New South Wales

Professor Derek Chew
Professor of Cardiology, Flinders University,
Flinders Medical Centre, South Australia

Professor Rufus Clarke
Faculty of Public Health Medicine,
Royal Australasian College of Physicians,
New South Wales

Professor Jacqueline Close
Consultant Geriatrician, Prince of Wales Hospital,
Director, Falls and Injury Prevention Group, NeuRA,
University of New South Wales, New South Wales

Professor Stephen Colagiuri
Director, Boden Institute, University of Sydney,
New South Wales

Dr Gary Deed
Chair, RACGP Specific Interests – Diabetes Network

Dr Joanne Dixon
National Clinical Director, Clinical Leader Genetic
Services, Genetic Health Service New Zealand

Professor Jenny Doust

Faculty of Health Sciences and Medicine,
Bond University, Queensland

Professor Peter Ebeling

Head of the Department of Medicine,
Monash Medical Centre, Victoria

Associate Professor Matt Edwards

Department of Paediatrics,
University of Western Sydney, New South Wales

Professor John Eisman

Director of Clinical Translation and Advanced
Education, Garvan Institute of Medical Research,
Darlinghurst, New South Wales

Dr Ben Ewald

Senior Lecturer in Epidemiology and General
Practitioner, Centre for Clinical Epidemiology
and Biostatistics, University of Newcastle,
New South Wales

Professor Kwun Fong

Prince Charles Hospital, Department of
Thoracic Medicine, Queensland

Professor Peter Frith

Respiratory Medicine, Flinders University,
South Australia

Clinical Professor Jack Goldblatt

School of Paediatrics and Child Health,
University of Western Australia, Western Australia

Professor Jonathon Golledge

Head of the Vascular Biology Unit, School of Medicine
and Dentistry, James Cook University, Queensland

Professor Paul Glasziou

Professor of Evidence-Based Medicine, Faculty of
Health Sciences and Medicine, Bond University,
Queensland

Associate Professor Jane Halliday

Public Health Genetics, Murdoch Childrens Research
Institute, Victoria

Dr James Harvey

Council member of Royal Australian and New Zealand
College of Obstetricians and Gynaecologists,
South Australia

Associate Professor Kelsey Hegarty

Department of General Practice,
University of Melbourne, Victoria

Ms Cristy Henderson

Assistant Director, Bowel Screening Section, Cancer
and Palliative Care Branch, Population Health & Sport
Division, Department of Health

Dr Elizabeth Hindmarsh

General Practitioner, New South Wales

Associate Professor Warrick Inder

Department of Diabetes and Endocrinology,
Princess Alexandra Hospital, Queensland

Professor Stephen Lord

Senior Principal Research Fellow, Neuroscience
Research Australia, New South Wales

Professor Finlay Macrae

Head, Colorectal Medicine and Genetics,
Royal Melbourne Hospital, Victoria
Professor, Department of Medicine, University of
Melbourne, Royal Melbourne Hospital, Victoria

Dr Catherine Mandel

MRI Radiologist, Swinburne University of Technology
Honorary Senior Fellow, Department of Radiology,
University of Melbourne, Victoria

Professor Rebecca Mason

Professor of Endocrine Physiology,
School of Medical Sciences, Sydney Medical School,
University of Sydney, New South Wales

Clinical Professor Richard Mendelson

Royal Perth Hospital, University of Western Australia,
Western Australia

Professor Sylvia Metcalfe

Genetics Education & Health Research,
Murdoch Childrens Research Institute, Victoria

Dr Mark Morgan

General Practitioner, South Australia
Senior Lecturer, Discipline of General Practice,
University of Adelaide, South Australia

Professor Paul Norman

Winthrop Professor of Vascular Surgery,
University of Western Australia, Western Australia

Professor Mark Nelson

Chair, Discipline of General Practice,
University of Tasmania, Tasmania
Professional Research Fellow, Menzies Research
Institute, University of Tasmania, Tasmania

Mark Nevin

Senior Executive Officer, Faculty of Clinical Radiology,
Royal Australian and New Zealand College of
Radiologists, New South Wales

Professor Doug McEvoy

Senior Director, Adelaide Institute for Sleep Health;
Staff Consultant in Sleep and Respiratory Medicine
at Repatriation General Hospital and Flinders Medical
Centre, South Australia

Dr Nicki Murdoch

President, Paediatrics & Child Division, Royal
Australasian College of Physicians, New South Wales

Professor Frank Oberklaid

Director, Centre for Community Child Health,
Royal Children's Hospital, Victoria

Dr Jan Orman

GP Services Consultant, Black Dog Institute,
Prince of Wales Hospital, New South Wales

Professor Kelly Phillips

Peter MacCallum Cancer Centre, Victoria

Professor Matthew Peters

Head of Respiratory Medicine,
Concord Hospital, New South Wales

Professor Ian Reid

Deputy Dean, Faculty of Medical and Health
Sciences, University of Auckland, New Zealand

Professor Ann Roche

National Centre for Education and Training on
Addiction, Flinders University, South Australia

Professor John Saunders

Consultant Physician in Internal Medicine and
Addiction Medicine, New South Wales

Professor Virginia Schmied

School of Nursing and Midwifery,
University of Western Sydney, New South Wales

Associate Professor Jonathan Shaw

Baker IDI Heart & Diabetes Institute, Victoria

Professor Maria Fiatarone Singh

Chair of Exercise and Sport Science, Exercise, Health
and Performance Group, Faculty of Health Sciences,
Sydney Medical School, New South Wales

Associate Professor John Slavotinek

Gastroenterologist
Honorary Senior Associate,
Cancer Council Victoria, Victoria

Professor Denis Spelman

Deputy Director, Clinical Infectious Diseases Unit
and Head, Microbiology Department,
Monash University, Victoria

Professor James St John

Gastroenterologist
Honorary Senior Associate,
Cancer Council Victoria, Victoria

Dr Michael Tam

Staff Specialist, General Practice,
University of New South Wales, New South Wales

Dr Wendy Tsui

RACGP Fellow, Family & Sports Medicine Centre,
New South Wales

Dr Angela Taft

Professor and Director, Judith Lumley Centre,
La Trobe University, Victoria

Dr Brendan White

Australian Dental Association (NSW Branch),
New South Wales

Clinical Associate Professor Liz Wylie

Medicine and Pharmacology Royal Perth Hospital
Unit, University of Western Australia, Western Australia

Professor Graeme Young

Flinders Centre for Innovation in Cancer,
Flinders University, South Australia

Professor Helen Zorbas

Chief Executive Officer, Cancer Australia,
New South Wales

**Australian & New Zealand Society for Geriatric
Medicine Council****Australasian Sleep Association****Australian Diabetes Society****Australian Dental Association****Cancer and Palliative Care Branch, Population
Health & Sport Division, Department of Health****Cancer Australia****Cancer Council Victoria****Centre for Population Health, NSW Ministry of
Health, Harm Reduction and Viral Hepatitis Branch****Continence Foundation of Australia****Haemochromatosis Society Australia****Human Genetics Society of Australasia****Dental Health Services Victoria****Exercise & Sports Science Australia****Kidney Health Australia****National Stroke Foundation****National Heart Foundation of Australia****NSW STI Programs Unit, Sydney Sexual Health
Centre, Sydney Hospital, New South Wales****Optometry Australia****Royal Australian and New Zealand College of
Obstetricians and Gynaecologists****Representatives from Cancer Council Victoria****Royal Australian and New Zealand College of
Radiologists****Royal Australian College of Ophthalmologists****SANE Australia****Urological Society of Australia and New Zealand**

Acronyms

13vPCV	13-valent pneumococcal conjugate vaccine	CEITC	Centre for Excellence in Indigenous Tobacco Control
23vPPV	23-valent pneumococcal polysaccharide vaccine	CF	cystic fibrosis
AAA	abdominal aortic aneurysm	CHD	coronary heart disease
ABCD	asymmetry, border, colour, diameter	CKD	chronic kidney disease
ABI	ankle:brachial index	CDK-EPI	Chronic Kidney Disease Epidemiology Collaboration
ABS	Australian Bureau of Statistics	COPD	chronic obstructive pulmonary disease
ACE	angiotensin converting enzyme	CRC	colorectal cancer
ACIR	Australian Childhood Immunisation Register	CRP	C-reactive protein
ACR	albumin-to-creatinine ratio	CT	computed tomography
ACS	asymptomatic carotid artery stenosis	CVD	cardiovascular disease
ADHD	attention deficit hyperactivity disorder	DALY	disability-adjusted life year
AEDC	Australian Early Development Census	DASH	dietary approaches to stop hypertension
AF	atrial fibrillation	DBP	diastolic blood pressure
ALA	alpha-linolenic acid	DNA	deoxyribonucleic acid
AMD	aged-related macular degeneration	DLCN	Dutch Lipid Clinic Network (criteria)
APC	adenomatous polyposis coli	DPA	docosapentaenoic acid
ApoE	apolipoprotein E	DRE	digital rectal examination
ARB	angiotensin receptor blocker	DT	diphtheria, tetanus
ASCIA	Australasian Society of Clinical Immunology and Allergy	DTPa	diphtheria, tetanus, acellular pertussis (child version)
AUDIT-C	Alcohol Use Disorders Identification Test – Consumption	dTpa	diphtheria, tetanus, acellular pertussis (adolescent/adult version)
AUSDRIK	Australian type 2 diabetes risk assessment tool	DXA	dual-energy X-ray absorptiometry
BCG	Bacillus Calmette-Guérin	ECG	electrocardiogram
BMD	bone mineral density	EFG	elevated, firm, growing for more than one month
BMI	body mass index	eGFR	estimated glomerular filtration rate
BNP	B-type natriuretic peptide	EPDS	Edinburgh Postnatal Depression Scale
BP	blood pressure	ESRD	end-stage renal disease
<i>BRCA1</i>	breast cancer susceptibility gene 1	FAP	familial adenomatous polyposis
<i>BRCA2</i>	breast cancer susceptibility gene 2	FH	familial hypercholesterolaemia
BUA	broadband ultrasound attenuation	FHSQ	family history screening questionnaire
CA	cancer antigen	FOBT	faecal occult blood test
CA125	cancer antigen 125	GP	general practitioner
CAD	coronary artery disease	GPCOG	general practitioner assessment of cognition
CALD	culturally and linguistically diverse	HbA1c	glycated haemoglobin
CCTA	coronary computed tomography angiography	HCG	human chorionic gonadotrophin
CEA	carotid endarterectomy	HDL	high-density lipoprotein

HDL-C	high-density lipoprotein-cholesterol	OSA	obstructive sleep apnoea
HHC	hereditary haemochromatosis	PBS	Pharmaceutical Benefits Scheme
Hib	haemophilus influenzae type b	PCR	polymerase chain reaction
HIV	human immunodeficiency virus	PEDS	parents' evaluation of developmental status
HNPCC	hereditary non-polyposis colon cancer	PET-CT	positron emission tomography – computed tomography
HPV	human papillomavirus	PLCO	Prostate, Lung, Colorectal and Ovarian trial
hsCRP	high sensitivity C-reactive protein	PND	postnatal depression
HSIL	high-grade squamous intraepithelial lesion	PVD	peripheral vascular disease
IADL	instrumental activities of daily living	RACGP	The Royal Australian College of General Practitioners
IBIS	International Breast Cancer Intervention Study	RCT	randomised controlled trial
IFG	impaired fasting glucose	SBP	systolic blood pressure
IGT	impaired glucose tolerance	SCC	squamous cell carcinoma
IPV	inactivated polio vaccine	SES	socioeconomic status
IS	intussusception	SIDS	sudden infant death syndrome
KICA	Kimberley Indigenous Cognitive Assessment tool	SMMSE	standardised mini-mental state examination
LDL	low-density lipoprotein	SNAP	smoking, nutrition, alcohol, physical activity
LDL-C	low-density lipoprotein-cholesterol	SNP	single nucleotide polymorphism
LSIL	low-grade squamous intraepithelial lesion	SOS	speed of sound
LUTS	lower urinary tract symptoms	SPF	sun protection factor
LVH	left ventricular hypertrophy	SSRI	selective serotonin reuptake inhibitor
MBS	Medicare Benefits Schedule	STI	sexually transmissible infection
MCH	mean corpuscular haemoglobin	SUDI	sudden unexpected death in infancy
MCV	mean corpuscular volume	T2D	type 2 diabetes
MI	myocardial infarction	TB	tuberculosis
MMR	measles, mumps and rubella	TG	triglyceride
MMRV	measles, mumps, rubella and varicella	TGA	Therapeutic Goods Administration
MMSE	mini-mental state examination	TIA	transient ischaemic attack
MRI	magnetic resonance imaging	TUGT	timed up and go test
MS	multiple sclerosis	UACR	urine albumin-to-creatinine ratio
MSM	men who have sex with men	UKCTOCS	UK Collaborative Trial of Ovarian Cancer Screening
MSU	mid-stream urine	USPSTF	US Preventive Services Task Force
MTHFR	methylenetetrahydrofolate reductase	UV	ultraviolet
MUKSB	Modified UK Simon Broome (criteria)	VIVAS	Vaccination Information and Vaccination Administration System
NAAT	nucleic acid amplification test	VV	varicella vaccination
NHMRC	National Health and Medical Research Council	VZV	varicella zoster virus
NIP	National Immunisation Program	WHO	World Health Organization
NIPS	National Immunisation Program Schedule		
NIPT	non-invasive prenatal test		
NMSC	non-melanocytic skin cancer		
NTD	neural tube defect		
Pap test	Papanicolaou test		

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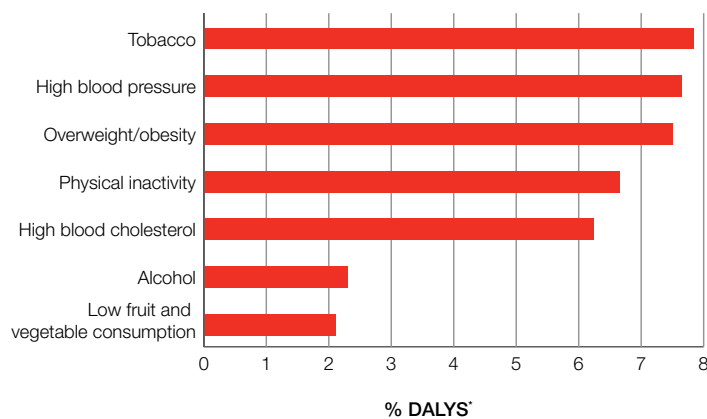
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I. Introduction

General practice is at the forefront of healthcare in Australia and in a pivotal position to deliver preventive healthcare. More than 137 million general practice consultations take place annually in Australia and 85% of the Australian population consult a general practitioner (GP) at least once a year.¹ Preventive healthcare is an important activity in general practice. It includes the prevention of illness, the early detection of specific disease, and the promotion and maintenance of health. The partnership between GP and patient can help people reach their goals of maintaining or improving health. Preventive care is also critical in addressing the health disparities faced by disadvantaged and vulnerable population groups.

Prevention of illness is the key to Australia's future health – both individually and collectively. About 32% of Australia's total burden of disease can be attributed to modifiable risk factors (Figure I.1 and Table I.1).²

Figure I.1. Leading risk factors contributing to the burden of disease³



*Total burden of disease and injury measured by disability-adjusted life year (DALY)

A healthy lifestyle is vital for preventing disease, including prevention of cancer. Cancer Australia⁴ summarises the recommendations for adults to reduce their risk of cancer and stay healthy as the following:

- Do not smoke
- Maintain a healthy weight
- Be active
- Eat a balanced and nutritious diet
- Limit alcohol consumption
- Be sun smart
- Protect against infection

The evidence of associations between behavioural and biomedical risk factors and chronic diseases is summarised in Table I.1.

Table I.1. Strong evidence of direct associations between selected chronic diseases and behavioural and biomedical risk factors⁵

Chronic disease	Behavioural Tobacco smoking	Behavioural Insufficient physical activity	Behavioural Excessive alcohol consumption	Behavioural Dietary risks	Biomedical Obesity	Biomedical High blood pressure	Biomedical Abnormal blood lipids
CVD	•	•	—	• [*]	•	•	•
Stroke	•	•	•	—	•	•	•
Type 2 diabetes	•	•	—	• [*]	•	—	—
Osteoporosis	•	•	•	• [†]	—	—	—
Colorectal cancer	•	—	•	• [‡]	•	—	—
Oral health	• [§]	—	•	• [#]	—	—	—
CKD	•	—	—	—	•	•	—
Breast cancer (female)	—	—	•	—	• ^{**}	—	—
Depression	—	—	—	—	•	—	—
Osteoarthritis	—	—	—	—	•	—	—
Rheumatoid arthritis	•	—	—	—	—	—	—
Lung cancer	•	—	—	—	—	—	—
Cervical cancer ^{††}	•	—	—	—	—	—	—
COPD	•	—	—	—	—	—	—
Asthma	•	—	—	—	—	—	—

• Strong evidence in support of a direct association between the chronic disease and risk factor

— There is either not a direct association or the evidence for a direct association is not strong

*For coronary heart disease and type 2 diabetes, dietary risks relate to high intake of saturated fat

†For osteoporosis, dietary risks relate to insufficient calcium and vitamin D. The recommendation is to enhance vitamin D levels through adequate sun exposure and/or supplements if required

‡For colorectal cancer (CRC), dietary risks relate to high intakes of processed (preserved) meat. In addition, a high intake of red meat is associated with an increased risk of CRC. The *Australian dietary guidelines* (ADG) therefore recommend that processed meat intake should be limited (also because of its high saturated fat content). In addition, to enhance dietary variety and reduce some of the health risks associated with consuming red meat, the ADG recommend Australian adults should consume up to a maximum of 455 g per week (one serve [65 g] per day) of lean red meats

§The evidence for tobacco smoking and oral health relate to oral cancer and adult periodontal diseases

||The evidence for excessive alcohol consumption and oral health relate to oral cancer

#For oral health, dietary risks relate to amount and frequency of free sugars for dental caries, soft drinks and fruit juices for dental erosion, excess fluoride for enamel developmental defects, and deficiency of vitamin C for periodontal disease

**The evidence for obesity and breast cancer is for postmenopausal women

††Persistent infection with the human papillomavirus (HPV) is a central cause of cervical cancer. HPV infection is not identified in Table I.1 as it only includes those risk factors that are implicated in more than one chronic disease and have the greatest prevalence within the population. It is important to recognise that the behavioural risk factors of multiple sexual partners and early age at initiation of sexual activity reflect the probability of being infected with HPV

The chronic diseases included in Table I.1 are those that currently contribute the most to burden of disease and/or are the focus of ongoing national surveillance efforts

The behavioural and biomedical risk factors included in Table I.1 are those that are implicated in more than one chronic disease and have the greatest prevalence within the population

ADG, Australian dietary guidelines; CKD, chronic kidney disease; COPD, chronic obstructive pulmonary disease; CRC, colorectal cancer; CVD, cardiovascular disease; HPV, human papillomavirus

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The Red Book

The Royal Australian College of General Practitioners (RACGP) has published the *Guidelines for preventive activities in general practice* (Red Book) since 1989 to support evidence-based preventive activities in primary care. The Red Book is now widely accepted as the main guide to the provision of preventive care in Australian general practice.

Purpose

The Red Book is designed to provide the general practice team with guidance on opportunistic and proactive preventive care. It provides a comprehensive and concise set of recommendations for patients in general practice with additional information about tailoring advice depending on risk and need. The Red Book provides the evidence and reasons for the efficient and effective use of healthcare resources in general practice.

The Red Book's companion publication, *National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people*, 2nd edn, is intended for all health professionals delivering primary healthcare to Aboriginal and Torres Strait Islander peoples.

Scope

The Red Book covers primary (preventing the initial occurrence of a disorder) and secondary (preventive early detection and intervention) activities. These guidelines focus on preventive activities applicable to substantial portions of the general practice population rather than specific subgroups. This means, in general, recommendations apply to asymptomatic (low-risk) people. However, there is an emphasis on equity, with recommendations aimed at major disadvantaged groups at higher risk of disease and those who are less likely to receive preventive care.

These guidelines do not include:

- detailed information on the management of risk factors or disease (eg what medications to use when treating hypertension)
- information about the prevention of infectious diseases. This information has been limited largely to immunisation and some sexually transmissible infections (STIs).

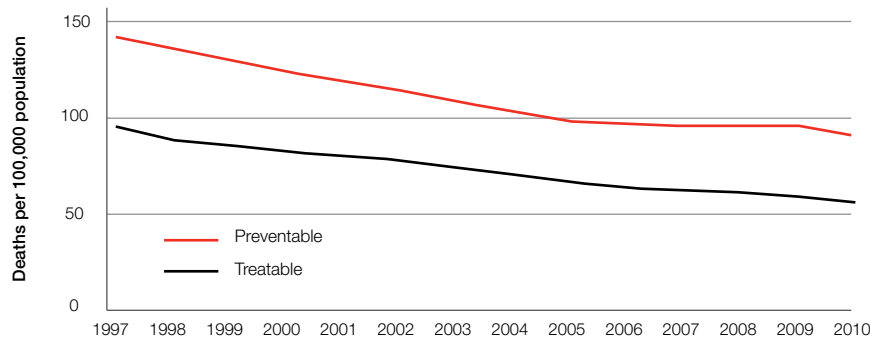
There is limited advice about travel medicine. This information can be obtained from the Centers for Disease Control and Prevention at wwwnc.cdc.gov/travel or World Health Organization (WHO) International Travel and Health at www.who.int/ith/en

The Australian experience

The role of general practice in prevention has been recognised by the Council of Australian Governments (COAG)⁶ and in the Australian Government's National Preventative Health Strategy and National Primary Health Care Strategic Framework.^{2,7}

Deaths and hospitalisations from preventable illness have continued to decline in Australia. However, the leading causes of death and disability in Australia are preventable or able to be delayed by early treatment and intervention (Figure 1.2).⁸

Figure I.2. Age-standardised death rates for potentially avoidable deaths, 1997–2010*⁹



*Deaths among people <75 years of age that are potentially avoidable within the present healthcare system

Potentially avoidable deaths are divided into potentially preventable deaths (cases amenable to screening and primary prevention) and treatable deaths (cases from potentially treatable conditions amenable to therapeutic interventions). There were 32,919 potentially avoidable deaths in Australia in 2010; 62% were classified as potentially preventable and 38% as potentially treatable.⁸ Preventable death rates fell from 142 to 91 deaths per 100,000 between 1997 and 2010 (36%), and treatable death rates fell by 41% (from 97 to 57 deaths per 100,000)

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An Australian review¹⁰ concluded that lifestyle interventions could have a large impact on population health. The absolute cardiovascular disease (CVD) risk approach and screening for diabetes and chronic kidney disease (CKD) were also given high priority for action.

Despite this evidence and wide acceptance of its importance, preventive interventions in general practice remain underused, being the primary reason for the consultation in only seven of every 100 clinical encounters.¹¹ This is small when it is considered that preventable chronic diseases, along with biomedical risk factors, account for approximately one-fifth of all problems currently managed in Australian general practice.¹²

Each preventive activity uses up some of the available time that GPs have to spend with their patients. It may also involve direct or indirect costs to the patient. Much more needs to be done to support and improve proper evidence-based preventive strategies, and to minimise practices that are not beneficial or have been proven to be harmful.

The RACGP has been championing this cause since its foundation, and encourages all general practices, GPs and their teams to prioritise evidence-based preventive health activities.

Benefits and harms of preventive health activities

'Prevention is better than cure' makes intuitive sense. Yet there is evidence that some preventive activities are not effective, some are actually harmful. It has been said 'all screening programs do some harm; some do good as well'.¹³ Screening of asymptomatic patients may lead to overdiagnosis, causing needless anxiety, appointments, tests, drugs and even operations, and may leave the patient less healthy as a consequence. Therefore, it is crucial that evidence clearly demonstrates that benefits outweigh those harms for each preventive activity.

Determining whether a preventive activity is beneficial, harmful or of indeterminate effect (ie there is not enough evidence on which to base a decision) requires a consistent, unbiased, evidence-based approach.

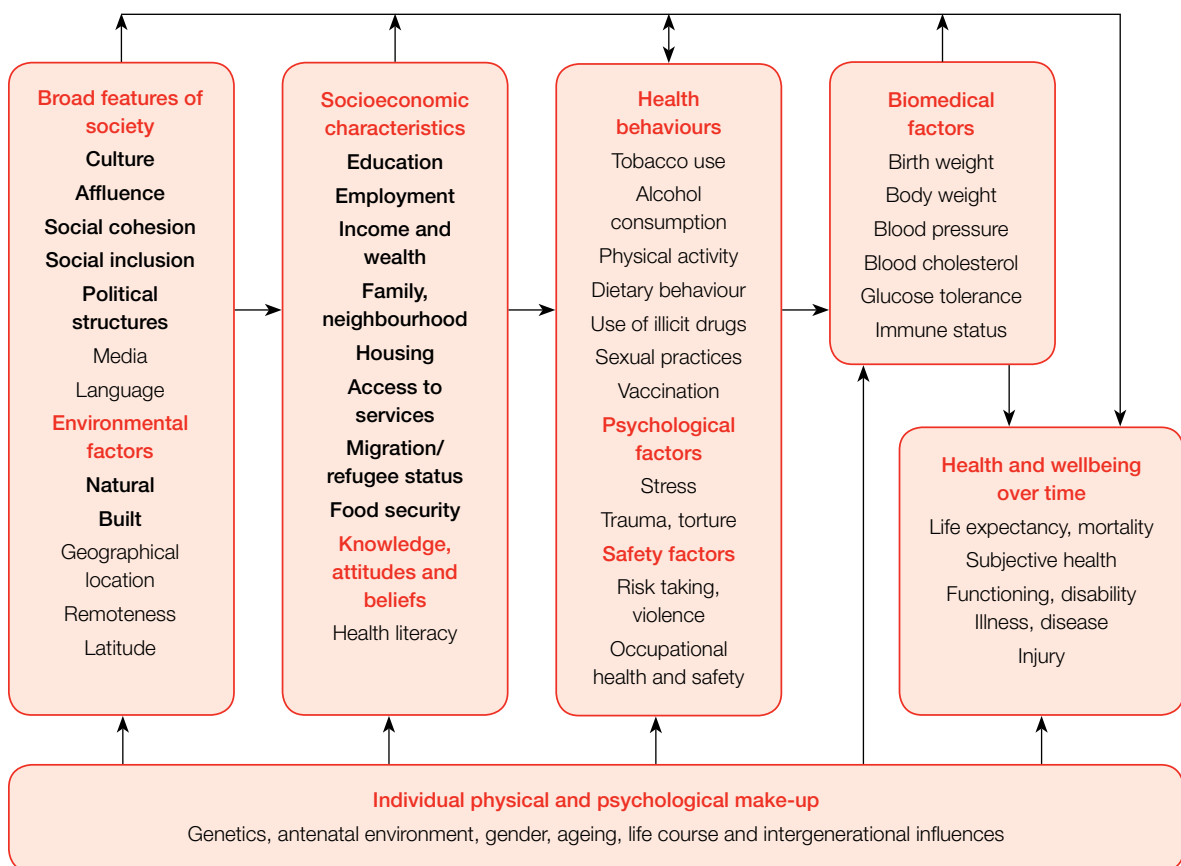
Cancer screening, in particular, can polarise different sectors of the health profession and broader community. The objective interpretation of evidence, balancing harms and benefits, and considering overdiagnosis and overtreatment is a goal of the Red Book.

In the Red Book, the RACGP provides information to assist GPs in caring for their patients, including in areas where the evidence is uncertain or contentious. Screening activities are only recommended where evidence demonstrates that benefits outweigh harms. Chapter 15 provides some guidance on common tests where this is not the case or where the evidence is either unclear or not available.

Prevention in the practice population

The risk of illness and disease is associated with a range of factors that operate on the individual across the lifecycle. For example, poor nutrition and lack of antenatal care during pregnancy are associated with later risk of chronic diseases in the child. Risk behaviours in childhood may become entrenched, leading to progressive physiological changes that can cause chronic diseases in later life. All these factors are in turn influenced by the social determinants of health, which operate at the local community and broader societal levels; these are poverty, housing, education and economic development (Figure I.3). Thus, it is highly desirable for general practice to think beyond the preventive healthcare needs of the individual patient, towards a practice population approach to primary prevention.

Figure I.3. The determinants of health and illness⁹



Note: Bold highlights selected social determinants of health

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General practice has a practical role to play in addressing these determinants and helping to break the cycle that may exist linking social and economic factors to illness and injury. This requires a systematic approach across the whole practice population, not just for those who seek out or are most receptive to preventive care. This may include auditing medical records to identify those who are missing out, using special strategies to support patients with low literacy, and being proactive in following up patients who are most at risk. It will usually require teamwork within the practice as well as links with other services.

General practice also has a broader role in facilitating health improvement for vulnerable and disadvantaged groups in the local community, in association with other services and providers. In some cases, this may involve advocacy for their needs. Information on local vulnerable and disadvantaged groups and their access to healthcare can be obtained from local Primary Health Networks (PHNs) or state and territory health networks. Measures to improve access to preventive healthcare by Aboriginal and Torres Strait Islander peoples are especially important given their higher burden of disease and the barriers that exist to preventive healthcare. More information is available in the *National guide to preventive health assessment for Aboriginal and Torres Strait Islander people*, 2nd edn.

Screening versus case finding

Many clinicians confuse screening and case-finding tests. Screening is defined as ‘the examination of asymptomatic people in order to classify them as likely or unlikely to have a disease’.¹⁴ The primary purpose of screening tests is to detect early disease in apparently healthy individuals.

Case finding is the examination of an individual or group suspected of having, or at risk of, the condition. Case finding is a targeted approach to identifying conditions in select patients who may already have symptoms.¹⁵

A diagnostic test is any kind of medical test performed to establish the presence (or absence) of disease as a basis for treatment decisions in symptomatic or screen-positive individuals (confirmatory test). Examples include taking a mid-stream urine (MSU) sample for evaluation of a urinary tract infection and performing a mammogram for a suspicious breast lump.

Screening and case finding carry different ethical obligations. If a clinician initiates screening in asymptomatic individuals, there needs to be conclusive evidence that the procedure can positively affect the natural history of the disorder. Moreover, the risks of screening must be carefully considered as the patient has not asked the health professional for assistance.

This situation is somewhat different from case finding, where the patient has presented with a particular problem or has asked for some level of assistance. In this situation, there is no guarantee of benefit of the tests undertaken. It could be argued that there is at least some implied exposure to risk (eg performing colonoscopy to investigate abdominal pain).

Opportunistic versus systematic prevention

Most preventive activities are undertaken in Australia opportunistically – that is when patients present for other reasons, and the preventive activity is an add-on.¹⁶ This approach is supported by evidence, which shows that visits just for ‘a general check-up’ are not effective or necessary.¹⁷

However, systematic approaches to register and recall patients for some specific targeted conditions are worthwhile – including childhood immunisations; and screening for cervical, breast and colorectal cancers (CRC), and diabetes. Proactive recall of patients for screening is warranted for high-risk groups, those who may have difficulty accessing services and for conditions where population coverage has been identified by the government as a public health priority.¹⁵

Screening principles

The World Health Organization (WHO) has produced guidelines^{18,19} for the effectiveness of screening programs. These and the National Health Service's (NHS) guidelines²⁰ in the UK have been kept in mind in the development of recommendations about screening in the Red Book.

Condition

- It should be an important health problem.
- It should have a recognisable latent or early symptomatic stage.
- The natural history of the condition, including development from latent to declared disease, should be adequately understood.

Test

- It should be simple, safe, precise and validated.
- It should be acceptable to the target population.
- The distribution of test values in the target population should be known and a suitable cut-off level defined and agreed.

Treatment

- There should be an effective treatment for patients identified, with evidence that early treatment leads to better outcomes.
- There should be an agreed policy on who should be treated and how they should be treated.

Outcome

- There should be evidence of improved mortality, morbidity or quality of life as a result of screening, and the benefits of screening should outweigh the harm.
- The cost of case finding (including diagnosis and treatment of patients who are diagnosed) should be economically balanced in relation to possible expenditure on medical care as a whole.

Consumers

- Consumers should be informed of the evidence so they can make an informed choice about participation.

In Australia, there is an increasing number of Medicare Benefits Schedule (MBS) items for health assessments in particular population groups: Aboriginal and Torres Strait Islander children and adults, refugees, people with an intellectual disability, those aged 45–49 years (with a risk factor), and those aged ≥ 75 years. There is evidence that these assessments improve the likelihood of preventive care being received.²¹ However, it is important that such 'health checks' involve preventive interventions where there is clear evidence of their effectiveness.

II. Patient education and health literacy

Impact of patient education

Patient education and counselling contribute to behaviour change for the primary prevention of disease.²¹ More broadly, they may also help to create greater 'health literacy' – the knowledge and skills patients require to maintain their own health, including use of health services. The use of behavioural techniques, especially for self-monitoring, is recommended, as is the use of personal communication and written or other audiovisual materials.²²

Patients view the general practitioner (GP) as a key first contact and credible source of preventive advice. Factors that increase the effectiveness of patient education delivered by GPs include:

- assessing the patient's health literacy²³
- the patient's sense of trust in their GP²⁴
- face-to-face delivery²⁵
- patient involvement in decision making^{26–28}
- highlighting the benefits and costs^{29,30}
- strategies to help the patient remember what they have been told³¹
- tailoring the information to the patient's interest in change³²
- strategies that address the difficulty in adherence^{28,33}
- the use of decision aids.³⁴

Many preventive activities involve a change in health-related behaviour. In general practice, it may take at least six to eight sessions to discuss and see changes to diet, physical activity or weight loss. This will often require referral, which should be followed up by the general practice. As the patient plays a large role in making this happen, it is useful to facilitate more active inclusion of patients in their care. This process is an essential component of self-management support strategies^{35,36} and has the potential to increase the patient's responsibility for their health. In addition, it:

- enhances the quality of communication^{37,38}
- enhances the doctor–patient consultation²⁶
- can reduce the cost of aspects of care through better informed patients²⁷
- increases the demand and use of appropriate referral to other health professionals and agencies³⁸
- increases adherence to recommended preventive activities and therapeutic regimens.^{38,39}

For those whose first language is not English, a professional interpreter should be considered.

Approaches to patient education

Patients need to develop their own understanding of the problem and what can be done about it. For simple behavioural changes, such as having a cervical cancer screening test, patients weigh up the perceived benefits and costs.⁴⁰ These benefits and costs may include answers to the following questions:

- How big is the problem to the individual?
- What are the consequences of not doing the test?
- What are the benefits?
- What are the barriers?

Some health education may require more complex actions over a period of time, such as changing diet, stopping smoking or increasing physical activity.

There are a number of theoretical approaches to understanding and supporting behaviour change including the:

- Theory of planned behaviour⁴¹
- Health belief model⁴²
- capability, opportunity and motivation (COM-B) system, which has been proposed by Michie et al as a way of representing the necessary conditions for behaviour change to occur⁴³
- 'stages of change model',⁴⁴ which proposes five stages of change, which are viewed as a cyclical, ongoing process during which the person has differing levels of motivation or readiness to change, and the ability to relapse or repeat a stage. Although there is a lack of evidence for greater effectiveness of stage-based approaches,⁴⁵ this model provides a useful framework for clinicians to identify patients' interest in behaviour change in the consultation and to provide tailored support in a way that is time efficient and likely to be well received.⁴⁶

Support from the GP and/or practice nurse may involve motivational interviewing. This is an evidence-based counselling technique based on a therapeutic partnership that acknowledges and explores the patient's ambivalence about a behaviour in a way that allows them to clarify what goals are important to them and to organise their reasons in a way that supports actions.

Motivational interviewing is a counselling philosophy that values patient autonomy and mutual respect, and the use of open-ended questions, affirmations, reflection and summarising.⁴⁷

Further information about motivational interviewing and its application in general practice can be found in The Royal Australian College of General Practitioners' (RACGP) *Smoking, nutrition, alcohol and physical activity (SNAP): A population health guide to behavioural risk factors in general practice* (www.racgp.org.au/your-practice/guidelines/snap) and *Putting prevention into practice: Guidelines for the implementation of prevention in the general practice setting* (Green Book; www.racgp.org.au/your-practice/guidelines/greenbook).

Health inequity

It is well recognised that socioeconomic disadvantage has a profound impact on people's health, and GPs are often in a good position to confront this.⁴⁸

However, poverty is not evenly spread across Australia, and it is likely that GPs who see some patients with socioeconomic disadvantage will see many. Similarly, GPs are not evenly spread with respect to poverty. The Australian Bureau of Statistics (ABS) have shown that, in 2006, 11% of GPs worked in the most disadvantaged areas, while 24% worked in the least disadvantaged.⁴⁹

Healthcare in communities that are socioeconomically deprived is often complex. As well as having more chronic health conditions, and more health behaviours leading to increased risk, there may be a lack of local support and infrastructure to improve the situation. General practices are often one of the few resources patients have to call on. There are often significant personal and social barriers to achieving change. As well as good communication skills, GPs may need to help patients navigate health, housing, welfare and legal systems. This often makes for more-frequent, longer, more-complex consultations. However, the long-term relationships GPs develop with patients are significant enablers for patients who are socioeconomically deprived to be able to make changes.

Health equity issues are more complex than just socioeconomic factors. There are specific issues for Aboriginal and Torres Strait Islander peoples, where an ongoing history of colonisation, dispossession and racism interact with a lack of economic opportunity. The *National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people*, 2nd edn⁵⁰ provides extensive detail on specific preventive care issues facing Aboriginal and Torres Strait Islander peoples, and the health equity material canvassed here should be read in conjunction with those guidelines. They provide much more in-depth and important guidance on preventive healthcare strategies that are recommended for practitioners working with Aboriginal and Torres Strait Islander peoples and communities. In addition, GPs should optimise their use of Medicare Benefits Schedule (MBS) Item 715 that supports health checks in Aboriginal and Torres Strait Islander peoples and their use of Close the Gap provisions in ensuring affordable access to medicines. GPs should also proactively address cost barriers to referral to other services faced by Aboriginal and Torres Strait Islander peoples.

Supporting patient education and health literacy in disadvantaged groups

What are the key equity issues and who is at risk?

- The complex needs and health problems of disadvantaged groups, and the interactions between social, psychological, environmental and physical determinants of health mean that special effort is required for patient education to be effective.
- Socioeconomic disadvantage and low health literacy are linked. Health literacy is a key factor in how patient education leads to patient empowerment. It allows individuals to access, understand and use information to negotiate the health system and support self-management.⁵¹ Health literacy is important as low health literacy is associated with poorer health outcomes and lower utilisation of health services such as screening and preventive care.
- Other groups that require particular focus in patient education include Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse (CALD) groups.⁵²

What can GPs do?

A range of strategies can be used by GPs to help patients with low health literacy and to promote health-related behaviour changes.^{51,53} These include:

- specific communication techniques such as asking patients to 'teach back' what has been taught to them and the 'ask me 3' health education program based on three patient-led questions⁵⁴ (<https://npsf.site-ym.com/default.asp?page=askme3>)
- motivational interviewing and counselling techniques
- plain-language and culturally appropriate written materials (explicitly asking about reading skills may be important)
- use of web-based or computer-based programs (explicitly asking about internet access, eg at home or through a library may be important)
- helping patients navigate the healthcare system to improve access to care, for example, by working in collaboration with other services such as community health centres and consumer organisations to access community health and group education programs.

Effective patient education for CALD populations means ensuring that health services and messages are accessible and relevant. GPs should:

- offer interpreter services during consultations. There is good evidence that interpreter services improve care experience and clinical outcomes⁵⁵
- use patient education materials in plain English or those that are culturally and linguistically sensitive (eg have a range of patient material in relevant different languages in your practice)
- link individuals to specific community-based health programs.^{56,57}

Cultural competence is important in providing appropriate patient education to all communities. This is particularly important in working with Aboriginal and Torres Strait Islander communities.⁵⁸ It is important for GPs to better appreciate Aboriginal and Torres Strait Islander peoples' perspectives on health, culture and history, and provide services within a culturally appropriate framework.⁵⁹ This could be facilitated through:

- reading about the history and impact of colonisation on Aboriginal and Torres Strait Islander peoples and their health, nationally and locally⁶⁰
- arranging Aboriginal and Torres Strait Islander cultural awareness training for themselves and practice staff (www.racgp.org.au/yourracgp/faculties/aboriginal/education/resources-for-gps-and-practice-staff/cultural-awareness)
- linking your practice and Aboriginal and Torres Strait Islander patients to local Aboriginal community controlled health services⁶¹
- developing relationships with your local Aboriginal and Torres Strait Islander community, and resources, people and services that can provide you with assistance and cultural mentorship.

III. Development of the Red Book

The Red Book, 9th edn, has been developed by a team of general practitioners (GPs) and experts to ensure that the content is the most valuable and useful for GPs and their teams. The content broadly conforms to the highest evidence-based standards according to the principles underlying the Appraisal of Guidelines Research and Evaluation (AGREE) tool.^{62,63}

The dimensions addressed are:

- scope and purpose
- clarity of presentation
- rigour of development
- stakeholder involvement
- applicability
- editorial independence.

The Red Book maintains developmental rigour, editorial independence, and relevance and applicability to general practice.

Recommendations

The recommendations in the Red Book are based on current, evidence-based guidelines for preventive activities. Focus has been on those most relevant to Australian general practice. Usually, this means that the recommendations are based on Australian guidelines such as those endorsed by the National Health and Medical Research Council (NHMRC).

Where NHMRC guidelines are not available or recent, other sources have been used, such as guidelines from the National Heart Foundation of Australia, Canadian or US preventive guidelines, or the results of systematic reviews. References to support these recommendations are listed. However, particular references may relate only to part of the recommendation (eg only relating to one of the high-risk groups listed), and other references in the section may have been considered in formulating the overall recommendation.

These recommendations are based on the best available information at the time of writing (May 2015 to May 2016). Any updated information will be posted on The Royal Australian College of General Practitioners' (RACGP) website. More information and guidelines can be found on the NHMRC website www.nhmrc.gov.au/guidelines-publications, the Australian Government clinical guidelines portal (www.clinicalguidelines.gov.au) and the Cochrane Collaboration website (www.cochrane.org).

IV. How to use the Red Book

The Red Book is designed to be used in a number of ways, all of which can be useful in day-to-day general practice. The Red Book can be used as a:

- guide to establish who is most at risk and for whom screening or preventive care is most appropriate
- refresher to check the latest recommendations
- reminder to check at a glance what preventive activities are to be performed in various age groups and how often
- checklist of preventive activities used according to an individual patient's health profile
- patient education tool, to demonstrate to patients the evidence that exists for preventive activities
- study guide – a comprehensive list of references is provided in each chapter. This allows more in-depth information on a particular topic.

Organisational detail

The information in the Red Book is organised into three levels.

The first level is the lifecycle chart, which highlights when preventive activities should be performed and the optimum frequency for each activity. The lifecycle chart is organised by age and clinical topic. Simply check the column under a particular age group to see what activities should be considered for the patient. The preventive activities that are recommended for everyone within a particular age range, and for which there is sound research evidence, are shaded in red. Activities to be performed only in patients with risk factors or where the evidence is not as strong are shaded in light red or pink.

A copy of this chart can be downloaded and attached to the patient record as a systematic reminder for preventive activities. General practitioners (GPs) can also use it as a wall chart or keep it handy on the desk.

The second level is more detailed and presents a summary of recommendations in addition to tables that identify what preventive care should be provided for particular groups in the population. This edition of the Red Book adopts the existing National Health and Medical Research Council (NHMRC) levels of evidence and grades of recommendations.⁶⁴ Future editions will consider adopting the GRADE system (www.gradeworkinggroup.org) for evaluating the quality of evidence for outcomes reported in systematic reviews.

Recommendations in the tables are graded according to the levels of evidence and strength of recommendation. The levels of evidence are coded by the roman numerals I–IV while the strength of recommendation is coded by the letters A–D. Practice Points are employed where no good evidence is available. Refer to Table IV.1 for more information.

Table IV.1. Coding scheme used for levels of evidence and grades of recommendation⁶⁴

Levels of evidence	
Level	Explanation
I	Evidence obtained from a systematic review of level II studies
II	Evidence obtained from a randomised controlled trial (RCT)
III-1	Evidence obtained from a pseudo-randomised controlled trial (ie alternate allocation or some other method)
III-2	Evidence obtained from a comparative study with concurrent controls: <ul style="list-style-type: none"> • non-randomised, experimental trial • cohort study • case-control study • interrupted time series with a control group
III-3	Evidence obtained from a comparative study without concurrent controls: <ul style="list-style-type: none"> • historical control study • two or more single arm study • interrupted time series without a parallel control group
IV	Case series with either post-test or pre-test/post-test outcomes
Practice Point	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees
Grades of recommendations	
Grade	Explanation
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution
Only key references used to formulate the recommendations are included in the tables. Where the evidence is available on the internet, the web link is given to enable easy access to original materials. There is also information on how the preventive care should be implemented, for example, a brief outline of the method of screening	

Finally, there is a third level of information, which is on particular disadvantaged population groups that may be at risk of not receiving preventive care and what should be done to increase their chance of preventive care.

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V. What's new in the 9th edition?

Chapter	Change
1. Preventive activities prior to pregnancy	<p>Advice on nutrition, weight assessment and oral health has been included in Table 1.1</p> <p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?', highlighting the key issues and strategies</p>
2. Genetic counselling and testing	<p>Information on referral to clinical genetic services has been added</p> <p>Inclusion of the use of a simple family history screening questionnaire to identify individuals in general practice who may require a more detailed assessment of their family history of cancer, heart disease or diabetes (Appendix 2A. Family history screening questionnaire)</p> <p>Additional advice added regarding Down syndrome – for all pregnant women – hereditary haemochromatosis, haemoglobinopathies and thalassaemias (Table 2.1)</p> <p>Non-invasive prenatal test now included</p>
3. Preventive activities in children and young people	<p>Content has been edited and layout simplified to enable faster appreciation of the recommendations 'at a glance'</p> <p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?', highlighting the key issues and strategies</p>
4. Preventive activities in middle age	<p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?', highlighting the key issues and strategies</p>
5. Preventive activities in older age	<p>Falls and physical activity are now in separate sections</p> <p>Physical activity recommendations relevant to the Australian environment are included</p>
6. Communicable disease	<p>Inclusion of new information on the consent process before vaccination</p> <p>New information on the prevalence of chlamydia, gonorrhoea, syphilis and human immunodeficiency virus (HIV) in Australia</p> <p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?', highlighting the key issues and strategies</p>
7. Prevention of chronic disease	<p>Additional information on identifying nutrition-related complications in children and adolescents (Table 7.3.1)</p> <p>Change of title of Section 7.4 from 'Problem drinking' to 'Early detection of at-risk drinking'. Additional advice and information on effective interventions</p> <p>Section 7.5. Physical activity includes assessment advice and referral information for different age groups, and those at increased risk</p> <p>Consumption of red meat and processed meat recommendations modified to align with World Health Organization (WHO) recommendations</p> <p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?', highlighting the key issues and strategies</p>

<p>8. Prevention of vascular and metabolic disease</p>	<p>Information added on assessing need for anticoagulation (Table 8.5.2)</p> <p>New information on atrial fibrillation</p> <p>New advice about screening for diabetes based on US Preventive Services Task Force (USPSTF) guidelines</p> <p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?', highlighting the key issues and strategies</p>
<p>9. Early detection of cancer</p>	<p>Sections rearranged in order of incidence – that is, most commonly reported in Australia (www.aihw.gov.au/cancer/cancer-in-australia-overview-2012/ch2/#t3)</p> <p>After reviewing information from recent large trials of prostate cancer screening, population screening for prostate cancer by prostate-specific antigen (PSA) testing continues to not be recommended. Therefore, GPs have no obligation to offer prostate cancer screening to asymptomatic men. Reference included to a decision aid to assist discussion of possible benefits and harms of screening with PSA in men who have individual concerns about prostate cancer</p> <p>Inclusion of information on the cervical cancer screening program to commence in May 2017</p> <p>New information about the risks and benefits of screening mammogram; in particular, the risk of over-diagnosis</p> <p>Oral cancer section moved to Chapter 11. Oral health</p> <p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?' highlighting the key issues and strategies</p>
<p>10. Psychosocial</p>	<p>Additional information on adolescents and those at average risk included for intimate partner violence (Table 10.3.1)</p> <p>Information on health inequity is presented under 'What are the key equity issues and who is at risk?' and 'What can GPs do?', highlighting the key issues and strategies</p>
<p>11. Oral health</p>	<p>Title of chapter has changed from 'Oral hygiene' to 'Oral health' to include information on both oral hygiene and cancer</p>
<p>14. Osteoporosis</p>	<p>Inclusion of an additional section on quantitative ultrasound as an alternative imaging technique for assessing fracture risk</p>
<p>15. Screening tests of unproven benefit</p>	<p>Additional screening tests not recommended:</p> <ul style="list-style-type: none"> • Coronary computed tomography (CT) angiography for coronary artery disease • Cardiac calcium scoring for coronary heart disease • Thermography and single nucleotide polymorphisms testing for breast cancer • Optical colonoscopy and CT colonography for colorectal cancer • Heel ultrasound for osteoporosis • Carotid artery ultrasound for asymptomatic carotid artery stenosis • Enquiry about sleep for obstructive sleep apnoea • Bimanual pelvic exam during a routine Pap smear in asymptomatic women • Genetic testing for methylenetetrahydrofolate reductase (<i>MTHFR</i>) • Genetic testing for apolipoprotein E (<i>ApoE</i>) <p>'Genetic profiling' has been renamed 'genomic sequencing'</p>

1. Preventive activities prior to pregnancy

Age	<2	2–3	4–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	≥65

Every woman of reproductive age should be considered for preconception care (C). This consists of interventions that aim to identify and modify biomedical, behavioural and social risks to a woman's health or pregnancy outcome through prevention and management.¹ Preconception care should include reproductive planning and the effective use of contraception to prevent unplanned pregnancy (A), smoking cessation (A)² and advice to consider abstinence from alcohol (especially if planning a pregnancy, or if the woman could become pregnant or is in the early stages of pregnancy),³ folic acid and iodine supplementation (A),^{4,5} nutrition and weight assessment,⁶ review of immunisation status (C),⁷ medications (B),⁸ oral health,⁹ and chronic medical conditions, especially glucose control in patients with diabetes (B).¹⁰

There is evidence to demonstrate improved birth outcomes with preconception healthcare in women with diabetes, phenylketonuria and nutritional deficiency,¹¹ as well as benefit from the use of folate supplementation¹² and a reduction in maternal anxiety.¹³ Below is information about all the potential interventions in preconception care that expert groups have recommended (C).

What does preconception care include?

Medical issues

Reproductive life plan

Assist your patients to develop a reproductive life plan that includes whether they want to have children. If they do, discuss the number, spacing and timing of intended children, and provide effective contraception to enable the implementation of this plan and reduce the risk of an unplanned pregnancy. If relevant, discuss reduction in fertility with advancing maternal age.

Reproductive history

Ask if there have been any problems with previous pregnancies such as infant death, fetal loss, birth defects (particularly neural tube defects [NTD]), low birth weight, preterm birth, or gestational diabetes. Also, if there are any ongoing risks that could lead to a recurrence in a future pregnancy.

Medical history

Ask if there are any medical conditions that may affect future pregnancies. Are chronic conditions such as diabetes, thyroid disease, hypertension, epilepsy and thrombophilia well managed? Consider if current management is optimal for early pregnancy given that early embryogenesis will occur prior to any consultation in pregnancy.

Medication use

Review all current medications for teratogenic effects, including over-the-counter medications, vitamins and supplements.

Genetic/family history (also refer to Chapter 2. Genetic counselling and testing)

Increased frequency of intellectual disability, multiple pregnancy losses, stillbirth or early death, and children with congenital abnormalities may suggest the presence of genetically determined disease. Patients of particular ethnic backgrounds may be at increased risk and can benefit from genetic testing for specific conditions. Possible consanguinity (eg cousins married to each other) should be explored, for example, by asking, 'Is there any chance that a relative of yours might be related to someone in your partner's family?' General practitioners (GPs) should consider referral to, or consultation with, a genetic service for testing because test results, which rely on sensitivity, specificity and positive predictive value, are not straightforward. Testing often involves complex ethical, social and legal issues. The time on waiting lists for genetic services is usually longer than one month, so direct consultation and liaison by telephone are necessary when the genetic advice could affect a current pregnancy. Provide opportunity for carrier screening for genetic conditions (eg cystic fibrosis, haemoglobinopathies) and referral for genetic counselling based upon risk factors.

General physical assessment

Conduct a breast examination and, if it is due, perform a cervical screening test (eg Papanicolaou [Pap] test) before pregnancy. Also assess body mass index (BMI) and blood pressure (BP), and check the oral cavity.

Substance use

Ask about tobacco, alcohol and illegal drug use. Offer counselling and referral for specialised assistance when use is identified.

Vaccinations

The need for vaccination, particularly for hepatitis B, rubella and varicella, should be assessed as part of any pre-conception health check. Vaccinations can prevent some infections that may be contracted during pregnancy, and relevant serological testing can be undertaken to ascertain immunity to hepatitis B and rubella. Routine serological testing for varicella does not provide a reliable measure of vaccine-induced immunity; however, it can indicate whether natural immunity has occurred due to prior infection. Women receiving live viral vaccines such as measles, mumps and rubella (MMR) and varicella should be advised against becoming pregnant within 28 days of vaccination. It is also important that women of child-bearing age who present for immunisation should be questioned regarding the possibility of pregnancy as part of the routine pre-vaccination screening, to avoid inadvertent administration of a vaccine(s) not recommended in pregnancy (refer to Section 2.1.4 Pre-vaccination screening in the *Australian immunisation handbook*, 10th edn). Recommended preconception vaccinations are:

- MMR
- varicella (in those without a clear history of chickenpox or who are non-immune on testing)
- influenza (recommended during pregnancy)
- diphtheria, tetanus, acellular pertussis (dTpa; to protect newborn from pertussis).

Lifestyle issues

Family planning

Based on the patient's reproductive life plan (refer to above), discuss fertility awareness and how fertility reduces with age, chance of conception, the risk of infertility, and fetal abnormality. For patients not planning to become pregnant, discuss effective contraception and emergency contraceptive options.

Folic acid supplementation

Women should take a 0.4–0.5 mg per day supplement of folic acid for at least one month prior to pregnancy, and for the first three months after conception. Where there is a known increased risk of NTD (ie patients taking anticonvulsant medication, or with pre-pregnancy diabetes mellitus, previous child or family history of NTD, 5-methyltetrahydrofolate deficiency or BMI >30 kg/m²) or a risk of malabsorption, a 5 mg daily dose is recommended.¹⁴

Iodine supplementation

Women who are pregnant, breastfeeding or considering pregnancy should take an iodine supplement of 150 µg each day.⁵

Healthy weight, nutrition and exercise

Discuss weight management and caution against being overweight or underweight. Recommend regular, moderate-intensity exercise and assess risk of nutritional deficiencies (eg vegan diet, lactose intolerance, and calcium, iron or vitamin D deficiency due to lack of sun exposure).

Psychosocial health

Discuss perinatal mental health, including anxiety and depression, pre-existing mental health conditions, psychological or psychiatric assessment and treatment, use of medication, and the risk of exacerbation of mood disorders in pregnancy and postpartum. Mental health screening should include a psychosocial assessment.

Smoking, alcohol and illegal drug cessation (as indicated)

Smoking,¹⁵ illegal drug¹⁶ and excessive alcohol use¹⁷ during pregnancy can have serious consequences for an unborn child and should be stopped prior to conception.

Healthy environments

Repeated exposure to hazardous toxins in the household and workplace environment can affect fertility and increase the risk of miscarriage and birth defects. Discuss the avoidance of TORCH infections: **T**oxoplasmosis, **O**ther (eg syphilis, varicella, mumps, parvovirus and human immunodeficiency virus [HIV], listeriosis), **R**ubella, **C**ytomegalovirus and **H**erpes simplex.

- Toxoplasmosis: Avoid cat litter, garden soil, raw/undercooked meat and unpasteurised milk products; wash all fruit and vegetables.
- Cytomegalovirus, parvovirus B19 (fifth disease): Discuss the importance of frequent hand-washing. Those who work with children or in the healthcare sector can further reduce risk by using gloves when changing nappies.
- Listeriosis: Avoid paté, soft cheeses (eg feta, brie, blue vein), prepackaged salads, deli meats and chilled/smoked seafood. Wash all fruit and vegetables before eating. Refer to Food Standards Australia New Zealand (www.foodstandards.gov.au/consumer/generalissues/pregnancy/Pages/default.aspx) regarding folate, listeria and mercury.
- Fish: Limit fish containing high levels of mercury. Refer to www.betterhealth.vic.gov.au/health/healthyliving/mercury-in-fish

Table 1.1. Preconception: Preventive interventions		
Intervention	Technique	References
Folate supplementation	Most women: 0.5 mg/day supplementation, beginning ideally at least one month prior to conception and continuing for the first trimester High-risk women: 5 mg/day supplementation, ideally beginning at least one month prior to conception and continuing for the first trimester	4, 18–20
Iodine supplementation	All women who are pregnant, breastfeeding or considering pregnancy should take an iodine supplement of 150 µg each day	5, 14
Nutrition and weight assessment	All women, especially those who become pregnant in adolescence or have closely-spaced pregnancies (interpregnancy interval less than six months), require nutritional assessment and appropriate intervention in the preconception period with an emphasis on optimising maternal body mass index (BMI) and micronutrient reserves	6, 21
Check oral cavity and referral	Ask the woman if she has bleeding gums, swellings, sensitive teeth, loose teeth, holes in teeth, broken teeth, toothache, or any other problems in the mouth Check oral cavity to confirm. Reassure the patient that it is safe to have a range of dental treatments during pregnancy	
Smoking cessation	Inform women who smoke that tobacco affects fetal growth and advise them to stop smoking. Evidence exists to suggest improved cognitive ability in children of mothers who quit smoking during gestation (III, A). Consider pharmacotherapy when a pregnant woman is otherwise unable to quit, and when the likelihood and benefits of cessation outweigh the risks of pharmacotherapy and potential continued smoking	22
Alcohol and illicit drug use	For women who are pregnant or planning a pregnancy, not drinking is the safest option. The risk of harm to the fetus is highest when there is high, frequent maternal alcohol intake. The risk of harm to the fetus is likely to be low if a woman has consumed only small amounts of alcohol before she knew she was pregnant. Inform pregnant women that illicit drugs may harm the fetus and advise them to avoid use	1
Interpregnancy interval	Perinatal outcomes are worse with interpregnancy intervals <18 months or >59 months; the outcomes affected are preterm birth, low birth weight and small size for gestational age	23
Chronic diseases	Optimise control of existing chronic diseases (eg diabetes, hypertension, epilepsy). Avoid teratogenic medications	18

BMI, body mass index

Health inequity

What are the key equity issues and who is at risk?

Preconception care is especially important to adolescents and young women in vulnerable populations.²⁴ Adolescent parenthood is more common in low socioeconomic groups and Aboriginal and Torres Strait Islander communities, and is associated with poor birth outcomes and adverse health effects, including mental health issues and substance misuse.²⁵⁻²⁹

Decreased folate supplementation is associated with being a woman from a lower socioeconomic group, being an Aboriginal and Torres Strait Islander person, or being younger or from a rural area.³⁰ Awareness of folic acid is related to income, educational level and younger age.^{31,32} Other dietary supplements may follow similar gradients.

Smoking and alcohol use in pregnancy show socioeconomic gradients. Women who are young, on a low income and of low socioeconomic status, Aboriginal and Torres Strait Islander women, single mothers, and women experiencing addiction, violence and mental health issues are all more likely to smoke during pregnancy.^{33,34}

Women from culturally and linguistically diverse (CALD) backgrounds are more likely to experience poorer perinatal outcomes.³⁶⁻³⁸

What can GPs do?

- Provide youth-friendly care to adolescent parents through non-judgemental, competent, considerate and respectful advice and services.³⁹
- Offer women culturally appropriate resources, including in the mother's own language, about health issues and the health system, and consider the use of interpreters.
- Link women into English language and perinatal education courses, and offer cultural brokerage through maternity liaison officers or bilingual health workers wherever possible.³⁹
- Refer to 'Antenatal care for Aboriginal and Torres Strait Islander women' in the Australian Health Ministers' Advisory Council's *Clinical practice guidelines: Antenatal care – Module 1*.³⁹
- Refer to the general principles of providing patient education and supporting health literacy in disadvantaged groups.

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2. Genetic counselling and testing

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Genetic testing can be used for various purposes, from preconception planning (refer to Chapter 1. Preventive activities prior to pregnancy), during pregnancy, for neonates (newborn screening), during childhood and right through to adult-onset familial diseases (eg cancer, cardiac and neurodegenerative diseases).

In order to identify patients who may be at risk of a genetic disorder, a comprehensive family history must be taken from all patients, and this should be regularly updated. A family history should include first-degree and second-degree relatives on both sides of the family and ethnic background. Age of onset of disease and age of death should be recorded where available.

Increased frequency and early onset of cancers in families, premature ischaemic heart disease or sudden cardiac death, intellectual disability, multiple pregnancy losses, stillbirth or early death, and children with congenital abnormalities may suggest the presence of genetically determined disease. Patients of particular ethnic backgrounds may be at increased risk and may benefit from genetic testing for specific conditions. Possible consanguinity (eg cousins married to each other) should be explored, for example, by asking, ‘Is there any chance that a relative of yours might be related to someone in your partner’s family?’ General Practitioners (GPs) should consider referral to, or consultation with, a genetic service (general or cancer genetics) for testing because test results, which rely on sensitivity, specificity and positive predictive value, are not straightforward. Testing often involves complex ethical, social and legal issues. The time on waiting lists for genetic services is usually longer than one month, so direct consultation and liaison by telephone are necessary when the genetic advice could affect a current pregnancy. On the basis of current evidence, whole genome sequencing is not recommended in low-risk general practice populations (refer to Chapter 15. Screening tests of unproven benefit).

Clinical genetic services provide testing, diagnosis, management and counselling for a wide range of genetic conditions. Reasons for referral include:

- diagnosis of a genetic condition
- family history of a genetic condition
- recurrence risk counselling (eg risk of recurrence in a future pregnancy)
- pregnancy counselling (eg preconception, consanguinity)
- prenatal screening and testing
- presymptomatic and predictive testing for adult-onset disorders (eg cancer)
- discussions surrounding genetic testing
- arranging of genetic testing.

Services such as paternity testing or genetic testing/management of very common genetic conditions (eg haemochromatosis) are not provided by clinical genetic services.

Use of a simple family history screening questionnaire (FHSQ) can help identify individuals who may require a more detailed assessment of their family history of cancer, heart disease or diabetes (refer to Appendix 2A. Family history screening questionnaire for a published and validated FHSQ).¹ This tool can be used as part of the patient assessment at their first visit to a practice. If a patient is uncertain about their family history, they can be asked to discuss the FHSQ with their relatives prior to completing the questionnaire. For patients with low literacy, the FHSQ may need to be completed with the support of a healthcare professional. A positive response to any question requires follow-up with a more detailed assessment of the family history. As family history can change, it is recommended that the FHSQ be repeated at least three every years.

Table 2.1. Genetic testing: Identifying risks			
Who is at risk?	What should be done?	How often?	References
Cystic fibrosis (CF)			
<p>Increased probability:</p> <ul style="list-style-type: none"> Northern European or Ashkenazi Jewish ancestry Family history of CF or a relative with a known CF mutation Where partner is affected or a known carrier of CF Partners from Northern European or Ashkenazi Jewish backgrounds who are consanguineous (eg cousins married to each other) Men with infertility suspected or due to congenital absence of the vas deferens 	<p>Offer referral for genetic counselling and carrier testing (III, B)</p> <p>If patient is pregnant, contact genetic services to organise screening in first trimester</p>	<p>Test couple for carrier status if planning pregnancy or in first trimester</p>	<p>2–5</p>
Down syndrome			
<p>Probability:</p> <ul style="list-style-type: none"> All pregnant women 	<p>Combined maternal serum and ultrasound screening in first trimester*</p> <p>Maternal serum screening in second trimester† (C)</p> <p>Non-invasive prenatal test (NIPT)‡</p>	<p>First or second trimester</p>	<p>3, 6–11</p>
<p>Significantly increased probability:</p> <ul style="list-style-type: none"> Women who had a previous Down syndrome pregnancy Women with positive maternal serum screening/nuchal translucency ultrasound, NIPT in first trimester or maternal serum screening in second trimester Parent with a chromosomal rearrangement (eg balanced translocation of chromosome 21) 	<p>Fetal diagnostic genetic testing (C)</p> <p>Offer referral for genetic counselling</p>	<p>First or second trimester</p>	<p>10</p>
Fragile X syndrome			
<p>Increased probability</p> <p>Children or adults of either sex with one or more of the following features:</p> <ul style="list-style-type: none"> developmental delay including intellectual disability of unknown cause autistic-like features attention deficit hyperactivity disorder (ADHD) speech and language problems social and emotional problems, such as aggression or shyness a female with a history of primary ovarian insufficiency or premature menopause (aged <40 years) adults with ataxia, balance problems and parkinsonism relative with a fragile X mutation 	<p>Deoxyribonucleic acid (DNA) test for fragile X and karyotype/comparative genomic hybridisation by microarray for other possible causes of developmental delay</p> <p>Refer to genetic services for genetic counselling and testing at-risk family (I, A)</p> <p>(IV, B)</p> <p>(IV, A)</p>	<p>Any age for diagnosis</p> <p>Prior to pregnancy to ascertain carrier status and reproductive risk</p>	<p>3, 12, 13</p> <p>14–16</p> <p>17</p>

Who is at risk?	What should be done?	How often?	References
Haemoglobinopathies and thalassaemias			
Increased probability: <ul style="list-style-type: none"> • People from any of the following ethnic backgrounds: Southern European, African, Middle Eastern, Chinese, Indian subcontinent, Central and South-east Asian, Pacific Islander, New Zealand Maori, South American, Caribbean, and some northern Western Australian and Northern Territory Aboriginal and Torres Strait Islander communities 	Test for mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH) and ferritin Haemoglobin electrophoresis (III, B) Blood for deoxyribonucleic acid (DNA) studies Arrange partner testing if: MCV ≤ 80 fL and/or MCH ≤ 27 pg and/or abnormal haemoglobin (Hb) electrophoresis	Test couple for carrier status prior to pregnancy or in first trimester	3, 18–20
Breast and ovarian cancer	Refer to Section 9.3. Breast cancer		
Colon cancer	Refer to Section 9.2. Colorectal cancer		
Familial hypercholesterolaemia (FH)			
Increased probability: <ul style="list-style-type: none"> • Premature ischaemic heart disease (ie ischaemic heart disease in men aged <55 years and women aged <60 years) • First-degree relative with premature ischaemic heart disease (men aged <55 years and women aged <60 years) • Total cholesterol >7.5 mmol/L or low density lipoprotein-cholesterol (LDL-C) >4.9 mmol/L • First-degree relative with a total cholesterol >7.5 mmol/L or LDL-C >4.9 mmol/L • Tendon xanthomata or arcus cornealis at <45 years of age 	Assess their probability of having FH using the Dutch Lipid Clinic Network (DLCN) criteria or Modified UK Simon Broome (MUKSB) criteria (III, B) (Appendix 2B. Dutch Lipid Clinic Network Criteria for making a diagnosis of Familial Hypercholesterolaemia in adults) Offer referral to a lipid disorders clinic if DLCN score ≥ 3 or the MUKSB suggests possible FH	First presentation	21, 22

Who is at risk?	What should be done?	How often?	References
Hereditary haemochromatosis (HHC)			
<p>Increased probability:</p> <ul style="list-style-type: none"> All first-degree relatives of patients with HHC who are C282Y homozygous or C282Y/H63D compound heterozygous 	<p>Positive family history – asymptomatic and symptomatic</p> <p>For patients aged >18 years, test for <i>HFE</i> mutations, transferrin saturation and serum ferritin to simultaneously assess future and current risk of iron overload (C). Medicare Benefits Schedule (MBS) rebate applies if affected relative is first-degree relative; no MBS rebate applies for more distant relatives</p> <p>If <i>HFE</i> mutation tests show C282Y homozygous or C282Y/H63D compound heterozygous result, arrange for all of that patient's first degree relatives aged >18 years to have tests for <i>HFE</i> mutations and transferrin saturation and serum ferritin (C). MBS rebate applies</p>	<p>Aged >18 years at first presentation</p> <p>Although abnormalities in transferrin saturation and serum ferritin may occur at <18 years of age in patients with HHC, morbidity from significant iron overload is exceedingly rare before the age of 18 years</p>	9, 23–29
<p>Consider in these patients:</p> <ul style="list-style-type: none"> Patients with conditions that could be a complication of haemochromatosis (eg arthritis, chronic fatigue, erectile dysfunction, early menopause, cirrhosis, hepatocellular carcinoma, cardiomyopathy, diabetes mellitus) Patients with liver disease of unknown cause, including those with suspected alcoholic liver disease Patients with a family history of haemochromatosis, liver cancer, unexplained early death from liver or heart failure Patients with porphyria cutanea tarda and chondrocalcinosis ('pseudogout') 	<p>Other patients – asymptomatic and symptomatic</p> <p>For patients aged >18 years, test transferrin saturation and serum ferritin</p> <p>If transferrin saturation >45% or serum ferritin >250 µg/L on repeated testing, test for <i>HFE</i> mutations. MBS rebate applies</p> <p>The ideal sample for testing transferrin saturation and serum ferritin is early morning fasting blood test with iron supplements withheld for 24 hours</p>		

*First trimester Down syndrome screening:

- free beta human chorionic gonadotrophin (HCG), pregnancy associated plasma protein at 10–12 weeks (this also provides risk for trisomy 18 and Edwards syndrome)
- nuchal translucency screen at 11 weeks, 3 days to 13 weeks, 6 days
- NIPT[†] from 10 weeks for trisomy 21, 18 and 13; not available for MBS rebate. Tests for fetal DNA in maternal blood

[†]Second trimester serum screening:

- beta HCG, unconjugated oestriol, alpha-fetoprotein and inhibin A, ideally at 15–17 weeks; also gives risk for Edward syndrome and neural tube defects (NTDs)

ADHD, attention deficit hyperactivity disorder; CF, cystic fibrosis; DLCN, Dutch Lipid Clinic Network; DNA, deoxyribonucleic acid; FH, familial hypercholesterolaemia; Hb, haemoglobin; HCG, human chorionic gonadotrophin; HHC, hereditary haemochromatosis; LDL-C, low density lipoprotein-cholesterol; MCH, mean corpuscular haemoglobin; MCV, mean corpuscular volume; MUKSB, Modified UK Simon Broome; NIPT, non-invasive prenatal test; NTD, neural tube defect

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Appendix 2A. Family history screening questionnaire

The use of a simple family history screening questionnaire (FHSQ) can help identify individuals who may require a more detailed assessment of their family history of cancer, heart disease or diabetes.¹

This tool can be used as part of the patient's assessment at their first visit to a practice. If patients are uncertain about their family history, they can be asked to discuss the FHSQ with their relatives prior to completing the questionnaire. For patients with low literacy, the FHSQ may need to be completed with the support of a healthcare professional.

A positive response to any question requires follow-up with a more detailed assessment of the family history. As family history can change it is recommended that the FHSQ be repeated at least every three years.

This risk assessment focuses on your close relatives including parents, children, brothers and sisters who are either living or dead.	Yes	No
Have any of your close relatives had heart disease before 60 years of age? 'Heart disease' includes cardiovascular disease, heart attack, angina and bypass surgery.		
Have any of your close relatives had diabetes? 'Diabetes' is also known as type 2 diabetes or non-insulin dependent diabetes.		
Do you have any close relatives who had melanoma?		
Have any of your close relatives had bowel cancer before 55 years of age? Do you have more than one relative on the same side of the family who had bowel cancer at any age? Please think about your parents, children, brothers, sisters, grandparents, aunts, uncles, nieces, nephews and grandchildren.*		
Have any of your close male relatives had prostate cancer before 60 years of age?		
Have any of your close female relatives had ovarian cancer?		
Have any of your close relatives had breast cancer before 50 years of age? Do you have more than one relative on the same side of your family who has had breast cancer at any age? Please think about your parents, children, brothers, sisters, grandparents, aunts, uncles, nieces, nephews and grandchildren.*		
<p>*Only first-degree and second-degree relatives need be considered in this screening questionnaire Reproduced with permission from Emery JD, Reid G, Prevost AT, Ravine D, Walter FM. Development and validation of a family history screening questionnaire in Australian primary care. <i>Ann Fam Med</i> 2014;12(3):241–49. Available at www.annfammed.org/content/12/3/241.long</p>		

Appendix 2B. Dutch Lipid Clinic Network Criteria for making a diagnosis of familial hypercholesterolaemia in adults

		Score
Family history		
First-degree relative with known premature coronary and/or vascular disease (men aged <55 years and women aged <60 years)		1
or		
First-degree relative with known low-density lipoprotein-cholesterol (LDL-C) above the 95th percentile for age and sex		
First-degree relative with tendinous xanthomata and/or arcus cornealis		2
or		
Children aged <18 years with LDL-C above the 95th percentile for age and sex		
Clinical history		
Patient with premature coronary artery disease (ages as above)		2
Patient with premature cerebral or peripheral vascular disease (as above)		1
Physical examination		
Tendinous xanthomata		6
Arcus cornealis prior to 45 years of age		4
LDL-C (mmol/L)		
LDL-C ≥ 8.5		8
LDL-C 6.5–8.4		5
LDL-C 5.0–6.4		3
LDL-C 4.0–4.9		1
Deoxyribonucleic acid (DNA) analysis: Functional mutation in the low-density lipoprotein receptor (LDLR), apolipoprotein B (APOB) or proprotein convertase subtilisin/kexin type 9 (PCSK9) gene		8
Stratification		Total score
Definite familial hypercholesterolaemia (FH)		≥ 8
Probable FH		6–7
Possible FH		3–5
Unlikely FH		<3
<i>ApoB</i> , apolipoprotein B; DNA, deoxyribonucleic acid; FH, familial hypercholesterolaemia; LDL-C, low-density lipoprotein-cholesterol; <i>LDLR</i> , low-density lipoprotein receptor; <i>PCSK9</i> , proprotein convertase subtilisin/kexin type 9		

Reproduced with permission from Elsevier from Watts GF, Sullivan DR, Poplawski N, et al. Familial Hypercholesterolaemia Australasia Network Consensus Group (Australian Atherosclerosis Society). Familial hypercholesterolaemia: A model of care for Australasia. *Atheroscler Suppl* 2011;12(2):221–63.

Modified UK Simon Broome criteria

1. Deoxyribonucleic acid (DNA) mutation
2. Tendon xanthomas in patient or first-degree or second-degree relative
3. Family history myocardial infarction (MI) <50 years of age in second-degree relative or <60 years of age in first-degree relative
4. Family history of cholesterol >7.5 in first-degree or second-degree relative
5. Cholesterol >7.5 (adult) or >6.7 (aged <16 years)
6. Low-density lipoprotein-cholesterol >4.9 (adult) or >4.0 (aged <16 years)

Definite: (5 or 6) + 1

Probable: (5 or 6) + 2

Possible familial hypercholesterolaemia: (5 or 6) + (3 or 4)

3. Preventive activities in children and young people

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Early intervention

Prevention and health promotion in the early years, from conception to 5 years of age, is important for an individual's lifelong health and wellbeing.¹ It may also be an opportunity to redress health inequalities.^{2,3} In adolescence, neurodevelopmental studies support the value of early intervention to prevent ongoing harm.⁴

Many infants and children visit their general practitioner (GP) frequently, and adolescents visit at least once a year.⁵ This frequent contact provides opportunities for disease prevention and health promotion.

Evidence provides moderate support for the hypothesis that 'accessible, family-centred, continuous, comprehensive, coordinated, compassionate and culturally effective care improves health outcomes for children with special healthcare needs'.⁶ There is also evidence that supports the beneficial impact of similar care for children without special healthcare needs.^{7,8}

Health inequity

What are the key equity issues and who is at risk?

- Low socioeconomic status (SES) is associated with increased childhood morbidity and mortality.⁹ This includes higher rates of death from neonatal hypoxia, sudden unexpected death in infancy (SUDI), prematurity-related disorders, and accidental and non-accidental injury;^{10,11} hospitalisations related to asthma;¹² and risk of child abuse.¹³ Low SES is also associated with overweight and obesity in children.¹⁴
- While there has been a decline in infant mortality since the 1990s, infant mortality in Aboriginal and Torres Strait Islander peoples is more than twice that of non-Indigenous children,¹⁰ in part due to pregnancy, labour and delivery complications, and trauma and congenital malformations.¹⁵ Aboriginal and Torres Strait Islander infants have higher rates of death from SUDI.¹⁶ They are also more likely to be born premature or with low birth weight^{17,18} and are more likely to be hospitalised before 1 year of age.¹⁹
- Aboriginal and Torres Strait Islander peoples and people from socioeconomically disadvantaged backgrounds are more likely to experience low immunisation rates.²⁰

What can GPs do?

- Refer to the general strategies for supporting patient education and health literacy in disadvantaged groups.
- Consider advocating for and supporting community-based strategies or policies for health promoting changes within the environments in which families live (eg school-based programs targeting nutrition and physical activity).^{21–27}
- Use resources supporting the provision of culturally competent care to adolescents from culturally diverse backgrounds.²⁸

Table 3.1. Age-related health checks in children and young people		
Age	What should be done?	References
Neonatal	<ul style="list-style-type: none"> Promote immunisation as per recommendations in the <i>Australian immunisation handbook</i> at www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home Vitamin K as per recommendations by the National Health and Medical Research Council (NHMRC) at www.nhmrc.gov.au/guidelines-publications/ch39 <p>Assessment</p> <ul style="list-style-type: none"> Metabolic screen (IV, B) Universal hearing screen Physical exam as outlined in the Child Personal Health Record (C; refer to Practice Point a in Table 3.2) Identify family strengths, elicit concerns and promote parental confidence, competence and mental health (C) <p>Preventive counselling and advice</p> <p>Injury prevention: Promote protection from accidental and non-accidental injury. This includes protecting against the risks of:</p> <ul style="list-style-type: none"> passive smoking sudden unexpected death in infancy (SUDI) use of appropriate restraints in motor vehicles 	<p>29</p> <p>30</p> <p>31</p> <p>32</p> <p>31, 33</p>
2, 4, 6, 12 and 18 months; and 3 years	<ul style="list-style-type: none"> Immunisation as per the <i>Australian immunisation handbook</i> at www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home (A) Immunisation includes seeking informed consent and identifying Aboriginal and Torres Strait Islander babies, infants and toddlers <p>Assessment</p> <ul style="list-style-type: none"> Physical exam as outlined in the Child Personal Health Record (C; refer to Practice Point a in Table 3.2). This includes regular measurement, plotting and interpreting of length, weight and head circumference on growth charts. Include body mass index (BMI) from 2 years of age When a baby or child is presented as a 'problem', assessment should include parental mental health, family functioning, the possibility of domestic violence and adequacy of social support (C; refer to Practice Point b in Table 3.2) From 12 months, 'Lift the lip' dental check (C; refer to Practice Point e in Table 3.2) <p>Health promotion</p> <ul style="list-style-type: none"> Support breastfeeding (refer to Practice Point c in Table 3.2 for introduction of solids and reduction of food allergy) Promote healthy eating in the second year of life as per <i>Australian dietary guidelines</i> at www.nhmrc.gov.au/guidelines-publications/n55 Promote physical activity as per Australian recommendations for children aged 0–5 years Promote healthy sleep <ul style="list-style-type: none"> www.sleephealthfoundation.org.au http://raisingchildren.net.au Enquire about developmental progress including behaviours that suggest normal hearing and vision (refer to Practice Point d in Table 3.2) From 6 months of age, consider the use of tools such as Parents' evaluation of developmental status (PEDS) and the Early intervention referral guide (refer to Appendix 3A. 'Red flag' early intervention referral guide) Promote early interactive reading with children Promote secure attachment <p>Preventive counselling and advice</p> <ul style="list-style-type: none"> Injury prevention: Promote protection from accidental and non-accidental injury The Royal Children's Hospital Melbourne has advice for parents and carers of children from birth to 5 years at www.rch.org.au/uploadedFiles/Main/Content/safetycentre/fact_sheets/Growing%20Safely%20DL%20brochure_WEB%20secure.pdf Promote sun protection (refer to Section 9.4. Skin cancer) 	<p>31</p> <p>34</p> <p>35, 36</p> <p>37, 38</p> <p>31</p>

Age	What should be done?	References
14–19 years	<ul style="list-style-type: none"> Promote immunisation as per the <i>Australian immunisation handbook</i> at www.immunise.health.gov.au (A). Note the electronic version of the handbook is regularly updated in between editions of the hardcopy <p>Assessment</p> <ul style="list-style-type: none"> Measure growth and BMI routinely (B; refer to Practice Point k in Table 3.2) Promote healthy eating, drinking, physical activity and sleep Screen sexually active young people for Sexually Transmissible Infections (STIs; refer to Section 6.2.1. Chlamydia and other STIs) <p>Preventive counselling and advice</p> <ul style="list-style-type: none"> Assess for risky behaviours (refer to Practice Point m in Table 3.2). In one study, risky behaviours occurred in 90% of young Australians attending a general practice Promote oral health (also refer to Chapter 11. Oral health) Use models of care that facilitate the transition of young people with chronic disease or disability from tertiary paediatric care to effective primary care with access to adult specialist care. The NSW Agency for Clinical Innovation has models of care for transition for most paediatric centres across Australia <ul style="list-style-type: none"> www.trapeze.org.au/content/gps www.aci.health.nsw.gov.au/networks/transition-care Ask about smoking and provide a strong anti-smoking message (III, C; refer to Section 7.1. Smoking) 	<p>44, 45 36, 43</p> <p>32,46,47</p> <p>64</p>
<p>AEDC, Australian Early Development Census; BMI, body mass index; NHMRC, National Health and Medical Research Council; PEDS, parents' evaluation of developmental status; SUDI, sudden unexpected death in infancy</p>		

Table 3.2. Explanatory notes for Practice Points

Practice Point	Comment
a	<p>Physical exam</p> <ul style="list-style-type: none"> Complete the Child Personal Health Record, which is given at birth in New South Wales,³¹ or refer to relevant programs in individual states and territories <p>Note: parents value reviewing completed growth charts</p>
b	<p>At present, there is insufficient evidence for either benefit or harm in screening for postnatal depression (PND). However, PND is known to have an unfavourable impact on the quality of attachment and family functioning. Further, there are evidence-based interventions for PND⁴⁸ and improving the quality of mother–infant interaction adversely affected by PND.^{49,50} GPs should be alert to the possibility of impaired parental mental health and family dysfunction. Visit www.beyondblue.org.au/the-facts/pregnancy-and-early-parenthood</p> <p>Table 10.1.2 and Section 10.3. Intimate partner violence</p>
c	<p>The Australasian Society of Clinical Immunology and Allergy's (ASCIA) 2016 <i>Guidelines for allergy prevention in infants</i> supports the introduction of complementary 'solid' foods within four to six months of age and preferably while breastfeeding.⁵¹ The introduction of allergenic food should not be delayed. However, the ASCIA position is in conflict with the 2012 National Health and Medical Research Council (NHMRC) guideline, which recommends exclusive breastfeeding until 6 months of age³⁵</p> <p>The new ASCIA guidelines provide:</p> <ul style="list-style-type: none"> good evidence* that introducing peanut into the diet of infants who already have severe eczema and/or egg allergy before 12 months of age can reduce the risk of these infants developing peanut allergy moderate evidence† that introducing cooked egg into an infant's diet before 8 months of age, where there is a family history of allergy, can reduce the risk of developing egg allergy. Raw egg is not recommended <p>Also refer to Table 7.3.2</p> <p>*High/good/strong evidence means convincing evidence from well-conducted studies, or many well-conducted studies results pooled into a large analysis (meta-analysis)</p> <p>†Moderate evidence means evidence from reasonably well-conducted studies or well-conducted single studies</p>
d	<p>Developmental progress</p> <p>Early intervention presupposes early detection. Prior to 3 years of age, the rate of attaining developmental milestones varies so much that the simple application of screening 'tools' would excessively detect developmental delay (false positive). This risk is reduced after 3 years of age</p> <p>In the earliest years, guides to developmental progress can be used to initiate an ongoing conversation with parents to elicit their concerns about their child's progress^{52,53}</p> <p>Developmental milestone assessments are outlined in the Child Personal Health Record, which is provided at birth in New South Wales</p> <p>A tool, such as the Parents' evaluation of developmental status (PEDS), can be used on a regular basis to identify any concerns about their child's development. The information gathered helps the GP gain a better understanding of the progress of each child. Further information on the PEDS questionnaire can be accessed at www.rch.org.au/ccch/peds</p> <p>The value of the PEDS may be increased if used in conjunction with:</p> <ul style="list-style-type: none"> Learn the signs – Act early at www.cdc.gov/ncbddd/actearly/index.html Red flags early intervention guide at www.health.qld.gov.au/cq/child-development/docs/red-flag-a3-poster-banana.pdf (refer to Appendix 3A. 'Red flag' early intervention referral guide). Information on the Ages and Stages Questionnaire is available at http://agesandstages.com

Practice Point	Comment
e	<p>'Lift the lip' screening tool for the prevention and early detection of tooth decay in children:</p> <ul style="list-style-type: none"> • Complete and also teach parents to simply lift the top lip of their child, looking for signs of tooth decay (eg white lines on top of the teeth below the gumline, or discolouration of the teeth that cannot be brushed off). Encourage parents to complete once a month • Encourage dental hygiene twice a day: No toothpaste <17 months of age and low fluoride toothpaste up to 5 years of age • Encourage dental visits annually after 12 months of age <p>Also refer to Chapter 11. Oral health</p>
f	<p>The latest Australian recommendations for healthy eating, drinking and physical exercise are summarised in The Royal Australian College of General Practitioners' (RACGP) <i>Smoking, nutrition, alcohol and physical activity (SNAP): A population guide to the behavioural risk factors in general practice</i>, 2nd edn, in particular, Table 15⁵⁴</p> <p>Nutrition for babies:</p> <p>www.eatforhealth.gov.au/sites/default/files/files/the_guidelines/n55e_infant_brochure.pdf</p> <p>Nutrition for children:</p> <p>www.eatforhealth.gov.au/sites/default/files/files/the_guidelines/n55f_children_brochure.pdf</p>
g	<p>The American Academy of Pediatrics has recommended the annual plotting of body mass index (BMI) for all patients aged ≥ 2 years. Be aware that small errors in measuring either height/length or weight cause large errors in the position of the calculated BMI on the BMI percentile chart. This is because percentile lines are crowded together in the preschool ages</p>
h	<p>An Australian randomised controlled trial (RCT) demonstrated that a coordinated cross-agency system of parenting support, which included general practice, produced meaningful effects at the population level⁵⁶</p>
i	<p>For pre-school children, family support and parenting programs continue to be the most effective method of preventing the onset of emotional and behavioural problems, which predispose to mental illness in later childhood and adolescence^{32,56}</p>
j	<p>The US Preventive Services Task Force (USPSTF) concludes with moderate certainty that vision screening for all children at least once between 3 and 5 years of age to detect the presence of amblyopia or its risk factors has a moderate net benefit.⁵⁷ The USPSTF concludes that the benefits of vision screening for children aged <3 years are uncertain, and that the balance of benefits and harms cannot be determined for this age group</p>
k	<p>The USPSTF recommends that clinicians screen children aged ≥ 6 years for obesity and offer them or refer them to comprehensive, intensive behavioural interventions to promote improvement in weight status (B)⁴⁵</p> <ul style="list-style-type: none"> • There is a moderate net benefit for screening children aged 6–18 years • As a screening tool, BMI is an 'acceptable measure for identifying children and adolescents with excess weight'⁴⁵ • 'Overweight' is having a BMI between the 85th and 94th percentiles for the individual's age and gender • 'Obesity' is having a BMI ≥ 95th percentile for age and gender
l	<p>Mental, emotional, behavioural disorder in Australian young people</p> <ul style="list-style-type: none"> • Fifty per cent of adult disorders have onset by 14 years of age • Between 14% and 18% of children and young people experience mental health problems of clinical significance • Depression and coping with stress are priorities for: <ul style="list-style-type: none"> – 16% of those aged 11–14 years – 21% of those aged 15–19 years⁵⁸ • The USPSTF recommends the screening of adolescents (aged 12–18 years) for major depressive disorder when systems are in place to ensure accurate diagnosis, psychotherapy (cognitive, behavioural or interpersonal) and follow-up (B)⁵⁹ • Risk factors for major depressive disorder include parental depression, having comorbid mental health or chronic medical conditions, and having experienced a major negative life event⁵⁹

Practice Point	Comment
m	<p>Assess for risky behaviours</p> <p>Promoting health and minimising harm is a whole-of-community opportunity and responsibility. Celebrating strengths, explaining confidentiality (including its limits) and using the HE²ADS³ framework⁶⁰ (refer to below) to explore with young people the context in which they live are strategies that are likely to improve the clinician's capacity to promote health and minimise morbidity (C);^{61,62}</p> <ul style="list-style-type: none"> – Home – Education/employment – Eating and exercise – Activities – Drugs – Sexuality – Suicide – Safety <ul style="list-style-type: none"> • Young people who present frequently are at higher risk of having a mental health problem⁶³ • Provide messages that encourage delay in initiation of potentially risky behaviours and, at the same time, promote risk-reduction strategies if adolescents choose to engage or are already engaging in the behaviour • Use principles of motivational interviewing in the assessment and discussion of risky health behaviours with adolescent patients (including safe practice for those who are sexually active) • Be familiar with the resources in the community that provide harm reduction programs for substance abuse, pregnancy prevention, injury prevention and road safety • Be familiar with resources in the community that provide parenting skills training for parents of young people • Advocate for the introduction, further development and evaluation of evidence-based prevention and treatment programs that use a harm reduction philosophy in schools and communities (C)

ASCI, Australasian Society of Clinical Immunology and Allergy; BMI, body mass index; NHMRC, National Health and Medical Research Council; PEDS, parents' evaluation of developmental status; PND, postnatal depression; RCT, randomised controlled trial; USPSTF, US Preventive Services Task Force

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Appendix 3A 'Red flag' early intervention referral guide

Changing lives for the better

Central Queensland Hospital and Health Service



The "Red Flag" Early Intervention Referral Guide for children 0 – 5 years



How to use this resource

This resource is a tool to help you to determine whether a child may have developmental delays. It will allow you to refer early before the child begins to struggle to achieve tasks usually managed by children of the same age.

Step 1:

Find the child's age across the top of the table below.

Step 2:

Read through the list and identify if the child is demonstrating any of the Red Flags at their age level.

Step 3:

If the child is between age levels (e.g. 2 yrs 5 months) check the lower age level for Red Flags (ie. 2 yrs)

When to be concerned?

One or more Red Flags (in any area) is a sign of delayed development.

Who to go to?

Parents:

If you have concerns about your child's development, please contact your Family Doctor or Child Health Nurse Phone: (07) 4992 7000

Health Professionals:

If you have screened and identified any Red Flags, please contact your local Child Development Service.

Who helps with these Red Flags?

Children aged 0 – 5 years who have a developmental concern, may benefit from the services from any of the following:





- Paediatrician
- Speech Pathologist
- Occupational Therapist
- Physiotherapist
- Social Worker
- Psychologist
- Dietitian

Local Child Development Service

Banana Community and Allied Health Services
Phone (07) 4992 7000
Office Hours 8.00 am to 4.30 pm
Monday to Friday

www.health.qld.gov.au/cq/child-development

Developed by: Child Development Program, Children's Health Services in conjunction with GPartners. Adapted by Central Queensland Hospital and Health Service 2015. Print ID P1000 05052015 v1.0

Red Flag referral guidelines									
	6 months	9 months	12 months	18 months	2 years	3 years	4 years	5 years	Red Flags at any stage
 Social / Emotional	Does not smile or squeal in response to people	Not sharing enjoyment with others using eye contact or facial expression	Does not notice someone new Does not play early turn taking games (e.g. peekaboo, rolling a ball)	Lacks interest in playing and interacting with others	When playing with toys tends to bang, drop, or throw them rather than use them for their purpose (e.g. cuddle doll, build blocks)	No interest in pretend play or other children Difficulties in noticing and understanding feelings in themselves and others (e.g. happy, sad)	Unwilling / unable to play cooperatively	Play is different than their friends	Not achieving indicated developmental milestones
 Communication	Lack of or limited eye contact								Strong parent concerns Significant loss of skills Lack of response to sound or visual stimuli
 Fine Motor and Cognition	Not reaching for and holding (grasping) toys Hands frequently clenched	No gestures (e.g. pointing, showing, waving) Not using 2 part babble (e.g. gaga, amma) Cannot move toy from one hand to another	No babbled phrases that sound like talking No response to familiar words Majority of nutrition still liquid/puree Cannot chew solid food Unable to pick up small items using index finger and thumb	No clear words Cannot understand short requests eg. "Where is the ball?" Not holding or scribbling with a crayon Does not attempt to tower blocks	Does not have at least 50 words Not putting words together eg. "push car" Most of what is said is not easily understood No interest in self care skills eg. feeding, dressing	Speech difficult to understand Not using simple sentences e.g. big car go Difficulty helping with self care skills (e.g. feeding, dressing) Difficulty manipulating small objects e.g. threading beads	Speech difficult to understand Unable to follow directions with 2 steps Not toilet trained by day Unable to draw lines and circles	Difficulty telling a parent what is wrong Cannot answer questions in a simple conversation Concerns from teacher about school readiness Not independent with eating and dressing Cannot draw simple pictures (e.g. stick person)	Poor interaction with adults or other children Difference between right and left sides of body in strength, movement or tone
 Gross Motor	Not rolling Not holding head and shoulders up when on tummy	Not sitting without support Not moving eg. creeping or crawling motion Does not take weight well on legs when held by an adult	Not crawling or bottom shuffling Not pulling to stand Not standing holding on to furniture	Not attempting to walk without support Not standing alone	Unable to run Unable to use stairs holding on Unable to throw a ball	Not running well Cannot walk up and down stairs Cannot kick or throw a ball Cannot jump with 2 feet together	Cannot pedal a tricycle Cannot catch, throw or kick a ball Cannot balance well standing on one leg	Awkward when walking, running, climbing and using stairs Ball skills are very different to their peers Unable to hop 5 times on each foot	Loose and floppy movements (low tone) or stiff and tense (high tone)

Parents - If there are Red Flags call your Family Doctor or Child Health Nurse
Professionals - REFER EARLY – DO NOT WAIT



4. Preventive activities in middle age

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

The recommended specific activities for low-risk patients in the 45–64 years age group are listed in Table 4.1. Patients should be offered these opportunistically, or at two-year to five-year intervals.

Planned health checks in general practice of middle-aged adults have been demonstrated to improve the frequency of the management of smoking, nutrition, alcohol and physical activity (SNAP) behavioural risk factors; screening for cervical and colorectal cancer (CRC); and hyperlipidaemia.^{1–3}

There is also evidence that Aboriginal and Torres Strait Islander health checks improve early detection of diabetes and provision of preventive care.⁴ However, there is mixed evidence for the effectiveness of interventions to address multiple risk factors.⁵ These checks may be facilitated by the involvement of practice nurses.^{6–8} Interventions should be tailored to the level of risk, and the use of the 5As framework (**A**sk, **A**ssess, **A**dvice and agree, **A**ssist, **A**rrange follow-up) is recommended as a guide to their delivery in primary healthcare.⁹

Health inequity

What are the key equity issues and who is at risk?

- Midlife, between 45 and 64 years of age, is particularly a time of determining patient risk factors and offering screening for health conditions. Multimorbidity, particularly physical–mental health comorbidity, is an important issue in middle aged populations. Social disadvantage can hasten the onset of multimorbidity by about 10–15 years, suggesting screening should start earlier in high-risk populations, including Aboriginal and Torres Strait Islander peoples (eg at 30 years of age). This may be a critical time for preventive interventions to reduce later life chronic illness.¹⁰
- The impact of income-related inequalities on the prevalence of common mental health disorders and psychological distress is particularly seen in middle aged people.¹¹

What can GPs do?

- Refer to the general principles of providing patient education and supporting health literacy in disadvantaged groups.
- Be aware that disadvantaged groups may be less likely to access health checks,¹² so proactive efforts to go outside the practice (eg to workplaces) may be needed or preventive care may be built in opportunistically to routine consultations.
- Actively manage vulnerable patients by recalling patients by phone or text messages for preventive care.

Table 4.1. Age-related health checks for low-risk patients in middle age

Age	What should be done	Chapters
45–49 years	<p>Ask about:</p> <ul style="list-style-type: none"> Smoking, nutrition, alcohol and physical activity (SNAP), and readiness to change possible depression but do not routinely screen unless staff-assisted depression care supports are in place early signs of skin cancer preconception care completing a family history screening questionnaire <p>Measure:</p> <ul style="list-style-type: none"> weight, height (to calculate body mass index [BMI]) and waist circumference blood pressure (BP) fasting lipids <p>Perform:</p> <ul style="list-style-type: none"> Papanicolaou (Pap) test every two years (until April 2017) Human papillomavirus (HPV) test every five years (from May 2017) mammogram for women dependent on her individual degree of risk 23-valent pneumococcal polysaccharide vaccine (23vPPV) and influenza vaccination for all Aboriginal and Torres Strait Islander peoples Influenza and diphtheria, tetanus, and acellular pertussis (dTpa adolescent/adult version) vaccination for pregnant women genetic testing as part of preconception planning <p>Calculate:</p> <ul style="list-style-type: none"> risk of diabetes using the Australian type 2 diabetes risk assessment tool (AUSDRISK) review fracture risk factors for osteoporosis for women aged >45 years of age absolute cardiovascular risk 	<p>Chapter 7</p> <p>Chapter 10</p> <p>Section 9.4</p> <p>Chapter 1</p> <p>Chapter 2</p> <p>Section 7.2</p> <p>Section 8.2</p> <p>Section 8.3</p> <p>Section 9.5</p> <p>Section 9.3</p> <p>Chapter 6</p> <p>Chapter 6</p> <p>Chapter 2</p> <p>Section 8.4</p> <p>Chapter 14</p> <p>Section 8.1</p>
50–64 years	<p>Ask about:</p> <ul style="list-style-type: none"> SNAP and readiness to change possible depression but do not routinely screen unless staff-assisted depression care supports are in place early signs of skin cancer completing a family history screening questionnaire <p>Measure:</p> <ul style="list-style-type: none"> weight, height (to calculate BMI) and waist circumference BP fasting lipids <p>Perform:</p> <ul style="list-style-type: none"> Colorectal cancer (CRC) screening with faecal occult blood testing (FOBT) at least every two years Pap test every two years (until April 2017) HPV test every five years (from May 2017) mammography for women dependent on individual degree of risk 23vPPV and influenza vaccination for all Aboriginal and Torres Strait Islander peoples vaccination for diphtheria, tetanus (DT); dTpa should be used in place of DT when providing booster tetanus immunisations <p>Calculate:</p> <ul style="list-style-type: none"> risk of diabetes using AUSDRISK review fracture risk factors for osteoporosis for women aged >45 years and men aged >50 years absolute cardiovascular risk 	<p>Chapter 7</p> <p>Chapter 10</p> <p>Section 9.4</p> <p>Chapter 2</p> <p>Section 7.2</p> <p>Section 8.2</p> <p>Section 8.3</p> <p>Section 9.2</p> <p>Section 9.5</p> <p>Section 9.3</p> <p>Chapter 6</p> <p>Chapter 6</p> <p>Section 8.4</p> <p>Chapter 14</p> <p>Section 8.1</p>

23vPPV, 23-valent pneumococcal polysaccharide vaccine; AUSDRISK, Australian type 2 diabetes risk assessment tool; BMI, body mass index; BP, blood pressure; DT, diphtheria, tetanus; dTpa, diphtheria, tetanus, and acellular pertussis(adolescent/adult version); HPV, human papillomavirus; Pap, Papanicolaou; SNAP, smoking, nutrition, alcohol and physical activity

Table 4.2. Preventive interventions in middle age

Intervention	Technique
Health education	Tailor health advice or education to the patient's risk, stage of change and health literacy (Chapter II. Patient education and health literacy)
Practice organisation	Use clinical audit to identify patients who have not had preventive activity. Recall to practice or opportunistically arrange a 45–49 years health assessment

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5. Preventive activities in older age

Older people are at increased risk of multiple chronic conditions that may impair their function and quality of life. Those living alone, with difficulties accessing healthcare, with poor mobility and with limited financial support are particularly vulnerable.¹ Their health problems may be exacerbated by poor nutrition, poor oral health,² lack of physical activity,³ taking multiple medications^{4,5} and lack of sun exposure,⁶ all of which can be addressed in preventive activities.

Older people may rely on the help and support of carers and family. Carers, particularly carers for people with dementia or depression, are at risk of depression, anxiety, emotional distress, loneliness and isolation, but their healthcare needs are often overlooked.⁷⁻¹¹ Their need for support should be assessed when possible (C) and appropriate referral instituted.¹² Carer support resources are helpful for carer wellbeing and may delay the need for the older person who is receiving care to be relocated to a residential facility.^{7,13-15}

People should be advised to plan as much as possible for their care as they get older to prevent family disruption in episodes of illness as well as unpleasant and undesired acute care interventions. This includes organising wills, financial enduring power of attorney, and the equivalent documentation for health and care (called enduring guardianship in some jurisdictions), and an advance care plan.¹⁶ The Royal Australian College of General Practitioners' (RACGP) position statement on the incorporation of advance care planning into routine general practice is available at www.racgp.org.au/download/documents/Policies/Clinical/advancedcareplanning_positionstatement.pdf

Medication-related problems may cause unnecessary hospital admissions, adverse drug reactions and other adverse outcomes for older people living in the community.¹⁷ General practitioners (GPs) should review medications in older people, particularly for vulnerable groups. Vulnerability factors include:

- recent discharge from hospital or other facility
- significant changes made to medication treatment regimen in the past three months
- high-risk drug groups (eg those with a narrow therapeutic index and those that cause xerostomia)
- confusion/cognitive impairment or dementia
- other causes of difficulty managing medications including literacy, language issues, dexterity problems, sight impairment
- inability to manage therapeutic devices
- history of falls
- currently taking five or more regular medications
- taking >12 doses of medication per day
- patients attending multiple doctors including GPs and specialists
- disease states where medication management is an important process of care (chronic kidney disease, congestive cardiac failure)¹⁸
- multiple chronic medical problems
- regular use of alcohol
- previous adverse drug reaction
- anticholinergic load.

GPs may consider a medication review, in particular focusing on reducing medications and anticholinergic load. The most successful interventions were delivered by small numbers of pharmacists working in close liaison with primary care doctors (III, C).¹⁹ The review should include consideration of the need for each medication; issues around patient compliance and understanding of the medication; screening for side effects, particularly falls and cognitive impairment; and consideration of the use of aids such as dosette boxes and Webster packaging. A review of the combined anticholinergic and sedative loads of the medications may also be done, as anticholinergic and sedative loads increase the rate of confusion and other adverse side effects.²⁰⁻²³ This process is often referred to as 'deprescribing'.²⁴

5.1 Immunisation

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Influenza immunisation is recommended for adults aged ≥ 65 years, according to the *Australian immunisation handbook* (which is regularly updated and available at www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home). However, the benefits are modest, with a number needed to treat of 71 people in the general population for influenza vaccination to prevent a single episode of influenza in older age.²⁵

Table 5.1. Immunisation: Preventive interventions in older age

Intervention	Technique	References
Vaccination: Influenza	Annual influenza vaccination in the pre-flu season months (III, C)	26
Vaccination: Pneumococcal	23-valent pneumococcal polysaccharide vaccine (23vPPV) is recommended for the prevention of invasive pneumococcal disease (II, B) Vaccination should be done opportunistically. One dose is currently recommended, except for those who have a condition that predisposes them to an increased risk of invasive pneumococcal disease Refer to www.health.gov.au/internet/immunise/publishing.nsf/content/older-australians	27
Vaccination: Herpes zoster	A single dose of zoster vaccine is recommended for adults aged ≥ 60 years (II, B) Also refer to Section 6.1. Immunisation	28

23vPPV, 23-valent pneumococcal polysaccharide vaccine

5.2 Physical activity

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Advice about moderate physical activity is recommended for all older people (A).²⁹ In addition, vigorous physical activity offers additional benefits for those without specific contraindications such as unstable, advanced or terminal illness. For the older person, physical activity provides many benefits, as well as minimising some of the limitations of later life.³⁰

Benefits include:

- maintaining or improving physical function and independent living
- improving social interactions, quality of life, sleep and reducing depression
- building and maintaining healthy bones, muscles and joints, reducing the risk of injuries from falls
- reducing the risk of heart disease, stroke, high blood pressure, type 2 diabetes, some cancers and vascular disease and Alzheimer's dementia
- improving management of lung disease, heart disease, arthritis, osteoporosis, kidney disease, stroke, cancer, and other chronic conditions.

The following are Australia’s physical activity and sedentary behaviour guidelines for older people³¹ (www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines#chba):

Older people:

- should do some form of physical activity, no matter what their age, weight, health problems or abilities
- should be active every day in as many ways as possible, doing a range of physical activities that incorporate fitness, strength, balance and flexibility
- should accumulate at least 30 minutes of moderate intensity physical activity on most, preferably all, days
- who have stopped physical activity, or who are starting a new physical activity, should start at a level that is easily manageable and gradually build up to the recommended amount, type and frequency of activity
- who continue to enjoy a lifetime of vigorous physical activity should carry on doing so in a manner suited to their capability into later life, provided recommended safety procedures and guidelines are adhered to.

Refer to falls risk reduction in Table 5.3.2 for more information on specific exercises.

5.3 Falls

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Approximately 30% of people aged ≥65 years report one or more falls in the past 12 months.³² Most falls are caused by an interaction of multiple risk factors. Having one fall puts you at risk of another fall, and the more risk factors, the greater the chance of falling. You can help your patients manage their risk and prevent further falls by regularly asking them about falls.

Table 5.3.1. Falls: Identifying risks

Who is at risk of falls?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> • All people aged ≥65 years 	Screen for falls (I, A)	Every 12 months	29, 33
Moderately high risk: <ul style="list-style-type: none"> • Older people presenting with one or more falls, who report recurrent falls or with multiple risk factors (refer to Table 5.3.2) 	Case find for risk factors and involve in preventive activities (I, A)	Every six months	32, 33

Table 5.3.2. Falls: Preventive interventions

Intervention	Technique	References
Screening for falls risk	Ask the following three screening questions:	32, 34–36
Case finding questions about risk factors to be used in those at moderately high risk	<ol style="list-style-type: none"> 1. Have you had two or more falls in the past 12 months? 2. Are you presenting following a fall? 3. Are you having difficulty with walking or balance? <p>If the answers to any of these are positive, complete a multifactorial risk assessment including obtaining relevant medical history, completing a physical examination, and performing cognitive and functional assessments</p> <ul style="list-style-type: none"> • History should include: <ul style="list-style-type: none"> – detailed history of falls (eg how many falls?, at home or outdoors?, patient perception of causes, any fear of falling) – multiple medications, and specific medications (eg psychotropic medications) – impaired gait, balance and mobility – foot pain and deformities, and unsafe footwear – home hazards – bifocal or multifocal spectacle use – incontinence – recent discharge from hospital – chronic illness such as stroke, multiple sclerosis (MS), Parkinson's disease, cognitive impairment/dementia – vitamin D deficiency/poor sun exposure if housebound or in a care facility • Physical examination should include: <ul style="list-style-type: none"> – impaired visual acuity, including cataracts – reduced visual fields – muscle weakness – neurological impairment – cardiac dysrhythmias – postural hypotension – six-metre walk, balance, sit-to-stand* • Cognitive and functional impairments should include: <ul style="list-style-type: none"> – dementia/cognitive impairment assessment (eg General Practitioner Assessment of Cognition [GPCOG]) – activities of daily living and home assessment as appropriate (eg by occupational therapist) – falls risk–assessment tools – if unsteady, gait and mobility assessment by physiotherapist <p>There are many fall risk–assessment tools. However, reports from researchers are variable, so no single tool can be recommended for implementation in all settings or for all subpopulations within each setting</p> <p>Also refer to Chapter 13. Urinary incontinence</p>	29, 32, 33, 37
		29
		38, 39

Intervention	Technique	References
Falls risk reduction	Prescribe or refer for a home-based exercise program and/or encourage participation in a community-based exercise program, particularly targeting balance and which may include strength and endurance (I)	40–47 29, 33
	For specific exercises to reduce the risk of falls, refer to www.racgp.org.au/your-practice/guidelines/handi/interventions/musculoskeletal/exercises-for-falls-prevention	
	Patients who report unsteadiness or are at higher risk of falls should be referred to a health professional for individual exercise prescription. Referral should specify fall prevention	
	Exercise programs targeting non-English-speaking patients may need to address cultural norms about appropriate levels of physical activity	41
	Exercise guidelines for fall prevention recommend the following: <ul style="list-style-type: none"> • Exercise that specifically challenges balance is the most effective physical activity intervention to prevent falls • Exercise needs to be done for at least two hours per week and continue as a lifetime activity • Fall prevention exercises can be home-based or a group program. • Walking or strength training as a single intervention does not appear to prevent falls 	48, 49
	Regularly review medication. Encourage patients to keep a medication review card. Reduce dose to address side effects and dose sensitivity, and stop medications that are no longer needed	33
	Medications that can promote falls include psychotropic medications, and medications with anticholinergic activity, sedation effects and hypotensive effects or orthostatic hypotensive side effects	
Also refer to Chapter 14. Osteoporosis		
A home assessment should be considered for those at moderately high to high risk of falls. Occupational therapy interventions can reduce fall hazards, raise awareness of fall risk and implement safety strategies. Referral should specify fall prevention	29, 33	
Other risk factors should be managed actively including: <ul style="list-style-type: none"> • using a multidisciplinary team (eg podiatrist regarding foot problems, optometrist regarding avoidance of multifocal lenses, physiotherapist or nurse regarding urge incontinence) • referring to relevant medical specialists (eg ophthalmologist for cataract surgery, cardiologist for consideration of pacemaker) • investigating the causes of dizziness 	29, 33	

*Two simple tests are the repeated chair standing test and alternate step test. The repeated chair standing test measures how quickly an older person can rise from a chair five times without using the arms. A time of >12 seconds indicates an increased fall risk. The alternate step test measures how quickly an older person can alternate steps (left, right, left, etc) onto an 18 cm high step a total of eight times. A time >10 seconds indicates an increased fall risk. The Quickscreen assessment tool, developed and validated for use in an Australian population, includes these tests as well as simple assessments of medication use, vision, sensation and balance. This is available at www.neura.edu.au/wp-content/uploads/2016/05/QuickScreen-Information-Order-Form_1.pdf

GPCOG, General Practitioner Assessment of Cognition; MS, multiple sclerosis

5.4 Visual and hearing impairment

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Visual acuity should be assessed from 65 years of age using the Snellen chart (B) in those with symptoms or who request it. There is no evidence that screening of asymptomatic older people results in improved vision.^{50,51}

Hearing loss is a common problem among older individuals and is associated with significant physical, functional and mental health consequences. Annual questioning about hearing impairment is recommended with people aged ≥65 years (B).

In some states and territories, there are legal requirements for annual assessment (eg driving aged >70 years).⁵²

Eye disease and visual impairment increase three-fold with each decade of life after 40 years of age. They are often accompanied by isolation, depression and poorer social relationships, and are strongly associated with falls and hip fractures.⁵³ It should be determined whether the patient is wearing up-to-date prescription spectacles, and whether there is a possibility of falls because the patient is no longer capable of managing a bifocal, trifocal or multifocal prescription. People at greater risk of visual loss are older people and those with diabetes and a family history of vision impairment; such history should be sought. Smoking (current or previous) increases the risk of age-related macular degeneration.⁵⁴ Cataracts are the most common eye disease in Australians aged ≥65 years (42% of cases of visual impairment), followed by age-related macular degeneration (AMD; 30%), diabetic retinopathy and glaucoma. The leading causes of blindness in those aged ≥65 years are AMD (55%), glaucoma (16%) and diabetic retinopathy (16%).^{55,56}

Table 5.4.1. Visual and hearing impairment: Identifying risks

Who is at higher risk of hearing loss?	What should be done?	How often?	References
People ≥65 years of age	Screen for hearing impairment (II, B)	Every 12 months	57

Table 5.4.2. Visual and hearing impairment: Preventive interventions

Intervention	Technique	References
Visual impairment: Case finding	Use a Snellen chart to screen for visual impairment in the elderly if requested, or indicated by symptoms or history. There is no evidence that screening asymptomatic older people results in improvements in vision Also refer to Chapter 12. Glaucoma	50
Hearing impairment screening	A whispered voice out of the field of vision (at 0.5 m) or finger rub at 5 cm has a high sensitivity for hearing loss, as does a single question about hearing difficulty	58

5.5 Dementia

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

With people aged >65 years, clinicians should be alert to the symptoms and signs of dementia. These may be detected opportunistically and assessed using questions addressed to the person and/or their carer (C). Depression and dementia may co-exist. When a person has dementia, adequate support is required for the person, carer and family. Counselling and education are important. Management priorities will vary from patient to patient, but there may be a need to consider medical management of dementia, behaviour and comorbidity, legal and financial planning, current work situation, driving, and advance care planning.⁵⁹

Table 5.5.1. Dementia: Identifying risks

Who is at risk?	What should be done?	How often?	References
<p>Average risk:</p> <ul style="list-style-type: none"> Those without symptoms 	No evidence of benefit from screening (II, C)	N/A	60, 61
<p>Moderate risk:</p> <ul style="list-style-type: none"> Those with symptoms (refer to Table 5.5.2) Risk increases with increasing age A family history of Alzheimer’s disease People with history of repeated head trauma People with Down syndrome Those with elevated cardiovascular risk (eg heart disease, stroke, hypertension, obesity, diabetes, elevated homocysteine, elevated cholesterol, smoking, sedentary lifestyle) Those with depression or a history of depression People with low levels of education Aboriginal and Torres Strait Islander peoples 	<p>Case finding and early intervention (III, C)</p> <p>Note that culturally safe practices should be adopted with this community</p>	N/A	<p>62–64</p> <p>65</p> <p>66–69</p> <p>64</p> <p>70–74</p>

Table 5.5.2. Dementia: Preventive interventions

Intervention	Technique	References
Case finding and confirmation	<ul style="list-style-type: none"> • Ask ‘How is your memory?’ and obtain information about dementia and other cognitive problems from others who know the person (eg repeating questions, forgetting conversations, double buying, unpaid bills, social withdrawal) • Other symptoms may include a decline in thinking, planning and organising, and reduced emotional control or change in social behaviour affecting daily activities. Not everyone with dementia has memory problems as an initial symptom (C). Other clues are missed appointments (receptionist often knows), change in compliance with medications, and observable deterioration in grooming or dressing. Falls may also be an indication of cognitive impairment • Over several consultations, obtain the history from the person and family/carer, and perform a comprehensive physical examination. Undertake cognitive assessment using: <ul style="list-style-type: none"> – Standardised Mini-Mental State Examination (SMMSE) available at www.ihipa.gov.au/publications/standardised-mini-mental-state-examination-smmse – General Practitioner Assessment of Cognition at www.gpcog.com.au – clock drawing test – Rowland Universal Dementia Assessment Scale at www.fightdementia.org.au/understanding-dementia/rowland-universal-dementia-assessment-scale.aspx which is a multicultural cognitive assessment scale that has been used to detect dementia across cultures – The Kimberley Indigenous Cognitive Assessment tool (KICA) dementia assessment instrument (available at www.healthinonet.ecu.edu.au/key-resources/programs-projects?pid=509), may be used as a component of dementia assessment for Aboriginal and Torres Strait Islander peoples living in remote areas; and the modified KICA, may be used as a component of dementia assessment in more urban Aboriginal and Torres Strait Islander peoples – The Mini-Mental State Examination (MMSE), is the most widely used and evaluated scale. However, as it is now copyrighted, it should be replaced by the SMMSE <p>A suite of recommended rating tools is available at www.dementia-assessment.com.au</p> <ul style="list-style-type: none"> • Assess functional status. The Instrumental activities of daily living at www.abramsoncenter.org/media/1456/instrumental-activities-of-daily-living.pdf assessment tool may be used. All screening instruments used to assess dementia in general practice have high rates of overdiagnosis (false positives) and underdiagnosis (false negatives), so the full clinical presentation needs to be taken into account. Reassessment after 6–12 months may be helpful <p>Assessment should include relevant blood tests and imaging to exclude space-occupying lesion or other brain disorder</p> <p>Relevant tests are recommended in the <i>Clinical practice guidelines for dementia in Australia</i> available at http://sydney.edu.au/medicine/cdpc/documents/resources/LAVER_Dementia_Guidleines_recommendations_PRWV5.pdf</p>	<p>75–77</p> <p>75</p> <p>78</p> <p>79</p> <p>80, 81</p>

Intervention	Technique	References
Early intervention and prevention	Evidence is growing that attention to cardiovascular disease (CVD) risk factors may improve cognitive function and/or reduce dementia risk. There is sufficient evidence now for clinicians to recommend the following strategies for early intervention and prevention of dementia:	68, 69, 82–87
	<ul style="list-style-type: none"> increased physical activity (eg 150 minutes per week of moderate-intensity walking or equivalent) social engagement (increased number of social activities per week) cognitive training and rehabilitation diet – the Mediterranean and the Dietary Approaches to Stop Hypertension (DASH) diets have been shown to be protective against cognitive decline smoking cessation management of vascular risk factors (refer to Chapter 8. Prevention of vascular and metabolic disease) use of the risk assessment tool developed by the Collaborative Research Centre, which is based on dementia prevention, and takes about 15 minutes to fill out and provides a good overview for all the possible risks for dementia, for discussion with the GP available at http://anuadri.anu.edu.au <p>Refer to Chapter 7. Prevention of chronic disease, Chapter 8. Prevention of vascular and metabolic disease, and Chapter 10. Psychosocial</p>	88 89, 90 91, 92 67 66, 68

CVD, cardiovascular disease; DASH, Dietary Approaches to Stop Hypertension; KICA, Kimberley Indigenous Cognitive Assessment; MMSE, Mini-Mental State Examination; SMMSE, Standardised Mini-Mental State Examination

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6. Communicable diseases

General practitioners (GPs) have an important role in the prevention and management of communicable diseases. This includes advice on prevention, immunisation, early detection and management.

The use of immunisation information systems¹ such as the Australian Childhood Immunisation Register (ACIR) and Vaccination Information and Vaccination Administration System (VIVAS) in Queensland helps raise immunisation rates. The available information in these databases helps to create recall-and-reminder systems and individual immunisation records within GP electronic medical records. An adult immunisation register is planned from September 2016.²

Updates on communicable diseases and notification requirements are available from the Department of Health at www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-casedefs-distype.htm

Notification of particular infectious diseases to state public health units is mandatory (the law overrides all privacy regulations). This is almost completely automated by pathology laboratories, but for clinically diagnosed infections such as varicella and herpes zoster, the GP is required to notify the relevant authority.

6.1 Immunisation

Age	Birth	<2	2-3	4-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	≥65

Immunisation is recommended from birth for all children, and at particular ages throughout life, according to the *Australian immunisation handbook* (this is updated regularly at www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home).

Consent

Consent should be sought from someone with legal capacity before each vaccination. The individual providing consent should have the intellectual capacity to understand specific information and agree voluntarily without pressure, coercion or manipulation. The consent process should include written advice about benefits and harms of the vaccines, risk of not having the vaccine, and what to do after receiving the vaccine. Information on providing valid consent is available at www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part2~handbook10-2-1#2-1-3

The National Immunisation Program Schedule (NIPS) lists the recommended funded vaccines for all Australian residents. There may be other vaccines that are not funded but are recommended in the *Australian immunisation handbook*, depending on occupation or travel. There may be variability in vaccines recommended/funded (eg hepatitis A vaccine).

Vaccination for special high-risk groups

Adults or children who develop asplenia, human immunodeficiency virus (HIV) infection or a haematological malignancy, or who have received a bone marrow or other transplant, may not be fit for some vaccinations, or may require additional or repeat vaccinations.

Health inequity

What are the key equity issues and who is at risk?

GPs need to be aware of groups with lower levels of age-appropriate immunisation.³ Socioeconomic characteristics associated with lower immunisation rates at 12 months⁴ include:

- being Aboriginal or Torres Strait Islander
- being born overseas
- no private health insurance
- being in the highest or lowest socioeconomic quintile
- being of low birth weight and singleton birth.

All of these factors were also associated with lower immunisation coverage at 24 months, with the exception of low birth weight, which was only significant in the very low birth weight category.

What can GPs do?

Evidence supports a number of strategies in improving immunisation rates that could reduce inequities if efforts were focused on at-risk groups:

- audit of immunisation coverage of at-risk groups in the practice
- use of recall-and-reminder systems and catch-up plans, with a focus on at-risk groups
- integrating vaccination status checks into routine health assessments for those target population groups.

Table 6.1.1. Summary of the main requirements from the National Immunisation Program Schedule

Age	Vaccine
Birth*	Hepatitis B (hep B)
6–8 weeks	Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), haemophilus influenzae type b, inactivated poliomyelitis (polio; hepB-DTPa-Hib-IPV) Pneumococcal conjugate (13vPCV) Rotavirus (dose 1 of Rotarix or RotaTeq) [†]
4 months	Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), haemophilus influenzae type b, inactivated poliomyelitis (polio; hepB-DTPa-Hib-IPV) Pneumococcal conjugate (13vPCV) Rotavirus (dose 2 Rotarix or RotaTeq) [†]
6 months	Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), haemophilus influenzae type b, inactivated poliomyelitis (polio; hepB-DTPa-Hib-IPV) Pneumococcal conjugate (13vPCV) Rotavirus (dose 3 for RotaTeq recipients only) [†]
≥6 months	Influenza annually (for those at risk of serious complications of influenza – eg Aboriginal and Torres Strait Islander peoples)
12 months	Haemophilus influenzae type b and meningococcal C (Hib-MenC) Measles, mumps and rubella (MMR) Pneumococcal conjugate (13vPCV) booster (only for medically at-risk groups)

Age	Vaccine
12–18 months	Hepatitis A (for Aboriginal and Torres Strait Islander peoples in the Northern Territory, Queensland, South Australia and Western Australia only) Pneumococcal conjugate (13vPCV; for Aboriginal and Torres Strait Islander peoples in the Northern Territory, Queensland, South Australia and Western Australia only)
18 months	Measles, mumps, rubella and varicella (chickenpox; MMRV) Diphtheria, tetanus, acellular pertussis (whooping cough; DTPa)
18–24 months	Hepatitis A (for Aboriginal and Torres Strait Islander peoples in the Northern Territory, Queensland, South Australia and Western Australia only)
4 years [†]	Diphtheria, tetanus, acellular pertussis (whooping cough) and inactivated poliomyelitis (polio; DTPa-IPV) Measles, mumps and rubella (MMR; if MMRV vaccine was not given at 18 months of age) Pneumococcal polysaccharide (23vPPV; only for medically high-risk groups)
10–15 years School-based programs +/- GP catch-up	Hepatitis B (two adult doses for those not vaccinated against hepatitis B) Varicella (catch up until all immunised) Human papillomavirus (HPV; three doses over six months) Diphtheria, tetanus and acellular pertussis (dTpa is the adult/adolescent vaccine)
15–49 years	Influenza annually (for Aboriginal and Torres Strait Islander peoples) Pneumococcal polysaccharide (23vPPV; for Aboriginal and Torres Strait Islander people who are medically at risk)
Pregnant women	Influenza Diphtheria, tetanus and acellular pertussis (dTpa) from 28 weeks (up to 38 weeks acceptable). Note that this is recommended for all but funding is variable
50 years and over	Influenza (for Aboriginal and Torres Strait Islander peoples) Pneumococcal polysaccharide (23vPPV; for Aboriginal and Torres Strait Islander peoples)
65 years and over	Influenza Pneumococcal polysaccharide (23vPPV)

*Hep B vaccine (dose 1 or 0) should ideally be given to all infants within 24 hours of birth, but at most within seven days of birth. Infants born to hepatitis B surface antigen (HBsAg)-positive mothers should be given hepatitis B immune globulin (HBIG) and a dose of monovalent hepatitis B vaccine on the day of birth (preferably within 12 hours of birth and certainly within 48 hours). Further information at www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home

[†]Rotavirus vaccines are contraindicated in infants with a history of intussusception (IS), or predisposing abnormality to IS, or severe combined immunodeficiency. Rotavirus vaccines are time limited and differ in number of doses and timing: catch-up may not be possible

[‡]MMR dose 2 remains at 4 years of age for children not immunised with MMRV at 18 months

Table 6.1.2. Vaccines recommended but not funded in National Immunisation Program

Age	Vaccine
Soon after birth	Bacillus Calmette–Guérin (BCG; Aboriginal and Torres Strait Islander peoples in higher risk areas of the Northern Territory, Queensland, and parts of northern South Australia). Infants born to migrants from country with high risk of tuberculosis (TB) – look up individual state and territory guidelines
<2 years and between 15 and 19 years of age	Meningococcal B vaccine recommended for highest incidence age groups from 6 weeks of age
Any age from 12 months	Varicella – A second dose of vaccine, at least one month after first dose, provides improved protection from varicella
Parents and carers of infants aged <6 months	Diphtheria, tetanus and acellular pertussis (dTpa) is recommended to protect the infant from pertussis. To maximise the protection of infants, parents and carers should get immunised before the birth. The dTpa vaccine can be given at any time after vaccination with diphtheria, tetanus (DT), and may be given again five years after previous dTpa
50 years and >65 years Travellers of any age	dTpa should be used in place of DT when providing booster tetanus immunisations ≥50 years of age. This booster dose is recommended if no tetanus immunisation was received in the previous 10 years, or no previous dTpa
>60 years	A single dose of zoster vaccine is recommended for prevention of shingles
All healthcare workers	dTpa Hepatitis B (and hepatitis A in some jurisdictions) Annual influenza Measles, mumps and rubella (MMR; if not immune) Varicella (if not immune)
Men who have sex with men People who inject drugs	Hepatitis A and B

Immunisation information resources include:

- NIPS, available at www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/national-immunisation-program-schedule
- *Australian immunisation handbook*, available at www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home
- Australian Childhood Immunisation Register (ACIR), available at www.humanservices.gov.au/customer/services/medicare/australian-childhood-immunisation-register, by email (acir@humanservices.gov.au) or telephone (1800 653 809). The ACIR can be used to obtain information on the vaccination history of individuals from birth to 7 years of age given since 1 January 1996
- National Centre for Immunisation Research & Surveillance, available at www.ncirs.edu.au

Notification of adverse events

The reporting of adverse events following vaccinations varies geographically. It is possible to report directly to the Therapeutic Goods Administration (TGA) from anywhere in Australia by telephone on 1800 044 114, or online at www.tga.gov.au/hp/problem-medicine-reporting-reactions.htm

6.2 Sexually transmissible infections

Sexually transmissible infections (STIs) are frequently seen in general practice, especially chlamydia, which is typically asymptomatic.^{5,6} It is important to detect it early in order to prevent transmission to others and minimise potential complications, such as infertility. It may also be appropriate to screen for other STIs. The individual's age, sexual behaviour and community HIV or STI prevalence all influence the level of risk, and should influence the choice of STI screening tests. For additional resources specific to Aboriginal and Torres Strait Islander peoples, The Royal Australian College of General Practitioners' (RACGP) *National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people*, 2nd edn, includes information about sexual health and blood-borne viruses (www.racgp.org.au/your-practice/guidelines/national-guide).

Sexual health consultation

Many patients and doctors feel uncomfortable discussing sexual histories even when indicated or the patient is requesting STI testing. Taking a sexual history is an important part of the assessment and management of STIs, and it should not be a barrier to offering STI testing.⁷

A non-judgmental attitude and environment will facilitate disclosures on sexual matters.⁸ It is important to ask open-ended questions and to avoid assumptions about sexual orientation, by using the term 'partner'. Gentle enquiry about recent sexual activity, gender, number of partners, contraception (including use of condoms), travel history, and immunisation status helps to inform decision making. Additionally, ask about the risk for blood-borne viruses (hepatitis B, C, and HIV), such as injecting drug use, tattooing and piercing. Investigations should be explained, and patients should be asked for consent before tests such as HIV or hepatitis C are ordered.

Contact tracing

Contact tracing is essential in reducing the transmission of STIs and HIV. It is the responsibility of the diagnosing clinician to facilitate the process of notifying current and past partners. This may be through a direct approach from the patient, their treating health professional, or by using online partner notification services available such as:

- www.letthemknow.org.au
- www.thedramadownunder.info/notify (for men who have sex with men [MSM])
- www.bettertoknow.org.au (for Aboriginal and Torres Strait Islander youths).

For more information and to determine 'how far back to trace', refer to the contact tracing manual at the Australasian Society of HIV, Viral Hepatitis and Sexual Health Medicine's (ASHM) website at <http://contacttracing.ashm.org.au> or the Contact Tracing Tool for General Practitioners at NSW STI Programs Unit's website at <http://stipu.nsw.gov.au/wp-content/uploads/GP-Contact-Tracing-Tool.pdf>

For HIV contact tracing, seek assistance from local sexual health services.

In the case of a notifiable condition, the patient should be informed that case notification to public health authorities will occur. Notification should be made as set by the department of health in the relevant state or territory.

6.2.1 Chlamydia and other STIs

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥ 80

More than 80% of chlamydia infections occur in people <29 years of age.⁹ Screening for chlamydia infection in all sexually active people up to 29 years of age is recommended because of increased prevalence and risk of complications.¹⁰ In asymptomatic, sexually active people up to 29 years of age, the overall absolute risk of infection is approximately 5% for chlamydia and 0.5% for gonorrhoea.

The ranked risk for specific infections per 100,000 in general population/Aboriginal and Torres Strait Islander populations:¹¹

- Chlamydia (371/1341)
- Gonorrhoea (49/858)
- Hepatitis B (23/50)
- Syphilis (8/32)
- HIV (4/6)

A large proportion of young people will attend primary care clinics each year, and this presents the opportunity to normalise sexual health care as part of usual general practice.¹⁰ Younger sexually active youths should not be excluded from case finding, or identifying any safety or abuse issues. This may involve a complete psychosocial (HE²ADS³)¹² risk assessment as discussed in Table 3.2.

Women with untreated chlamydia infections have a 2–8% risk of infertility.¹³ Other STIs to consider screening for in higher risk individuals are gonorrhoea, HIV and syphilis.¹⁴ The risk for gonorrhoea, HIV and syphilis is low for heterosexuals in all major cities in Australia and New Zealand,¹⁵ but rates of gonorrhoea and syphilis are higher among MSM. The individual's age and sexual habits, and community STI prevalence all influence the level of risk and should guide STI testing recommendations for patients (refer to Tables 6.2.1.1 and 6.2.1.2 for guidance).

MSM should be screened for gonorrhoea, chlamydia, syphilis and HIV every 12 months. Screening should be performed more often if they have multiple sexual contacts. Most MSM with STIs have no symptoms.¹⁶

Aboriginal and Torres Strait Islander peoples are at higher risk and should also be screened for gonorrhoea, chlamydia, syphilis and HIV.

Screening for hepatitis C should be provided if the patient is HIV positive or there is a history of injecting drug use, as this increases the risk of transmission.¹⁶

All pregnant women should be screened for hepatitis B, C, HIV and syphilis.^{14,17,18} Consider screening pregnant women up to 29 years of age for chlamydia (and also gonorrhoea, if the patient is at high risk).^{17–20}

Table 6.2.1.1. Sexually transmissible infections: Identifying risks

Risk assessment of asymptomatic sexually active person	What should be done?	How often?	References
<p>Low–average risk:</p> <ul style="list-style-type: none"> Heterosexual asymptomatic up to 29 years of age requesting sexually transmissible infection (STI) check up 	<p>Urine, cervical or genital swab polymerase chain reaction (PCR; or self-collected) for chlamydia</p> <p>Consider other infections based on risk assessment</p>	<p>Opportunistically if indicated (evidence is unclear on testing interval)</p>	<p>5</p>
<p>Medium–high risk:</p> <ul style="list-style-type: none"> <20 years of age Rural and remote 	<p>As above</p> <p>Consider other infections, particularly gonorrhoea and syphilis, based on risk assessment</p>	<p>Opportunistically if indicated (evidence is unclear on testing interval)</p>	<p>6, 10, 11, 21–26</p>
<p>Higher risk:</p> <ul style="list-style-type: none"> Aboriginal or Torres Strait Islander peoples 	<p>Testing for chlamydia, gonorrhoea, syphilis</p> <p>Serology for human immunodeficiency virus (HIV), syphilis and, if the person is not vaccinated or immune, hepatitis A and B (III)</p> <p>Offer hepatitis A and B vaccination (III, B)</p>	<p>Every 12 months (evidence is unclear on testing interval)</p>	<p>27</p>
<p>Other higher risk:</p> <ul style="list-style-type: none"> People who inject drugs Sex workers 	<p>Testing for chlamydia, gonorrhoea, syphilis; Serology for HIV, syphilis; if the person is not vaccinated or immune, hepatitis A and B</p> <p>Offer hepatitis A and B vaccination (III, B)</p> <p>Hepatitis C testing if the patient injects drugs</p>	<p>Every 12 months (evidence is unclear on testing interval)</p>	
<p>Highest risk:</p> <ul style="list-style-type: none"> Asymptomatic men who have sex with men Highest risk in those who: <ul style="list-style-type: none"> have unprotected anal sex had >10 partners in past six months participate in group sex or use recreational drugs during sex 	<p>Urine, throat and rectal swab for chlamydia PCR</p> <p>Throat and rectal swab for gonorrhoea PCR (III, B)</p> <p>Serology for HIV, syphilis and, if the person is not vaccinated or immune, hepatitis A and B</p> <p>Offer hepatitis A and B vaccinations (III, B)</p>	<p>Every 12 months and three to six monthly in higher risk men</p>	<p>5, 16, 28</p>
<p>Sexual contacts from the last six months of women and men with an STI</p> <p>For how far back to trace, refer to Contact Tracing Tool for General Practice</p>	<p>Test and treat contacts presumptively (II, A)</p> <p>Consider other infections based on risk assessment such as gonorrhoea, hepatitis B (if not vaccinated), syphilis and HIV (III, B)</p>	<p>If chlamydia infection found (and treated), repeating testing to check for re-infection after 3–12 months may be appropriate</p>	<p>29–32</p>

HIV, human immunodeficiency virus; PCR, polymerase chain reaction; STI, sexually transmissible infection

Table 6.2.1.2. Tests to detect sexually transmissible infections

Test	Technique	References
Nucleic acid amplification test most commonly by polymerase chain reaction (PCR)	The first 20 mL of urine passed at any time of day, and at least 20 minutes since last voiding	33
	PCR testing can be performed on urine, throat, endocervix rectum, or vagina (whichever are indicated)	5, 15, 30, 34
Gonorrhoea microscopy, culture and sensitivity (MCS)	If the suspected clinical diagnosis is gonorrhoea, an MCS is required to guide antibiotic treatment	11

MCS, microscopy, culture and sensitivity; PCR, polymerase chain reaction

Implementation

Chlamydia is the most common and curable STI in Australia. Notification rates per 100,000 increased from 35.4 in 1993 to 363 in 2011, and has been steady since; 78% of those infected are aged 15–29 years.¹¹ Young Aboriginal and Torres Strait Islander peoples have higher infection rates especially in regional and remote areas, with a substantially increased risk of chlamydia, gonorrhoea and syphilis.¹⁰

Screening sexually active women <25 years of age for chlamydia on an annual basis has been shown to halve the infection and complication rates.^{11,13,35}

Treatment of partners and contact tracing

All partners of those infected should be tested and treated presumptively. A systematic review has shown that providing patient-delivered partner therapy to index cases is more effective in reducing infection rates than paper-based methods of contact tracing.³⁶ There is no single optimal strategy for contact tracing. Getting assistance from the local sexual health services is recommended for HIV and syphilis because it leads to more contacts being tested and treated.³⁵ Referral to sexual health services should be considered for problematic or repeated infections.³⁷

It is important to ensure current sexual partners are treated simultaneously. Untreated pregnant women infected with chlamydia have a 20–50% chance of infecting their infant at delivery.³⁸

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7. Prevention of chronic disease

The lifestyle risk factors of smoking, nutrition, alcohol and physical activity (SNAP) are common among patients attending general practice.¹ They contribute significantly to the burden of disease, largely due to their effect on the incidence and complications of chronic diseases such as diabetes, cardiovascular disease (CVD), chronic respiratory disease and some cancers.² General practitioners (GPs) and their teams can make an important contribution to managing each of the SNAP lifestyle behaviours, including smoking,^{3,4} dietary change,⁵ hazardous drinking,⁶ physical activity^{7,8} and weight.^{9,10}

Each of these risk factors may interact with the others throughout the lifecycle and need to be considered together rather than separately.¹¹ The 5As is an internationally accepted framework for organising the assessment and management of behavioural risk factors in primary healthcare.¹²⁻¹⁴ It consists of the following:

- **Ask** – A systematic approach to asking all patients about their SNAP, which may occur opportunistically as they present for other conditions and/or by recall for health checks.
- **Assess** – Assess readiness to change, and dependence (for smoking and alcohol).
- **Advise** – Provide brief, non-judgemental advice with patient education materials.
- **Assist/agree** – Work with the patient to set agreed goals for behaviour change; provide motivational interviewing; refer to telephone support services, group lifestyle programs or individual providers (eg dietitian or exercise physiologist); consider pharmacotherapy.
- **Arrange** – Regular follow-up visits to monitor maintenance and prevent relapse.

Progress along the pathway from assessment and advice to goal setting, referral and follow-up is associated with increased patient motivation and behaviour change.¹⁵ A number of evidence-based preventive care guidelines are based on the 5As framework.⁹

Health inequity

What are the key equity issues and who is at risk?

- The greatest burden of chronic illness is experienced by socioeconomically disadvantaged groups, including Aboriginal and Torres Strait Islander peoples, who access preventive healthcare less frequently than other groups.¹⁶⁻¹⁸ Aboriginal and Torres Strait Islander peoples have a significantly lower life expectancy at birth than non-Indigenous Australians. This is attributable, to a significant extent, to inequities in prevalence and care for chronic diseases.^{19,20} This gap appears to be widening and is the widest seen globally between Indigenous and non-Indigenous populations.²¹ Multimorbidity is more common in disadvantaged groups and is associated with higher levels of psychosocial stress.^{22,23}
- The uptake of preventive and screening services in primary healthcare is significantly related to higher levels of education, health motivation, and self-rated health, as well as to particular cultural groups. Immigrant groups undergo fewer preventive consultations and screening tests, and have overall less primary care utilisation.²⁴ Aboriginal and Torres Strait Islander peoples and socioeconomically deprived people have higher risks of disease, but are less likely to be offered preventive interventions.²⁵
- Socioeconomic disadvantage is associated with higher rates of smoking and alcohol use, poorer diets and lower levels of physical activity. The higher rates are a product of social, environmental and individual factors.
- Smoking rates show significant inequities across groups. Most disadvantaged groups continue to have higher smoking rates. Smoking status varies by education level, employment status, socioeconomic status (SES), geographic location and Indigenous status.^{26,27} Nationally, the prevalence of smoking among Aboriginal and Torres Strait Islander peoples (45%) is more than double that of non-Indigenous Australians, and is up to 82% in remote communities.^{28,29} Smoking is also more prevalent in people with long-term mental illness.³⁰

- Overweight and obesity rates are higher in socioeconomically disadvantaged groups and the gap is widening.^{31–33} Aboriginal and Torres Strait Islander peoples have higher rates of being overweight and obese as well as a higher incidence of vascular disease.³⁴ Aboriginal and Torres Strait Islander communities in remote regions face significant access barriers to nutritious and affordable food.^{35,36} Nutritious food tends to cost more in rural and remote areas, and cost may also be an issue in low SES groups.^{37,38} Low-income groups are less likely to be offered interventions to prevent being overweight.³⁹
- Alcohol may produce a greater burden of harm in more socially disadvantaged groups partly through the more hazardous pattern of drinking and partly through reduced access to resources to mitigate harm.^{40–43} Recognition and treatment are also impeded by the social stigma associated with problematic use of alcohol.^{44–46}

What can GPs do?

- Interventions targeting Aboriginal and Torres Strait Islander peoples could include individual and group interventions delivered in primary healthcare and community settings to promote improved health literacy and awareness of behavioural risk factors.⁴⁷ Financial assistance to enable healthier food choices may be effective.⁴⁸ The Centre for Excellence in Indigenous Tobacco Control (CEITC) provides resources and strategies at www.ceitc.org.au Improvements in physical activity for Aboriginal and Torres Strait Islander patients may be achieved by linking health advice with locally available and appropriate community sport and recreation programs, as well as social support programs such as group activities.^{34,49}
- Provide motivational interviewing for at-risk patients with low SES.^{50–52} Individual behavioural counselling is more likely to be effective for patients from disadvantaged backgrounds if linked to community resources, and if financial and access barriers are addressed.^{53,54} Interventions to improve physical activity among socially disadvantaged patients would ideally be linked to community programs that improve the physical environment, are culturally acceptable and address cost barriers.^{55–57} Supportive provider attitudes are also important in building self-efficacy among patients from these groups.⁵⁸
- Be aware that behavioural risk factors are not simply a matter of ‘individual lifestyle choices’. For example, racism and stress may be drivers of smoking for Aboriginal and Torres Strait Islander peoples and dietary choices may be shaped significantly by availability, cost and distribution of healthy food.
- Quality improvement activities, especially clinical audit and practice plans, can help improve the assessment and recording of behavioural risk factors.⁵⁹

7.1 Smoking

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥ 80

Smoking status and interest in quitting should be assessed and documented in the medical record for every patient >10 years of age.^{3,13,60} All patients who smoke, regardless of the amount they smoke, should be offered smoking cessation advice. This should include the following actions:

- Ask about their interest in quitting (B).
- Advise to stop smoking (A), agreeing on quit goals and offer pharmacotherapy to all patients smoking more than 10 cigarettes per day unless contraindicated, especially if there is evidence of nicotine dependence (A).
- Offer referral to a proactive telephone call-back cessation service (eg Quitline 13 7848; A).
- Follow up to support maintenance and prevent relapse using self-help or pharmacotherapy (A).

To assess nicotine dependence, ask about the:⁶⁰

- number of minutes between waking and smoking the first cigarette
- number of cigarettes smoked a day (there is a high likelihood of nicotine dependence if the person smokes within 30 minutes of waking and smokes more than 10–15 cigarettes a day)
- type of craving or withdrawal symptoms experienced in previous quit attempts.

Table 7.1.1. Smoking: Identifying risks

Who is at risk?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> Everyone >10 years of age 	Ask about quantity and frequency of smoking (I, A). Offer smoking cessation advice, set quit goals, offer pharmacotherapy, referral and follow-up as appropriate (II, A)	Opportunistically* (III, C)	60
High risk of complications: <ul style="list-style-type: none"> Aboriginal and Torres Strait Islander peoples People with smoking-related disease 	Offer smoking cessation advice. Agree on quit goals, offer pharmacotherapy and culturally appropriate referral and support (II, A) (I, A)	Opportunistically, ideally at every visit* (III, C)	61
Patients requiring different interventions to those at average risk			
<ul style="list-style-type: none"> People with mental illness People with other drug-related dependencies 	Make careful use of pharmacotherapy, because of the significant impact of nicotine and nicotine withdrawal on drug metabolism (I, A) [†] Add mood management to behavioural support in those with current or past depression	Opportunistically, ideally every visit* (III, C)	62
<ul style="list-style-type: none"> Pregnant women 	Offer smoking cessation advice, agree on quit goals, offer referral to a quit program (I, A). Also refer to Chapter 1. Preventive activities prior to pregnancy	At each antenatal visit (III, C)	
<ul style="list-style-type: none"> Parents of young babies and children 	Offer smoking cessation advice. If the parent is unable to quit, advise to: <ul style="list-style-type: none"> smoke away from children not smoke in confined spaces with children (eg when driving) (I, A) 	Opportunistically, ideally every visit* (III, C)	
<ul style="list-style-type: none"> Adolescents and young people 	Ask about smoking and provide a strong antismoking message (III, C)	Opportunistically (III, C)	63

*Refer to Appendix 9. Effect of smoking abstinence on medications in the *New Zealand smoking cessation guidelines 2007* at www.treatobacco.net/de/uploads/documents/Treatment%20Guidelines/New%20Zealand%20treatment%20guidelines%20in%20English%202007.pdf

[†]While enquiry about smoking should occur at every opportunity, be aware of patient sensitivity. Non-judgmental enquiry about smoking is associated with greater patient satisfaction⁶⁴⁻⁶⁶

Implementation

At an individual patient level, GPs and their teams can influence smoking rates by systematically providing opportunistic advice and offering support to all attending patients who smoke.⁶⁷ Where this is insufficient, other effective treatment strategies include referral to the Quitline,⁶⁸ pharmacotherapy^{69,70} and motivational interviewing.^{71,72} Tobacco use is most effectively treated with a comprehensive approach involving behavioural support and pharmacotherapy. Combined pharmacotherapy and behavioural support increases the success of smoking cessation.⁷³

Pregnant women find it especially difficult to quit; pregnancy alters nicotine metabolism and heightens withdrawal symptoms and the support from partners is an important element in quitting. Higher smoking rates in disadvantaged individuals reflect greater neighbourhood disadvantage, less social support, greater negative effect

and lower self-efficacy.^{21,28} Removing access barriers and providing incentives to motivate patients to quit may improve quit rates.

Patients should be reviewed within one week and again after one month of stopping smoking in order to help increase the long-term chance of quitting.

There is a lack of consistent, bias-free evidence that acupuncture, acupressure or laser therapy have sustained benefit on smoking cessation for longer than six months.⁷⁴ There is insufficient evidence that electronic cigarettes (e-cigarettes) help smokers to stop smoking when compared with nicotine patches or placebo.⁷⁵

The CEITC provides resources and strategies at www.ceitc.org.au

7.2 Overweight

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥ 80

Body mass index (BMI) and waist circumference should be measured every two years and recorded in the medical record (A). On its own, BMI may be misleading, especially in older people and muscular individuals, and classifications may need to be adjusted for some ethnic groups.⁹ Waist circumference is a stronger predictor of CVD and diabetes than weight alone.^{76,77}

Patients who are overweight or obese should be offered individual lifestyle education and skills training (A).⁹ Restrictive dieting is not recommended for children and most adolescents who have not completed their growth spurt.⁹ A modest loss of 5–10% of starting body weight in adults who are overweight is sufficient to achieve some health benefits.^{9,78}

Table 7.2.1. Obesity-related complications: Identifying risks

Who is at risk?	What should be done?	How often?	References
Average risk:			
Adults	Assess body mass index (BMI) and waist circumference in all adults >18 years of age (I, A) Offer education on nutrition and physical activity (I, A)	Every two years (IV, D)	78
Adolescents	Assess weight and height using age-specific BMI charts (either Centers for Disease Control and Prevention [CDC] or World Health Organization [WHO]; Practice Point) Involve parents, carers and families in lifestyle change (Practice Point)	Every two years	9
Children	Aged >2 years: Assess weight and height using age specific BMI charts (either CDC or WHO; Practice Point) Aged <2 years: Monitor growth using WHO growth charts (Practice Point) Involve parents, carers and families in lifestyle change	At times of child health surveillance or immunisation	9
Increased risk:			
<ul style="list-style-type: none"> Aboriginal and Torres Strait Islander peoples and people from the Pacific Islands Patients with existing diabetes or cardiovascular disease, stroke, gout or liver disease 	Assess BMI and waist circumference in all adults aged >18 years (I, B) Offer individual or group-based education on nutrition and physical activity (II, A)	Every 12 months (IV, D)	49
Identified risk:			
<ul style="list-style-type: none"> Adults who are overweight or obese 	Assess weight and waist circumference (I, B) Develop weight management plan* (II, B) Offer behaviour-oriented interventions to assist with weight loss (I, B) Consider referral for: <ul style="list-style-type: none"> self-management support coaching in an individual or group-based diet physical activity program allied health provider (eg dietitian, exercise physiologist, psychologist) 	Every six months [†] (III, C)	9, 79
<ul style="list-style-type: none"> Children and adolescents who are overweight or obese 	Recommend lifestyle change including reducing energy intake and sedentary behaviour, and increased physical activity and measures to support behaviour change (II, B)		80

*Refer to the National Health and Medical Research Council's (NHMRC) *Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia*.⁹ The plan should include frequent contact (not necessarily in general practice), realistic targets and monitoring for at least 12 months

[†]Review impact on changes in behaviour in two weeks

BMI, body mass index; CDC, Centers for Disease Control and Prevention; NHMRC, National Health and Medical Research Council; WHO, World Health Organization

Table 7.2.2. Overweight and obesity: Assessment and preventive interventions		
Assessment	Technique	References
Body mass index (BMI)	BMI = body weight in kilograms divided by the square of height in metres. BMI of ≥ 25 kg/m ² conveys increased risk	
Waist circumference	An adult's waist circumference is measured halfway between the inferior margin of the last rib and the crest of the ilium in the mid-axillary plane over bare skin. The measurement is taken at the end of normal expiration ≥ 94 cm in males and ≥ 80 cm in females conveys increased risk ≥ 102 cm in males and ≥ 88 cm in females conveys high risk	9
Weight reduction in adults (5As approach)	Ask patients what concerns they have about their weight and if they tried to lose weight in the past Assess BMI, waist circumference, diet, physical activity, motivation to change and health literacy Advise that weight loss can have health benefits, including reduced blood pressure and prevention of diabetes in high-risk patients. Advise the risks of being overweight and a lifestyle program that includes reduced caloric intake (aiming for 600 kcal or 2500 kJ energy deficit) and increased physical activity (increasing to 60 minutes at moderate intensity five days per week), supported by behavioural counselling Assist/Agree: Discuss goals, including a realistic initial target of 5% weight loss and specific measurable changes to diet and physical activity. Make contact (eg visit, phone) two weeks after commencing weight loss to determine adherence and if goals are being met. If no response (<1 kg weight or <1 cm waist reduction) after three months, consider alternative approaches, including referral to lifestyle programs or coaching. These programs may be face to face or delivered by phone Arrange: After achieving initial weight loss, advise that patients may regain weight without a maintenance program that includes support, monitoring and relapse prevention Consider very low energy diets if there is no response to lifestyle programs. Bariatric surgery may be considered in patients who fail lifestyle interventions and who have a BMI >35 kg/m ² with comorbidities, such as poorly controlled diabetes, who are expected to improve with weight reduction	9, 81

BMI, body mass index

Table 7.2.3. Nutrition: Healthy weight: Body mass index (kg/m²)⁸²

Classification	Body mass index (BMI; kg/m ²)	Risk of morbidities
Underweight	<18.5	Increased
Normal weight	18.5–24.9	Low
Overweight	25.0–29.9	Increased
Obese I	30.0–34.9	Moderate
Obese II	35–39.9	Severe
Obese III	≥40.0	Very severe

BMI, body mass index

Implementation

Consider and offer adult patients a range of treatment options. Individual education and simple behavioural interventions are appropriate for some patients, while behavioural approaches may be more appropriate for those with disordered eating patterns. Behaviour change techniques include goal setting, self-monitoring of behaviour and progress, stimulus control (eg recognising and avoiding triggers that prompt unplanned eating), cognitive restructuring (modifying unhelpful thoughts or thinking patterns) or problem-solving, and relapse prevention and management.⁹

Telephone coaching has been demonstrated to be comparable with face-to-face techniques and is available in most states.^{83,84}

For adolescents and children, lifestyle programs should focus on parents, carers and families. Advise that weight maintenance is an acceptable approach in most situations for children who are overweight or obese. Recommend lifestyle changes, including reducing energy intake and sedentary behaviour, and increasing physical activity based on current Australian dietary and physical activity guidelines.⁹

For more information, refer to The Royal Australian College of General Practitioners' (RACGP) *Smoking, Nutrition, Alcohol and Physical activity (SNAP): A population health guide to behavioural risk*⁸² and National Health and Medical Research Council's (NHMRC) *Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia*.⁹

7.3 Nutrition

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥ 80

Ask adults how many portions of fruits or vegetables they eat in a day and advise to follow the NHMRC's *Australian dietary guidelines* (B).⁸⁵ Brief advice should be given to eat two serves of fruit and five serves of vegetables per day (2 + 5 portions), and to limit sugar, saturated fat, salt and alcohol.

Breastfeeding should be promoted as the most appropriate method for feeding infants (and one that offers protection against infection and some chronic diseases).⁸⁵ Refer to Chapter 3. Preventive activities in children and young people for nutrition-related recommendations.

Table 7.3.1. Nutrition-related complications: Identifying risk

Who is at risk?	What should be done?	How often?	References
Average risk:			
Adults	<p>Ask about the number of portions of fruits and vegetables eaten per day, and the amount of sugar (including sweetened drinks), salt and alcohol, and saturated fat intake (II, B)</p> <p>All patients should be advised to follow the <i>Australian dietary guidelines</i> (www.nhmrc.gov.au/guidelines-publications/n55), and eat at least five serves of vegetables and two serves of fruit per day (II, B)</p>	Every two years (IV, D)	9, 86
Children and adolescents	<p>Assess growth using the World Health Organization (WHO) weight-for-age and height-for-age charts up to 2 years of age, and body mass index (BMI) for age charts from 2 to 16 years of age</p> <p>Advise patients to follow <i>Australian dietary guidelines</i>, including eating high quantities of vegetables, fruit, wholegrain cereals, poultry, fish, eggs and low fat milk, yoghurt and cheese products, and less discretionary food choices including sugary soft drinks</p>	At times of child health surveillance or immunisation until 5 years of age then every two years	85
High risk:			
<ul style="list-style-type: none"> • Overweight or obese • High cardiovascular disease (CVD) absolute risk (>15%) • A past or first-degree family history of CVD (including stroke) before 60 years of age. For personal history the age does not matter • Type 2 diabetes or high risk for diabetes 	<p>Provide lifestyle advice to limit intake of foods containing saturated fat, added salt, added sugars (including sugary drinks) and alcohol, and increase serves of fruit and vegetables. (Refer to Section 7.2. Overweight for dietary recommendations for overweight and obesity; II, B)</p> <p>Provide self-help nutrition education materials and refer to a dietitian, group diet program or phone coaching (II, B)</p>	Every six months (Practice Point)	85, 87

BMI, body mass index; WHO, World Health Organization

7.4 Early detection of at-risk drinking

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥ 80

All patients should be asked about the quantity and frequency of alcohol intake from 15 years of age (A).⁶ Those with at-risk patterns of alcohol consumption should be offered brief advice on the risk in drinking (A).⁹⁰ Motivational interviewing is both a useful and effective counselling strategy to facilitate a decrease of alcohol intake to low-risk drinking (I, B).^{91–94}

Table 7.4.1. Alcohol-related complications: Identifying risk

Who is at risk?	What should be done?	How often?	References
<p>Low risk:*</p> <ul style="list-style-type: none"> All patients aged >15 years 	<p>Ask about the quantity and frequency of alcohol intake (II, B)</p> <p>The alcohol use disorder identification test-consumption (AUDIT-C) tool can be used to assess this (II, B)</p> <p>Advise if drinking alcohol to drink two drinks or less per day or less and no more than four drinks on any one occasion (II, B)</p>	Every two to four years (III, C)	6, 95
<p>Increased risk:</p> <ul style="list-style-type: none"> Children and adolescents 	<p>Advise children aged <15 years not to drink (III, B)</p> <p>Advise young people aged 15–17 years to delay drinking as long as possible (III, B)</p>	Opportunistically (III, C)	6, 96, 97
<ul style="list-style-type: none"> Older people† 	<p>Inform that there is an increased risk of potential harm from drinking (III, B)</p>	Opportunistically (III, C)	98, 99
<ul style="list-style-type: none"> Young adults, who have a higher risk of accidents and injuries 			100, 101
<ul style="list-style-type: none"> People with a family history of alcohol dependence 			102, 103
<ul style="list-style-type: none"> Individuals who are participating in or supervising risky activities (eg driving, boating, extreme sports, diving, using illicit drugs) 	<p>Advise that non-drinking is the safest option: driving (I, A), other areas (III, C)</p>	Opportunistically (III, C)	104–106
<ul style="list-style-type: none"> Women who are pregnant or planning a pregnancy (refer to Chapter 1. Preventive activities prior to pregnancy) 	<p>Advise that non-drinking is the safest option</p>	At each antenatal visit (III, C)	107, 108

Who is at risk?	What should be done?	How often?	References
<ul style="list-style-type: none"> • People with a physical condition made worse by alcohol: <ul style="list-style-type: none"> – pancreatitis – diabetes – hepatitis/chronic liver disease – hypertension – sleep disorders – sexual dysfunction – other major organ disease 	<p>Advise that non-drinking is the safest option (II–IV, B)</p> <p>Advise those with hypertension, or taking antihypertensive medication, to limit alcohol intake to no more than two (for men) or one (for women) standard drinks per day (II, B)</p>	Opportunistically (III, C)	<p>6 109 110, 111</p> <p>6, 112 6, 113 114, 115</p>
<ul style="list-style-type: none"> • People with a mental health problem made worse by alcohol (eg anxiety and depression) • People taking multiple medications 	Assess whether there are possible harmful interactions between their medications and alcohol (II, A)	Opportunistically (III, C)	116–118
		Opportunistically (III, C)	119, 120

*There is some variability between the levels of low-risk drinking in the drinking guidelines for each country. The Australian guidelines, to be updated in 2016, represent the modal (or most common) recommendation. Refer to www.iard.org/wp-content/uploads/2016/02/Drinking-Guidelines-General-Population.pdf

[†]Older people who have a higher risk of falls and are more likely to be taking medication.¹²¹

AUDIT-C, alcohol use disorder identification test-consumption

Table 7.4.2. What advice, and to whom, should be provided?

What advice should be given to adults who drink alcohol?	References
<ul style="list-style-type: none"> • Advise to limit their drinking to two drinks or less per day, and no more than four drinks on any one occasion (II, B) • Counsel everybody who consumes alcohol about the dangers of operating a motor vehicle or performing other potentially dangerous activities after drinking (II, B) • Provide simple advice to reduce alcohol consumption to all patients drinking at potentially risky or high-risk levels (I, A) • Advise pregnant women not to drink alcohol (ie there are no safe drinking levels) 	6

Table 7.4.3. Strategies to increase effectiveness		
Intervention	Technique	References
Screening	<ul style="list-style-type: none"> • Early detection of at-risk drinking may be improved by asking patients about their drinking more frequently. New patient registration, health assessment, chronic disease or mental health assessments and care planning are acceptable times for enquiry 	122, 123
Brief intervention	<ul style="list-style-type: none"> • Screening and brief advice in general practice has been demonstrated to have resulted in a reduction in drinking of about four to six standard drinks per week for men • While there is no clear dose-response curve for spending more time counselling subjects who are drinking at risky levels, the minimum time to achieve some impact is between five and 15 minutes. Although some have argued that screening, of itself, constitutes a brief intervention, the impact of interventions of less than five minutes is less clear • Components of effective interventions include: <ul style="list-style-type: none"> – motivational interviewing, especially being more person-centred and eliciting change talk – asking about drinking and its consequences – personalised feedback about impact on health – goal setting 	90, 124–126 126–129 124, 130, 131
Management of dependence or heavy drinking	<ul style="list-style-type: none"> • Brief interventions and routine GP care are likely to be insufficient for patients with alcohol dependence or heavy drinking. Such patients should be referred to a drug and alcohol service 	132

Implementation

There is some evidence from earlier systematic reviews that for every 10 hazardous drinkers treated using brief interventions, one will reduce drinking to low-risk levels.^{102,133,134} For more information, refer to the RACGP's SNAP guide, 2nd edn.⁸²

7.5 Physical activity

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥ 80

Ask about the patient's current level of physical activity and sedentary behaviour, and assess against current guidelines.

Provide age-specific advice on meeting recommended levels of sedentary behaviour and physical activity.

The message that any physical activity is better than none is important. If a patient does not already engage in regular physical activity, they can be encouraged to start by doing some, and then gradually build up to the recommended amount.¹³⁵ Advice, written physical activity materials and referral should be tailored to age (refer to Table 7.5.1).

Table 7.5.1. Physical activity: Assessment, advice and referral

Age and risk group	What should be done?	How often?	References
Children 0–5 years of age	<p>From birth, encourage physical activity, particularly supervised floor-based play in safe environments</p> <p>Toddlers and pre-schoolers should be physically active every day for at least three hours, spread throughout the day (Practice Point)</p> <p>Recommend children <2 years of age not spend time in front of screens. From two to five years of age recommend limiting screen time to one hour per day (Practice Point)</p>	At times of child health surveillance or immunisation (Practice Point)	136
Children 5–17 years of age	<p>Ask questions regarding current level of activity and sedentary behaviour, and assess against current guidelines (II, A)</p> <p>Recommend accumulating 60 minutes of a variety of moderate or vigorous aerobic physical activity per day (I, A) and muscle strengthening activity three days a week (II, A)</p> <p>Recommend limiting or breaking up sitting time and use of screens to no more than two hours a day (Practice Point)</p>	Opportunistically	136
Adults 18–64 years of age	<p>Ask questions regarding current level of activity and sedentary behaviour, and assess against current guidelines (II, A)</p> <p>Recommend doing some activity on most days of the week. Accumulate 2.5–5 hours of moderate intensity physical activity, 1.25–2.5 hours of vigorous intensity physical activity, or a combination of these per week (III, A). Do muscle strengthening activities at least two days a week (I, A)</p> <p>Avoid prolonged sitting and break up periods of sitting (III, C)</p>	Every two years (III, C)	135
People ≥65 years of age	<p>Ask questions regarding current level of activity and sedentary behaviour, and assess against current guidelines (II, A)</p> <p>Recommend some physical activity every day that improves fitness, strength, balance and flexibility (III, C)</p> <p>Gradually increase amount and frequency (Practice Point)</p> <p>Accumulate at least 30 minutes of moderate activity on most days (III, C; refer to Section 5.2. Physical activity)</p>	Every two years	137, 138

Age and risk group	What should be done?	How often?	References
Increased risk			
<ul style="list-style-type: none"> Those at higher risk include teenage girls, older adults, office workers, Aboriginal and Torres Strait Islander peoples, and people from low socioeconomic and non-English-speaking backgrounds Those with or at high risk of a chronic condition or cancer (refer to Chapter 8. Prevention of vascular and metabolic disease, and Chapter 9. Cancer) 	<p>Ask questions regarding current level of activity and sedentary behaviour and assess against current guidelines (III, C)</p> <p>Provide brief interventions (refer to below) and age-appropriate written physical activity materials (III, C)</p> <p>Refer to an exercise or physical activity professional or program if appropriate brief interventions within the general practice cannot be offered (I, D) or if preferred by the patient (Practice Point)</p> <p>Programs with additional behaviour change support may be more beneficial (III, C)</p>	At least two yearly and opportunistically (IV, D)	139–141 142, 143

Table 7.5.2. Physical inactivity interventions		
Assessment and intervention	Technique	References
Brief interventions to increase levels of physical activity	<p>Some of the components of interventions in general practice that have been shown to have short-term benefit in changing behaviour related to physical activity include:</p> <ul style="list-style-type: none"> at least two sessions of face-to-face provision of brief advice or counselling on exercise with supporting written materials written prescription for exercise and/or supplementary advice or counselling by telephone pedometer step target that is incremental and agreed with the patient 	142, 144
Physical activity program	<p>Structured programs of physical activity education and exercise may be delivered as individual or group program and over several sessions. The National Heart Foundation of Australia's program is available at http://heartmoves.heartfoundation.org.au and some local councils have information on local physical activity programs. Exercise physiologists are listed at www.essa.org.au</p> <p>Non-face-to-face programs using telephone or internet have been demonstrated to be effective in adults >50 years of age</p> <p>It should be noted that there is limited research examining the effectiveness of exercise referral and none comparing exercise referrals to general practice-based physical activity interventions</p>	145, 146 143, 147

Implementation

Physically inactive patients may be referred to physical activity programs or classes run by local community organisations. Those who have a chronic medical condition and complex needs may benefit from referral to an accredited exercise physiologist or physiotherapist. For more information, refer to the RACGP's SNAP guide, 2nd edn.⁸²

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8. Prevention of vascular and metabolic disease

Cardiovascular disease (CVD) occurs in 18% of Australians. It accounts for 36% of all deaths and 6.9% of all disability.¹ The most important behavioural and physiological risk factors for CVD are smoking, diabetes, raised blood pressure (BP), dyslipidaemia, obesity, physical inactivity and poor diet.² These risk factors are common in the Australian population: 90% of adults aged >45 years have at least one modifiable risk factor and 66% have three or more risk factors for CVD.³ In addition to these, a family history of premature heart disease in a first-degree relative,⁴ history of depression, social isolation and lack of quality social support are recognised risk factors for coronary heart disease (CHD).⁵

Health inequity

What are the key equity issues and who is at risk?

- **CVD:** Socioeconomic disadvantage is associated with higher rates of CVD.⁶ Aboriginal and Torres Strait Islander peoples, people living in rural and remote areas, and people in lower socioeconomic groups, all have an increased risk of cardiovascular disease.⁶ Minority groups have high risk factor rates of cardiovascular disease globally.^{6,7}
- **Type 2 diabetes (T2D):** There is a higher prevalence of T2D among Australians in the lower socioeconomic groups.⁸ T2D is more than twice as common in the most disadvantaged communities.⁹ Certain ethnic groups are more at risk.¹⁰ Aboriginal and Torres Strait Islander peoples are three times more likely to have diabetes than non-Indigenous Australians, and T2D is a direct or indirect cause for 20% of Aboriginal and Torres Strait Islander deaths.¹¹
- **CVD risk factors:** Biological and behavioural risk factors play a role in increasing cardiovascular risk (refer to Chapter 7. Prevention of chronic disease). However, while smoking, nutrition, alcohol and physical activity (SNAP) risk factors exhibit clear socioeconomic gradients,^{10,12} the higher prevalence of vascular and metabolic disease is only partly mediated by behavioural risk factors and is more consistently observed in women.¹³ Diabetes and CVD are more common in rural populations, and this is exacerbated by poorer access to healthcare.¹⁴ There is evidence that men from socioeconomically disadvantaged backgrounds may be less likely to be offered statins.¹⁵
- **Chronic kidney disease (CKD):** Disadvantaged groups have higher rates of CKD for which type 2 diabetic nephropathy is a common cause.^{16,17} Over the past 25 years, the number of Aboriginal and Torres Strait Islander peoples commencing renal replacement therapy was 3.5 times greater than the majority of the population. CKD has an earlier onset in Indigenous peoples.^{18–20} Aboriginal and Torres Strait Islander peoples are 10 times more likely than non-Indigenous Australians to be hospitalised for CKD, and, from 2008 to 2012, CKD was responsible for or associated with 16% of Aboriginal and Torres Strait Islander deaths.¹¹

What can GPs do?

- Inequities in diabetes care can be ameliorated using a structured systems-based approach to care targeting at-risk and minority populations using diabetes registries.²¹
- Social disadvantage may be a factor in poor medication adherence in patients with chronic disease.^{22,23} Interventions that can help improve medication adherence include those that target the barriers created by socioeconomic status (SES) and the treatment itself.²³ Underuse of cardiovascular medications is common in older adults at high risk of CVD, and may be a factor in inequity in cardiovascular outcomes.²⁴

- Effective chronic disease interventions are likely to be those that address the determinants of behavioural risk factors that arise from root social causes such as poverty and low health literacy.⁶ Interventions delivered in community settings that target families and are multifaceted to incorporate the social context are generally the most successful.^{25,26}
- Trust is an important element in the delivery of culturally competent health service to patients with chronic diseases, particularly Aboriginal and Torres Strait Islander peoples. Key ways to improve healthcare delivery are to respond to social complexity; promote empowerment, trust and rapport; and reduce discrimination and racism. To do so requires not only practice-system change but also Aboriginal and Torres Strait Islander cultural training of health professionals to build culturally safe environments.^{27,28} Continuity of care and patient-centred care are also important. Culturally specific interventions are needed and there are ongoing initiatives to develop these.^{29–33}

8.1 Assessment of absolute cardiovascular disease risk

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Aboriginal and Torres Strait Islander peoples															

Absolute CVD risk assessment combines risk factors to calculate the probability that an individual will develop a cardiovascular event (eg myocardial infarction, stroke) or other vascular disease within a specified time frame (usually five years). Absolute CVD risk assessment should be conducted at least every two years in all adults aged ≥ 45 years who are not known to have CVD or to be at clinically determined high risk (B).³⁴ This calculation requires information on the patient's age, sex, smoking status, total and high-density lipoprotein-cholesterol (HDL-C), systolic blood pressure (SBP) and whether the patient is known to have diabetes or left ventricular hypertrophy (LVH). In adults at low absolute CVD risk, blood test results within five years may be used for review of absolute CVD risk unless there are reasons to the contrary.³⁴

Adults >74 years of age may have their absolute CVD risk assessed with age entered as 74 years. This is likely to underestimate five-year risk but will give an estimate of minimum risk.³⁵ Patients with a family history of premature CVD (in a first-degree relative – men aged <55 years, women aged <65 years)⁴ or obesity (body mass index [BMI] above 30 kg/m^2 or more) may be at greater risk.^{36–38} Similarly, patients with depression and atrial fibrillation (AF) may also be at increased risk.³⁴

Table 8.1.1. Cardiovascular disease: Identifying risk

Population group	What should be done?	How often?	References
Adults aged ≥ 45 years not known to have cardiovascular disease (CVD) or not clinically determined to be at high risk	Calculate absolute CVD risk* 45–74 years (II, B)	Every two years [†] (IV, C)	34
Aboriginal and Torres Strait Islander peoples aged ≥ 35 years not known to have CVD or not clinically determined to be at high risk	Assess absolute CVD risk (may underestimate risk; IV, C)	Every two years (IV, C)	

*Calculate risk using the National Heart Foundation of Australia's risk charts (refer to Appendix 8A. Australian cardiovascular disease risk charts) or online at www.cvdcheck.org.au Blood lipid results within five years can be used in the calculation of absolute CVD risk, but blood pressure (BP) should be measured at the time of assessment. On-therapy measures of BP and cholesterol may underestimate absolute risk, and thus, recently recorded pre-treatment measures may be more appropriate to use if available. An electrocardiogram (ECG) is not required to determine left ventricular hypertrophy (LVH) if it is not previously known. Other absolute CVD risk calculators have been developed but most should not be applied to the Australian population.

[†]Adults with any of the following do not require absolute CVD risk assessment using the absolute risk calculator, because they are already known to be at clinically determined high risk of CVD (IV, D):

- diabetes and >60 years of age
- diabetes with microalbuminuria (>20 $\mu\text{g}/\text{min}$ or urine albumin-to-creatinine ratio (UACR) >2.5 mg/mmol for males, >3.5 mg/mmol for females)
- moderate or severe chronic kidney disease (CKD; persistent proteinuria or estimated glomerular filtration rate [eGFR] <45 $\text{mL}/\text{min}/1.73$ m^2)
- previous diagnosis of familial hypercholesterolaemia (FH)
- Systolic blood pressure (SBP) ≥ 180 mmHg or diastolic blood pressure (DBP) ≥ 110 mmHg
- serum total cholesterol >7.5 mmol/L
- Aboriginal or Torres Strait Islander peoples aged >74 years (Practice Point)

BP, blood pressure; CKD, chronic kidney disease; CVD, cardiovascular disease; DBP, diastolic blood pressure; ECG, electrocardiogram; eGFR, estimated glomerular filtration rate; FH, familial hypercholesterolaemia; LVH, left ventricular hypertrophy; SBP, systolic blood pressure; UACR, urine albumin-to-creatinine ratio

8.2 Blood pressure

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥ 80

BP should be measured in all adults from 18 years of age (A) at least every two years. BP should be interpreted in the context of an absolute CVD risk assessment after 45 years of age (35 years of age for Aboriginal and Torres Strait Islander peoples; B). Secondary causes of hypertension and 'white coat' hypertension should be considered.

Table 8.2.1. Hypertension: Identifying risk

Who is at risk?	What should be done?	How often?	References
Low absolute risk: <ul style="list-style-type: none"> <10% cardiovascular disease (CVD) risk 	Provide lifestyle advice and education (I, B) Offer pharmacotherapy if blood pressure (BP) persistently over 160/100 mmHg Review BP of 140–159 mmHg after two months of lifestyle advice	BP every two years (III, C)	34, 39–41
Moderate risk: <ul style="list-style-type: none"> 10–15% absolute CVD risk 	Provide intensive lifestyle advice (II, B) Consider pharmacotherapy if systolic blood pressure (SBP) is 140–159 mmHg or diastolic blood pressure (DBP) is 90–99 mmHg. If SBP is 130–139 mmHg or DBP is 85–89 mmHg, review BP in six months Offer pharmacotherapy simultaneously with lifestyle intervention if BP persistently over 160/100 mmHg or if family history of premature CVD or patient is of South Asian, Middle Eastern, Maori, Aboriginal, Torres Strait Islander or Pacific Islander descent (III, C)	BP every 6–12 months (III, C)	34, 38, 42 11, 36, 37, 41, 43
High risk: <ul style="list-style-type: none"> >15% absolute CVD risk Clinically determined high risk: <ul style="list-style-type: none"> diabetes and >60 years of age diabetes with microalbuminuria (>20 µg/min or urine the urine albumin-to-creatinine ratio [UACR] >2.5 mg/mmol for males, >3.5 mg/mmol for females) moderate or severe chronic kidney disease (CKD) (persistent proteinuria or estimated glomerular filtration rate [eGFR] <45 mL/min/1.73 m²) previous diagnosis of familial hypercholesterolemia (FH) SBP ≥180 mmHg or DBP ≥110 mmHg serum total cholesterol >7.5 mmol/L Aboriginal and Torres Strait Islander peoples aged >74 years Existing CVD (previous event, symptomatic CVD), stroke or transient ischaemic attacks (TIAs) or CKD 	Provide intensive lifestyle advice (II, B) Commence pharmacotherapy (simultaneously with lipid therapy unless contraindicated) Treatment goal is BP ≤140/90 mmHg in adults without CVD, or lower (SBP <120 mmHg) in some individuals who tolerate more intensive treatment, and those with CKD (I, B to III, D;* ≤130/80 mmHg in people with diabetes or microalbuminuria or macroalbuminuria UACR >2.5 mg/mmol in males and >3.5 mg/mmol in females)	BP every 6–12 weeks (III, C)	34, 43 44, 45
	Provide lifestyle risk factor counselling and commence pharmacotherapy to lower risk (I, A). There is some evidence that a treatment goal (SBP <120 mmHg) in some individuals who tolerate more intensive treatment provides additional benefit. Adverse effects need to be monitored	Every six months (III, C)	43, 46

*D recommendation for clinically determined high risk

BP, blood pressure; CKD, chronic kidney disease; CVD, cardiovascular disease; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; FH, familial hypercholesterolaemia; SBP, systolic blood pressure; TIA, transient ischaemic attack; UACR, urine albumin-to-creatinine ratio

Table 8.2.2. Hypertension: Preventive interventions

Intervention	Technique	References
Measure blood pressure (BP)	<p>Measure BP on at least two separate occasions with a calibrated mercury sphygmomanometer, or automated device that is regularly calibrated against a mercury sphygmomanometer. At the patient's first BP assessment, measure BP on both arms. Thereafter, use the arm with the higher reading. In patients who may have orthostatic hypotension (eg elderly, those with diabetes), measure BP in sitting position and repeat after the patient has been standing for at least two minutes</p> <p>If possible, use ambulatory BP monitoring or self-measurement for patients with:</p> <ul style="list-style-type: none"> • unusual variation between BP readings in the clinic • suspected white coat hypertension • hypertension that is resistant to drug treatment • suspected hypotensive episodes (eg in elderly or diabetic patients) <p>Risk calculation should be performed using clinical BP measurements (as the algorithms are based on these)</p>	34, 40 47
Lifestyle modification	<p>Lifestyle risk factors should be managed at all risk levels</p> <p>All people, regardless of their absolute cardiovascular disease (CVD) risk assessment, should be given dietary advice. Those at low to moderate absolute CVD risk should be given dietary and other lifestyle advice (refer to Chapter 7. Prevention of chronic disease)</p> <p>Advise to aim for healthy targets:</p> <ul style="list-style-type: none"> • Encourage any physical activity and aim for at least 30 minutes of moderate-intensity physical activity on most, if not all, days • Recommend smoking cessation • Suggest a target waist measurement <94 cm for men and <80 cm for women, and a body mass index (BMI) <25 kg/m² • Recommend dietary salt restriction ≤4 g/day (65 mmol/day sodium) • Encourage limiting alcohol intake to ≤2 standard drinks per day for males and ≤1 standard drink per day for females 	34, 40, 48
Medications	<p>BP treatment should aim to lower BP towards (while balancing risks and benefits):</p> <ul style="list-style-type: none"> • ≤140/90 mmHg for adults without CVD (including those with chronic kidney disease [CKD]) • ≤130/80 mmHg for adults with diabetes or with microalbuminuria or macroalbuminuria (urine albumin-to-creatinine ratio urine albumin-to-creatinine ratio [UACR] >2.5 mg/mmol for males, >3.5 mg/mmol for females) • In patients at high absolute risk there is some evidence that a lower treatment goal (systolic blood pressure [SBP] <120 mmHg) in individuals who tolerate more intensive treatment provides additional benefit. Adverse effects need to be monitored 	34, 49

BMI, body mass index; BP, blood pressure; CKD, chronic kidney disease; CVD, cardiovascular disease; SBP, systolic blood pressure; UACR, urine albumin-to-creatinine ratio

8.3 Cholesterol and other lipids

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Aboriginal and Torres Strait Islander peoples															

Adults should have their blood lipids (a fasting sample should be used when assessing elevated triglycerides [TG])⁵⁰ assessed every five years starting at 45 years of age (A for males, C for females). Lipid levels should be interpreted in the context of an absolute CVD risk assessment after 45 years of age (35 years of age for Aboriginal and Torres Strait Islander peoples; B). Aboriginal and Torres Strait Islander adults should have lipid tests performed every five years from 35 years of age (B).

Table 8.3.1. Cholesterol and lipids: Identifying risk

Who is at risk?	What should be done?	How often?	References
Low risk: <ul style="list-style-type: none"> Absolute cardiovascular disease (CVD) risk <10% 	Provide lifestyle advice (I, A)	Repeat lipids every five years*	34
Moderate risk: <ul style="list-style-type: none"> Absolute CVD risk 10–15% 	Provide intensive lifestyle advice (II, B) Consider pharmacotherapy [†] if not reaching target after six months (I, A) or if family history of premature CVD or patient is of Aboriginal or Torres Strait Islander, South Asian, Middle Eastern, Maori or Pacific Islander descent (II, C)	Repeat lipids every two years	34, 36–38, 42
High risk: <ul style="list-style-type: none"> Absolute CVD risk >15% Patient with the following clinically determined high-risk factors: <ul style="list-style-type: none"> diabetes and >60 years of age diabetes with microalbuminuria (>20 µg/min or urine albumin-to-creatinine ratio [UACR]) >2.5 mg/mmol for males, >3.5 mg/mmol for females) Chronic kidney disease (CKD); persistent microalbuminuria or stage 4 renal failure (estimated glomerular filtration rate [eGFR] <30 mL/min/1.73 m²) or stage 3a renal failure eGFR <45 mL/min/1.73 m²) previous diagnosis of familial hypercholesterolaemia Systolic blood pressure (SBP) ≥180 mmHg or diastolic blood pressure (DBP) ≥110 mmHg serum total cholesterol >7.5 mmol/L[‡] Aboriginal and Torres Strait Islander peoples aged >74 years Refer to Section 8.2. Blood pressure	Provide intensive lifestyle advice (II, C) Commence cholesterol-lowering therapy (simultaneously with antihypertensive unless contraindicated) (II, C to III, D) [§]	Every 12 months (III, C)	34, 42
<ul style="list-style-type: none"> Existing CVD (previous event, symptomatic CVD) 	Provide lifestyle risk factor counselling and commence pharmacotherapy to lower risk	Every 12 months (III, C)	51

*Lipid blood test results within five years can be used to calculate absolute CVD risk every two years. Patients with diabetes, cardiac disease, stroke, hypertension or kidney disease should have their lipids tested every 12 months (III, C)

[†]In Australia, pharmacotherapy with statins are only subsidised on the pharmaceutical benefits scheme (PBS) for limited criteria at www.pbs.gov.au/info/news/2006/09/Eligibility-cholesterol-lowering-meds

[‡]Those with low-density lipoprotein cholesterol (LDL-C) >4.0 or total cholesterol >7.5 should be reviewed for family history and clinical features of FH^{§2}

[§]D recommendation for clinically determined high risk

CKD, chronic kidney disease; CVD, cardiovascular disease; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; FH, familial hypercholesterolaemia; low-density lipoprotein cholesterol, LDL-C; PBS, Pharmaceutical Benefits Scheme; SBP, systolic blood pressure; UACR, urine albumin-to-creatinine ratio

Table 8.3.2. Cholesterol and lipids: Preventive interventions		
Intervention	Technique	References
Blood lipids	<p>Total cholesterol, low-density lipoprotein-cholesterol (LDL-C), high-density lipoprotein-cholesterol (HDL-C) and triglycerides (TGs)</p> <p>If lipid levels are abnormal, a second confirmatory sample should be taken on a separate occasion (as levels may vary between tests) before a definitive diagnosis is made. A fasting sample should be used when assessing elevated TGs</p> <p>Screening tests using capillary blood samples produce total cholesterol results that are slightly lower than on venous blood. These may be used, providing they are confirmed with full laboratory testing of venous blood for patients with elevated levels and there is good follow up</p> <p>In adults with low absolute cardiovascular disease (CVD) risk, blood test results within five years may be used for review of absolute CVD risk unless there are reasons to the contrary</p>	50, 53–55
Lifestyle modification	<p>Lifestyle risk factors should be managed at all risk levels</p> <p>All people, regardless of their absolute CVD risk level, should be given dietary advice. Those at low to moderate absolute CVD risk should be given dietary and other lifestyle advice (refer to Chapter 7. Prevention of chronic disease)</p> <p>Advise to aim for healthy targets:</p> <ul style="list-style-type: none"> • Encourage any physical activity and aim for at least 30 minutes of moderate-intensity physical activity on most, if not all, days • Recommend smoking cessation • Suggest a target waist measurement <94 cm for men and <80 cm for women, and a body mass index (BMI) <25 kg/m² • Recommend salt restriction ≤4 g/day (65 mmol/day sodium) • Encourage limiting alcohol intake to ≤2 standard drinks per day for males and ≤1 standard drink per day for females 	34, 40
Pharmacotherapy	<p>Lipid-lowering therapy for primary prevention should (while balancing risks and benefits) aim towards:</p> <ul style="list-style-type: none"> • total cholesterol <4.0 mmol/L • HDL-C ≥1.0 mmol/L • LDL-C <2.0 mmol/L • non-HDL-C <2.5 mmol/L • TG <2.0 mmol/L <p>Refer to the <i>Australian medicines handbook</i> for pharmacotherapy options</p>	34, 49

BMI, body mass index; CVD, cardiovascular disease; HDL-C, high-density lipoprotein-cholesterol; LDL-C, low-density lipoprotein-cholesterol; TG, triglyceride

8.4 Type 2 diabetes

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Aboriginal and Torres Strait Islander peoples															

Abnormal blood glucose is a modifiable risk factor for CVD and a diagnosis of diabetes substantially increases a person's absolute CVD risk score. The Australian type 2 diabetes risk assessment tool (AUSDRISK) is useful in assessing risk of diabetes. Preventive interventions (refer to Table 8.4.3) have been shown to reduce progression to diabetes in patients with impaired fasting glucose.

Patients at high risk should be screened for diabetes every three years from 40 years of age. Aboriginal and Torres Strait Islander peoples should have their risk of diabetes assessed every three years from 18 years of age. Screening should be part of a comprehensive CVD assessment including BP, lipids, smoking, physical activity, diet, overweight and obesity.

Table 8.4.1. Type 2 diabetes: Identifying risk

Who is at risk?	What should be done?	How often?	References
Increased risk: <ul style="list-style-type: none"> ≥40 years of age Aboriginal and Torres Strait Islander peoples aged ≥18 years 	AUSDRISK* (III, B)	Every three years (III, C)	56
High risk: <ul style="list-style-type: none"> ≥40 years of age and being overweight or obese (refer to Section 7.2. Overweight) AUSDRISK score of 12 or more Consider screening the following groups because they may be at increased risk for diabetes at an earlier age or lower body mass index (BMI): <ul style="list-style-type: none"> first-degree relative with diabetes high-risk race/ethnicity (Indian subcontinent or Pacific Islanders) all people with a history of a previous cardiovascular event (eg acute myocardial infarction or stroke) women with a history of gestational diabetes mellitus women with polycystic ovary syndrome patients on antipsychotic drugs Those with impaired glucose tolerance test or impaired fasting glucose (not limited by age) 	Fasting blood glucose (III, B) OR glycated haemoglobin (HbA1c)	Every three years (III, C)	57–59
	Fasting blood glucose (III, B) or HbA1c	Every 12 months (III, C)	58

*The Australian type 2 diabetes risk assessment tool (AUSDRISK) is available at www.health.gov.au/preventionoftype2diabetes

BMI, body mass index; HbA1c, glycated haemoglobin

Table 8.4.2. Tests to detect diabetes*

Test	Technique	References
Fasting blood glucose	<p>Measure plasma glucose levels on a fasting sample:</p> <ul style="list-style-type: none"> • <5.5 mmol/L: Diabetes unlikely • 5.5–6.9 mmol/L: May need to perform an oral glucose tolerance test • ≥7.0 mmol/L (>11.1 non-fasting): Diabetes likely; repeat fasting blood sugar on a separate day to confirm <p>The test should be performed on venous blood and tested in a laboratory to confirm a diagnosis</p> <p>Impaired fasting glucose is diagnosed on the basis of a result between 6.1 and 6.9 mmol/L</p>	58
Glycated haemoglobin (HbA1c)	HbA1c may be used as a diagnostic test for diabetes. HbA1c of ≥48 mmol/mol (6.5%) is diagnostic of diabetes	60, 61
Oral glucose tolerance test	Measure the plasma glucose before (fasting) and two hours after a 75 g glucose load is taken orally. Diabetes is diagnosed if fasting plasma glucose is ≥7.0 mmol/L or two-hour plasma glucose is ≥11.1 mmol/L. If the two-hour plasma glucose is between 7.8 and 11.0 mmol/L, there is impaired glucose tolerance. A two-hour result <7.8 mmol/L is considered normal	58

*Cut off levels for classifications vary by national and World Health Organization (WHO) guidelines, and are subject to change as more evidence is developed

HbA1c, glycated haemoglobin; WHO, World Health Organization

Table 8.4.3. Type 2 diabetes: Preventive interventions

Target group	Intervention	References
Impaired glucose tolerance, impaired fasting glucose and those with an elevated Australian type 2 diabetes risk assessment tool (AUSDRISK) score or with other specific high-risk factors	<ul style="list-style-type: none"> • Increasing physical activity (eg 30 minutes brisk walking five times a week) and/or weight loss reduces risk of developing diabetes by 40–60% in those at high risk • Give advice on healthy low-fat diet (<30% kcal or kilojoules from fat and <10% from saturated fat; high fibre, low glycaemic index with cereals, legumes, vegetables and fruits), weight loss and increased physical activity (refer to <i>Smoking, nutrition, alcohol, physical activity (SNAP): A population health guide to behavioural risk factors in general practice</i>, 2nd edn) • Refer patients to a dietitian and a physical activity program • Provide pre-conception advice to women with a history of gestational diabetes 	62–65

AUSDRISK, Australian type 2 diabetes risk assessment tool

The RACGP and Diabetes Australia’s publication *General practice management of type 2 diabetes – 2016–18* provides guidance for the management of patients diagnosed with T2D.

8.5 Stroke

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

GPs should be alert to symptoms of transient ischaemic attacks (TIAs) in those aged ≥ 45 years and they should assess these patients early in order to prioritise those needing urgent investigation and management. People at high risk should be questioned about symptoms of TIA to determine appropriate action. Adults with AF should have their absolute CVD risk assessed and the cause of their AF determined and treated according to cardiovascular and thromboembolic risk (II, B).

Table 8.5.1. Stroke: Identifying risk

Who is at risk?	What should be done?	How often?	References
High absolute risk: <ul style="list-style-type: none"> Calculated $>15\%$ absolute risk, clinically determined high risk or pre-existing cardiovascular disease (CVD) Previous stroke (especially with co-existent atrial fibrillation [AF] or high grade [70–99%] symptomatic carotid stenosis) Previous transient ischaemic attack (TIA) 	<p>Question about symptoms of TIA. If TIA, stratify risk of stroke and consider anticoagulation* (I, A)</p> <p>If AF, determine cause of AF and treat according to cardiovascular and thromboembolic risk (II, B)</p> <p>Manage behavioural and physiological risk factors actively. Treat with antihypertensive and lipid-lowering medications unless contraindicated or clinically inappropriate (II, B)</p>	Every 12 months (IV, C)	34, 51 66–68
Auscultation for carotid bruit	<p>Auscultating for carotid bruit in asymptomatic people is not recommended in the general adult population as a screening tool for stroke risk. Screening with duplex ultrasonography in this population is not cost-effective (yields many false positive results). In addition, the overall benefit of surgery is, at best, small; hence, very careful selection of patients is needed to justify surgery in those with severe ($>60\%$) but asymptomatic stenosis[†]</p> <p>However, the presence of a carotid bruit has been shown to be associated with increased risk of myocardial infarction and cardiovascular death, so may be a useful prognostic marker when assessing cardiovascular risk generally</p> <p>Screen patients with known asymptomatic carotid artery stenosis for other treatable causes of stroke and treat these intensively</p>		67, 69–71 67

*Anticoagulation therapy for long-term secondary prevention should be used in people with ischaemic stroke or TIA who have documented atrial fibrillation or cardio-embolic stroke

[†]Antiplatelet therapy should be considered for non-cardio-embolic stroke or TIA

AF, atrial fibrillation; CVD, cardiovascular disease; TIA, transient ischaemic attack

Table 8.5.2. Tests to detect stroke risk		
Test	Technique	References
Question about transient ischaemic attack (TIA) ABCD2 tool	<p>Question patient or carer regarding symptoms of sudden onset of loss of focal neurological function such as weakness or numbness of arms or legs, speech disturbance, double vision or vertigo</p> <p>All patients with suspected TIA should have stroke risk assessment, which may include the ABCD2 tool:</p> <ul style="list-style-type: none"> • Age: >60 years (1 point) • BP: >140/90 mmHg (1 point) • Clinical features: Unilateral weakness (2 points), speech impairment without weakness (1 point) • Duration: >60 minutes (2 points), 10–59 minutes (1 point) • Diabetes (1 point) <p>Important additional information required:</p> <ul style="list-style-type: none"> • presence of atrial fibrillation (AF) • signs that might indicate carotid disease (eg anterior circulation signs), in people who are candidates for carotid surgery • ≥2 TIAs within the previous seven days (crescendo TIA) <p>For those deemed high risk (ABCD2 tool = 4–7 and/or AF, potential carotid disease or crescendo TIA): Urgent brain and carotid imaging ('urgent' is considered immediately, but certainly within 24 hours). If carotid territory symptoms, consider duplex ultrasound for patients who are potential candidates for carotid revascularisation</p> <p>For those deemed low risk (ABCD2 tool = 0–3 without AF, potential carotid disease or crescendo TIA): Refer for computed tomography (CT) of brain (and carotid ultrasound where indicated) as soon as possible (ie within 48–72 hours)</p>	68, 72
Assess the need for anticoagulation	A decision to anticoagulate someone with AF can be assisted by stroke (CHA2DS2-VASc) and bleeding (HAS-BLED) scores	73, 74
AF, atrial fibrillation; CT, computed tomography; TIA, transient ischaemic attack		

For further information about secondary prevention after stroke or TIA, refer to <https://strokefoundation.com.au>
Also refer to Chapter 15. Screening tests of unproven benefit.

8.6 Kidney disease

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Approximately 1.7 million Australians aged >18 years have reduced kidney function and/or albumin in the urine,⁷⁵ but only 10% are aware of this.⁷⁶ CKD may be a stronger risk factor for future coronary events and all-cause mortality than diabetes.⁷⁷ Early management of CKD includes CVD risk factor reduction, lifestyle changes and prescription of angiotensin-converting-enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs).⁷⁸ Patients should be screened for kidney disease if they are at high risk (B).

Table 8.6.1. Kidney disease: Identifying risk

Who is at risk?	What should be done?	How often?	References
High risk: <ul style="list-style-type: none"> • Smoking • Obesity (body mass index [BMI] >30 kg/m²) • Family history of kidney failure • Diabetes • Hypertension • Aboriginal or Torres Strait Islander peoples aged >30 years • Established cardiovascular disease (CVD), coronary heart disease (CHD) or peripheral vascular disease (PVD) • History of acute kidney injury 	Blood pressure (BP), albumin-to-creatinine ratio (ACR) and estimated glomerular filtration rate (eGFR; III, A) If ACR is positive, arrange two further samples for urine ACR over two months (III, B) If eGFR <60 mL/min/1.73 m ² , repeat within seven days	Every one to two years* (IV, C)	79–88, 92–94 57, 88–91

*One year for patients with hypertension or diabetes

ACR, albumin-to-creatinine ratio; BMI, body mass index; BP, blood pressure; CHD, coronary heart disease; CVD, cardiovascular disease; eGFR, estimated glomerular filtration rate; PVD, peripheral vascular disease

Table 8.6.2. Tests to detect kidney disease

Test	Technique	References												
Albuminuria	<p>Estimation of urine albumin-to-creatinine ratio (UACR), preferably on a first morning void. Note: Dipstick urine test is not adequate to identify microalbuminuria</p> <p>Albumin-to-creatinine ratio (ACR)</p> <table border="1"> <thead> <tr> <th></th> <th>Females</th> <th>Males</th> </tr> </thead> <tbody> <tr> <td>Normal</td> <td><3.5 mg/mmol</td> <td><2.5 mg/mmol</td> </tr> <tr> <td>Microalbuminuria</td> <td>3.5–35 mg/mmol</td> <td>2.5–25 mg/mmol</td> </tr> <tr> <td>Macroalbuminuria</td> <td>>35 mg/mmol</td> <td>>25 mg/mmol</td> </tr> </tbody> </table>		Females	Males	Normal	<3.5 mg/mmol	<2.5 mg/mmol	Microalbuminuria	3.5–35 mg/mmol	2.5–25 mg/mmol	Macroalbuminuria	>35 mg/mmol	>25 mg/mmol	88, 90
	Females	Males												
Normal	<3.5 mg/mmol	<2.5 mg/mmol												
Microalbuminuria	3.5–35 mg/mmol	2.5–25 mg/mmol												
Macroalbuminuria	>35 mg/mmol	>25 mg/mmol												
Estimated glomerular filtration rate (eGFR)	<p>This is currently automatically reported with every test for serum creatinine using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) formula (staging is based on both eGFR level and UACR [normoalbuminuria, microalbuminuria or macroalbuminuria]):</p> <ul style="list-style-type: none"> • Stage 1: >90 mL/min/1.73 m² with microalbuminuria, proteinuria or haematuria with the presence of structural or pathological abnormalities • Stage 2: 60–89 mL/min/1.73 m² with microalbuminuria, proteinuria or haematuria with the presence of structural or pathological abnormalities • Stage 3a: 45–59 mL/min/1.73 m² • Stage 3b: 30–44 mL/min/1.73 m² • Stage 4: 15–29 mL/min/1.73 m² • Stage 5: (end-stage): <15 mL/min/1.73 m² <p>Refer patients with Stage 4 or 5 to a renal unit or nephrologist, and consider referral at Stage 3 or earlier if:</p> <ul style="list-style-type: none"> • persistent significant albuminuria (UACR ≥30 mg/mmol) • a sustained decrease in eGFR of 25% or more OR a sustained decrease in eGFR of 15 mL/min/1.73 m² within 12 months • chronic kidney disease (CKD) with hypertension that is hard to get to target despite at least three antihypertensive agents <p>Visit www.kidney.org.au/cms/uploads/docs/ckd-management-in-gp-handbook-3rd-edition.pdf</p> <p>Note: eGFR and the presence and severity of albuminuria reflects the risk of cardiovascular disease (CVD) progression and future cardiovascular events</p> <p>The eGFR may be unreliable in the following situations:</p> <ul style="list-style-type: none"> • acute changes in renal function • patients on dialysis • certain diets (eg vegetarian, high protein, recent ingestion of cooked meat) • extremes of body size • muscle diseases (may overestimate) or high muscle mass (may underestimate) • children <18 years of age • severe liver disease 	78, 89, 95												

ACR, albumin-to-creatinine ratio; CKD, chronic kidney disease; CKD-EPI, Chronic Kidney Disease Epidemiology Collaboration; CVD, cardiovascular disease; eGFR, estimated glomerular filtration rate; UACR, urine albumin-to-creatinine ratio

8.7 Atrial fibrillation

AF is the most common heart arrhythmia; it increases in incidence with age,^{96,97} affecting less than 1% of patients aged <60 years and between 5% and 15% of patients aged >80 years.⁹⁸

Systematic screening for AF is not recommended; however, opportunistic screening when taking a blood pressure or at other times appears to be cost effective.⁹⁹

References

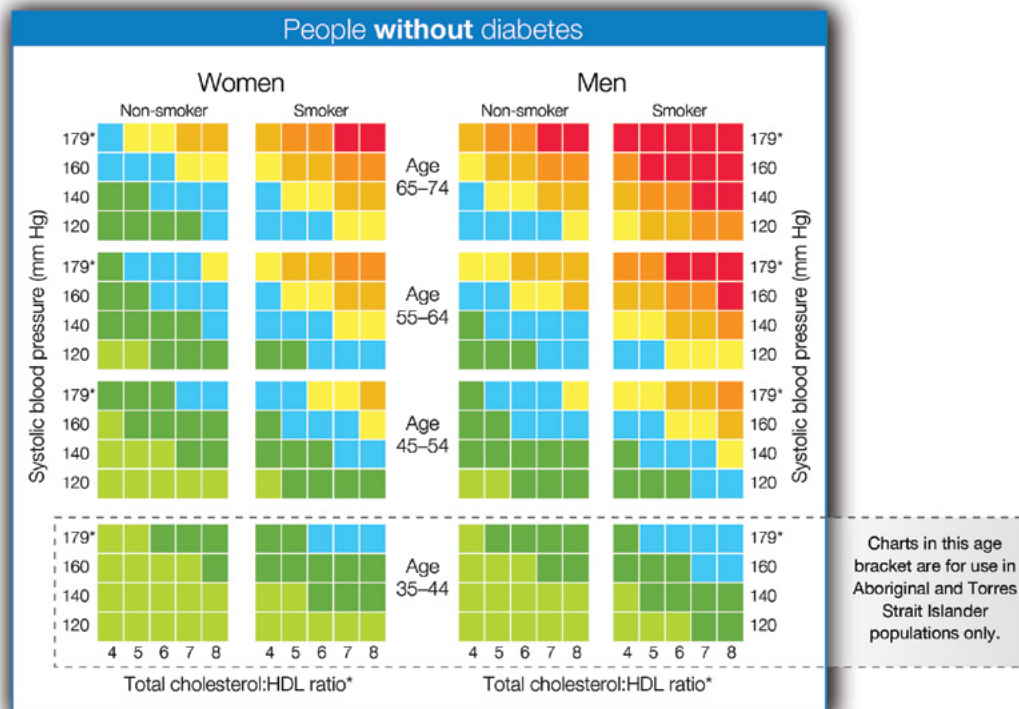
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Appendix 8A. Australian cardiovascular disease risk charts



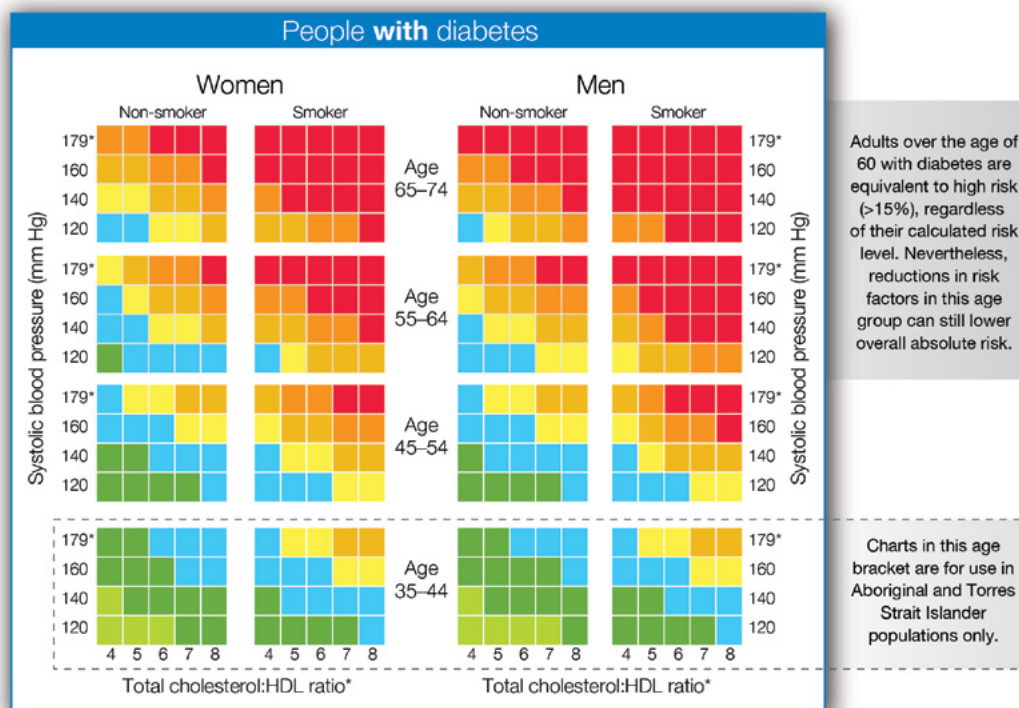
* In accordance with Australian guidelines, patients with systolic blood pressure ≥ 180 mm Hg, or a total cholesterol of >7.5 mmol/L, should be considered at clinically determined high absolute risk of CVD.

Risk level for 5-year cardiovascular (CVD) risk

High risk	Moderate risk	Low risk
≥30%	10–15%	5–9%
25–29%		< 5%
20–24%		
16–19%		

How to use the risk charts

- Identify the chart relating to the person's sex, diabetes status, smoking history and age. The charts should be used for all adults aged 45 years or over (and all Aboriginal and Torres Strait Islander adults aged 35–74 years) without known history of CVD and not already known to be at clinically determined high risk.
- Within the chart, choose the cell nearest to the person's age, systolic blood pressure (SBP) and total cholesterol (TC):HDL ratio. For example, the lower left cell contains all non-smokers without diabetes who are 34–44 years and have a TC:HDL ratio of less than 4.5 and a SBP of less than 130 mmHg.
- The colour of the cell that the person falls into provides their 5-year absolute cardiovascular risk level (see legend for risk category). People who fall exactly on a threshold between cells are placed in the cell indicating higher risk.



* In accordance with Australian guidelines, patients with systolic blood pressure ≥ 180 mm Hg, or a total cholesterol of >7.5 mmol/L, should be considered at clinically determined high absolute risk of CVD.

Risk level for 5-year cardiovascular (CVD) risk

High risk	Moderate risk	Low risk
<ul style="list-style-type: none"> $\geq 30\%$ 25-29% 20-24% 16-19% 	<ul style="list-style-type: none"> 10-15% 	<ul style="list-style-type: none"> 5-9% <5%

Notes: The risk charts include values for SBP alone as this is the most informative of conventionally measured blood pressure parameters for cardiovascular risk.

For specific groups, additional guidance includes:

The Framingham Risk Equation has not been validated for all population groups, the assessment score should be interpreted with caution in the following groups:

- The Framingham Risk Equation may **underestimate CVD risk** in Aboriginal and Torres Strait Islander peoples (EBR Grade D); adults with diabetes aged between 45 and 60 years (EBR Grade C); adults aged over 74 years (CBR), however, available evidence suggests that this approach will provide an estimate of minimum cardiovascular risk.
- The Framingham Risk Equation is likely to **underestimate CVD risk** in adults with socioeconomic deprivation (an independent risk factor for cardiovascular disease) (PP) or depression (PP).

- The predictive value of the Framingham Risk Equation **has not been specifically assessed** in adults who are overweight or obese (EBR Grade D).
- The **increased risk of cardiovascular events and all-cause mortality**, in addition to thromboembolic disease including stroke, should be taken into account for adults with atrial fibrillation (particularly those aged over 65 years) (PP).

Charts are based on the NVDPA's Guidelines for the assessment of absolute cardiovascular disease risk and adapted with permission from New Zealand Guidelines Group, *New Zealand Cardiovascular Guidelines Handbook: A Summary Resource for Primary Care Practitioners*, Second edition, Wellington, NZ: 2009. www.nzgg.org.nz.

Reproduced with permission from the National Heart Foundation of Australia from National Vascular Disease Prevention Alliance. Absolute cardiovascular disease risk management. Quick reference guide for health professionals. Melbourne: NVDPA, 2012.

9. Early detection of cancers

General practitioners (GPs) can play a key role in identifying patients who may be at increased risk of cancer, and giving tailored advice and cancer screening. There are many risk factors for cancers that GPs can explore – most are specific to each cancer.

9.1 Prostate cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Not recommended as a preventive activity															

Screening of asymptomatic (low-risk) men for prostate cancer by prostate specific antigen (PSA) testing is not recommended because the benefits have not clearly been shown to outweigh the harms.¹ This remains the case following recent large trials.¹ Therefore, GPs have no obligation to offer prostate cancer screening to asymptomatic men.

Some men may have individual concerns about prostate cancer and may put a higher value on the possible benefits of prostate cancer screening. This requires specific discussion to address the benefits and harms (from overdiagnosis and overtreatment) of prostate cancer screening.² The Royal Australian College of General Practitioners (RACGP) has produced a patient decision aid that may assist this discussion (www.racgp.org.au/your-practice/guidelines/prostate-cancer).

If after an informed process, perhaps using a decision aid, a man still requests prostate cancer screening, a PSA blood test is acceptable.³ Digital rectal examination (DRE) is no longer recommended as it is insufficiently sensitive to detect prostate cancers early enough.⁴

Clinicians should not test for asymptomatic prostate cancer (eg by adding the PSA test to a battery of other tests) without counselling about possible harms as well as possible benefits, and obtaining informed consent.

Table 9.1.1. Prostate cancer: Identifying risk

Who is at risk?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> The risk of developing prostate cancer increases with age and positive family history. However, because prostate cancer is normally slow growing, men aged >75 years or with a life expectancy of <10 years are at reduced threat of dying from a diagnosis of prostate cancer Men with uncomplicated lower urinary tract symptoms (LUTS) do not appear to have an increased risk of prostate cancer. The most common cause of LUTS is benign prostate enlargement. Early prostate cancer often does not have symptoms 	Respond to requests for screening by informing patients of risks and benefits of screening using a decision support aid (I, A)	On demand (Practice Point)	5, 6
High risk: <ul style="list-style-type: none"> Men with one or more first-degree relatives diagnosed <65 years of age Men with a first-degree relative with familial breast cancer (<i>BRCA1</i> or <i>BRCA2</i>) 	Respond to requests for screening by informing patients of risks and benefits of screening (Practice Point)	On demand (Practice Point)	5–7

LUTS, lower urinary tract symptoms

Table 9.1.2. Screening for prostate cancer in asymptomatic men

Not recommended	Justification	References
Prostate specific antigen (PSA) screening	The most common adverse effect of radical prostatectomy is erectile dysfunction, which affects most men (it is less common in younger men, those with a lower PSA, and when nerve-sparing surgical techniques are used)	4, 8–11
	Other complications are common as well, including urinary incontinence (which is very common in the months after treatment; however, this returns to normal in 75–90% men after two years, depending on treatment type). To a lesser extent, urinary irritation and bowel symptoms can occur. General feelings of ‘vitality’ are lost in about 10% of men	12
	Both suicide and cardiovascular disease (CVD) increase enormously (eight and 11 times more respectively) in the week after men are given their diagnosis of prostate cancer	13, 14
	Even diagnostic procedures performed following positive screening can be harmful, with Australian data showing that the risk of life-threatening sepsis needing intensive care admission is about 1% after biopsy	15
	Despite large trials, two meta-analysis suggests that prostate cancer screening does not save lives	
	For more information on benefits and harms, visit the <i>Clinical practice guidelines PSA testing and early management of test-detected prostate cancer</i> at http://wiki.cancer.org.au/australia/Guidelines:PSA_Testing/About_this_guideline	2, 8

CVD, cardiovascular disease; PSA, prostate specific antigen

Implementation

Strategy

Patients who request testing should be informed about the risks and benefits of tests for prostate cancer, and should be assisted to make their own decision using an acceptable decision aid.¹⁶

9.2 Colorectal cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Average risk															
High risk					10 years prior to age of onset of affected family member										

Biennial faecal occult blood test (FOBT) can reduce colorectal cancer (CRC) mortality by 16%.¹⁷ The original trials of FOBT screening used the guaiac-based FOBT, but this has been superseded by the more sensitive and specific faecal immunochemical test (ie iFOBT). Organised screening by iFOBT is recommended for the asymptomatic (average risk) population from 50 years of age every two years (A) until 74 years of age with repeated negative findings.^{18,19}

In November 2017, the National Health and Medical Research Council (NHMRC) endorsed a new national guideline on CRC prevention and screening. Screening recommendations, which used to be determined solely on lifetime risk of CRC, now also account for absolute risk of cancer in the short term.¹⁰⁹ Risk assessment should include determining the number and type of relatives affected by CRC, and age at diagnosis (refer to Table 9.2.1. Colorectal cancer: Identifying risk). The new guideline also changed the recommendations on CRC screening modality in people at moderate risk of CRC. Of note, iFOBT is now recommended for people in this group from 40–49 years of age

and colonoscopy five-yearly from 50 to 74 years of age. Digital rectal examination (DRE) is not recommended as a screening tool (D), but is important in evaluating patients who present with symptoms (eg rectal bleeding).

Colonoscopy is not recommended as a screening test for people at average risk of CRC. No randomised controlled trial (RCT) has evaluated the effect of colonoscopy on CRC mortality, although trials are in progress in Spain, Sweden and the US. Colonoscopy has indirect and direct harms, including, rarely, death from the procedure (one in 10,000–14,000 colonoscopies).^{20,21} Harm may be caused by the bowel cleanout prior to the procedure (eg dehydration, electrolyte imbalances), sedation used during the procedure (eg cardiovascular events), or the procedure itself (eg infection, colonic perforations, bleeding). There is insufficient evidence about the use of computed tomography (CT) colonography (also refer to Chapter 15. Screening tests of unproven benefit), faecal deoxyribonucleic acid (DNA) or plasma circulating DNA tests to recommend them as alternatives to iFOBT for CRC screening.²²

The 2017 NHMRC-endorsed guideline also examined an updated systematic review of trial evidence on the effects of low-dose aspirin on CRC incidence and mortality. The guideline development group considered evidence relating to the additional benefits from reduction in cardiovascular disease risk and potential adverse effects (ie haemorrhagic stroke, gastrointestinal bleeding, peptic ulcer).¹⁰⁹ Overall, it was found that the benefits of taking low-dose aspirin outweighed the harms, and the guideline recommends that aspirin should be actively considered in all people aged 50–74 years.

Table 9.2.1. Colorectal cancer: Identifying risk

Who is at risk?	What should be done?	How often?	References
Category 1 – Average or slightly increased risk (<1% 10-year risk of CRC; 95–98% of the population)			
Asymptomatic people with: <ul style="list-style-type: none"> no personal history of bowel cancer, colorectal adenomas, inflammatory bowel disease or family history of colorectal cancer (CRC) or <ul style="list-style-type: none"> one first-degree or one first-degree and one second-degree relative with CRC diagnosed aged ≥55 years 	Immunochemical faecal occult blood test (iFOBT; I, A)	Every two years from 50 to 74 years of age (Practice Point)	17, 19, 24
	Low-dose aspirin (100–300 mg daily) should be actively considered to prevent CRC*	Aspirin for at least 2.5 years commencing at 50 until 70 years of age†	
Category 2 – Moderately increased risk (1–4% 10-year risk of CRC; 2–5% of the population)			
Asymptomatic people with: <ul style="list-style-type: none"> one first-degree relative with CRC diagnosed aged <55 years or <ul style="list-style-type: none"> two first-degree relatives with colorectal cancer diagnosed at any age one first-degree relative and at least two second-degree relatives diagnosed with colorectal cancer at any age 	iFOBT	iFOBT every two years from 40 to 49 years of age	19, 25, 26
	Colonoscopy	Colonoscopy every five years from 50 to 74 years of age	
	Low-dose aspirin (100–300 mg daily) should be actively considered	Aspirin for at least 2.5 years commencing at age 50 until 70 years of age†	

Table 9.2.1. Colorectal cancer: Identifying risk

Who is at risk?	What should be done?	How often?	References
Category 3 – High risk (>4% 10-year risk of CRC; <1% of the population)[‡]			
Asymptomatic people with: <ul style="list-style-type: none"> at least three first-degree or second-degree relatives with CRC, with at least one relative diagnosed aged <55 years at least three first-degree relatives with CRC diagnosed at any age People with high-risk familial syndromes, Lynch syndrome: <ul style="list-style-type: none"> three or more first-degree or second-degree relatives on the same side of the family diagnosed with CRC or other Lynch syndrome–related cancers[§] (suspected Lynch syndrome) or <ul style="list-style-type: none"> two or more first-degree or second-degree relatives on the same side of the family diagnosed with CRC, including any of the following high-risk features <ul style="list-style-type: none"> multiple CRC in the one person CRC aged <50 years A family member who has or had Lynch syndrome–related cancer	Refer to familial cancer clinic for genetic risk assessment High-risk familial syndromes Refer to familial cancer clinic for genetic risk assessment and genetic screening of affected relatives Refer to bowel cancer specialist to plan appropriate surveillance (III, B) and dose of aspirin Familial polyposis syndromes Refer to familial cancer clinic for genetic risk assessment and genetic screening of affected relatives Refer to bowel cancer specialist to plan appropriate surveillance (III, B) and chemoprevention	iFOBT every two years from 35 to 44 years of age Colonoscopy every five years from 45 to 74 years of age Frequency and starting age of colonoscopic surveillance will be determined by specialist team Starting age and dose of aspirin will be determined by specialist team Frequency and starting age of colonic surveillance and chemoprevention will be determined by specialist team	25, 26
People with familial polyposis syndromes: <ul style="list-style-type: none"> at least one first-degree or second-degree relative with CRC, with a large number of adenomas throughout the large bowel[#] 			

*The choice to take aspirin should be personalised based on age, sex and potential reduction in cardiovascular events, cerebrovascular events and thrombotic stroke. The individual should take into account the potential risks of taking aspirin. Aspirin should be avoided in patients with current dyspepsia, any history of peptic ulcer, aspirin allergy, bleeding diathesis, an increased risk of gastrointestinal haemorrhage (eg associated with use of oral anticoagulants or antiplatelet agents), or renal impairment.

†The benefit may extend to older ages with longer duration of use. The benefit for cancer prevention (though shorter for cardiovascular risk) is evident only after 10 years of initiation, so a life expectancy of at least 10 years should be taken into consideration in the advice to use aspirin.

‡Approximately 5% of all CRCs and 10–15% of CRCs diagnosed in people aged <50 years are caused by high-risk germline mutations. Genetic knowledge is rapidly expanding and new discoveries are likely to explain cases of heritable predisposition for which a mutation cannot currently be identified. Genetic testing for familial cancer syndromes is undergoing rapid change as technology improves and costs for more extensive testing strategies drop. Testing strategies are moving towards testing a panel of genes covering all polyposis conditions, or a non-polyposis Lynch panel, or both where the phenotype is unclear.

§Lynch syndrome–related cancers include endometrial, ovarian, gastric, pancreatic, urothelial, renal pelvic, small intestine, biliary tract, brain, sebaceous gland adenomas and keratoacanthomas.

||Aspirin at 600 mg/day reduced Lynch syndrome cancer incidence by 50–68% in the Colorectal Adenoma/Carcinoma Prevention Programme 2 (CAPP2) trial.²⁷ Follow-up of the low-dose aspirin randomised controlled trials (RCTs)^{28,29} suggests low-dose aspirin (100 mg/day) also reduces cancer incidence by half. A dose–response RCT in Lynch syndrome is open for recruitment at www.capp3.org

#There are several rare polyposis syndromes, some of which are associated with other cancers (eg familial adenomatous polyposis is associated with duodenal, gastric, desmoid, brain, thyroid cancers and hepatoblastoma).

CAPP2, Colorectal Adenoma/Carcinoma Prevention Programme 2; CRC, colorectal cancer; iFOBT, immunochemical faecal occult blood test; RCT, randomised controlled trial

Patients who have adenomatous polyps removed at colonoscopy are then classified as having above-average risk for the development of metachronous adenomatous polyps and CRC. Table 9.2.2 provides advice about colonoscopic surveillance and recommended frequency based on the number and histology of polyps. It is important to try to obtain information about the histology, size and number of polyps removed, as this determines the future risk of adenomas and CRC and, therefore, frequency of recommended surveillance colonoscopy.³⁰

Table 9.2.2. Follow-up after polypectomy

Polyp type and number	Recommended colonoscopy screening interval
Small, pale, distal hyperplastic polyps only (not adenomas)	No follow-up required as no increased risk of metachronous colorectal neoplasia
One to two small tubular (<10 mm) adenomas	Repeat colonoscopy at five years If that colonoscopy is normal, repeat colonoscopy at 10 years or immunochemical faecal occult blood test (iFOBT) every two years
High-risk adenomas (three or more adenomas, ≥10 mm, or with tubulovillous or villous histology, or high-grade dysplasia)	Three-year intervals
Large and sessile adenomas removed piecemeal	Three to six months and again at 12 months to ensure complete removal
Multiple adenomas, which is a strong determinant of risk of metachronous advanced and non-advanced neoplasia: <ul style="list-style-type: none"> • ≥5 adenomas 	12 months
Multiple adenomas, which is a strong determinant of risk of metachronous advanced and non-advanced neoplasia: <ul style="list-style-type: none"> • ≥10 adenomas 	Sooner than 12 months (because of the likelihood of missed synchronous polyps)
Family history in addition to adenomas	Intervals determined by adenoma characteristics, unless a syndromic risk mandates more frequent surveillance
If advanced adenomas are found during subsequent surveillance	Three-yearly schedule is prudent, but the choice should be individualised; interval can be lengthened if advanced adenomas are not found
People aged ≥75 years	No surveillance as lead time for progression of an adenoma to cancer is approximately 10–20 years

iFOBT, immunochemical faecal occult blood test

Table 9.2.3. Test to detect colorectal cancer

Test	Technique	References
Faecal occult blood test (FOBT) screening	Two main types of FOBT are available: guaiac test and immunochemical faecal immunochemical test (iFOBT) iFOBTs are preferred as they have greater sensitivity and higher uptake (A). ³¹ Two or three serial stools should be tested, depending on the type and brand of test being used. Follow the manufacturer's instructions It is essential that any positive iFOBT (including just one of the samples) is appropriately investigated by colonoscopy (such people being at least 12 times more likely to have colorectal cancer [CRC] than those with a negative test). With guaiac tests, even if a subject fails to follow dietary restrictions, it is dangerous to assume that a positive result is a result of dietary non-compliance	31, 32

CRC, colorectal cancer; FOBT, faecal occult blood test; iFOBT, immunochemical faecal occult blood test

Implementation

Strategy

Measures to increase screening in these groups include organised approaches such as employing recall and reminder systems;^{32,33} recommendations by the GP for the screening;^{33,34} addressing capacity issues, including convenience;^{33,35} and minimising barriers such as cost.^{33,35,36} Refer to the RACGP's *Putting prevention into practice: Guidelines for the implementation of prevention in the general practice setting* (Green Book).

The National Bowel Cancer Screening Program, using iFOBT, is being expanded, and by 2020 will offer biennial screening for people aged 50–74 years. GPs are critical, not just in maximising participation but in managing participants with a positive iFOBT.^{34,37}

Participation is under-represented by Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse (CALD) peoples.³⁸

9.3 Breast cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Increasing age is a major risk factor for developing breast cancer. Other major risk factors include a personal history of atypical hyperplasia or lobular carcinoma in situ, a strong family history of the disease or mutation in a breast cancer predisposition gene, and previous radiotherapy (eg for previous cancer). Breast cancer risk factors that reflect hormonal exposures in the distant past, such as age at menarche or age at first birth, are less predictive of late-life breast cancer than factors indicating recent hormonal exposures such as high bone mass or obesity (refer to <https://canceraustralia.gov.au/clinical-best-practice/breast-cancer/breast-cancer-risk> for further information).

Breast cancer risk is not normally distributed: most women have a low (<4%) lifetime risk; and the remainder 4% to more than 80%.^{39,40}

Prevention of breast cancer

Physical activity,⁴¹ adequate folate,⁴² a Mediterranean diet,⁴³ normal BMI (in postmenopausal women only) and decreased alcohol consumption⁴⁴ are associated with a decreased risk of breast cancer in observational studies. For women at moderate (ie 1.5–3 times the population risk) or high (ie >3 times the population risk) risk, additional interventions such as risk-reducing medication⁴⁵ (moderate and high risk) and risk-reducing surgery⁴⁶ (high risk) are available. Referral to specialist genetic assessment is available for women assessed at high risk.

Screening

The screening strategy employed for an individual woman depends on her individual degree of risk. Validated tools are available that can assess an individual woman's breast cancer risk (eg International Breast Cancer Intervention Study [IBIS] tool, available at www.ems-trials.org/riskevaluator).⁴⁷ For asymptomatic, low-risk women, BreastScreen Australia recommends screening mammograms every two years for women aged 50–74 years (B).⁴⁸

The benefits of screening are obvious. However, the risks must not be forgotten: assuming that screening reduces breast cancer mortality by 15%, and that overdiagnosis and overtreatment is at 30%, then for every 2000 women invited for screening over 10 years, one will avoid dying of breast cancer and 10 healthy women, who would not have been diagnosed if there had not been screening, will be treated unnecessarily.^{49,50} An extra 200 women will experience important psychological distress including anxiety and uncertainty from false positive findings. The substantial advances in treatment, and greater breast cancer awareness since the trials were carried out, mean that presented breast cancers are detected earlier and survive better, so screening today is less effective than at

the time of the trials. Recent observational studies show more overdiagnosis than in the trials and very little or no reduction in the incidence of advanced cancers with screening.⁵¹

The decision to start screening mammogram should be an individual one. This is especially for women aged <50 years, where the benefits–harms ratio is less favourable.⁴⁸

Some points:

- Screening mammogram in women aged 40–49 years may reduce the risk of dying of breast cancer, but the number of deaths averted is much smaller than in older women, and the number of false-positive tests and unnecessary biopsies are larger (C). Some women put a higher value on the potential benefit than the potential harms, and may choose to begin screening between the ages of 40–49 years (C).⁴⁸
- For women at average risk (ie <1.5 times population risk) of breast cancer, most of the benefit of a mammogram will result from biennial screening during ages 50–74 years of age.⁴⁸
- Of all age groups, women aged 60–69 years are most likely to avoid a breast cancer death through mammogram screening (C).⁴⁸
- All women undergoing regular screening mammogram are at risk of overdiagnosis – the detection (and then treatment) of non-invasive and invasive breast cancer that would otherwise not have become a threat to their health, or even apparent, during her lifetime (C).⁴⁸
- Women with a parent, sibling, or child with breast cancer may benefit more than average-risk women from beginning screening between 40 and 49 years of age (C).⁴⁸
- Cancer Australia recommends considering annual mammograms from 40 years of age if the woman has a first-degree relative <50 years of age diagnosed with breast cancer (refer to Table 9.3.1).⁴⁸
- There is insufficient evidence to assess the balance of benefits and harms of screening mammogram in women aged >75 years (I).⁴⁸ Randomised trials of the benefits of screening mammogram did not include women >74 years of age. However observational studies favour extending screening mammogram to older women who have a life expectancy of not less than 10 years.⁵²
- There is insufficient evidence to recommend that clinical breast examination offers any benefits to women, of any age (C).⁴⁸ However, it is recommended that all women, whether or not they undergo mammogram screening, are aware of how their breasts normally look and feel, and promptly report any new or unusual changes (such as a lump, nipple changes, nipple discharge, change in skin colour, pain in a breast) to their GP. No one method for women to use when checking their breasts is recommended over another.

The recommended screening strategy for women at different individual degrees of risk is outlined in Table 9.3.1. Cancer Australia recommends that women at any age at increased risk (ie >1.5 times population risk) are offered an individualised surveillance program by their GP and/or specialist.⁵³ This might include regular clinical breast examination and breast imaging with mammography and/or ultrasound and magnetic resonance imaging (MRI). There is government funding available for MRI screening for women <50 years of age at high risk of developing breast cancer.⁵⁴

Table 9.3.1. Breast cancer: Managing risk

Who is at risk?	What should be done?	How often?	References
<p>Average or only slightly higher* risk (>95% of the female population):</p> <p>No confirmed family history of breast cancer</p> <ul style="list-style-type: none"> • One first-degree relative diagnosed with breast cancer aged ≥ 50 years • One second-degree relative diagnosed with breast cancer at any age • Two second-degree relatives on the same side of the family diagnosed with breast cancer aged ≥ 50 years • Two first-degree or second-degree relatives diagnosed with breast cancer, aged ≥ 50 years, but on different sides (ie on each side) of the family <p>As a group, risk of breast cancer up to 75 years of age is between 1:11 and 1:8</p>	<p>Clarify risk at http://canceraustralia.gov.au/clinical-best-practice/gynaecological-cancers/familial-risk-assessment-fra-boc</p> <p>Mammogram</p> <p>Breast awareness (I, A)</p>	<p>Every two years from 50 to 74 years of age</p> <p>Regular (Practice Point)</p>	55
<p>Moderately increased risk† (<4% of the female population):</p> <ul style="list-style-type: none"> • One first-degree relative diagnosed with breast cancer aged <50 years (without the additional features of the potentially high-risk group) • Two first-degree relatives, on the same side of the family, diagnosed with breast cancer (without the additional features of the potentially high-risk group) • Two second-degree relatives, on the same side of the family, diagnosed with breast cancer, at least one aged <50 years (without the additional features of the potentially high-risk group) <p>As a group, the relative risk of breast cancer up to 75 years of age is between 1:8 and 1:4</p>	<p>Clarify risk at http://canceraustralia.gov.au/clinical-best-practice/gynaecological-cancers/familial-risk-assessment-fra-boc</p> <p>Mammogram (III, C)</p> <p>Breast awareness</p> <p>Consider referral to or consultation with a family cancer clinic for further assessment and management plan</p>	<p>At least every two years from 50 to 74 years of age</p> <p>Annual mammograms from 40 years of age may be recommended if the woman has a first-degree relative aged <50 years diagnosed with breast cancer (Practice Point)</p>	55

Who is at risk?	What should be done?	How often?	References
<p>Potentially high risk[‡] or carrying a mutation (<1% of the female population):</p> <ul style="list-style-type: none"> • Women who are at potentially high risk of ovarian cancer • Two first-degree or second-degree relatives on one side of the family diagnosed with breast or ovarian cancer, plus one or more of the following features on the same side of the family: <ul style="list-style-type: none"> – additional relative(s) with breast or ovarian cancer – breast cancer diagnosed before age 40 years – bilateral breast cancer – breast and ovarian cancer in the same woman – Ashkenazi Jewish ancestry – breast cancer in a male relative • One first-degree or second-degree relative diagnosed with breast cancer aged <45 years plus another first-degree or second-degree relative on the same side of the family with sarcoma (bone/soft tissue) aged <45 years • Member of a family in which the presence of a high-risk breast cancer gene mutation has been established • Refer to the Cancer Australia guidelines at http://canceraustralia.gov.au/clinical-best-practice/gynaecological-cancers/familial-risk-assessment-fra-boc for further information <p>As a group, risk of breast cancer up to 75 years of age is between 1:2 and 1:4</p>	<p>Clarify risk at http://canceraustralia.gov.au/clinical-best-practice/gynaecological-cancers/familial-risk-assessment-fra-boc</p> <p>Advise referral to a cancer specialist or family cancer clinic for risk assessment, possible genetic testing and management plan, which might include treatment with chemo-prevention with selective oestrogen-receptor modulators (SERMs [eg tamoxifen or raloxifene] or aromatase inhibitors [AIs; eg exemestane and anastrozole]), which reduce the risk of cancer in women at moderate or high risk of breast cancer. Tamoxifen has greater efficacy (and can be used in premenopausal women), but raloxifene has fewer adverse effects</p> <p>An alternative treatment is mastectomy or salpingo-oophorectomy (which has a greater effect on ovarian cancer risk reduction), which also reduces the risk of breast cancer</p> <p>These decisions requires careful assessment of risk and benefits for individual women. Information tailored for GPs is available at https://canceraustralia.gov.au/sites/default/files/publications/rrm-risk-reducing-medication-for-women-at-increased-risk-of-breast-cancer-due-to-family-history_504af03f31630.pdf</p> <p>Ongoing surveillance strategies may include regular clinical breast examination, breast imaging with mammography, magnetic resonance imaging (MRI) or ultrasound, and consideration of ovarian cancer risk (III, C)</p>	<p>Individualised surveillance program</p> <p>This may include regular clinical breast examination, and annual breast imaging with mammography, MRI or ultrasound (Practice Point)</p>	<p>55</p> <p>46–56</p>
<p>*About 1.5 times the population average</p> <p>†About 1.5–3 times the population average</p> <p>‡More than three times the population average. Individual risk may be higher or lower if genetic test results are known</p>			

Implementation of breast cancer screening

Strategies

A systematic review of strategies for increasing the participation of women in community breast cancer screening found five favourable active strategies: letter of invitation, mailed educational material, letter of invitation plus phone call, phone call, and training activities plus direct reminders.⁵⁷

9.4 Skin cancer

Primary prevention is being 'sun smart' (refer to Table 9.4.1.2). Everyone, particularly children, should be advised to adopt protective measures when ultraviolet (UV) levels are ≥ 3 . An RCT in Queensland showed that sunscreen applied daily reduces the incidence of melanoma and squamous cell carcinoma (SCC) in adults with a previous history of skin cancer.^{58,59}

Screening of asymptomatic (low-risk) people for melanoma or non-melanocytic skin cancer (NMSC) is not recommended as there is insufficient evidence available to show that this reduces death.⁶⁰ A skin cancer screening program in one region of Germany reported temporary reductions in melanoma mortality; however, this ecological study may be subject to several biases.^{61,62}

Instead of screening, providing education that raises awareness of the early signs of skin cancer, particularly in people aged >40 years is recommended. Patients can be assessed opportunistically, or when concerned generally, or about a specific skin lesion.

9.4.1 Melanocytic skin cancer

Age	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-79	≥ 80
Advise on sun protection and prevention															
Screen increased-risk and high-risk patients															

Clinical assessment of future risk of melanoma should take into account:⁶⁰

- patient's age and sex
- history of previous melanoma or NMSC
- number of naevi (common and atypical)
- family history of melanoma
- skin and hair pigmentation
- response to sun exposure
- evidence of actinic skin damage.

There are no sufficiently well-validated risk models to assess the combined effects of all these factors.⁶³

Skin self-examination should be encouraged for high-risk individuals every three months and clinical examination every six months (B).^{63,64}

Table 9.4.1.1. Melanocytic skin cancer: Identifying risk

Who is at risk?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> • Medium/dark skin colour and no other risk factors 	Primary preventive advice (III, B)	Opportunistically	60
Increased risk: <ul style="list-style-type: none"> • Family history of melanoma in first-degree relative (relative risk [RR] = 1.7) • Fair complexion, a tendency to burn rather than tan, the presence of freckles, high naevus count (>100), light eye colour, light or red hair colour • Presence of actinic damage (RR = 2) • Past history of non-melanocytic skin cancer (NMSC) (<40 years of age higher risk) • People with childhood high levels of ultraviolet (UV) exposure and episodes of sunburn in childhood (RR = 2) 	Primary preventive advice and examination of skin (III, B)	Opportunistically	60, 65
High risk (Risk >6 times normal): <ul style="list-style-type: none"> • Previous history of melanoma (RR >10) • >5 atypical (dysplastic) naevi (RR = 6) 	Preventive advice, examination of skin (with or without photography) and advice on self-examination (III, C)	Every 6–12 months (Practice Point) Frequency of follow-up examinations for people who have had melanoma is based on disease stage	66 64

RR, relative risk; NMSC, non-melanocytic skin cancer; UV, ultraviolet

Table 9.4.1.2. Melanocytic skin cancer: Preventive interventions

Intervention	Technique	References
Sun protection advice	<p>All people (especially children aged ≤10 years) should be advised to be 'sun smart': Adopt protective measures during sun protection times (when ultraviolet [UV] levels are ≥3). These measures include use of shade; broad-brimmed, bucket or legionnaire-style hats; protective clothing; sunglasses; and sunscreens with a sun protection factor (SPF) ≥30 (which need to be reapplied every two hours)</p> <p>Sun protection times are available from the Bureau of Meteorology. Apps for Apple and Android tablets and smartphones or desktops provide real-time electronic alerts on recommended sun protection times, current and maximum UV levels, and information on recommended exposure for vitamin D. They are adjustable to specific geographic locations around Australia, and is available at www.sunsmart.com.au</p>	60, 67
Skin examination	<p>Before examining the skin, it is worth asking about any new, or changes in old skin lesions. Characteristics of suspicious naevi include asymmetry, border irregularity, variable colour (including a surrounding coloured halo) and diameter >6 mm (mnemonic 'ABCD'). Naevi that stand out from the others ('ugly duckling') are also suspicious. Nodular melanomas (with a much worse prognosis) are characteristically elevated, firm, growing over the past month (mnemonic 'EFG')</p>	60, 68–70
	<p>The 7-point checklist is an alternative method to assess pigmented skin lesions and is the only one to have been validated and shown to improve the identification of melanoma in primary care. A score of >3 is associated with an increased risk of melanoma</p> <p>Major features of the lesions (scoring 2 points each):</p> <ul style="list-style-type: none"> • change in size • irregular shape • irregular colour <p>Minor features of the lesions (scoring 1 point each):</p> <ul style="list-style-type: none"> • largest diameter 7 mm or more • inflammation • oozing • change in sensation <p>Excision biopsy or referral should be considered for lesions where there is clear suspicion of melanoma</p> <p>Training in the use of dermatoscopy and monitoring lesions for three months where there is diagnostic uncertainty can reduce excision rates of benign skin lesions while maintaining sensitivity to detect melanoma</p>	71–73
	<p>Photography aids in monitoring skin lesions by detecting changes over time, and may reduce the excision rate of benign lesions</p>	74–76
Self-examination	<p>Advise patients to be aware of the specific skin changes that suggest melanoma, be encouraged to become familiar with their skin, and be alert for new or changing skin lesions</p>	65, 77
	<p>Encourage high-risk individuals to perform self-examination, potentially with the aid of a partner or carer, especially of naevi. Those at high risk may benefit from the use of self-photography. At present, the role of 'melanoma apps' on smart phones to support self-monitoring is not advised given uncertainties about their image quality and accuracy</p>	78

SPF, sun protection factor; UV, ultraviolet

Implementation

GPs over-excise pigmented lesions in people who are younger (aged <40 years) or female, in whom they excise more benign lesions.⁷⁵ GPs should be more suspicious of skin lesions in men aged >50 years.⁷⁵

9.4.2 Non-melanocytic skin cancer (basal cell and squamous cell carcinoma)

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Prevention advice															
Opportunistic case finding															

High-risk individuals aged ≥ 40 years should be examined for NMSC opportunistically (B). Skin self-examination should be encouraged for high-risk individuals (B). The most common preventable cause of NMSC is UV exposure. All people, especially children, should be advised to use protective measures when UV levels are ≥ 3 (A).

An RCT in Queensland showed that sunscreen applied daily reduces the incidence of melanoma and SCC in adults with a previous history of skin cancer.⁵⁸ In northern Australia and some parts of southern Australia, UV exposure is sufficiently high to require daily use of sunscreen. For daily information about UV levels, visit the SunSmart widget at www.sunsmart.com.au/uv-sun-protection/uv/uv-widget

Table 9.4.2.1. Non-melanocytic skin cancer: Identifying risk

Who is at risk?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> Those with fair to lighter than olive skin colour, aged < 40 years without any risk factors 	Preventive advice (III, B)	Opportunistically	79
Increased risk: <ul style="list-style-type: none"> Fair complexion, a tendency to burn rather than tan, the presence of freckles, light eye colour, light or red hair colour Family history of skin cancer Aged > 40 years Male Presence of multiple solar keratoses People with high levels of ultraviolet (UV) exposure such as outdoor workers 	Preventive advice, educate patients to present to their GP if changes occur in a skin lesion, and examination of skin (III, B)	Opportunistically	79
High risk: <ul style="list-style-type: none"> Previous non-melanocytic skin cancer (NMSC; up to 60% of patients grow another in three years' time) Immunosuppressed (eg post-renal or heart transplant) Past exposure to arsenic 	Preventive advice, educate patients to present to their GP if changes occur in a skin lesion, examination of skin, and advice on self-examination (III, B)	If initial opportunistic assessment indicates the need. Every 12 months, or when patient develops new skin lesion (Practice Point)	80

NMSC, non-melanocytic skin cancer; UV, ultraviolet

Table 9.4.2.2. Non-melanocytic skin cancer: Preventive interventions

Intervention	Technique	References
Sun protection advice	<p>Advise all people (especially children aged ≤ 10 years) to adopt protective measures when ultraviolet (UV) levels are ≥ 3. These measures include use of shade; broad-brimmed, bucket or legionnaire-style hats; protective clothing; sunglasses; and use of sunscreen with sun protection factor (SPF) ≥ 30 (which need to be reapplied every two hours)</p> <p>Sun protection times are available from the Bureau of Meteorology. 'SunSmart' applications for Apple and Android tablets and smartphones or desktops provide real-time electronic alerts on recommended sun protection times, current and maximum UV levels, and information on recommended exposure for vitamin D. They are adjustable to specific geographic locations around Australia, and is available at www.sunsmart.com.au</p>	60, 67
Skin examination	<p>Precede skin examination by enquiring for relevant history (eg of lesions of concern to patient or recent appearance or change in any lesions in the past few months or years). Examination should identify skin lumps, ulcers or scaly patches, particularly growing, scarred or inflamed lesions. Consider incision, shave or excision biopsy for histology (or referral). There are many suitable means to treat non-melanocytic skin cancer (NMSC); these include surgery, cryotherapy, curettage and cytotoxic and immune modulating creams</p> <p>Training in the use of dermoscopy can assist in diagnosis</p>	70, 75
Self-examination	Advise patients to be alert for skin lesion changes	79

NMSC, non-melanocytic skin cancer; SPF, sun protection factor; UV, ultraviolet

9.5 Cervical cancer

Age	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-79	≥ 80

Prevention

Human papillomavirus vaccination (B)

For maximal effect, the vaccination should be given prior to the onset of sexual activity. It has no modifying effect on already acquired human papillomavirus (HPV) infections. It is available as part of the National Immunisation Program Schedule for girls and boys in year 7.^{81,82} HPV-vaccinated women still require cervical screening as the HPV vaccine does not protect against all the types of HPV that cause cervical cancer.

Screening

Australia has the lowest mortality rate and the second lowest incidence of cervical cancer in the world. The success of the cervical screening program is dependent upon the recruitment of women: 85% of women in Australia who develop cervical cancer have either not had a Papanicolaou (Pap) test or been inadequately screened in the past 10 years. Women aged >50 years are still under-screened.⁸³

Australia's National Cervical Cancer Screening Program will change from May 2017. As of that date, women aged 25–74 years, both HPV vaccinated and unvaccinated, will be invited to undertake an HPV test every five years.⁸⁴ Women of any age who have symptoms (including pain or bleeding) should have appropriate clinical assessment, which may include a cervical cytology test and an HPV test. Women between 70 and 74 years of age who have had a regular screening test will be recommended to have an exit HPV test before leaving the cervical screening program.

A comparison between the current program and the one starting in May 2017 is given in Box A. In the interim, the National Cervical Cancer Screening program continues to recommend Pap test screening every two years for women who have ever had sex and have an intact cervix, commencing from 18–20 years of age (or up to two years after first having sexual intercourse, whichever is later).⁸⁵

Box A. Comparison of the key aspects of the current national cervical screening program with that commencing from May 2017

	Current recommendations	From May 2017
Who?	Human papillomavirus (HPV) vaccinated and unvaccinated women	HPV vaccinated and unvaccinated women
What?	Pap test screening	HPV test
How often?	Every two years	Every five years
Commencing?	From 18–20 years of age (or two years after first having sexual intercourse, whichever is later)	From 25 years of age (or two years after first having sexual intercourse, whichever is later)
Ending?	At 70 years of age for women who have had two normal Papanicolaou (Pap) tests within the last five years. Women >70 years of age who have never had a Pap test, or who request a Pap test, should be screened	Between 70 and 74 years of age

HPV, human papillomavirus; Pap, Papanicolaou

Table 9.5.1. Cervical cancer: Identifying risk			
Who is at risk?	What should be done?	How often?	References
<p>Average risk:</p> <ul style="list-style-type: none"> All women who have ever been sexually active 	<p>Papanicolaou (Pap) test (III-2, B)</p>	<p>All women who have ever been sexually active should start having Pap tests between 18 and 20 years of age (or two years after first having sexual intercourse, whichever is later)</p> <p>Routine screening with Pap tests should be carried out every two years for women who have no symptoms or history suggestive of cervical pathology (Practice Point)</p> <p>Pap tests may cease at 70 years of age for women who had two normal Pap tests within the last five years. Women aged >70 years who have never had a Pap test, or who request a Pap test, should be screened</p> <p>Women with female sex partners are also at risk of developing cervical cancer and should be screened as above</p>	85
<p>Increased risk:</p> <ul style="list-style-type: none"> Persistent infection with high-risk human papillomavirus (HPV) types is necessary for the development of cervical cancer. Other risk factors include: <ul style="list-style-type: none"> immunosuppression cigarette smoking use of combined oral contraception >5 years 	<p>Pap test (Practice Point)</p>	<p>It is important to ensure the patient always receives the results of her test</p> <p>Low-grade squamous intraepithelial lesion (LSIL):</p> <ul style="list-style-type: none"> A woman with a Pap test report of possible/definite LSIL should have a repeat Pap test in 12 months (Practice Point). If the repeat test at 12 months shows LSIL (definite or possible) the woman should be referred for colposcopy A woman aged ≥30 years with a Pap test report of LSIL, without a history of negative smears in the preceding two to three years, should be offered either colposcopy or a repeat Pap test at six months (Practice Point) <p>High-grade squamous intraepithelial lesion (HSIL):</p> <ul style="list-style-type: none"> Refer for colposcopy assessment and targeted biopsy where indicated <p>Glandular abnormality or adenocarcinoma:</p> <ul style="list-style-type: none"> Refer for colposcopy by an experienced gynaecologist or gynaecological oncologist If the woman is symptomatic or if she has a clinically abnormal cervix, referral for colposcopy is recommended 	86, 87

HPV, human papillomavirus; HSIL, high-grade squamous intraepithelial lesion; LSIL, low-grade squamous intraepithelial lesion; Pap, Papanicolaou

Table 9.5.2. Tests to detect cervical cancer risk

Test	Technique	References
Papanicolaou (Pap) test	<p>A sample of the ectocervix (using an extended tip spatula) then the endocervix (using a cytobrush), provides the best method of sampling and can be used in all age groups of women (the cytobrush is not recommended for use during pregnancy)</p> <p>The cervical broom can be used on its own in premenopausal women if it is possible to sample from both sides of the transformation zone. In postmenopausal women, the transformation zone tends to be higher in the endocervical canal</p> <p>The cervical cells should be placed onto a glass slide and fixed with spray within five seconds. If the smear is reported as technically unsatisfactory, it should not be repeated before six weeks</p> <p>In postmenopausal women with atrophic changes, it may be necessary to use vaginal oestrogen for 14–21 days prior to the test. Refer to Chapter 15. Screening tests of unproven benefit regarding evidence related to bimanual vaginal examination</p>	88
Human papillomavirus (HPV) testing	<p>As a primary screening tool:</p> <ul style="list-style-type: none"> • Current national guidelines do not support the use of HPV testing as a primary screening tool. This will change from May 2017 <p>In triage of low-grade squamous intraepithelial lesion (LSIL):</p> <ul style="list-style-type: none"> • The use of HPV testing in the triage of LSIL remains under investigation and is not currently recommended by the National Cervical Cancer Screening guidelines <p>In follow-up of high-grade squamous intraepithelial lesion (HSIL):</p> <ul style="list-style-type: none"> • In women treated for HSIL, cervical cytology plus HPV testing should be performed 12 months post-treatment and annually thereafter until both tests are negative on two consecutive occasions, at which point women can return to the routine cervical screening interval 	85, 89, 90 85, 91–93
Liquid-based cytology	Liquid-based cytology can be used as an additional test to the conventional smear, but not as a substitute. Its addition may be useful when repeating an unsatisfactory smear, or added if requested by the woman	94, 95
Self-collection	If patients do not agree to undergo Pap (or HPV) testing by a clinician, they can be assisted to collect the sample themselves	84, 96

HPV, human papillomavirus; LSIL, low-grade squamous intraepithelial lesion; HSIL, high-grade squamous intraepithelial lesion

The following resources provide helpful advice:

- Recommended screening tests and the visual appearance of the cervix, www.papscreen.org.au/downloads/resources/other/cervical_sampling_card.pdf
- HPV: A guide for practitioners, www.papscreen.org.au/downloads/resources/other/hpv-a-guide-for-practitioners.pdf

Pelvic examination

Screening pelvic examinations for the detection of pathology in asymptomatic, non-pregnant, adult women is not recommended because there is no evidence of benefit.⁹⁸ Also refer to Chapter 15. Screening tests of unproven benefit.

Implementation

Strategy

Methods of encouraging women to undergo cervical screening include invitations, reminders, education, message framing, counselling, risk-factor assessment, procedures and economic interventions. Evidence supports the use of invitations and, to a lesser extent, educational materials. It is likely other methods are advantageous, but the evidence is not as strong. Further research is required.⁹⁷

9.6 Ovarian cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Not recommended as a preventive activity															

Screening in asymptomatic, low-risk women is not recommended. Screening methods for ovarian cancer employ blood tests for cancer antigen (CA) 125, or transabdominal or transvaginal ultrasound. There are three large randomised trials on ovarian cancer screening: the United States Prostate, Lung, Colorectal and Ovarian trial (PLCO), which reported in 2011;⁹⁹ the United Kingdom Collaborative Trial of Ovarian Cancer Screening (UKCTOCS) in late 2015;¹⁰⁰ and a European trial, which commenced in 2005 and has not reported yet. The UK trial found a small reduction in ovarian deaths from CA125, and transvaginal ultrasound for routine population-based screening for ovarian cancer. However, the results are regarded as preliminary, requiring confirmation and longer follow-up¹⁰⁰ and, in the meantime, the US Preventive Services Task Force (USPSTF) recommends against ovarian cancer screening.¹⁰¹

Table 9.6.1. Ovarian cancer: Identifying risk

Who is at risk?	What should be done?	How often?	References
Lower risk: <ul style="list-style-type: none"> Those who have used the oral contraception or carried a pregnancy to term (risk of about half the population average) 	No screening		102
Higher risk: <ul style="list-style-type: none"> Family history of ovarian cancer, especially first-degree relatives and more than one relative (risk of about 3 times the population average) Presence of the genes <i>BRCA1</i> or <i>BRCA2</i> 	No screening Consider increased frequency of screening for breast and colorectal cancer (CRC)		103 104

CRC, colorectal cancer

9.7 Testicular cancer

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Not recommended as a preventive activity															

There is insufficient evidence to routinely screen for testicular cancer using clinical or self-examination.^{105,106} Those performing testicular self-examination are not more likely to detect early-stage tumours or have better survival than those who do not (C).

Table 9.7.1. Testicular cancer: Identifying risk

Who is at risk?	What should be done?	How often?	References
High risk: Those with a history of cryptorchidism (relative risk [RR] = 3.5–17 above average), orchidopexy, testicular atrophy, or previous testicular cancer (RR = 25–28)	Testicular examination (Practice Point)	Opportunistically (Practice Point)	106–108

RR, relative risk

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10. Psychosocial

General practitioners (GPs) play an important role in the detection and management of mental illness, especially with prevalent conditions such as depression and anxiety, and social conditions such as intimate partner violence.¹ The prevalence of gender-based violence has been estimated at 27.4%.² In the most recent (2007) Australian National Survey of Mental Health and Wellbeing, the prevalence of any lifetime mental disorder was 45.5%, with a 12-month prevalence of 14.4% for anxiety disorders, 6.2% for affective disorders and 5.1% for substance use disorders.³ Patients, especially women, who experience underlying intimate partner violence, often present with depression and anxiety.⁴

Health inequity

What are the key equity issues and who is at risk?

- **Socioeconomic disadvantage** – The National Survey of Mental Health and Wellbeing identified that ‘the proportion of people who reported having mental problems increased as levels of socioeconomic disadvantage increased’. In 2007–08, 16% of people living in the most disadvantaged areas had a mental or behavioural problem, compared with 11% of people living in the least disadvantaged areas.³ The likelihood of depression among low socioeconomic status (SES) persons is almost double that of high SES persons (most marked for persistent depression).^{3,5–7} Anxiety and affective disorders are more common in unemployed people.^{8,9} In patients with chronic disease and disability, lower educational level and unemployment are predictive of depression.^{10,11}
 - Practices in disadvantaged areas have a higher prevalence of depression to identify and manage. Mental health services overall are used at lower rates by the socioeconomically disadvantaged, possibly related to low health literacy and stigma.^{12–14}
 - Suicide and attempted suicide are consistently associated with markers of SES disadvantage including limited educational achievement and homelessness.^{15,16}
- **Aboriginal and Torres Strait Islander peoples** – Aboriginal and Torres Strait Islander peoples are known to be at greater risk of morbidity and mortality from mental health–related conditions affecting social and emotional wellbeing. Aboriginal and Torres Strait Islander peoples are hospitalised for mental health problems at twice the rate of non-Indigenous Australians and experience twice the rate of suicide, rising to five times the rate in the 15–19 years age group.¹⁷ Very high psychological distress in Aboriginal and Torres Strait Islander communities may be related to the risk factors of chronic stress and exposure to violence, racism (including within the health system¹⁸ where all concerned have a role to ensure this does not happen), and marginalisation and dispossession.¹⁹
- **Culturally and linguistically diverse patients (CALD)** – Differences in the way depression is understood and presented may create barriers to accessing effective depression care for patients from non-English-speaking and culturally diverse backgrounds.²⁰
- **Age** – Income-related inequalities in the prevalence of psychological distress and common mental health conditions are particularly common in midlife.²¹ With advancing age, socioeconomic inequities lead to an increase in anxiety and depression. Young people with a low level of education have the greatest likelihood of experiencing chronic depression and progression from anxiety to depression. Socioeconomic disadvantage is associated with both the incidence and chronic nature of depression and anxiety symptoms in older adults.²²
- **Childbirth** – Postpartum depression and poor childbirth outcomes are associated with socioeconomic disadvantage.²³ Postpartum depression is more common in women from CALD backgrounds and these women are less likely to receive help.²⁴ Immigrant women experience many barriers to accessing high-quality, equitable care and are especially vulnerable to stress in the postpartum period, which may result in postnatal depression.^{25,26}

What can GPs do?

- Refer to the general principles of providing patient education and supporting health literacy in disadvantaged groups (refer to preamble).
- Be aware of the associated stigma of mental illness if offering opportunistic screening for depression to disadvantaged groups.
- Refer to The Royal Australian College of General Practitioners' (RACGP) *National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people* for important information on offering mental health care to Aboriginal and Torres Strait Islander patients.²⁷
- Assist women to achieve optimal postpartum health by linking them into social and medical supports, improving their health literacy and self-efficacy, and promoting positive coping strategies and realistic expectations.²⁸ Early screening and treatment of women with perinatal mental illness can alleviate symptoms and decrease comorbid disease risk.²⁹ Culturally appropriate, individual-level interventions may be important.³⁰

10.1 Depression

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79+

While there is evidence that depression screening instruments have reasonable sensitivity and specificity, the evidence for improved health outcomes and cost-effectiveness of screening for depression in primary care remains unclear. There is evidence for routine screening for depression in the general adult population in the context of staff-assisted support to the GP in providing depression care, case management and coordination (eg via practice nurses; B).³¹ There is insufficient evidence to recommend routine screening in adults or adolescents where case management and coordination is not available (C).³¹ There is insufficient evidence to recommend screening in children.³² Clinicians should maintain a high level of awareness for depressive symptoms in patients at high risk of depression and make appropriate clinical assessments wherever the risk is high.³³

Table 10.1.1. Depression: Identifying risk

Who is at risk?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> • Adult population aged ≥18 years, where no risk factors for depression are identified 	Be alert to possible depression, but do not routinely screen unless staff-assisted depression care supports are in place (C)	Opportunistically	31
Increased risk: <ul style="list-style-type: none"> • Past history of depression • Family history of depression • Other psychiatric disorders, including substance misuse • Chronic medical conditions • Unemployment • Low socioeconomic status (SES) • Older adults with significant life events (eg illness, cognitive decline, bereavement or institutional placement) • All family members who have experienced family violence • Lesbian, gay and bisexual peoples • Experience of child abuse 	Recurrent screening may be more useful in people deemed to be at higher risk of depression (B); however, in the case of people with chronic diseases (eg diabetes, heart failure, coronary heart disease), a screen-and-treat strategy for depression has not been shown to improve chronic disease symptoms nor reduce health service use Maintain a high level of clinical awareness of those at high risk of depression and consider depression when a person presents with suggestive symptoms such as low mood, insomnia, anhedonia, suicidal thoughts	Opportunistically	31 33 34 35 36

Who is at risk?	What should be done?	How often?	References
<p>Increased risk</p> <ul style="list-style-type: none"> Pregnant and postpartum women Risk factors for depression during pregnancy and postpartum include poor self-esteem, child care stress, prenatal anxiety, life stress, decreased social support, single/unpartnered relationship status, history of depression, difficult infant temperament, previous postpartum depression, lower SES, and unintended pregnancy Adolescents aged 12–18 years, particularly with: <ul style="list-style-type: none"> family history of depression deliberate self-harm comorbid mental health or chronic medical conditions experience of a major negative life event (including being bullied) 	<p>Recurrent screening may be more useful in people deemed to be at higher risk of depression (B)</p> <p>The benefits of screening alone have not been established, but screening is recommended where access to effective treatment and follow up is available</p> <p>Be alert for signs of depression in this age group (B)</p> <p>Consider use of HE²ADS³ assessment tool (refer to Practice Point m in Table 3.2)</p>	<p>Opportunistically</p> <p>At every encounter</p>	<p>31</p> <p>32, 37–39</p> <p>40, 41</p>
SES, socioeconomic status			

Table 10.1.2. Test to detect depression

Test	Technique	References
Question regarding mood and anhedonia	<p>Asking two simple questions may be as effective as longer instruments:</p> <ul style="list-style-type: none"> ‘Over the past two weeks, have you felt down, depressed or hopeless?’ ‘Over the past two weeks, have you felt little interest or pleasure in doing things?’ <p>Asking a patient if help is needed in addition to these two screening questions improves the specificity of a GP diagnosis of depression (IV)</p> <p>In adolescents, consider use of HE²ADS³ assessment tool (refer to Chapter 3. Preventive activities in children and young people)</p> <p>In women in the perinatal period, the Edinburgh Postnatal Depression Scale (EPDS) can be used to detect women requiring further assessment of possible major depression (B in the postnatal period) at www.blackdoginstitute.org.au/docs/CliniciansdownloadableEdinburgh.pdf or www.beyondblue.org.au/who-does-it-affect/pregnancy-and-early-parenthood/edinburgh-postnatal-depression-scale</p> <p>Refer to Section 10.3. Identification of intimate partner violence, as depression is a common reason for presentation in those experiencing violence</p>	<p>42</p> <p>33</p> <p>43</p>
EPDS, Edinburgh Postnatal Depression Scale		

10.2 Suicide

There is a lack of evidence for the routine screening of patients using a screening instrument (C). GPs should be alert for higher-risk individuals and the possibility of suicide in these patients. There is evidence that detecting and treating depression has a role in suicide prevention.^{44,45} For example, the incidence of suicide has decreased in older men and women in association with exposure to antidepressants.^{31,46}

Table 10.2.1. Suicide: Identifying risk

Who is at risk?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> • General population 	No routine screening for suicide (III, C)	N/A	47, 48
Increased risk: <ul style="list-style-type: none"> • Attempted suicide is a higher risk in the following factors: <ul style="list-style-type: none"> – mental illness, especially mood disorders, and alcohol and drug abuse – previous suicide attempts or deliberate self-harm – male – young people and older people – those with a recent loss or other adverse event – patients with a family history of attempted or completed suicide – Aboriginal and Torres Strait Islander peoples – widowed – living alone or in prison – chronic and terminal medical illness – in the 12 months following discharge from a psychiatric hospital – women experiencing intimate partner violence – lesbian, gay and bisexual people 	Be aware of risk factors for suicide (III, C)	Opportunistically	31, 44, 48, 49 50 51 35

Table 10.2.2. Tests to detect suicide risk

Test	Technique	References
Evaluate the risk of suicide in the presence of risk factors	<p>Assessment of risk involves enquiring into the extent of the person's suicidal thinking and intent, including the following:</p> <ul style="list-style-type: none"> • Suicidal thinking – If suicidal thinking is present, how frequent and persistent is it? • Plan – If the person has a plan, how detailed and realistic is it? • Lethality – What method has the person chosen and how lethal is it? • Means – Does the person have the means to carry out the method? • Past history – Has the person ever planned or attempted suicide? • Suicide of family member or peer – Has someone close to the person attempted or completed suicide? <p>Consideration should also be given to:</p> <ul style="list-style-type: none"> • risk and protective factors • mental state – hopelessness, despair, psychosis, agitation, shame, anger, guilt, impulsivity • substance use – current misuse of alcohol or other drugs • strengths and supports – availability, willingness and capacity of supports <p>For all patients with suicidal ideation, enquiry should be made regarding preparatory actions (eg obtaining a weapon, making a plan, putting affairs in order, giving away prized possessions, preparing a suicide note)</p>	41
Screening for psychological distress in young people	<p>The HE²ADS³ tool has questions that can assist in assessing suicide risk. For example:</p> <ul style="list-style-type: none"> • Sometimes when people feel really down, they feel like hurting or even killing themselves. Have you ever felt that way? • Have you ever deliberately harmed or injured yourself (eg cutting, burning or putting yourself in unsafe situations, such as unsafe sex)? • Do you feel sad or down more than usual? How long have you felt that way? • Have you lost interest in things you usually like? • On a scale of 1 to 10, with 1 being the worst you feel and 10 being really great and positive, how would you rate your mood today? 	40

10.3 Intimate partner violence

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Abused women use healthcare services more than non-abused women. They also identify healthcare providers as the professionals they would most trust with disclosure of abuse.⁵² Consider asking all pregnant adult and adolescent women about partner violence during antenatal care.¹ There is insufficient evidence for screening the general population;⁵³ however, there should be a low threshold for asking about abuse, particularly when the GP suspects underlying psychosocial problems.¹ Training GPs to identify violence has resulted in increased identification and referral to services.⁵⁴ Inviting women who are fearful of a partner to attend counselling by trained GPs has resulted in increased safety discussions with women and less depressive symptoms.⁵⁵ There is some evidence for the effectiveness of interventions in clinical practice to reduce partner violence.⁵⁶

Table 10.3.1. Intimate partner violence: Identifying risk			
Who is at risk?	What should be done?	How often?	References
<p>Average risk:</p> <ul style="list-style-type: none"> • Adult population aged ≥18 years, where no risk factors for intimate partner violence are identified • Adolescents aged 12–18 years, particularly with: <ul style="list-style-type: none"> – family history of violence – comorbid mental health conditions – pregnancy 	<p>Be alert to possible partner violence, but do not routinely screen (II, B)</p> <p>Consider use of HE²ADS³ assessment tool (refer to Chapter 3. Preventive activities in children and young people; III, B)</p>	<p>Opportunistically</p> <p>At every encounter</p>	<p>53</p> <p>57</p>
<p>Increased risk:</p> <ul style="list-style-type: none"> • Pregnant women • People who were abused or witnessed intimate partner violence as a child • People with psychiatric disorders, especially substance misuse • Unemployed people • People suffering poverty 	<p>Screen all pregnant women</p> <p>Maintain a high level of clinical awareness of those at high risk of intimate partner violence and consider intimate partner violence when a person presents with suggestive symptoms such as symptoms of mental ill health, chronic unexplained physical symptoms, and unexplained injuries (II, B)</p>	<p>Opportunistically</p>	<p>1, 52, 53</p>

Table 10.3.2. Tests to detect intimate partner violence		
Test	Technique	References
Ask about partner violence	<p>Victimised women stress the importance of a trusting doctor–patient relationship, confidentiality, and respectful and non-judgemental attitudes to achieving disclosure, as well as acceptance of non-disclosure and a supportive response. It is crucial for safety reasons that any questions are asked privately, when the patient is alone – not when another family member, adult or child >2 years of age is present. It is a clinician’s responsibility to ask and support women regardless of their response. Asking about abuse may ‘plant a seed’ for later action</p> <p>The World Health Organization (WHO) guidelines recommend that GPs should ask women who are ‘symptomatic’ (eg show symptoms of mental ill health, chronic unexplained physical symptoms, unexplained injuries, frequent attendance) about partner violence</p> <p>Questions and statements to make if you suspect domestic violence:</p> <ul style="list-style-type: none"> • Has your partner ever physically threatened or hurt you? • Is there a lot of tension in your relationship? How do you resolve arguments? • Sometimes partners react strongly in arguments and use physical force. Is this happening to you? • Are you afraid of your partner? • Violence is very common in the home. I ask a lot of my patients about abuse because nobody should have to live in fear of their partners 	<p>52</p> <p>1</p>

WHO, World Health Organization

These recommendations might apply to people in same-sex relationships and male victims, but there has been insufficient research in these areas.

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11. Oral health

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Good oral hygiene and a diet low in sugar help to prevent dental decay and periodontal disease, and improves oral health in children and adults. There is evidence that the use of fluoride in water, or topically, reduces dental decay in children.^{1–3} Although there is insufficient evidence to screen for oral cancer, opportunistic examination of the mouth and lips is encouraged in increased risk groups.⁴

Table 11.1. Oral health: Identifying risk of dental decay, periodontal disease and oral cancer

Who is at risk?	What should be done?	How often?	References
<p>Increased risk:</p> <ul style="list-style-type: none"> • Lower socioeconomic groups with difficulty accessing dental care • Elderly (including residential care) • Aboriginal and Torres Strait Islander peoples • Rural and remote populations • Migrant groups (especially refugees); more information is available at http://refugeehealthnetwork.org.au/category/oral-health • People with reduced saliva flow (eg head and neck radiation therapy, Sjögren syndrome, multiple drug therapy including psychotropic medications) • Smokers aged >50 years, heavy drinkers, patients chewing tobacco or betel nut • Patients exposed to excessive sunlight (lip cancer) 	<p>Examination of the mouth, teeth and lips (IV, C)</p> <p>Education regarding prevention (I, B)</p> <p>Recommendation of professional or home application of topical fluoride pastes, gels or mouth rinses (I, A)</p> <p>Opportunistic examination of the mouth and lips (Practice Point)</p>	<p>At least every 12 months (more frequent dental check-ups as determined by dentist and other dental health professionals; Practice Point)</p>	<p>5–7</p> <p>8, 9*</p>

*Oral cancer references

Table 11.2. Oral health: Preventive interventions		
Intervention	Technique	References
Education	<ul style="list-style-type: none"> • Advise about the hazards of snacks and sweetened drinks containing high levels of carbohydrate and acid between meals • Advise against the use of baby bottles with any fluid apart from water at night • Advise patients to brush teeth twice daily with fluoride toothpaste. A small pea-sized amount of low-fluoride toothpaste should be used from 18 months to 6 years of age. Encourage to spit not rinse • Advise patients that adult supervision of tooth-brushing is recommended for children until 8 years of age • Encourage home use of high-fluoride toothpastes, gels or mouth rinses for children >10 years of age and adults at high risk • Advise the use of dental floss daily to prevent gingivitis and periodontal disease • Advise the use of mouthguards for contact sports • Advise patients of the risks of smoking, chewing tobacco, excessive alcohol consumption and sunlight exposure • Recommend regular dental check ups • Additional advice can be obtained from the findings of a national consensus workshop conducted in 2011, available at www.adelaide.edu.au/arcpho/oral-health-promotion/resources/national-consensus-workshop 	<p>10, 11</p> <p>12</p> <p>13</p> <p>9</p> <p>13</p>
Oral examination	<ul style="list-style-type: none"> • Inspect mouth for dental decay, stained, worn or broken teeth, and inflamed or swollen gums • Advise pregnant women to visit a dentist for treatment of all active dental decay and periodontal disease • Inspect mouth for xerostomia (dry mouth). It may present as dry and reddened gums and increased decay rate particularly on root surfaces • 'Lift the lip' of children 0–5 years of age for early identification of oral problems (also refer to Chapter 3. Preventive activities in children and young people) • Inspect the oral cavity – buccal mucosa, gums, tongue, floor of mouth and palate (looking for white or red patches, ulceration or induration) • Examine the extra-oral areas – neck lips and facial areas – looking for lumps and swellings 	<p>14, 15</p> <p>9, 16</p>
Fluoridation	<ul style="list-style-type: none"> • Fluoridation of public water supplies has improved dental health and reduced dental decay • Approximately 90% of Australians now drink fluoridated water. Details regarding fluoride levels in Australian water supplies and recommended dosages of fluoride are provided at www.nhmrc.gov.au/health-topics/health-effects-water-fluoridation 	<p>1, 2</p> <p>17</p>

Implementation

Health inequity

Oral disease is more prevalent among low socioeconomic groups. Significant financial barriers to accessing dental care remain in Australia. People on low incomes are more likely to delay dental visits and less likely to receive appropriate dental care.¹⁸

Private dental insurance is associated with higher rates of dental care, but insurance is less common in low income groups or those in regional or remote locations. People who hold healthcare cards are less likely to receive preventive dental care and more likely to receive extractions when visiting the dentist.^{18,19} Aboriginal and Torres Strait Islander peoples are at higher risk of poor oral health.²⁰

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12. Glaucoma

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80

Glaucomas are a group of relatively common optic neuropathies, in which there is pathological loss of retinal ganglion cells, progressive loss of sight and associated alteration in the retinal nerve fibre layer and optic nerve head.

Evidence supports screening people at higher risk for glaucoma (A). General practitioners (GPs) have an important role in identifying those at increased risk for glaucoma and referring them for testing. There is no consensus on the recommended frequency of screening for at-risk groups.^{1,2}

Table 12.1. Glaucoma: Identifying risk

Who is at risk?	What should be done?	How often?	References
Increased risk: <ul style="list-style-type: none"> Family history of glaucoma (first-degree relatives) Caucasian and Asian patients aged ≥50 years Patients of African descent aged ≥40 years 	Refer for ocular examination 5–10 years earlier than the age of onset of glaucoma in the affected relative (A)	Frequency of follow up determined by the individual patient's eye assessment	1, 2
Higher risk: <ul style="list-style-type: none"> Patients aged >50 years with: <ul style="list-style-type: none"> diabetes myopia long-term steroid use migraine and peripheral vasospasm abnormal blood pressure (BP) history of eye trauma 	Refer for examination of the optic nerve head (ophthalmoscopy), measurement of intraocular pressure (tonometry) and assessment of visual fields (perimetry)*	Frequency of follow up determined by the individual patient's eye assessment	1, 2

*This may be by an ophthalmologist or optometrist
BP, blood pressure

Table 12.2. Glaucoma: Preventive interventions

Intervention	Technique	References
Patient education	Educate patients about glaucoma and alert them to associated risk factors, with advice to attend regular, fully comprehensive eye examinations	1, 2
Tonometry	Applanation or puff tonometry has poor sensitivity and specificity for early detection of glaucoma. Tonometry alone is an inadequate screening tool as it overestimates the prevalence of glaucoma	
Perimetry (visual fields)	Not advisable in general practice as only automated perimetry is sensitive for detecting loss of visual field due to glaucoma	
Assessment of eye structure (ophthalmoscopy)	Indirect ophthalmoscopy performed with a slit lamp is the examination of choice	1, 2

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13. Urinary incontinence

Age	0–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
No evidence for screening general population															

There is no evidence for screening for urinary incontinence in the general population. Instead, GPs should case-find those at higher risk (B).

Within the general population, up to 19% of children,¹ 13% of men and 37% of women may be affected by some form of urinary incontinence.² While urinary incontinence is most common in women and increases with age, bedwetting (enuresis) is common in children (5.5% of children also report daytime wetting).¹ In men, uncomplicated lower urinary tract symptoms do not appear to be associated with an increased risk of prostate cancer.³ Of those sitting in a GP waiting room, 65% of women and 30% of men report some type of urinary incontinence, yet only 31% of these people report having sought help from a health professional.⁴ Primary care professionals are in a position to take a more proactive approach to incontinence treatment by asking about urinary symptoms in at-risk groups during routine appointments. There remains considerable health decrement due to urinary incontinence in those not receiving help in a population readily accessible to primary care services.⁵

Table 13.1. Urinary incontinence: Identifying risk

Who is at higher risk of urinary incontinence?	What should be done?	How often?	References
Average risk:	There is no evidence to support screening (IV)	N/A	
Higher risk: <ul style="list-style-type: none"> • Prenatal and postnatal women • Women who have had children • Women who are overweight • Women reporting constipation • People with respiratory conditions, diabetes stroke, heart conditions, recent surgery, neurological disorders • Frail elderly people or long-term care residents 	Case finding (IV, B) Ask about the occurrence of urinary incontinence In residential aged care facilities, residents are automatically assessed	Every 12 months	2

Table 13.2. Urinary incontinence: Preventive interventions

Intervention	Technique	References
Case finding	Probing questions such as 'Other people with ... [state conditions of higher risk here] have had problems with their waterworks [bladder control] ...' Simple patient survey assessment tools have been shown to be valid and reliable (A)	6

Intervention	Technique	References
Assessment	<p>Patients with urinary incontinence should be assessed to determine the diagnostic category as well as underlying aetiology. This can usually be determined on the basis of history, physical examination, and urinary dipstick and culture, if indicated. A post-void residual may be required in the assessment of possible retention and/or overflow</p> <p>There are four common types of incontinence:</p> <ol style="list-style-type: none"> 1. Stress incontinence is the leaking of urine that may occur during exercise, coughing, sneezing, laughing, walking, lifting or playing sport. This is more common in women, although it also occurs in men, especially after prostate surgery. Pregnancy, childbirth and menopause are the main contributors 2. Urge incontinence is a sudden and strong need to urinate. It is often associated with frequency and nocturia, and is often due to having an over-active or unstable bladder, neurological condition, constipation, enlarged prostate or history of poor bladder habits 3. Mixed incontinence is a combination of stress and urge incontinence, and is most common in older women 4. Overflow incontinence as a result of bladder outflow obstruction or injury. Its symptoms may be confused with stress incontinence <p>Because treatments differ, urge incontinence should be distinguished from stress incontinence (A)</p> <p>To make this distinction, the International Continence Society guidelines recommend an extensive evaluation that is too time-consuming for primary care practice</p> <p>However, the 3 Incontinence Questions (3IQ) questionnaire is a simple, quick, and non-invasive test with acceptable accuracy for classifying urge and stress incontinence, and may be appropriate for use in primary care settings (A). The questionnaire is provided in Appendix 13A</p>	<p>7</p> <p>8, 9</p>

The Continence Foundation of Australia (CFA) has a helpline available for consumers and healthcare professionals at 1800 33 00 66. Consumers can ask for specific help or for contact details of their nearest continence professional. The CFA website has many evidence-based resources available for consumers at www.continence.org.au/resources.php

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Appendix 13A. The 3 Incontinence Questions (3IQ)

1. During the last three months, have you leaked urine (even a small amount)?
 Yes No → Questionnaire completed.
2. During the last three months, did you leak urine (check all that apply):
 - a. When you were performing some physical activity, such as coughing, sneezing, lifting, or exercise?
 - b. When you had the urge or feeling that you needed to empty your bladder, but you could not get to the toilet fast enough?
 - c. Without physical activity and without a sense of urgency?
3. During the last three months, did you leak urine most often (check only one):
 - a. When you are performing some physical activities, such as coughing, sneezing, lifting, or exercise?
 - b. When you had the urge or feeling that you needed to empty your bladder, but you could not get to the toilet fast enough?
 - c. Without physical activity or a sense of urgency?
 - d. About equally as often with physical activities as with a sense of urgency?

Definitions of the type of urinary incontinence are based on responses to Question 3

Response to question 3	Type of incontinence
a. Most often with physical activity	Stress only or stress predominant
b. Most often with the urge to empty the bladder	Urge only or urge predominant
c. Without physical activity or sense of urgency	Other cause only or other cause predominant
d. About equally with physical activity and sense of urgency	Mixed

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14. Osteoporosis

Age	0–9	10–14	20–24	15–19	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79	≥80
Women															
Men															

The goal of the prevention and treatment of osteoporosis is to reduce a person’s overall fracture risk, not just to maintain bone density.

Review of fracture risk factors for postmenopausal women aged >45 years and men aged >50 years is recommended (Practice Point). Those with increased risk should have bone density assessed (Practice Point).

Osteoporosis is a disease characterised by low bone mass and micro-architectural deterioration of bone tissue, leading to bone fragility and increased fracture risk.¹ It is diagnosed on the presence of a fragility fracture (fracture from the equivalent of a fall from standing height or less, or a fracture that under normal circumstances would not be expected in a healthy young man or woman). For epidemiological and clinical purposes, osteoporosis is defined by bone mineral density (BMD) as a T-score of ≤ -2.5 . However, age, lifestyle factors, family history, and some medications and diseases contribute to bone loss and increased risk of fragility fractures. Furthermore, it is important to note that in an individual who has sustained a fragility fracture, a T-score of ≤ -2.5 is not also required to make the diagnosis of osteoporosis, the presence of a fragile fracture is sufficient. Thus, the goal of prevention and treatment is to reduce a person’s overall fracture risk (not just maintain bone density).

Two of the most widely validated methods to estimate absolute fracture risk for osteoporotic fractures relevant to the Australian population are available at:

- www.shef.ac.uk/FRAX
- www.garvan.org.au/promotions/bone-fracture-risk/calculator

These calculators can be used with and without measuring BMD, though the Garvan fracture risk calculator has not been validated in an external cohort when BMD has not been used in the calculator.² Risk estimation is imperfect, with the tools being modest predictors of fracture risk.^{3,4} Risk factors (eg falls, glucocorticoid use) not included in one or the other risk algorithm require clinical judgement to modify the risk estimate.

To date, there are no randomised controlled trials (RCTs) directly evaluating screening effectiveness, harms and intervals, and whether screening is performed by bone density screening by dual-energy X-ray absorptiometry (DXA) or by estimating absolute fracture risk.⁴ The place of absolute fracture risk assessment in the prevention and management of osteoporosis requires further clarification as its effectiveness is yet to be tested.

Table 14.1. Osteoporosis: Identifying risk

Who is at risk?	What should be done?	How often?	References
Average risk: <ul style="list-style-type: none"> • Postmenopausal women (aged ≥ 45 years) • Men aged ≥ 50 years 	Clinical assessment for risk factors (Practice Point) Preventive advice (II, C)	Every 12 months (Practice Point)	1, 3, 5
Increased risk: <ul style="list-style-type: none"> • Aged >60 years for men and >50 years for women plus any of: <ul style="list-style-type: none"> – family history of fragility fracture – smoking – high alcohol intake (>4 standard drinks per day for men and >2 for women) – vitamin D deficiency <50 nmol (screening for vitamin D not indicated just for risk assessment)* – low body weight (body mass index [BMI] <20 kg/m²) – recurrent falls – low levels of physical activity† – immobility (to the extent that person cannot leave their home or cannot do any housework) • Medical conditions and medications that may cause secondary osteoporosis including: <ul style="list-style-type: none"> – endocrine disorders (eg hypogonadism, Cushing syndrome, hyperparathyroidism, hyperthyroidism) – premature menopause – anorexia nervosa or amenorrhea for >12 months (unrelated to pregnancy) before 45 years of age – inflammatory conditions (eg rheumatoid arthritis) – malabsorption (eg coeliac disease) – chronic kidney or liver disease – multiple myeloma and monoclonal gammopathies – human immunodeficiency virus (HIV) and its treatment – Type 1 and type 2 diabetes mellitus – drugs, especially corticosteroids (eg 7.5 mg for >3 months) used for immunosuppression including as part of chronic anti-rejection therapy in organ or bone marrow transplant, anti-epileptic, aromatase inhibitors, anti-androgen, excessive thyroxine, possibly selective serotonin reuptake inhibitors (SSRIs) 	Dual X-ray absorptiometry (DXA) to measure bone mineral density (BMD) and management of risk factors (II, A to III, D depending on risk factor) Investigate for causes of secondary osteoporosis if indicated by history, examination findings or BMD result (Practice Point)	The optimal timing of repeated DXA for screening is unknown but is likely to vary depending on baseline BMD Women with baseline T-score >-1.0 may take longer than 15 years to transition to osteoporosis Repeat only when it is likely to change management (II, C) Where there is a specific condition or medication present likely to lead to accelerated bone loss (eg corticosteroid use [refer to causes of secondary osteoporosis]), consider more frequent repeat of DXA (Practice Point)	3, 5–8

Who is at risk?	What should be done?	How often?	References
<p>High risk of further fracture:</p> <ul style="list-style-type: none"> • Patients aged >45 years who have sustained a low-trauma fracture • Postmenopausal women, and older men with a vertebral fracture. Such fractures should be ruled out if clinically suspected (eg from loss of height >3 cm, kyphosis, back pain) 	<p>DXA to measure BMD and management of risk factors (II, A)</p> <p>Investigate for causes of secondary osteoporosis if indicated by history, examination findings or BMD result (Practice Point)</p> <p>Recommend that such individuals are initiated on effective anti-osteoporosis therapy unless there are specific contraindications</p>	<p>DXA at presentation and no more than every two years (II, B).</p> <p>It is appropriate to recommend a repeat BMD by DXA after two years for patients at risk of developing osteoporosis, to assist in re-evaluation of fracture risk</p> <p>In patients with confirmed osteoporosis, repeat BMD is generally not required; however, it may be conducted before initiating a change in, or cessation of, anti-osteoporotic therapy (Practice Point)</p> <p>Where there is a specific condition or medication present likely to lead to accelerated bone loss (eg corticosteroid use [refer to causes of secondary osteoporosis]), consider more frequent repeat of DXA (Practice Point)</p>	<p>1</p>

*Assessment of the potential clinical importance of a given serum vitamin D level should take into consideration the season in which the test was done, as levels in an individual will be higher from late spring to autumn than in winter to early spring^{6,9} (Practice Point)

†There is no accepted cut-off or standard definition for defining low levels of physical activity as a risk factor for osteoporosis. Those at risk would include people with higher levels of sedentary behaviour, (eg those who participate in no recreational exercise,¹⁰ or who are sitting and lying for more than 20 hours per day).¹¹ It also includes those who perform relatively low levels of weight bearing physical activity (eg people who walk less than 60 minutes per day,¹¹ less than 12 km per week,¹² or do not walk for exercise)¹⁰

BMD, bone mineral density; BMI, body mass index; DXA, dual X-ray absorptiometry; HIV, human immunodeficiency virus; SSRI, selective serotonin reuptake inhibitor

Table 14.2. Osteoporosis: Preventive interventions

Intervention	Technique	References
Assessment of risk factors	Take a thorough history, paying particular attention to the risk factors above plus: <ul style="list-style-type: none"> • vertebral deformity (if has occurred within 5–10 years, this creates an equivalent risk to any other fragility fracture) • loss of height (>3 cm) and/or thoracic kyphosis (consider lateral spine X-ray for vertebral deformity) 	
Preventive actions	Encourage a daily dietary calcium intake that meets the age-appropriate Australian recommended daily intake (1000 mg for adult men until 70 years of age and women until 50 years of age, 1300 mg after this age; prevention of bone loss [I, A] but not for fracture prevention [III-2, D]) Encourage healthy lifestyle (eg smoking cessation and limiting alcohol intake) (D) Education and psychosocial support for risk factor modification (Practice Point) Falls reduction strategies: Falls (I, A), and fracture risk reduction (Practice Point) Encourage regular weight-bearing and resistance exercise for the prevention of falls (I, A), bone loss (I, A) and fracture risk reduction (I, C) Advise on appropriate sun exposure levels (which minimise the risk of skin cancer) as a source of vitamin D (II, C)* Discuss absolute risk of fracture (Practice Point)	13–19
Bone mineral densitometry (BMD)	BMD should be measured by dual X-ray absorptiometry (DXA) scanning performed on two sites, preferably antero-posterior spine and hip. Without bone-losing medical conditions (eg hypogonadism, anti-gonadal therapy or corticosteroid use), BMD is unlikely to change significantly in <2 years (II, B) DXA should generally be repeated only when patient is at risk of reaching treatment thresholds (average decrease in T-score is usually approximately 0.1/year if no specific bone-losing medical conditions; Practice Point)	8, 20

*Population screening for vitamin D deficiency is not recommended, but targeted testing of people who are at risk of osteoporosis and/or who are at high risk of vitamin D deficiency should be considered. Vitamin D supplements could be considered in deficient individuals if increasing sun exposure is contraindicated or not feasible or if deficiency is more than mild (ie <30 nmol/L) and so is less likely to be corrected by low-risk levels of sun exposure²¹ (Practice Point)

BMD, bone mineral density; DXA, dual X-ray absorptiometry

Quantitative ultrasound

An alternative imaging technique for assessing fracture risk is quantitative ultrasound, which measures parameters such as speed of sound (SOS) and broadband ultrasound attenuation (BUA), with these values being combined into composite parameters such as stiffness index. These parameters predict fracture to a similar degree as DXA measures of BMD. However, there is no agreed definition of osteoporosis using quantitative ultrasound, and it cannot be used to assess the response to osteoporosis treatment.²² Moreover, intervention trials have predominantly been based on cases identified through DXA assessment, so their results cannot readily be applied to individuals identified by other means.^{1,3} For this reason, DXA remains the recommended method of assessment.

Implementation

Several Australian studies have shown an evidence–practice gap, where the majority of people with a fragility fracture tend to have their fracture treated, but not the underlying osteoporosis.^{23,24} Those with a previous fragility fracture have a very high risk of further fracture, and have greatest benefit from specific anti-osteoporosis treatment. Fracture risk reductions with optimal therapy are substantial and treatment according to current guidelines is recommended unless absolutely contraindicated. This is unlikely given the range of treatments now available. Optimal treatment necessitates the use of a specific anti-osteoporosis treatment such as a bisphosphonate, but also includes ensuring adequate calcium intake and correcting vitamin D deficiency.

There are inequities in the use of BMD measurement with relative underuse in men and people from rural and remote locations.²⁵

There is insufficient evidence to support population screening of younger women by DXA. However, if a DXA is performed for a clinical indication, the results could be used opportunistically to improve bone health via feedback of relative fracture risk. In women aged 25–45 years, written feedback of being at high risk compared to not at high risk of fracture in later life (based on mean DXA hip and lumbar spine T-score being less than or greater than or equal or zero) resulted in improved osteoporosis preventive behaviours and femoral neck BMD at two²⁶ and 12 years.²⁷

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15. Screening tests of unproven benefit

The following are not recommended as screening tests in low-risk or asymptomatic general practice populations. These tests may have a separate value as diagnostic tests or as tests to monitor disease progression.

Table 15.1. Screening tests not recommended in low-risk general practice populations			
Screening test	Condition	Reason not to use	References
Genomic sequencing	Genetic risk	Limited evidence on the balance of benefits and harms, ethical issues and uncertain utility in an asymptomatic adult	1–5
Genetic testing – methylenetetrahydrofolate reductase (MTHFR)	Venous thrombo-embolism	The MTHFR test has minimum clinical utility and is not recommended in the evaluation of thrombophilia, recurrent pregnancy loss, or assessment of risk of coronary artery disease or any other condition	6
Genetic testing – apolipoprotein E (ApoE)	Alzheimer's disease	ApoE testing is not recommended to assess risk of Alzheimer's disease due to its poor predictive value and the lack of preventive options	6
Vascular			
Coronary computed tomography angiography* (CCTA)	Coronary artery disease (CAD)	No randomised controlled trial (RCT) evidence. RCTs of therapy show no effect on coronary artery progression May be of benefit in those at moderate risk of CAD – but not in: <ul style="list-style-type: none"> • asymptomatic persons • subjects with known significant CAD • subjects with a high pre-test probability of CAD 	7–11
Computed tomography (CT) calcium scoring†	Coronary heart disease (CHD)	Usually not appropriate in a low-risk asymptomatic population, but may be of possible value in risk reclassification in those at moderate risk	8, 9, 11–13
Serum homocysteine	CHD	Value as a risk factor for CHD is uncertain and published RCTs show no evidence of benefit by lowering levels	14–18
Exercise electrocardiogram (ECG)	CHD	Low yield and high false-positive rate given low prevalence in asymptomatic population	14, 19–22
High sensitivity C-reactive protein (hsCRP)	Cardiovascular disease (CVD)	Insufficient evidence to support the role of hsCRP in preventive screening of asymptomatic patients	14, 22–29
Ankle:brachial index (ABI)	Peripheral vascular disease	Current evidence is insufficient to assess benefits and costs of using ABI to screen for peripheral vascular disease	28, 30–37

Screening test	Condition	Reason not to use	References
Carotid artery ultrasound	Asymptomatic carotid artery stenosis	<p>It is no longer justifiable to screen for the presence of asymptomatic carotid artery stenosis to select patients for carotid procedures. There is no current evidence of patient benefit. However, there is evidence of harms from screening, including significant procedural risk and cost</p> <p>Carotid stenting cannot be recommended because it causes about twice as many strokes or deaths as carotid endarterectomy (CEA), a risk that is not offset by the CEA risk of myocardial infarction</p> <p>Also, asymptomatic carotid artery stenosis patients with particularly high ipsilateral stroke risk who benefit from CEA, in addition to current optimal medical treatment alone, have not been identified. Evidence is insufficient to allow reliable risk stratification. For example, degree of stenosis within the 50–99% range, asymptomatic stenosis progression, plaque echolucency and transcranial Doppler embolus detection are not specific enough to identify patients likely to benefit from CEA</p> <p>A research priority is to find out if screening to detect asymptomatic carotid artery stenosis improves medical treatment and patient outcomes over screening for, and optimal treatment of, other established vascular risk factors</p>	38–43
Cancer			
Magnetic resonance imaging (MRI)	Breast cancer	<p>Ongoing surveillance strategies for women at high risk of breast cancer may include imaging with MRI. A Medicare rebate is available for MRI scans for asymptomatic women <50 years of age at high risk of breast cancer</p> <p>There is no evidence for MRI as a stand-alone screening test for women at average risk of breast cancer</p>	44–51
Thermography	Breast cancer	Thermography is associated with high false-positive and false-negative rates. There is insufficient evidence to support the use of thermography in breast cancer screening or as an adjunctive tool to mammography	52, 53
Single nucleotide polymorphism (SNP) testing	Breast cancer	<p>Use of a SNP-based breast cancer risk assessment test should only be undertaken after an in-depth discussion led by a clinical professional familiar with the implications of genetic risk assessment and testing, including the potential insurance implications</p> <p>Genetic testing should be offered only with pre-test and post-test counselling to discuss the limitations, potential benefits, and possible consequences</p>	46, 54–56

Screening test	Condition	Reason not to use	References
Cancer antigen (CA)125/ transvaginal ultrasound	Ovarian cancer	<p>There is no evidence to support the use of any test – including pelvic examination, CA125, or other biomarkers, ultrasound (including transvaginal ultrasound), or combination of tests – for routine population-based screening for ovarian cancer</p> <p>CA125 is limited by poor sensitivity in early-stage disease and low specificity. The specificity of transvaginal ultrasound is low. The low prevalence of ovarian cancer means that even screening tests that have very high sensitivity and specificity have a low positive predictive value for disease detection</p> <p>The recently reported UK Collaborative Trial of Ovarian Cancer Screening (UKCTOCS) trial of transvaginal ultrasound +/- CA125 found no significant difference in mortality over 0–14 years</p> <p>Secondary analyses suggest a possible benefit of screening using transvaginal ultrasound and CA125, but further follow-up is needed before firm conclusions can be reached on the long-term efficacy and cost-effectiveness of ovarian cancer screening</p>	46, 57–61
Optical colonoscopy or computed tomography (CT) colonography [†]	Colorectal cancer (CRC)	<p>These have good sensitivity for cancer and advanced polyps, and are more acceptable than colonoscopy, but there is no current evidence of the reduction of CRC mortality. There are several trials under way to assess effectiveness and cost effectiveness of this as a screening strategy</p> <p>Neither optical colonoscopy nor CT colonography are recommended for primary screening because there is no current RCT evidence of effectiveness in relation to any harms</p>	62–69
Whole-body CT or MRI	Cancer	Whole-body imaging has not been shown to improve quality of life and/or decrease mortality. It is associated with additional radiation exposure and a high number of false positive results. There are no RCTs of whole-body imaging to detect cancer or CVD	70–77
Lung disease			
Spirometry	Chronic obstructive pulmonary disease (COPD)	<p>Screening with spirometry in the absence of symptoms has no net benefit</p> <p>Opportunistic case-finding should be considered in high-risk individuals. These include those aged >40 years, plus either:</p> <ul style="list-style-type: none"> • symptoms (chronic cough, increased sputum production, wheezing or dyspnoea) • history of exposure to relevant environmental factors such as cigarette smoke <p>Several questionnaires[§] are useful and if positive, should be followed by spirometry by a trained professional (consensus statement)</p>	78–83

Screening test	Condition	Reason not to use	References
Endocrine			
Thyroid function tests	Thyroid dysfunction	<p>Despite the relatively high incidence of subclinical hypothyroidism in older women (up to 17%), there is a lack of convincing data from controlled trials that early treatment reduces lipid levels, symptoms or the risk for CVD in patients with mild thyroid dysfunction detected by screening</p> <p>There is no evidence supporting an increased risk for stroke associated with subclinical thyroid dysfunction</p> <p>More research is needed to determine the clinical benefits associated with thyroid screening</p>	84–89
Chronic disease prevention			
Vitamin D	Vitamin D deficiency	Current evidence is insufficient to assess the balance of benefits and harms of screening for vitamin D deficiency in asymptomatic adults	90–97
Heel ultrasound	Osteoporosis	While there is some evidence that heel ultrasound in combination with femoral neck bone densitometry better predicts hip fracture, there are no RCTs showing any benefit of using heel ultrasound as the primary screening tool for osteoporosis, nor is its usefulness as a pre-screening tool in tandem with dual-energy X-ray absorptiometry (DXA) proven	98–103
Infection			
Mid-stream urine (MSU) culture	Asymptomatic bacteriuria (elderly)	Identifying and treating non-pregnant adults with asymptomatic bacteriuria does not improve outcomes and may increase antibiotic resistance. The only two exceptions to this are pregnancy and a patient who is about to undergo a urological procedure	104, 105
Other tests			
Enquiry about sleep	Obstructive sleep apnoea (OSA)	<p>The prevalence of undiagnosed OSA is high and it is associated with considerable morbidity. While there are some screening tools that are available, there are no large-scale RCTs showing the benefit or cost-benefit of routine screening for OSA in primary care</p> <p>Case-finding for OSA may be beneficial in commercial vehicle drivers and pilots, but it has not been mandated by any government authority</p>	106–109
Bimanual pelvic exam	During a routine Papanicolaou (Pap) test in an asymptomatic woman	<p>A bimanual examination performed as part of routine Pap smear examination is of no proven benefit, but studies are limited</p> <p>It has been shown to be not an effective screening method for ovarian cancer detection</p>	110–113

*CCTA involves the use of multi-slice CT and intravenously administered contrast material to obtain detailed images of the blood vessels of the heart. It has been used as an alternative to conventional invasive coronary angiography for evaluating CAD and coronary artery anomalies. CCTA requires high doses of ionizing radiation, with an average dose of 8.1 millisieverts for patients weighing 75 kg. This dose is approximately two to three times higher than the average radiation dose administered to patients during conventional coronary angiography

†CT calcium scoring (also known as Coronary Calcium Scan and Coronary Artery Calcium Scoring). A good summary on CT calcium score can be found at www.aetna.com/cpb/medical/data/200_299/0228.html [Accessed 26 May 2016]

‡There are no current Medicare Benefits Schedule (MBS) rebates for performing cardiac CT in asymptomatic individuals.

§Refer to the Lung Foundation website at <http://lungfoundation.com.au/health-professionals/clinical-resources/copd/targeted-copd-case-finding-using-copd-screening-devices-in-the-community>

ABI, ankle:brachial index; ApoE, apolipoprotein E; CA, cancer antigen; CAD, coronary artery disease; CCTA, coronary computed tomography angiography; CEA, carotid endarterectomy; CHD, coronary heart disease; CT, computed tomography; CVD, cardiovascular disease; DXA, dual-energy X-ray absorptiometry; hsCRP, high sensitivity C-reactive protein; MBS, Medicare Benefits Schedule; MRI, magnetic resonance imaging; MSU, mid-stream urine; MTHFR, methylenetetrahydrofolate; OSA, obstructive sleep apnoea; Pap, Papanicolaou; RCT, randomised controlled trial; SNP, single nucleotide polymorphism; UKCTOCS, UK Collaborative Trial of Ovarian Cancer Screening

Table 15.2. Screening tests of indeterminate value

Screening test	Condition	Reason not to use	References
Vitamin D	Pregnancy	<p>Pregnant women with one or more risk factors for low vitamin D levels should have their serum 25-hydroxy vitamin D levels measured at their first antenatal visit</p> <p>Risk factors for low vitamin D levels are lack of skin exposure to sunlight, dark skin, southerly latitude, conditions affecting vitamin D metabolism and storage (including obesity) and, for infants, being born to a mother with low vitamin D levels and exclusive breastfeeding combined with at least one other risk factor.</p>	92, 114–17
Vascular			
Ultrasound	Abdominal aortic aneurysm (AAA)	<p>National screening of men aged 65 years has been successfully introduced in the UK and parts of Scandinavia for AAA. However, it is unclear what the impact of the lower-than-expected prevalence (<2%) of AAAs will be on the long-term benefit</p> <p>The US Preventive Services Task Force (USPSTF) recommends screening of older male smokers. Limiting screening to this sub-group has raised some ethical issues and may influence cost-effectiveness</p> <p>Unpublished recent data from the Western Australian trial of screening for AAA suggests that the magnitude of the benefit from screening men aged ≥65 years does not warrant the introduction of a national AAA screening program in Australia at this stage</p>	118–23

Screening test	Condition	Reason not to use	References
B-type natriuretic peptide (BNP)	Congestive cardiac failure	The evidence for screening for heart failure using BNP is mixed despite its sensitivity and prognostic significance. It may be useful in excluding the condition in suspected heart failure. A recent, pragmatic, unblinded randomised controlled trial (RCT) has shown some benefit for BNP screening in high-risk groups, but large scale trials are needed to confirm these findings and establish feasibility and cost effectiveness	25, 124–30
Cancer			
Low-dose chest computed tomography	Lung cancer	A large trial in the US has shown that patients selected for high lung cancer risk have reduced lung cancer and total mortality within a carefully conducted LDCT screening program in the context of a structured program of selection, screening, evaluation, and management of the relatively high number of benign abnormalities Performing CT scans in high-risk individuals outside well-designed and conducted research programs may lack any benefit and may be harmful. Low-risk persons should not have screening CT as the reasonably foreseeable benefits are lower and may be substantially outweighed by harms. More accurate data on the identification of the appropriate target group including the threshold for absolute lung cancer risk, are required before any recommendation on LDCT	131–38
Positron emission tomography – computed tomography (or PET CT scan)	Lung cancer	There is no current evidence of benefit for PET screening for lung cancer	135, 139, 140
Elderly			
Visual acuity	Visual impairment	Current evidence is insufficient to assess the balance of benefits and harms of screening for impaired visual acuity in older adults	141–43
AAA, abdominal aortic aneurysm; BNP, B-type natriuretic peptide; LDCT, low-dose computed tomography; PET, positron emission tomography; RCT, randomised controlled trial ; USPSTF, US Preventive Services Task Force			

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Preventive activities over the lifecycle – Adults

Patient name: _____ Date of birth: _____ Date: _____

Activity/topic	Frequency	Notes	Reference	Age group											
				15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–79
Prevention of chronic disease															
Smoking	Opportunistically	It would be ideal to offer smoking cessation advice at every visit for those at high risk of complications	p 67, Section 7.1												
Women who are pregnant or planning a pregnancy	Each antenatal visit		p 67, Section 7.1 and p 18, Chapter 1.												
Overweight	Every two years	Every 12 months for Aboriginal and Torres Strait Islander patients, or those with existing diabetes, cardiovascular disease, stroke, gout or liver disease. Every six months for adults who are overweight or obese	p 69 Section 7.2												
Nutrition	Every two years	Every six months for patients who are overweight or obese, or have high cardiovascular absolute risk, a family history cardiovascular disease, type 2 diabetes or high risk of type 2 diabetes .	p 73, Section 7.3												
Alcohol: Early detection of at-risk drinking	Every two to four years for low-risk groups and opportunistically for higher risk groups	All patients 15 years of age and older should be asked about the quantity and frequency of alcohol intake	p 75, Section 7.4												
Women who are pregnant or planning a pregnancy	Each antenatal visit	No drinking is the safest option	p 18, Section 1												
Physical activity	Every two years	Opportunistically for those at higher risk, including teenage girls, older adults, office workers, Aboriginal and Torres Strait Islander patients, patients with low socioeconomic status and non-English speaking background, or those at high risk of a chronic condition or cancer	p 77, Section 7.5												
Pre-conception care	Opportunistically	Consider for all women aged 15–49 years	p 18, Chapter 1												
Sexual health – Chlamydia and other sexually transmissible diseases	Opportunistically if indicated	All sexually active patients up to 29 years of age. Test every 12 months for higher and highest risk groups	p 62, Section 6.2.1												
Prevention of vascular disease															
Absolute cardiovascular disease risk assessment	Every two years	Aged ≥35 years for Aboriginal and Torres Strait Islander patients	p 86, Section 8.1												
Blood pressure	Every two years	Every 6–12 months for patients with moderate risk and every 6–12 weeks for patients with high risk.	p 87, Section 8.2												
Cholesterol and other lipids	Every five years	Every two years for those with increased risk, and 12 months with increased cardiovascular risk and existing chronic disease. Aged ≥35 years for Aboriginal and Torres Strait Islander patients	p 89, Section 8.3												
Type 2 diabetes	Every three years	Every 12 months for those with impaired glucose tolerance or impaired fasting glucose. Aged 18 years and older for Aboriginal and Torres Strait Islander patients	p 92, Section 8.4												
Stroke	Assess patients with high absolute risk every 12 months		p 94, Section 8.5												
Kidney disease	Every one to two years for those at high risk	Aged ≥30 years for Aboriginal and Torres Strait Islander patients	p 96, Section 8.6												
Cancer															
Colorectal cancer	Every two years from 50 years of age	Earlier for those with high risk	p 105, Section 9.2												
Breast cancer	Every two years		p 109, Section 9.3												
Melanocytic skin cancer	Opportunistically for average and increased risk	Examine every 6–12 months for those at high risk.	p 113, Section 9.4.1												
Non-melanocytic skin cancer	Opportunistically	Opportunistically for patients with increased risk including those >40 years of age, and every 12 months for high-risk patients	p 116, Section 9.4.2												
Cervical cancer (to April 2017)	Every two years		p 117, Section 9.5												
Cervical cancer (commencing May 2017)	Every five years		p 117, Section 9.5												
Psychosocial															
Depression	Every encounter for those aged 12–18 years and opportunistically for those aged ≥18 years														
Intimate partner violence	Opportunistically; maintain a high level of clinical awareness for patients at increased risk	Every encounter for adolescent women and screen all pregnant women	p 130, Section 10.3												
Elderly															
Immunisation	Refer to Section 5.1 or the <i>Australian immunisation handbook</i>		p 46, Table 5.1												
Physical activity	Every two years	Advise moderate physical activity	p 46, Section 5.2 and p 78, Table 7.5.1												
Falls risk	Every 12 months	Every six months if the patient has a history of falls or multiple risk factors	p 47, Section 5.3												
Vision and hearing	Every 12 months														
Oral health	At least every 12 months and encouraged to attend annual dental visits	More frequently for those at increased risk	p 134, Chapter 11												
Glaucoma	Frequency of follow-up determined by the patient's eye assessment	Patients at increased risk	p 137, Chapter 12												
Osteoporosis															
Postmenopausal women	Every 12 months for average risk	Increased risk for women aged ≥50 years with risk factors	p 141, Chapter 14												
Men	Every 12 months for average risk	Increased risk for women aged ≥50 years with risk factors	p 141, Chapter 14												
Family history screening questionnaire	First visit to a practice and then at least every three years		p 24, Chapter 2												

Low-average risk Increased risk

Preventive activities over the lifecycle – Children

Patient name: _____ Date of birth: _____ Date: _____

Activity/topic	Frequency	Reference	Age group					
			Neonatal	2,4,6 & 12 months	18 months & 3 years	3.5–5 years	6–13 years	14–19 years
Immunisation	Refer to the <i>Australian immunisation handbook</i>	p 58, Table 6.1.1						
Assessment								
Metabolic screen		p 33, Chapter 3, Table 3.1						
Hearing		p 33, Chapter 3, Table 3.1						
Physical examination	As outlined in the Child Personal Health Record (Blue Book)	p 33, Chapter 3, Table 3.1						
Body mass index	Measure routinely from 2 years of age	p 37, Table 3.2 Practice Point k						
Vision	At least once between 3 and 5 years of age	p 37, Table 3.2 Practice Point j						
Oral health	Lift the lip' check from 12 months of age and encourage annual dental visits. Opportunistic examination of higher risk groups	p 37, Table 3.2 Practice Point e						
Chlamydia and other sexually transmissible infections	Patients who are sexually active	p 62, Section 6.2.1						
Family and social environment	When a child presents with behavioural or emotional problems	p 33, Table 3.1						
Depression	Every encounter	p 38, Table 3.2 Practice Point m						
Risky behaviours		p 38, Table 3.2 Practice Point m						
Intimate partner violence	Opportunistically at every encounter for adolescent women	p 131, Table 10.3.1						
Health promotion								
Support breastfeeding		p 74, Table 7.3.2						
Nutrition		p 32, Chapter 3, Table 3.1						
Physical activity		p 37, Table 3.2 Practice Point f						
Healthy sleep		p 32, Chapter 3, Table 3.1						
Interactive reading		p 32, Chapter 3, Table 3.1						
Developmental progress	As outlined in the Child Personal Health Record (Blue Book)	p 36, Table 3.2 Practice Point d						
Preventive counselling and advice								
Smoking	Ask about passive smoking during the neonatal period. It should be asked opportunisticly in adolescents and young people	p 67, Section 7.1						
Sudden unexpected death in infancy		p 32, Chapter 3, Table 3.1						
Social/emotional wellbeing		p 32, Chapter 3, Table 3.1						
Injury prevention		p 32, Chapter 3, Table 3.1						
Sun protection	Opportunistically							
Early detection of at-risk drinking	Every two to four years all patients aged ≥15 years Opportunistically for children aged <15 years (increased risk)	p 75, Section 7.4						

Low-average risk
 Increased risk