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## CT Scans for Adults with Head Injuries: When you need one—and when you don't

A blow to the head or a severe twist to your neck can be scary. Usually, the injury is not severe, although sometimes there can be a brain injury such as concussion, bleeding on the brain, or cracks to the skull.

Head and neck injuries are a common reason for visiting the emergency department. It is important for the health care provider to examine you for a possible concussion or another injury. The health care provider may order a CT (computerized tomography) scan of the brain to make sure you do not have a fractured skull or a serious brain injury. But most of the time these scans are not needed. Here's why:

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### Often, CT scans aren't necessary.

CT scans can show if there is swelling or bleeding in the brain or a fracture in the skull. If you have signs of a serious injury, a CT scan is usually the best first test to diagnose it. Your health care provider will look for specific signs of a more serious problem. These include:

- Weakness on one side of your face or body
- Trouble speaking, hearing, or swallowing
- Reduced vision
- Seizures
- Repeated vomiting
- Severe headache
- One pupil larger than the other
- Fluid or blood from an ear or nose
- Tenderness over the skull
- Being on a blood thinner

Health care providers follow guidelines that recommend performing CT scans only for patients who are at higher risk for skull fractures



or bleeding in the brain. Most people with head injuries do not have either of these problems, and simple concussions do not show up on a CT scan.

If you do not have any of these signs, research shows your risk of a serious injury needing surgery or leading to serious complications is less than 1 in 7000, and a CT scan is unlikely to be helpful.

A thorough examination by a health care provider is the most important step to rule out a serious injury. Your health care provider will examine you for a possible concussion or more serious injuries. If you are able to walk and talk normally, the chance of you having a serious injury needing surgery or special treatment is very low.

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## **CT scans expose you to radiation.**

A CT scan uses X-rays to create images of the brain and skull. X-rays are a form of radiation which increases the risk of cancer over your lifetime. Risks from radiation exposure add up, so it is best to avoid unnecessary radiation when possible.

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## **Head injuries take time to get better.**

You may continue to have some mild symptoms over the next several days or weeks, such as headaches, dizziness, nausea, feeling unsteady, sensitivity to light or loud noises, or difficulties with memory or concentration. These symptoms usually improve with time.

If you experience any of the following symptoms, you should immediately go to an emergency department:

- A headache that gets significantly worse
- Extreme drowsiness, cannot be woken
- Difficult recognizing people or places
- Repeated vomiting
- Unusual behaviour or extreme irritability
- Seizures of the arms or legs (uncontrollable jerking)
- Weak or numb arms or legs on one side of the body
- Impaired balance or speech

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## **About Choosing Wisely Canada**

Choosing Wisely Canada is the national voice for reducing unnecessary tests and treatments in health care. One of its important functions is to help clinicians and patients engage in conversations that lead to smart and effective care choices.

### **How this pamphlet was created:**

This pamphlet was developed by the Canadian Association of Emergency Physicians in collaboration with Choosing Wisely Alberta and Alberta's Emergency Strategic Clinical Network.

This pamphlet is for you to use when talking with your health care provider. It is not a substitute for medical advice and treatment. Use of this pamphlet is at your own risk.

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## **How can I help myself get better?**

### **Take it easy.**

- Rest until your symptoms improve.
- Avoid strenuous physical activity, especially sports, intense exercise, and other heavy work.
- Be careful not to injure your head again.
- If your symptoms get worse with a particular activity, then you should avoid it.
- Graduated return-to-work guidelines exist that help people recover from a head injury.
- Ask your health care provider when you can return to your normal activities.

### **Drink enough fluids and avoid alcohol.**

Staying well-hydrated and avoiding alcohol may help you recover more quickly.

### **Don't stress your brain.**

Avoid activities that are emotionally and mentally demanding until your symptoms improve, such as studying, reading, playing video games or watching television.

### **Ask your health care provider about medicine.**

You can take pain medication as instructed by your health care provider, such as acetaminophen (Tylenol®), ibuprofen (Advil®, Motrin®) or naproxen (Aleve®).

If your symptoms continue for the next several weeks but are not getting worse, you should follow up with your health care provider.