Choosing Wisely Canada (CWC) was developed to help clinicians and patients engage in conversations about unnecessary tests and treatments and make smart and effective choices to ensure high-quality care.

Unnecessary tests and treatments do not add value to patient care. They take away from care by potentially exposing patients to harm, lead to testing to investigate false positives, and contribute to patient stress. Unnecessary tests and treatments put increased strain on the resources of our health care system.

Canadian national specialty societies participating in the campaign, representing a broad spectrum of clinicians, were asked to develop lists of “Five Things Clinicians and Patients Should Question.” These lists identify tests and treatments commonly used in each specialty, but are not supported by evidence, and/or could expose patients to unnecessary harm.

In conjunction with CWC, the Canadian Association of Radiology (CAR) identified the following five recommendations, pertinent to imaging utilization, as significant clinical situations where clinicians should re-think the use of imaging for their patients.

1 – Don’t do imaging for lower-back pain unless red flags are present.

Red flags include suspected epidural abscess or hematoma presenting with acute pain, but no neurological symptoms (urgent imaging is required); suspected cancer; suspected infection; cauda equina syndrome; severe or progressive neurologic deficit; and suspected compression fracture. In patients with suspected uncomplicated herniated disc or spinal stenosis, imaging is only indicated after at least a six-week trial of conservative management and if symptoms are severe enough that surgery is being considered.

2 – Don’t do imaging for minor head trauma unless red flags are present.
Red flags include Glasgow Coma Scale (GCS) less than 13; GCS less than 15 at 2 hours post-injury; a patient aged 65 years or older; obvious open skull fracture; suspected open or depressed skull fracture; any sign of basilar skull fracture (e.g., hemotympanum, raccoon eyes, Battle’s Sign, CSF otorhinorrhea); retrograde amnesia to the event lasting 30 minutes or longer after the event; “dangerous” mechanism (e.g., pedestrian struck by motor vehicle, occupant ejected from motor vehicle, or fall from higher than 3 feet or down more than 5 stairs); and Coumadin use or bleeding disorder.

3 – Don’t do imaging for uncomplicated headache unless red flags are present.

Red flags include recent onset, rapidly increasing frequency and severity of headache; headache causing the patient to wake from sleep; associated dizziness, lack of coordination, tingling or numbness, new neurologic deficit; and new onset of a headache in a patient with a history of cancer or immunodeficiency.

4 – Don’t do computed tomography (CT) for the evaluation of suspected appendicitis in children until after ultrasound has been considered as an option.

Although CT is accurate in the evaluation of suspected appendicitis in the pediatric population, ultrasound is nearly as good in experienced hands. Since ultrasound will reduce radiation exposure, ultrasound is the preferred initial imaging examination in children. If the results of the ultrasound exam are equivocal, it may be followed by CT. This approach is cost-effective, reduces potential radiation risks and has excellent accuracy, with reported sensitivity and specificity of 94 percent.

5 – Don’t do an ankle x-ray series in adults for minor injuries.

X-rays are only indicated if there is pain in the malleolar zone, bone tenderness at the posterior edge or tip of either malleolus, or inability to bear weight for four steps immediately after the trauma and in the emergency department.

5 Things Clinicians and Patients Should Question:

1. Don’t do imaging for lower-back pain unless red flags are present
2. Don’t do imaging for minor head trauma unless red flags are present
3. Don’t do imaging for uncomplicated headache unless red flags are present
4. Don’t do computed tomography (CT) for the evaluation of suspected appendicitis in children until after ultrasound has been considered as an option
5. Don’t do an ankle x-ray series in adults for minor injuries

For More Information:


Medical Students and Trainees – General Choosing Wisely Guiding Principles

1. Don’t suggest ordering the most invasive test or treatment before considering other less invasive options.
There are often diagnostic approaches and treatment options that result in the same clinical outcome but are less invasive. Examples include the use of ultrasound instead of computed tomography (CT) scanning to diagnose acute appendicitis in children, or the use of an oral antibiotic that has similar oral bioavailability as its intravenous counterpart. Taking time to consider the diagnostic sensitivity and specificity of less invasive tests or the therapeutic effectiveness of less invasive treatments can minimize unnecessary patient exposure to harmful side effects of more invasive tests or treatments.

2. Don't suggest a test, treatment, or procedure, that will not change the patient’s clinical course.

When ordering tests, it is important to always consider the diagnostic characteristics such as sensitivity, specificity and predictive value in light of the patient’s pre-test probability. Patients who are at very low baseline risk often do not require an additional test to rule out the diagnosis. Furthermore, evidence suggests that in such low-risk patients, diagnostic tests do not reassure patients, decrease their anxiety, or resolve their symptoms. Examples include the use of computed tomography (CT) scanning in low-risk patients to rule out pulmonary embolism, or pre-operative cardiac testing for patients prior to low risk surgery. Evaluation of baseline risk and the use of decision support tools wherever possible, along with a ‘how will this change my management’ approach, can help to avoid unnecessary ‘rule out’ testing in patients.

3. Don't miss the opportunity to initiate conversations with patients about whether a test, treatment or procedure is necessary.

Patient requests sometimes drive overuse. For example, a parent might request antibiotics for his or her child who likely has viral sinusitis, or a patient might request magnetic resonance imaging (MRI) for low-back pain. Often patients are unaware of the benefits, side-effects and risks of tests and treatments. Taking time to explore a patient’s concerns, and counseling them about the relative benefits and risks of tests or treatments represents a patient-centered approach to ensuring the appropriate use of resources.

4. Don't hesitate to ask for clarification on tests, treatments, or procedures that you believe are unnecessary.

Unfortunately, in some learning environments, a hierarchy exists between supervisors and students that makes it difficult for students to feel comfortable speaking up. As a result, students might observe unnecessary care, but avoid saying anything for fear of potential consequences. Supervisors need to encourage students to feel free to question whether tests or treatments are truly necessary without fear of repercussion. The clinical training environment should be one where students feel safe to ask questions.

5. Don't suggest ordering tests or performing procedures for the sole purpose of gaining personal clinical experience.

The clinical training years in medical school represent an important opportunity for students to translate what was learned in the classroom to the bedside. This can be a challenging time of great uncertainty for students. Students may order tests excessively due to a lack of clinical experience, or recommend investigations in order to build upon their personal experience.

6. Don't suggest ordering tests or treatments pre-emptively for the sole purpose of anticipating what your supervisor would want.
A "hidden curriculum" pervasive in the academic environment encourages medical students to search for zebras through extensive (and often unnecessary) diagnostic workups. Because restraint is often discouraged, students adopt the belief that faculty expect an exhaustive diagnostic approach, and feel that they need to demonstrate their knowledge, thoroughness and curiosity through test ordering. Students can overcome this practice by articulating why they chose not to order a specific test.

**Medical Students and Trainees:**

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2. Don’t suggest a test, treatment, or procedure that will not change the patient’s clinical course.
3. Don’t miss the opportunity to initiate a conversation with patients about whether a test, treatment or procedure is necessary.
4. Don’t hesitate to ask for clarification on tests, treatment, or procedures that you believe are unnecessary.
5. Don’t suggest ordering tests or performing procedures for the sole purpose of gaining personal clinical experience.
6. Don’t suggest ordering tests or treatments pre-emptively for the sole purpose of anticipating what your supervisor would want.

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**For More Information:**

Choosing Wisely Canada – [https://choosingwiselycanada.org/](https://choosingwiselycanada.org/)