Maternity moments webinar series

The first trimester

Dr Wendy Burton
Antenatal care in general practice

RACGP

Acknowledgement of Country

I would like to acknowledge the traditional owners of the lands from where each of us are joining this webinar today.

I wish to pay my respects to their Elders past, present and emerging.

Dr Craig Pennell

Craig Pennell is the Chair in Obstetrics and Gynaecology and Professor of Maternal Fetal Medicine at the University of Newcastle. In addition to being a MFM specialist, he leads two research programs, the first is in the prediction and prevention of preterm birth and the second relates to the role of genetics in the developmental origins of health and disease.

RACGP

Let me also say…

Thank you to the multidisciplinary teams from Mater Mothers Hospital, Brisbane

Thank you for the thousands upon thousands of excellent questions from GPs over the years

Thank you to GPDU and the GPs at Emerald who road tested some of my documents

This presentation is not perfect. It's my attempt to provide some practical tips, tricks and tools which I hope will be useful. If they are, please modify for the population you serve and share them generously with others

I have QR codes on some slides

I suggest you screenshot/take a photo so you can find the link later (or wait until the PowerPoint is available online)

They link to a (noncommercial) website I have, with links to multiple other sites (mostly Australian government, NFP and NGO)

The first trimester

What do you do with what you find?

Mental health

Iron deficiency +/- anaemia

Thyroid

Nausea and vomiting

PV bleeding

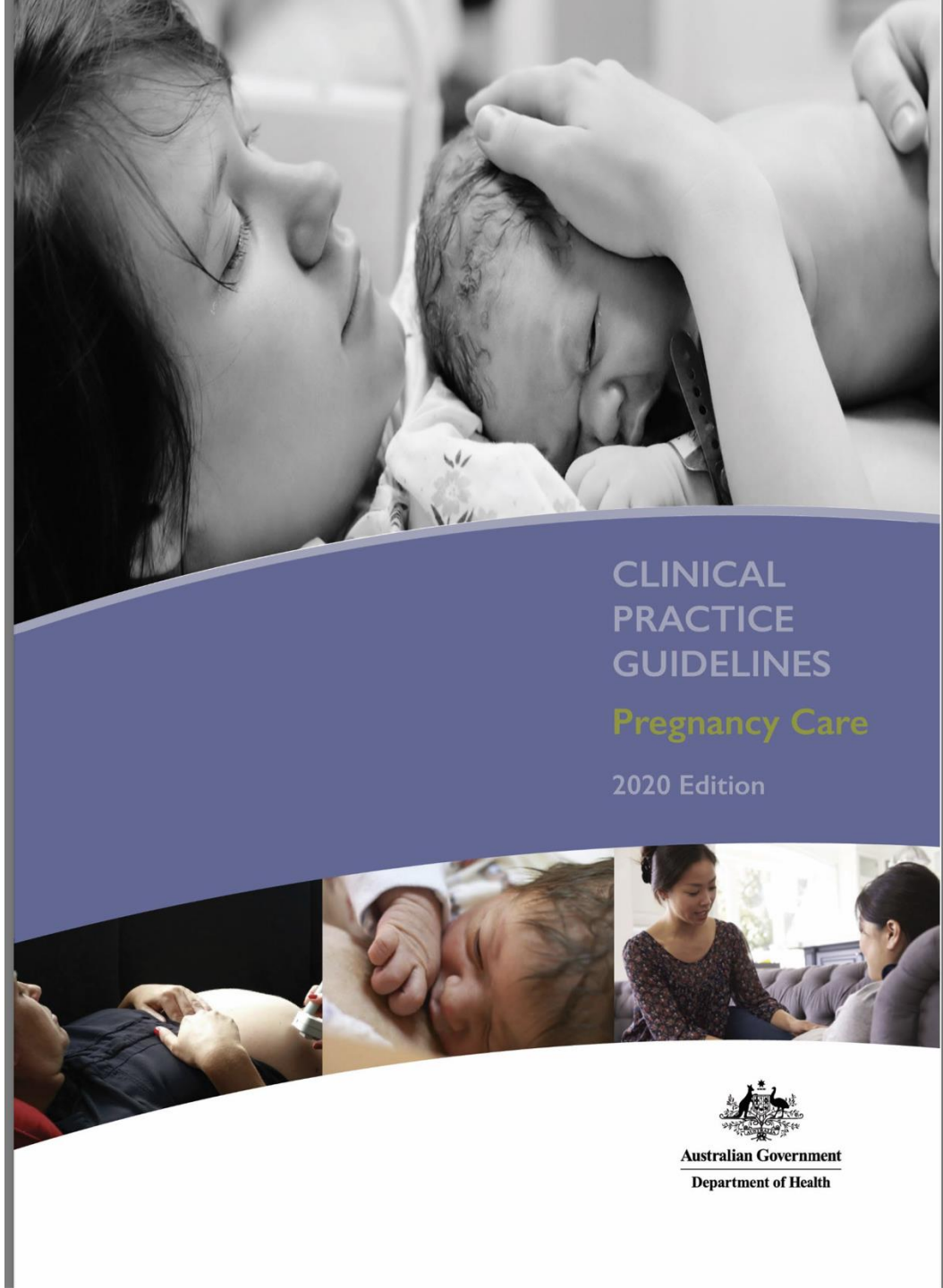
The new stuff

RACGP

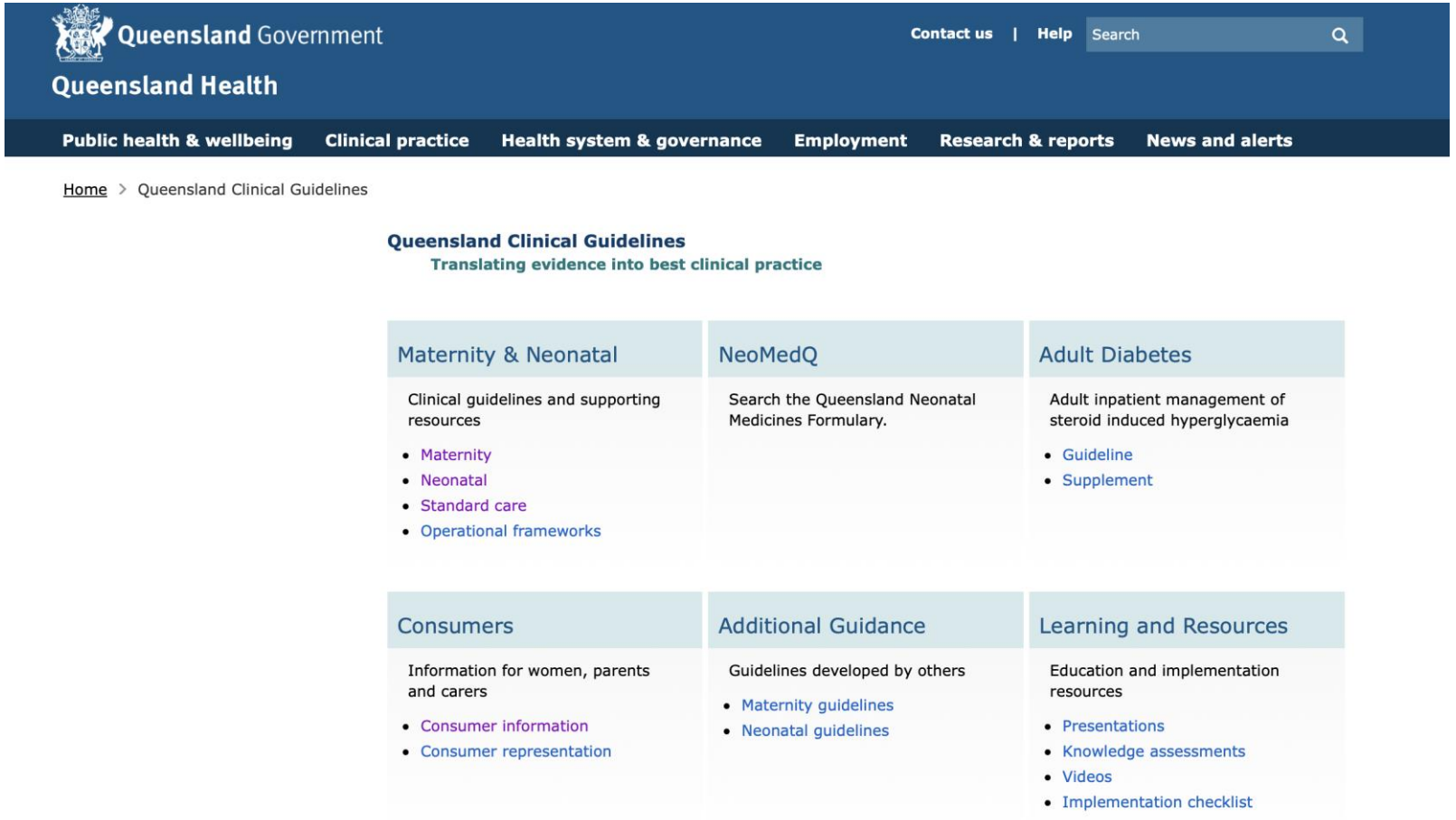
Guidelines-National

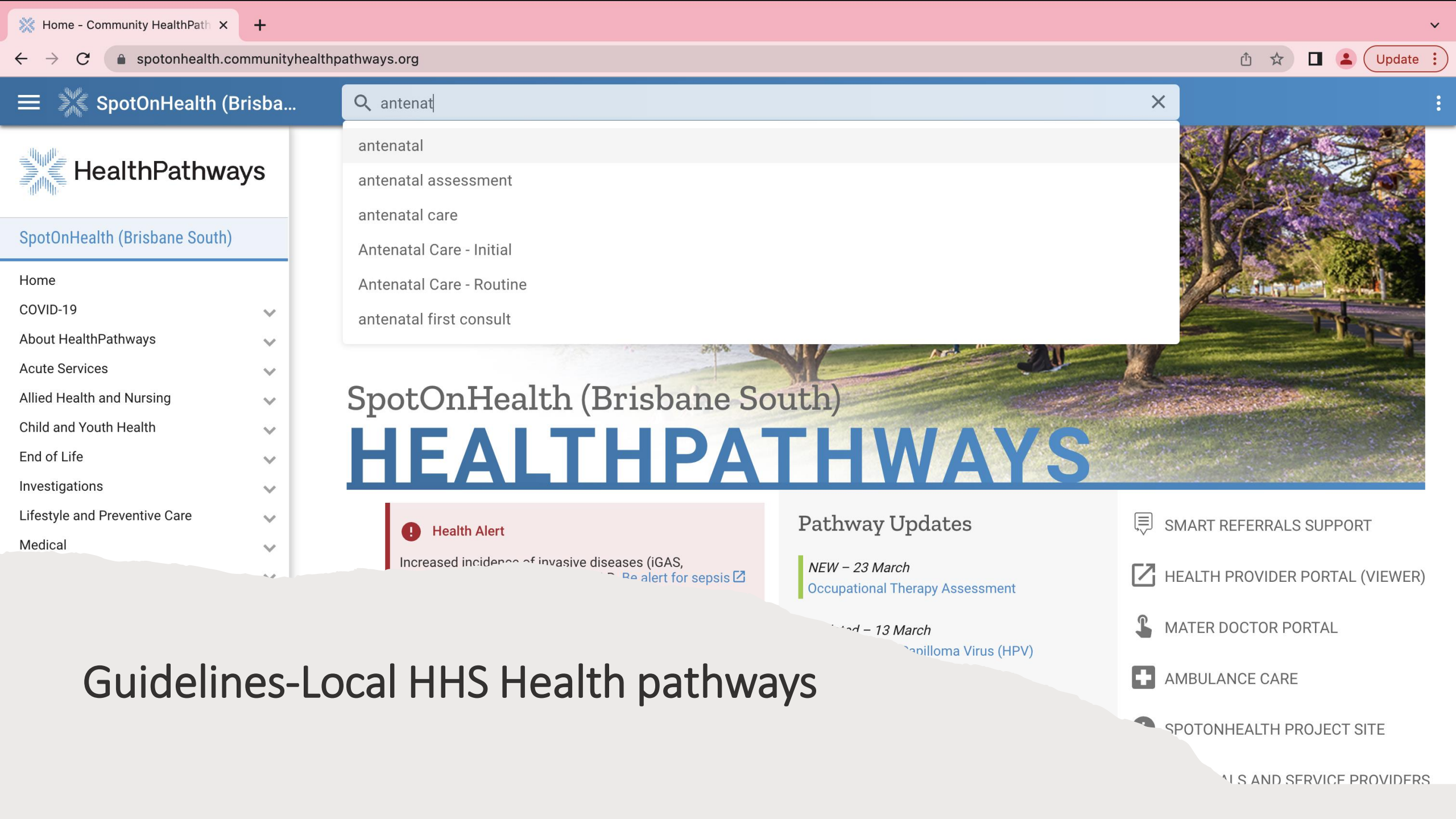
Contains Search Done

https://www.health.gov.au/resources/publications/pregnancy-care-guidelines



Guidelines-State (Qld)




Home - Community HealthPath
spotonhealth.communityhealthpathways.org
Update
SpotOnHealth (Brisba...
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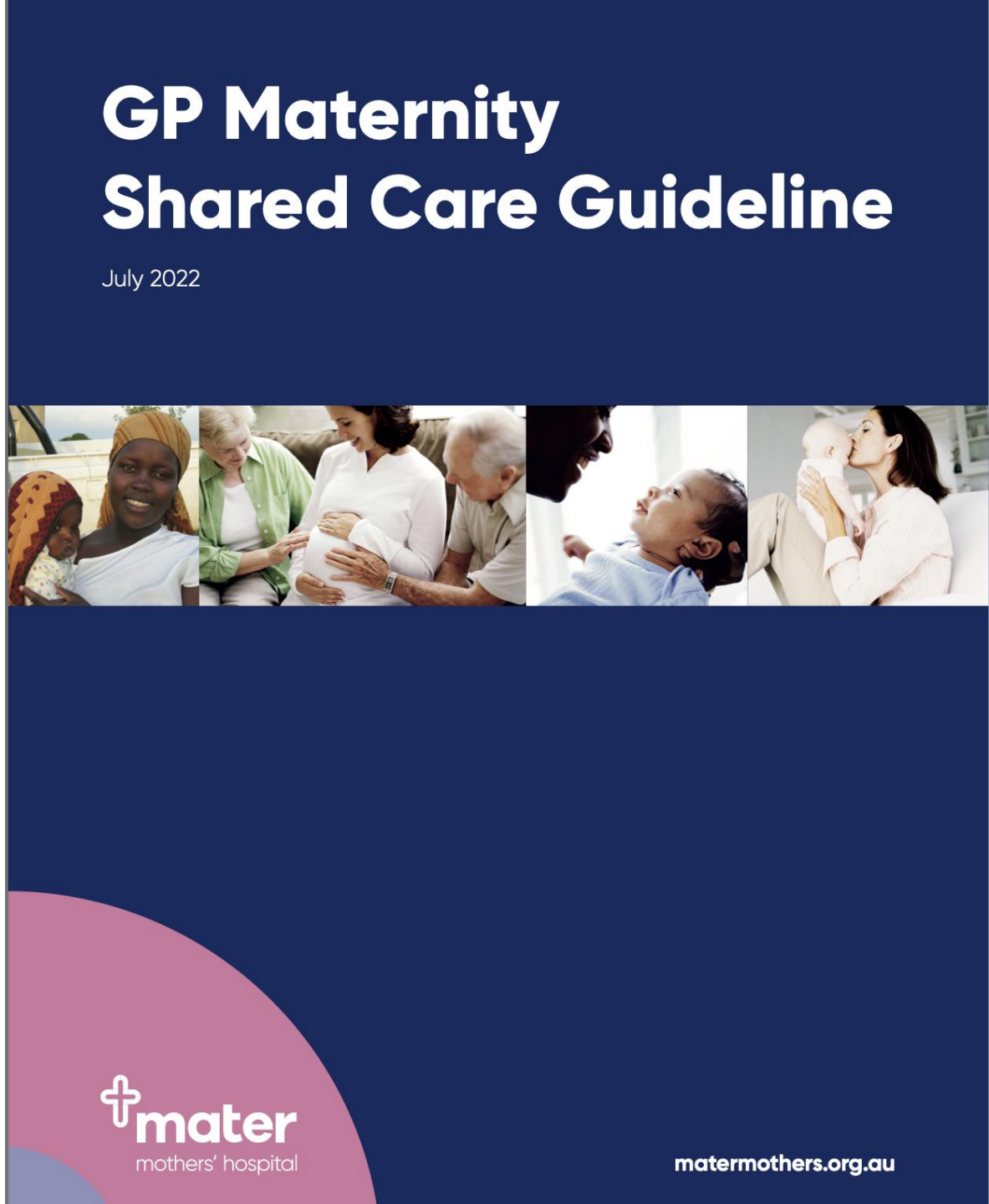
antenatal
antenatal assessment
antenatal care
Antenatal Care - Initial
Antenatal Care - Routine
antenatal first consult
HealthPathways
SpotOnHealth (Brisbane South)
Home
COVID-19
About HealthPathways
Acute Services
Allied Health and Nursing
Child and Youth Health
End of Life
Investigations
Lifestyle and Preventive Care
Medical
SpotOnHealth (Brisbane South)
HEALTHPATHWAYS
Health Alert
Increased incidence of invasive diseases (iGAS,
Be alert for sepsis
Pathway Updates
NEW – 23 March
Occupational Therapy Assessment
13 March
apilloma Virus (HPV)
SMART REFERRALS SUPPORT
HEALTH PROVIDER PORTAL (VIEWER)
MATER DOCTOR PORTAL
AMBULANCE CARE
SPOTONHEALTH PROJECT SITE
Guidelines-Local HHS Health pathways

Guidelines - my local maternity hospital



Choose-your-topic guideline

- ASID (infectious diseases)
- ADIPS (diabetes in pregnancy)
- COPE (perinatal mental health)
- National Blood Authority (anaemia)
- SOMANZ (nausea and vomiting, hypertension, sepsis)
- Etcetera
- Etcetera
- Etcetera

What do you do with what you find?

History

- Notify your maternity colleagues via referral/phone/fax of concerns that emerged from the history

Examination

- Notify your maternity colleagues via referral/phone/fax of concerns that emerged from the examination

Investigations

- Include copies of the investigations with your referral. If you are taking action, e.g. elevated TSH, low ferritin, Thalassaemia trait, let your colleagues know
- If investigations of concern come in post referral, send an updated letter OR notify via your communication channels

Mental health concerns

Identify those at risk early and proactively manage

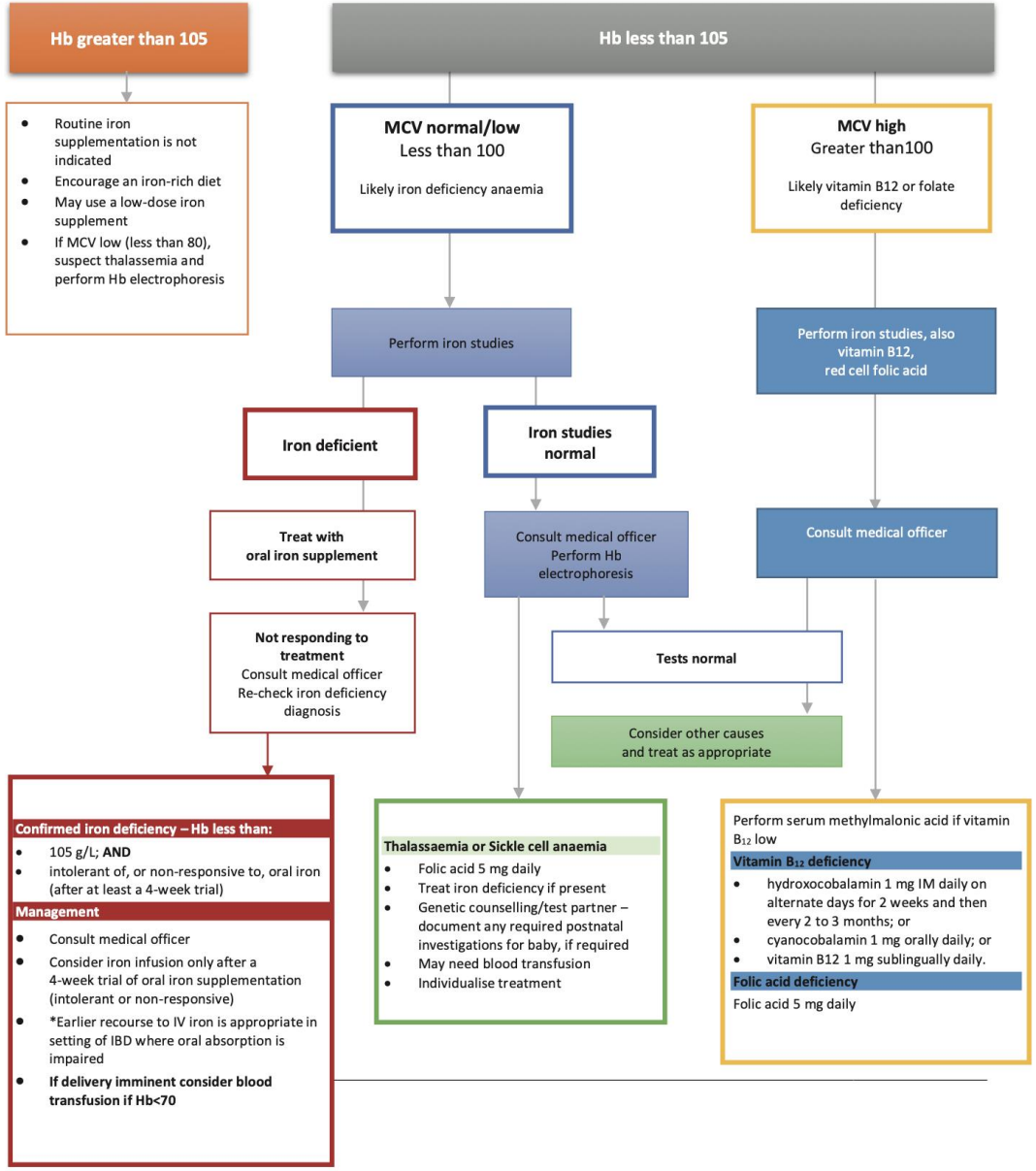
Use virtual supports:
- Ready to Cope
- SMS4Dads
- PANDA
- Mind the Bump
- GP Psychiatry Support Line (if your PHN supports it)

SSRIs and SNRIs in the first trimester are considered safer than untreated mental illness

Many patients cease medication without asking – monitor closely and provide appropriate advice. Many presentations to psychiatrists or hospitalisations are due to well-intentioned cessation of medication

Anaemia

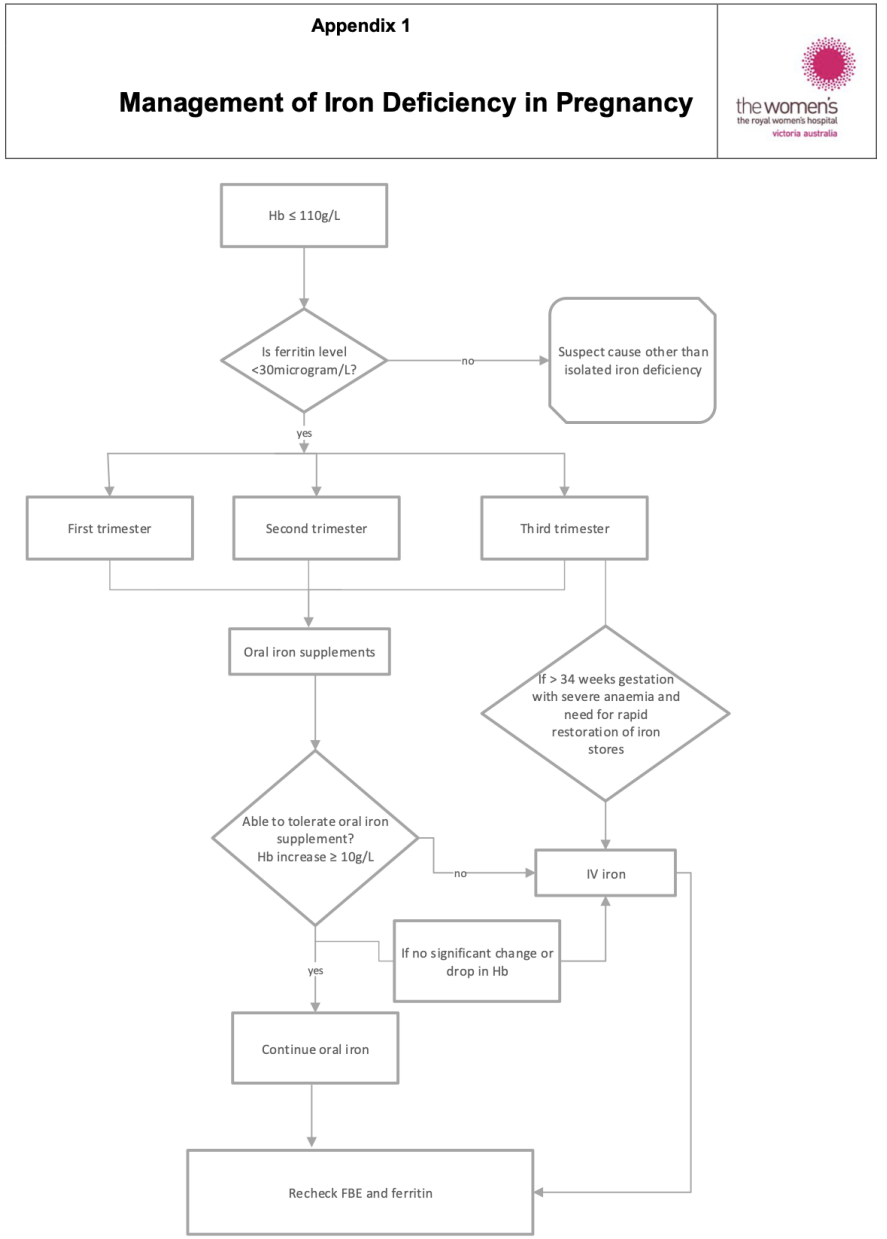
To state the obvious, please identify and treat the cause



Source: Mater Mothers GP Maternity Shared Care Guideline, page 34

Iron deficiency, anaemia

- Oral iron has nausea, vomiting and constipation as common side effects. This can be particularly brutal in first trimester – if nausea and vomiting is a significant burden, you may need to take women off their multivitamin or supplement until it passes
- IV iron is generally not recommended in first trimester



Iron deficiency

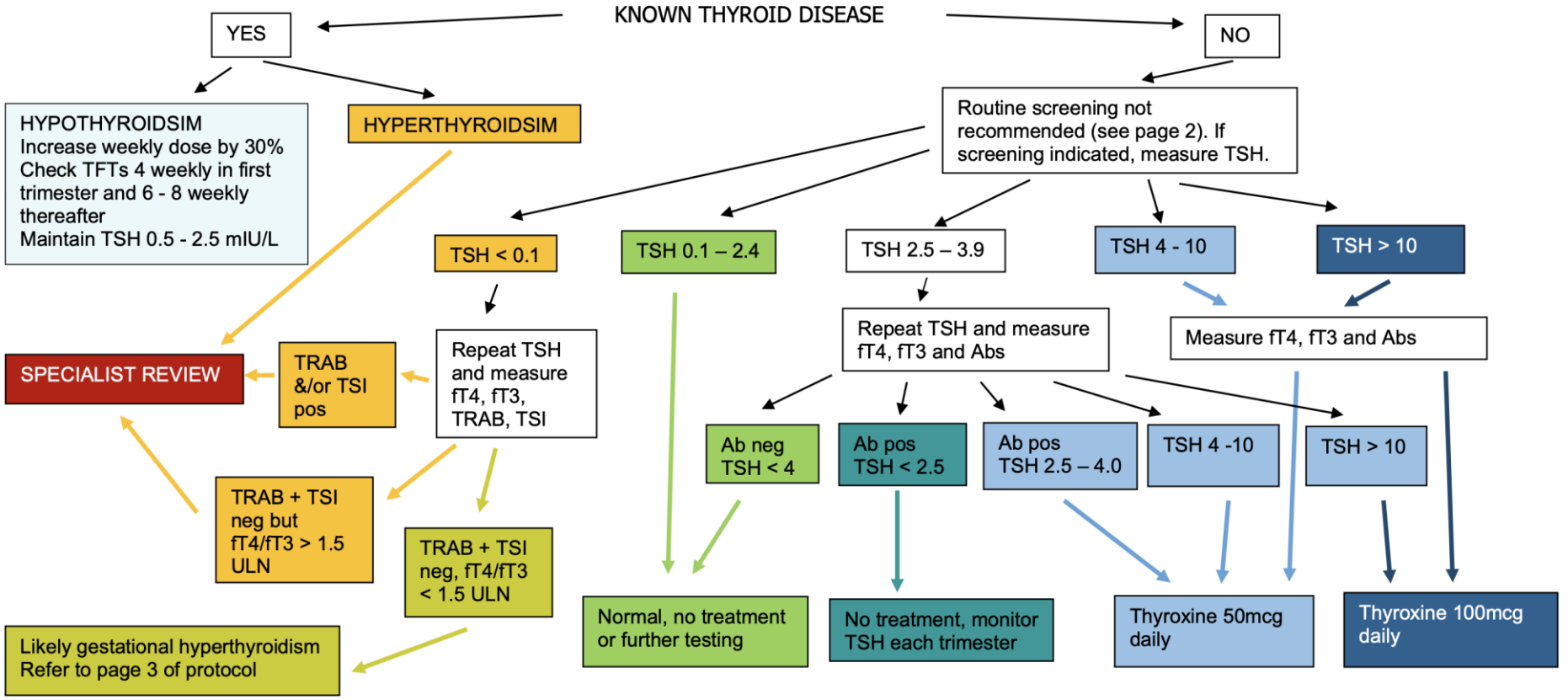
Iron requirements are highest in the third trimester
Aim for ferritin >30
Oral before IV if tolerated and effective

Identifier and grade	Guidance – recommendations, practice points and expert opinion points	Relevant section of document
ORAL AND/OR PARENTERAL IRON		
R1 GRADE C	The routine administration of iron supplementation to all pregnant women is not recommended.[a] [a] In accordance with *Clinical practice guidelines: Antenatal care – Module 1*[8]	3.3.1
R2 GRADE C	The administration of iron to pregnant women with iron deficiency anaemia is recommended; IV iron is preferred when rapid restoration of Hb and iron stores is required.	3.3.1
R3 GRADE C	In maternity patients who require iron therapy for the treatment of anaemia, the routine addition of folic acid is not recommended.[a] [a] Folic acid should be administered for the prevention of neural tube defects, in accordance with *Clinical practice guidelines: Antenatal care – Module 1*[8]	3.3.1
PP9	In maternity patients with iron deficiency anaemia, a therapeutic dose of elemental iron (100–200 mg daily) should be prescribed, and the response to therapy monitored. If the response to oral iron is inadequate, IV iron should be used.	3.3.1
PP10	In maternity patients with iron deficiency without anaemia, a low dose of elemental iron (e.g. 20–80 mg daily) may be considered, and may be better tolerated than higher doses.	3.3.1
PP11	In maternity patients requiring iron, IV iron is preferred when oral iron is poorly tolerated (affecting compliance), or absorption is likely to be impaired.	3.3.1
PP12	When IV iron is prescribed, calculation of the dose should take into consideration the iron deficit.	3.3.1
PP13	The routine use of IM iron is not advised where alternatives are available.	3.3.1

Source: National Blood Authority

Thyroid

Management of Thyroid Disorders – prior to 13 weeks



Version 3.0 Effective: August 2022 Review: August 2025

Royal Brisbane & Women's Hospital
Butterfield Street
Herston QLD 4029

Telephone +61 7 3646 8111
www.health.qld.gov.au

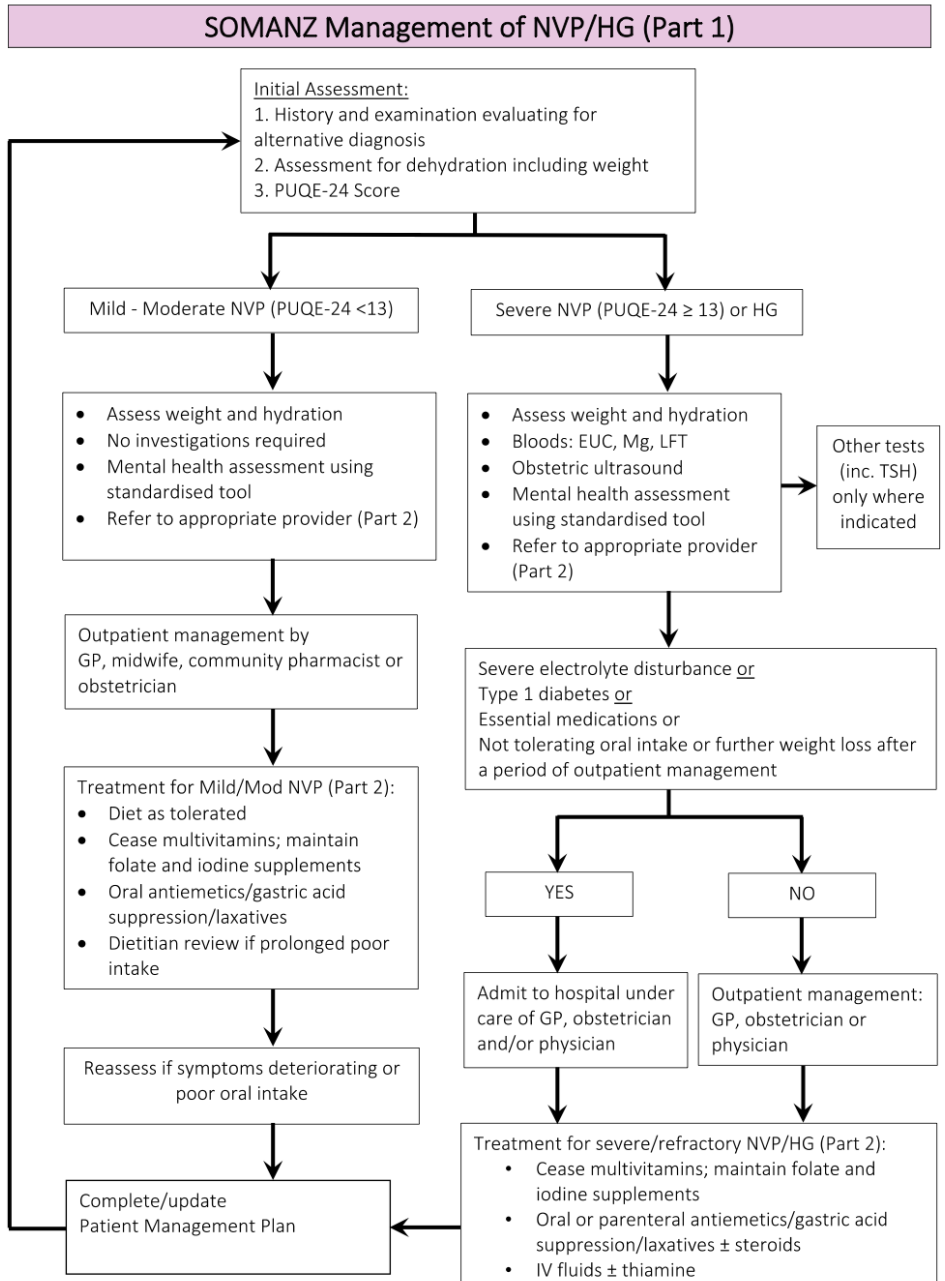
Metro North Health | Queensland Government

Nausea and vomiting

Table 2. Motherisk PUQE-24 scoring system (2,3)

Total score: mild ≤6; moderate 7 to 12; severe ≥13.

1. In the last 24 hours, for how long have you felt nauseated or sick to your stomach?				
Not at all (1)	1 hour or less (2)	2-3 hours (3)	4 to 6 hours (4)	More than 6 hours (5)
2. In the last 24 hours, have you vomited or thrown up?				
I did not throw up (1)	1 to 2 (2)	3 to 4 (3)	5 to 6 (4)	7 or more times (5)
3. In the last 24 hours, how many times have you had retching or dry heaves without throwing up?				
None (1)	1 to 2 (2)	3 to 4 (3)	5 to 6 (4)	7 or more times (5)



Source: SOMANZ

PV bleeding

Are they haemodynamically stable?

Is baby alive?

- Incomplete miscarriage – expectant, medical or surgical options

Where is baby (intra or extra uterine)?

What blood type?

- Threatened miscarriage first trimester, anti-D not required
- mTOP less than 9 weeks, anti-D not required
- Completed miscarriage, STOP, anti-D is required. Consider also for those who may not re-present with a completed miscarriage

PV Bleeding – PV Progesterone support?

TGA approved (2022)

- “UTROGESTAN 200 mg (soft capsule) is now also indicated for treatment of unexplained threatened miscarriage in women with bleeding in the current pregnancy and a history of at least three or more previous miscarriages. Use in women with less than three miscarriages may be warranted in those with reduced chances of future pregnancy such as those undergoing IVF treatment with limited viable egg and/or embryo availability or advanced fertility age. However, the benefit of treatment in clinical trials was limited to women with three or more miscarriages”
- Note: *not PBS listed for this indication*
- PBS listed for IVF and preterm birth prevention (short cervix or history of spontaneous preterm birth, from 16 weeks)

Progesterone pessaries for threatened miscarriage

“The usual dose is 400 mg (two pessaries) twice a day (morning and night).

Treatment should be initiated at the first sign of vaginal bleeding during the first trimester of pregnancy and should continue to at least the sixteenth week of gestation.”

Cost: $91 (Chemist Warehouse) for 42 pessaries = ~ $9/day for treatment

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Hunter Medical Research Institute

Challenges in First Trimester Care

Professor Craig Pennell

craig.pennell@Newcastle.edu.au

In partnership with our community

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

NSW GOVERNMENT Health
Hunter New England Local Health District

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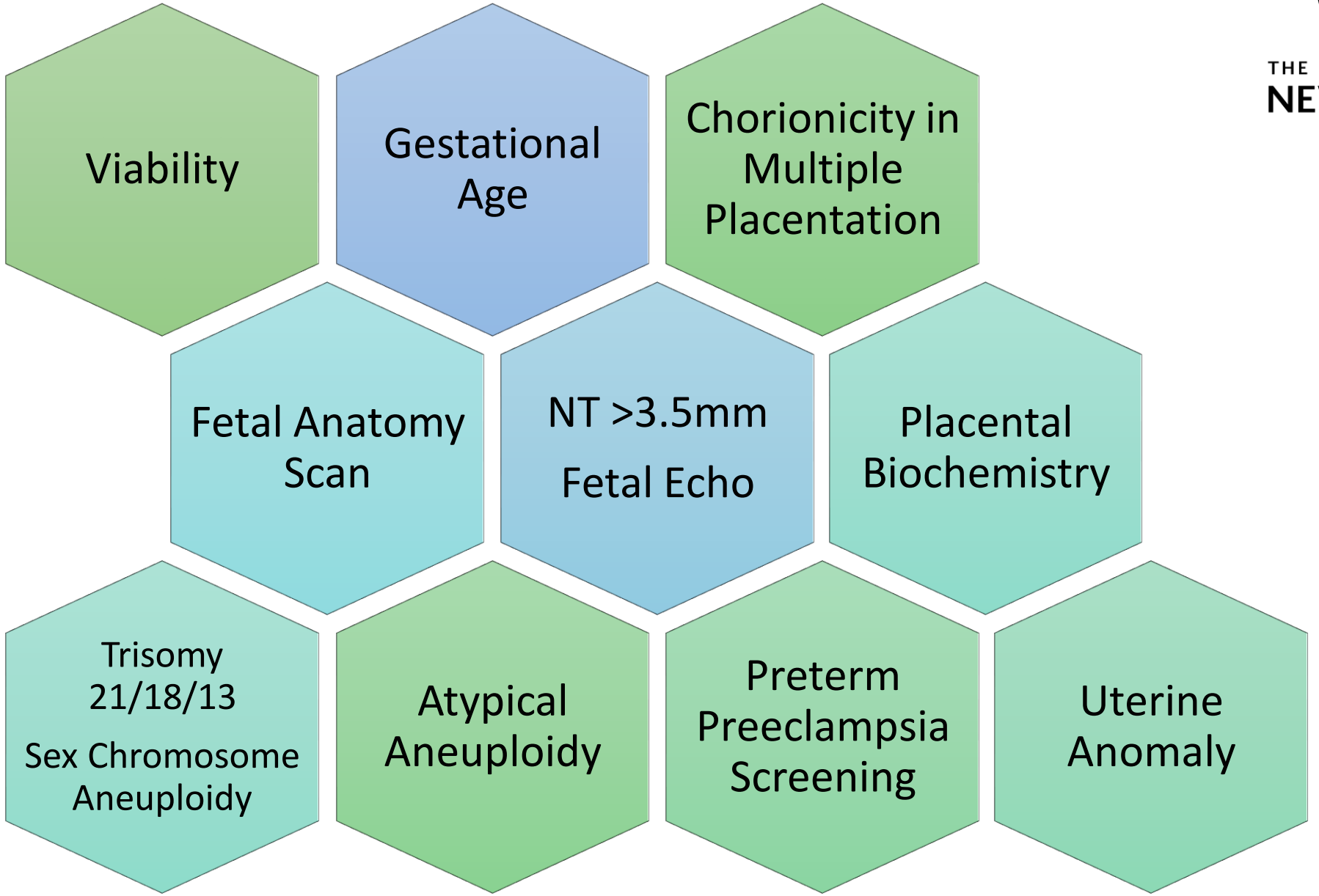
cFTS, NIPT:
One, the other or both?

Omega-3 Supplementation to Prevent Preterm Birth
Are we ready for implementation?


Viability
Gestational Age
Chorionicity in Multiple Placentation
Fetal Anatomy Scan
NT >3.5mm
Fetal Echo
Placental Biochemistry
Trisomy 21/18/13
Sex Chromosome Aneuploidy
Atypical Aneuploidy
Preterm Preeclampsia Screening
Uterine Anomaly

Aneuploidy Risk

	cFTS	NIPT
Trisomy 21	92%	99.7%
Trisomy 18	97%	97.9%
Trisomy 13	92%	99%
Sex Chromosome Aneuploidy	80%	70%
Atypical Aneuploidy	87%	0%

N=675,332 Kagan et al 2015b
N=21,052, Kagan et al 2015a
Health.gov.au/resources/pregnancy-care-guidelines

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Atypical Aneuploidy

cFTS Risk	Atypical Aneuploidy Risk
> 1:300	1%
> 1:100	3%
> 1:10	5%
PAPP-A < 0.2 MoM	4%
Free BhCG < 0.2 MoM	7%

Growth Disorders and Stillbirth

Analyte	Increased Risk
PAPP-A	< 0.4 MoM
Free BhCG	> 4.0 MoM

Early Anatomy Scan

NT mm	Aneuploidy Risk	FDIU	Structural Abnormality	Normal
3	3.5%	1%	2.5%	93%
4	20%	2.5%	10%	70%
5	30%	3.5%	20%	50%
6	50%	10%	25%	30%
>6	65%	20%	45%	15%

cFTS, NIPT:
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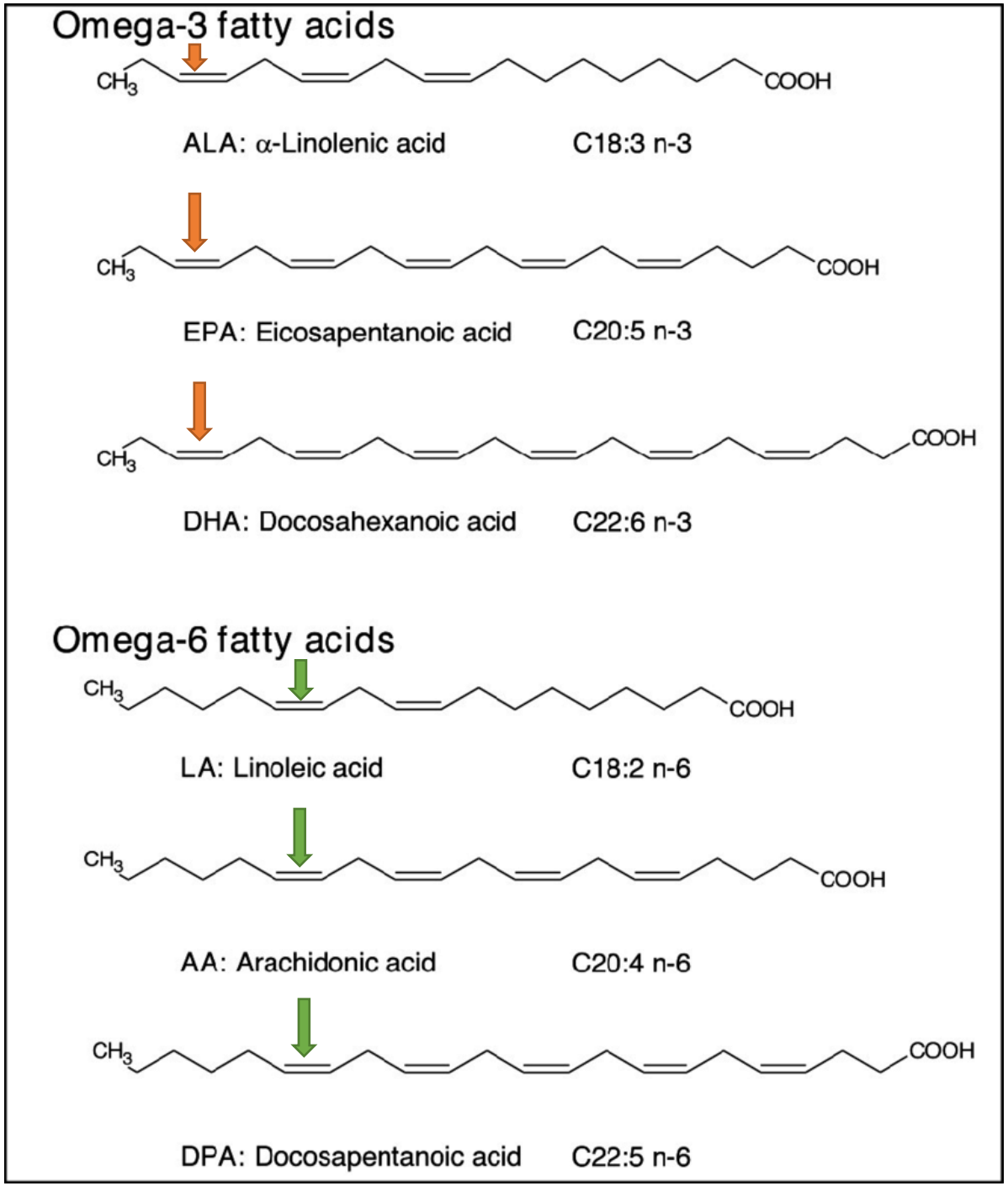
Polyunsaturated Fatty Acids (PUFAs)

- Naturally occurring fatty acids with two or more carbon double bonds
- Commonly known groups
  - Omega-3 (n-3)
  - Omega-6 (n-6)
- Both parent compounds (ALA, LA) are essential fatty acids as cannot be synthesised de novo



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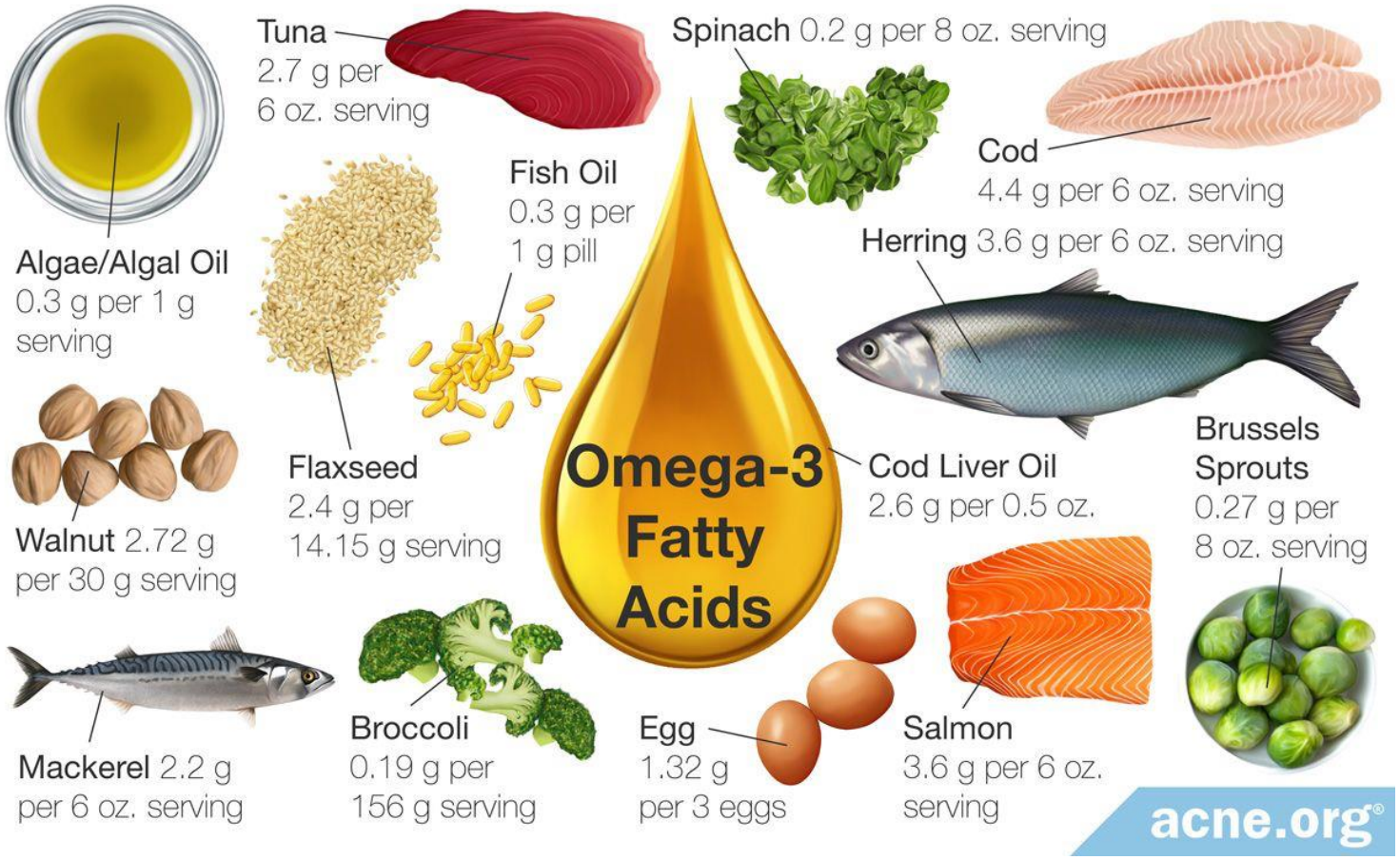
Sources of PUFAs



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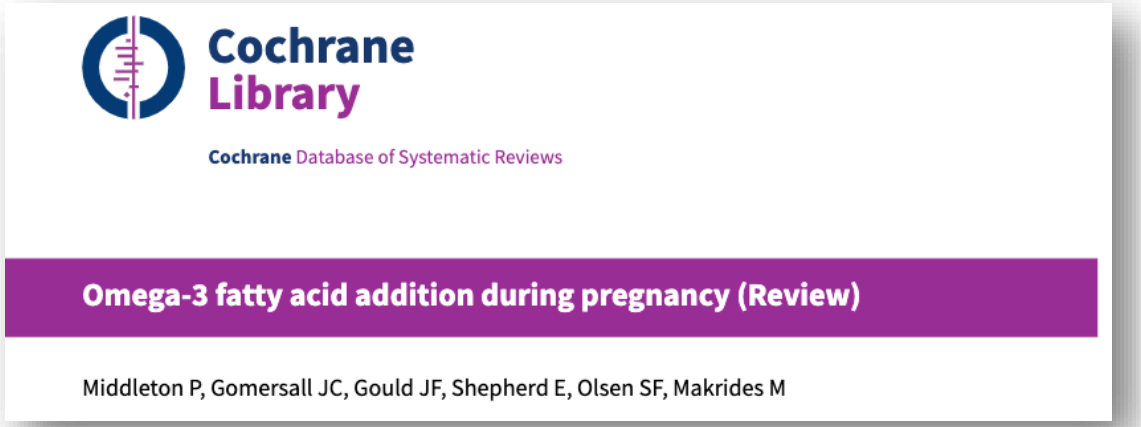
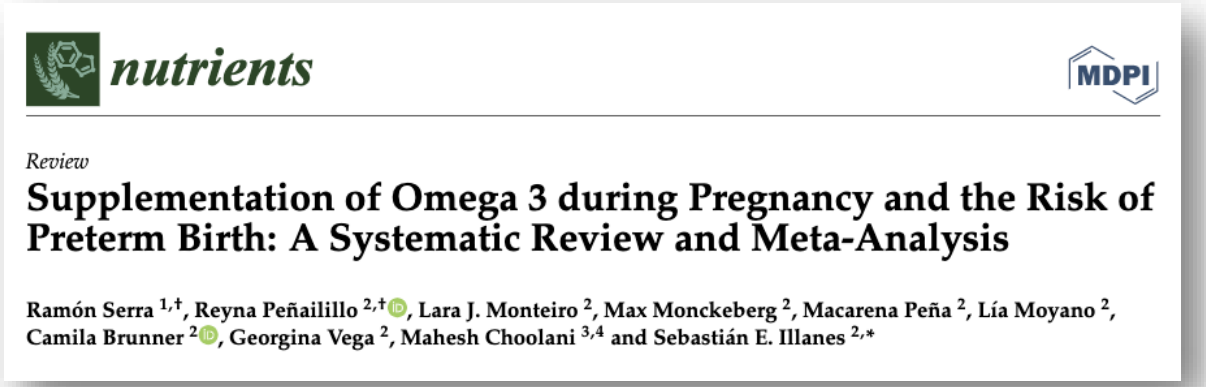
Faroe Islands

Olsen S, et al. Intake of marine fat, rich in (n-3)-polyunsaturated fatty acids, may increase birthweight by prolonging gestation. The Lancet. 1986;328(8503):367-9.



Cochrane Database of Systematic Reviews. 2018(11).



Nutrients 2021, 13(5)

- PTB <37 weeks
  - 26 RCTs 10,304 participants
  - **RR 0.89**; 95%CI 0.81-0.97

- PTB <37 weeks
  - 37 RCTs 21,458 participants
  - **RR 0.89**; 95%CI 0.82-0.97

- PTB <34 weeks
  - 9 RCTs 5,204 participants
  - **RR 0.58**; 95%CI 0.44-0.77

- PTB <34 weeks
  - 11 RCTs 10,864 participants
  - **RR 0.73**;95%CI 0.58-0.92

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Cochrane Database of Systematic Reviews | Review - Intervention

New search | Conclusions changed

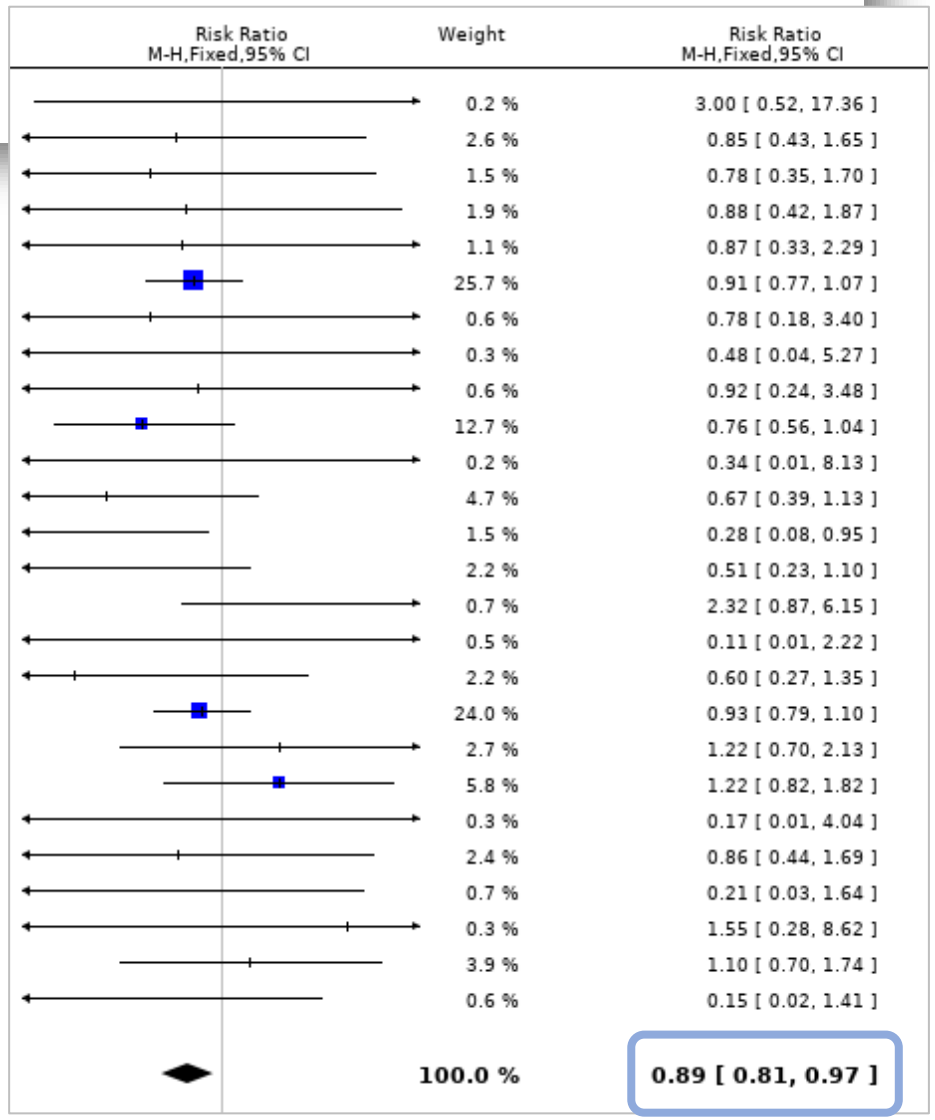
Omega-3 fatty acid addition during pregnancy

Philippa Middleton, Judith C Gomersall, Jacqueline F Gould, Emily Shepherd, Sjurdur F Olsen, Maria Makrides

Authors' declarations of interest

Version published: 15 November 2018 Version history

https://doi.org/10.1002/14651858.CD003402.pub3



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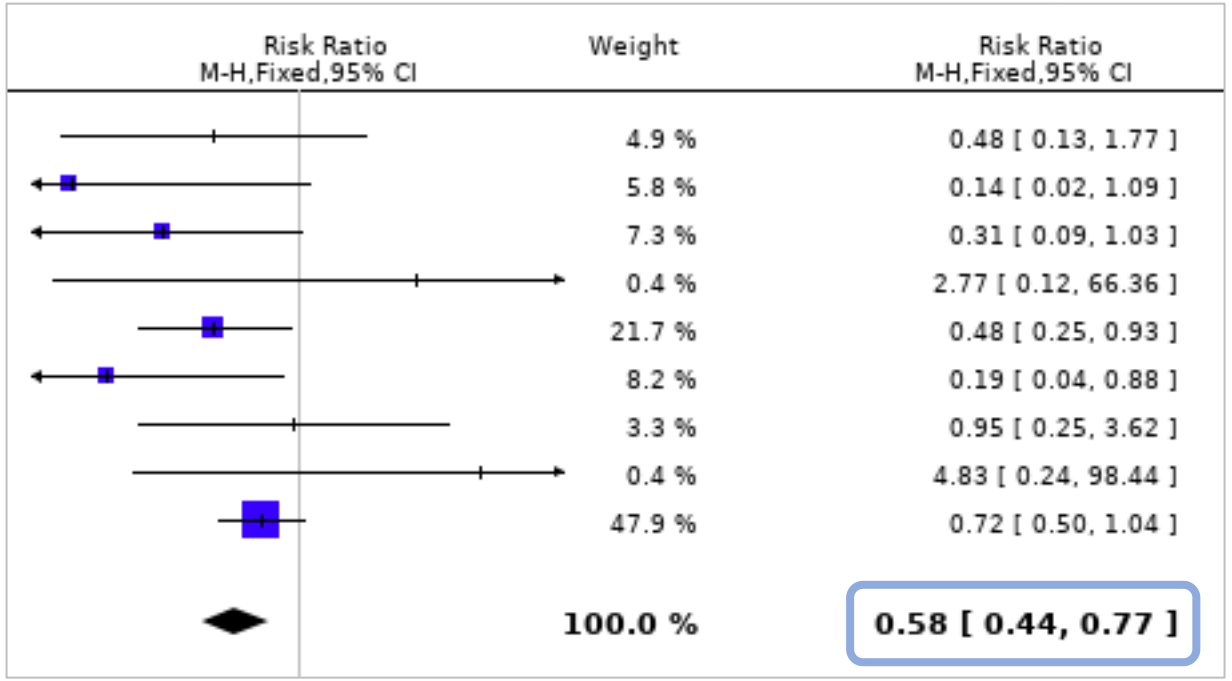

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Mixed results with n-3 supplementation and PTB

- Different types of n-3 supplementation
- Different timing
- Different doses
- Different characteristics of pregnancy population

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Application to Australia

- Multicentre, double-blind, RCT
- 5544 pregnancies
- n-3 capsules 900mg
- PTB <37 weeks
  - **RR 0.86** (95%CI 0.72-1.03)
- PTB <34 weeks
  - **RR 1.13** (95%CI 0.79-1.63)

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Effect of maternal omega-3 status on PTB risk

ORIGINAL ARTICLE

A Randomized Trial of Prenatal n−3 Fatty Acid Supplementation and Preterm Delivery

Maria Makrides, Ph.D., Karen Best, Ph.D., Lisa Yelland, Ph.D., Andrew McPhee, M.B., B.S., Shao Zhou, Ph.D., Julie Quinlivan, M.B., B.S., Ph.D., Jodie Dodd, M.B., B.S., Ph.D., Elinor Atkinson, M.B., B.S., Huda Safa, M.B., Ch.B., Jacqueline van Dam, M.B., B.S., Nisha Khot, M.B., B.S., Gustaaf Dekker, M.D., Ph.D., et al.

Omega-3 fatty acid supplementation in pregnancy—baseline omega-3 status and early preterm birth: exploratory analysis of a randomised controlled trial

LA Simmonds, TR Sullivan, M Skubisz, PF Middleton, KP Best, LN Yelland, J Quinlivan, SJ Zhou, G Liu, AJ McPhee, RA Gibson, M Makrides

First published: 08 February 2020 | https://doi.org/10.1111/1471-0528.16168 | Citations: 11

Serum Status	Risk Reduction (95% Confidence Interval)
Low	0.23 (0.07-0.79)
Sufficient	2.27 (1.13-4.58)

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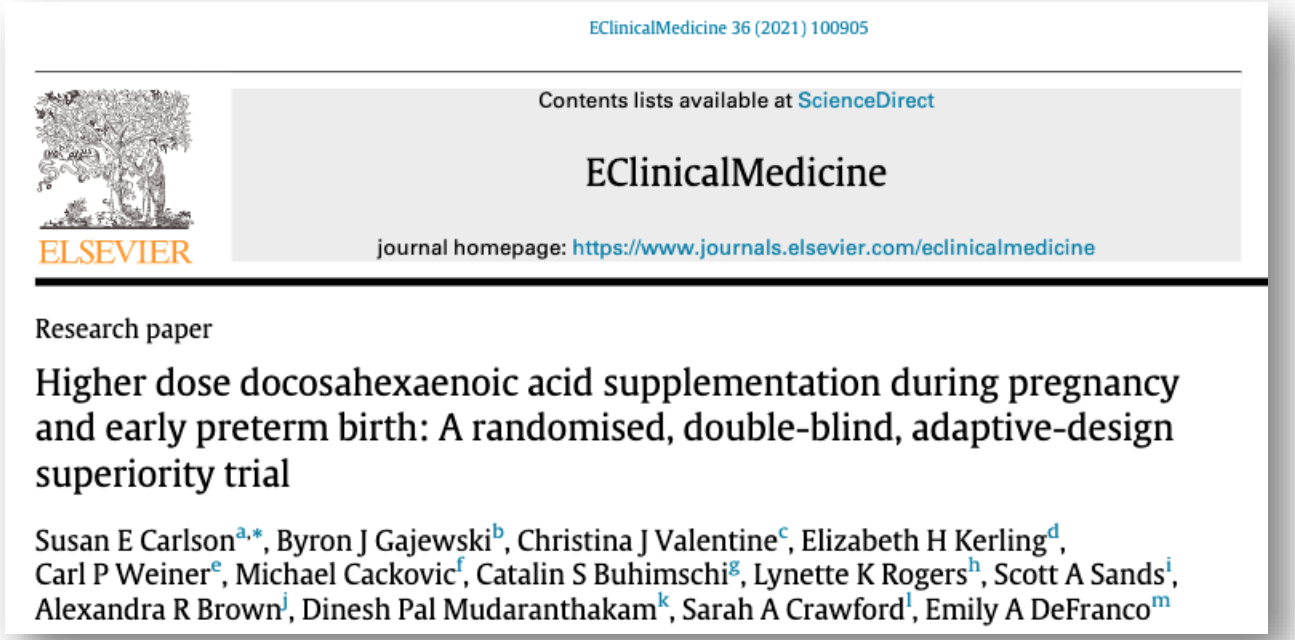
Benefit dependent on baseline DHA levels

- ADORE trial
- Lower rates of ePTB with n-3 supplementation if low DHA levels at enrolment (2.0% vs. 4.1%)
- No benefit if DHA levels in upper two quartiles
- Interpretation:
  - ‘Clinicians could consider prescribing 1000mg DHA daily during pregnancy to reduce ePTB in women with low DHA status if they are able to screen for DHA’



EClinicalMedicine 36 (2021) 100905

Contents lists available at ScienceDirect

EClinicalMedicine

journal homepage: https://www.journals.elsevier.com/eclinicalmedicine

Research paper

Higher dose docosahexaenoic acid supplementation during pregnancy and early preterm birth: A randomised, double-blind, adaptive-design superiority trial

Susan E Carlson[a,*], Byron J Gajewski[b], Christina J Valentine[c], Elizabeth H Kerling[d], Carl P Weiner[e], Michael Cackovic[f], Catalin S Buhimschi[g], Lynette K Rogers[h], Scott A Sands[i], Alexandra R Brown[j], Dinesh Pal Mudaranthakam[k], Sarah A Crawford[l], Emily A DeFranco[m]

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Omega-3 status test for prematurity risk

SA Maternal Serum Antenatal Screening (SAMSAS) Program

Information for **health professionals**

SAHMRI
South Australian Health & Medical Research Institute

- Cochrane review 70 RCT and almost 20,000 women
  - ↓ 11% PTB
  - ↓ 42% early PTB
- Supplementation of all women not effective
- Best to target women based on omega-3 status prior to 20 weeks gestation

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SAHMRI: Recommendations for omega-3 supplementation

Total Omega-3 Serum Level	Recommendation
< 3.7%	Take omega-3 fatty acid supplements
3.7% – 4.3%	No action required
> 4.3%	Cease any omega-3 fatty acid supplements

45% had baseline levels associated with an increased risk of ePTB

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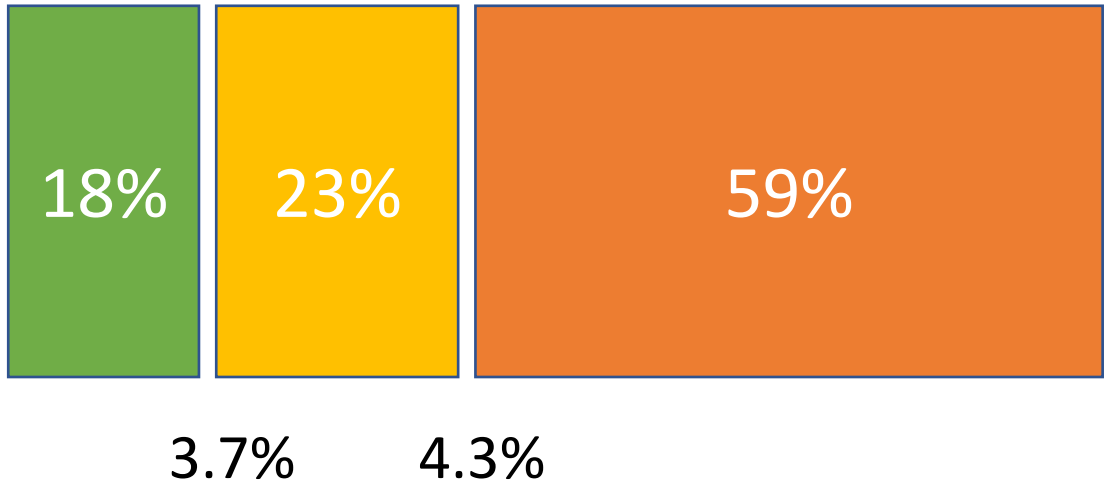
Current Limitations

- Cost of serum fatty acid testing
- No current clinical screening tools to predict omega-3 serum levels above or below given thresholds in pregnancy



Proportions based on Newcastle population 2021

Reporting of Omega-3

- South Australia (SAHMRI)
  - Total Omega-3 Serum Level (%)

- Other Laboratories (nmol)
  - 8:0, 10:10, 10:1, 12:0, 12:1, 14:0, 14:1, 14:2, 15:0, 16:0
  - 16:1n-7, 16:1n-9, 16:2, 17:0, 18:0, 18:1n-7, 18:1n-9, 18:2n-6
  - 22:0, 24:0, Phytanic, 18:3n-3, 18:3n-6, 19:0, 20:0
  - 20:3n-9, 20:3n-6, 20:4n-6, 20:0n-3, 21:0, 22:1n-9
  - 22:1n-9, 22:4n-6, 22:5n-6, 22:5n-3, 22:6n-3, 23:0
  - 24:1n-9, 26:0, 26:1, Pristanic
  - n-3 index

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cFTS, NIPT:
One, the other or both? BOTH

Omega-3 Supplementation to Prevent Preterm Birth
Are we ready for implementation? NO

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