

# Over-testing

Over-testing occurs when:

- the result of the test would not alter how you manage the patient or their symptoms, or change their health outcomes
- there are more potential harms than benefits from taking the test
- the tests have poor measurement properties and/or are done more frequently than necessary.<sup>1</sup>

## What causes over-testing?

- **Defensive medicine**, which can occur if the clinician has concerns about medico-legal liability. These concerns might stem from delayed diagnosis or difficulty dealing with uncertainty.<sup>2</sup>
- **Some complementary and alternative (CAM) practitioners** may advise patients that they can avoid paying for specific tests if they ask a GP to request them through Medicare.<sup>2</sup>
- **Poor-quality information sources**, resulting from patients researching their symptoms and presenting at the clinic with a proposed course of action.<sup>3</sup> Medical literature and internet sources often contain exhaustive lists of tests associated with conditions, but many of these recommended tests do not improve clinical management or patient safety.
- **Financial incentives for testing companies operating under a fee-for-service model.**
- **Lack of information continuity.** The patient may not tell their regular GP about tests they have already had through another GP or a private pathology laboratory that does not require a GP consult.

## Harms from over-testing

- **Physical harms from over-testing:** Testing can be painful and anxiety provoking, and may expose the patient to radiation.<sup>2</sup>
- **Overdiagnosis:** More testing can lead to an increased likelihood of making a 'diagnosis'. Tests are increasingly sensitive and therefore may pick up an 'incidentaloma', which could lead to treatment that is unnecessary, expensive and potentially dangerous.
- **False-positive and false-negative tests:** Some tests can give false-positive results, leading to unnecessary further testing or treatments, or false-negative results, which provide inappropriate reassurance that can delay correct diagnosis and appropriate treatments.



- **Non-medical harms**

- **Patient's financial costs:** These could include out-of-pocket payment for procedures, as well as time off work for tests, treatments and recovery, and loadings and exclusions that insurance companies might apply as a result of particular test results.<sup>2</sup>
- **Harms to the health system:** Over-testing can create delays, and waste the health system's finite resources (eg money, equipment, peripherals and people) that could be used for patients who need those tests.
- **Environmental harms:** Over-testing can create unnecessary waste from products used in the testing process, such as syringes.

## How to help prevent over-testing

- **Consider whether the test results will change your management of your patient:** If the results will not change how your patient is managed, then do not order the test.<sup>4</sup>
- **Ask your patient whether they have undertaken any tests for the same issue and, if so, when:** The lack of information continuity from other providers can lead to over-testing. GPs also have an important role in educating patients around the cost to the health system of 'double testing' or unnecessary testing.
- **Undertake shared decision making with your patient:** Communicate your thoughts to your patient clearly and thoroughly. Invite them to be an active partner in the management of their health and encourage them to ask questions.<sup>4</sup>
  - Use evidence-based, accessible information appropriate to the patient's health literacy so they understand the risks and benefits of the test or treatment they are asking about and can make informed decisions.<sup>3</sup>
  - Provide information about appropriate diagnostic testing, such as the RACGP's [Appropriate diagnostic testing](#) patient information sheet, which has more information on this topic.
  - Use precise language when talking about screening and diagnosis (eg use the term 'raised blood pressure' instead of 'hypertension').<sup>3</sup>
  - Depending on the test or screening, talk to your patient about:
    - the uncertainties in medicine and the advantages of not rushing to a diagnosis<sup>3</sup>
    - the high sensitivity of modern screening tests.<sup>3</sup> Some screening tests can detect an 'abnormality' that many people have but is not the cause of your patient's symptoms and will not cause them harm. However, this can result in an unnecessary 'diagnosis', along with associated unnecessary harms, and may also stop you and your patient from focusing on the cause of the symptoms.
- **Watchful waiting:** This can often be safely implemented by monitoring the patient's condition, but not providing treatment immediately.<sup>5</sup> To implement properly:
  - advise your patient of symptoms they should look out for, especially red flags<sup>6</sup>
  - depending on the condition, ask your patient to return at an agreed time for a review, or sooner if symptoms appear, get worse or change
  - reassure your patient that they can take some time to think about the information they have received and come back if they have any questions.
- **Check your practice if you are unsure about ordering investigations:**<sup>4</sup> This could include:
  - reading relevant clinical guidelines (you can view [All guidelines by topic](#) on the RACGP website)
  - seeking assistance from a supervisor or peer
  - analysing your test ordering, by answering the following questions:<sup>7</sup>

- Why did you order this test?
- How will the result change your management?
- What are the risks of ordering/not ordering this test?
- Is there a risk of overdiagnosis?
- What is the likelihood of a positive result?
- What is the prevalence of the provisional diagnosis?
- Did any other factors influence your decision to order the test?
- Are there guidelines for testing based on this presentation?

## Further reading

RACGP *First do no harm* GP resources

- [Vitamin D testing](#)
- [MTHFR gene testing](#)

RACGP clinical resources

- *Guidelines for preventive activities in general practice* (the Red book), [Chapter 15: Screening tests of unproven benefit](#)
- [National guide to a preventive health assessment in Aboriginal and Torres Strait Islander people](#)
- [Responding to patient requests for tests not considered clinically appropriate](#)
- [Clinical guidance for MRI referral](#)
- [RACGP Standards for general practices \(5th edition\)](#)

2022 RACGP curriculum and syllabus for Australian general practice, [Domain 2: Applied professional knowledge and skills](#)

RACGP position statements

- [Too much medicine](#)
- [Non-GP initiated testing](#)

newsGP article, [Media fails to cover harms of early diagnostic testing: study](#)

Australian Family Physician article, [We live in testing times: Teaching rational test ordering in general practice](#)

Other resources

- Choosing Wisely Australia, [Choosing wisely in general practice](#)

## Information for patients

RACGP *First do no harm* patient resources

- [Vitamin D testing](#)
- [MTHFR gene testing](#)

Other RACGP resources

- [Appropriate diagnostic testing – patient information](#)

Other patient resources

- BMJ Best Medicine, [Weighing up benefits and harms: Information for patients](#)
- Healthdirect, [Understanding pathology tests](#)

- Healthdirect, *Diagnostic tests*
- Choosing Wisely Australia, *5 questions to ask your doctor or other healthcare provider before you get any test, treatment, or procedure*

## References

1. Lam JH, Pickles K, Stanaway FF, Bell KJL. Why clinicians overtest: Development of a thematic framework. *BMC Health Serv Res* 2020;20(1):1011. doi: [10.1186/s12913-020-05844-9](https://doi.org/10.1186/s12913-020-05844-9).
2. The Royal Australian College of General Practitioners (RACGP). Responding to patient requests for tests not considered clinically appropriate. RACGP, 2018. Available at <https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/tests-not-considered-clinically-appropriate> [Accessed 21 October 2022].
3. The Royal Australian College of General Practitioners (RACGP). Too much medicine. [Position statement] RACGP, 2018. Available at: <https://www.racgp.org.au/advocacy/position-statements/view-all-position-statements/clinical-and-practice-management/too-much-medicine> [Accessed 4 October 2023].
4. The Royal Australian College of General Practitioners (RACGP). Domain 2: Applied professional knowledge and skills. In: 2022 RACGP curriculum and syllabus for Australian general practice. RACGP, 2022. Available at <https://www.racgp.org.au/education/education-providers/curriculum/curriculum-and-syllabus/units/domain-2> [Accessed 28 November 2023].
5. National Cancer Institute (NCI). Watchful waiting. NCI, n.d. Available at <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/watchful-waiting> [Accessed 21 October 2022].
6. General Practice Supervisors Australia (GPSA). Managing uncertainty in general practice guide. GPSA, 2023. Available at <https://gpsa.org.au/managing-uncertainty-in-general-practice/> [Accessed 30 November 2023].
7. Coleman J, Morgan S. We live in testing times: Teaching rational test ordering in general practice. *Aust Fam Physician* 2014;43(5):273–76.

Published December 2023.