Intermountain® Healthcare

Subdural Hematoma

What is it?

A **subdural hematoma** happens when blood builds up underneath the outer layer of the brain (called the **dura mater**). The blood comes from small veins that have been torn. Blood leaks from the veins, forming a pocket that bulges and puts pressure on the brain. If the pocket is big enough, it can bruise or tear the brain tissue near it, which can damage the brain.

What are the symptoms?

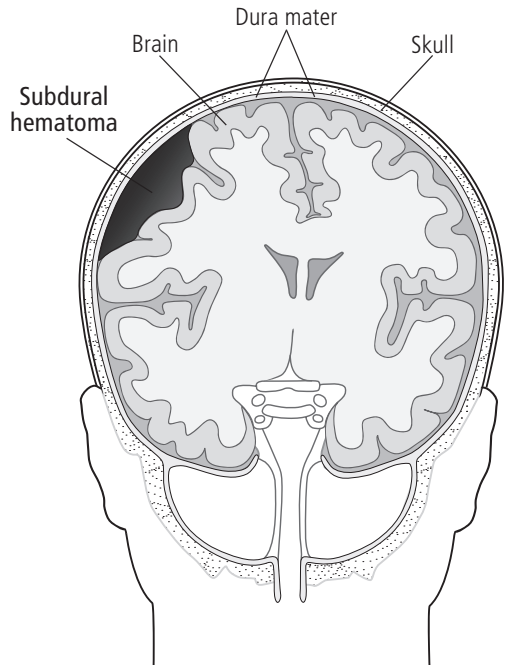
Symptoms vary depending on where the subdural hematoma is in the brain. Some symptoms may mimic a stroke. Symptoms include:

- Headache
- Weakness or numbness in arms, legs, or face
- Poor balance or coordination
- Change in behavior, emotions, or memory
- Drowsiness, lethargy, or coma
- Changes in vision
- Trouble speaking, swallowing, or communicating
- Nausea/ vomiting
- Seizures

A subdural hematoma can be very serious and can result in death or disability if not recognized and treated quickly. Possible complications include:

- Brain herniation (severe pressure on the brain that causes coma or death)
- Permanent brain damage
- Persistent symptoms or seizures

If the symptoms above appear after a known head injury, contact a doctor right away. Early treatment of subdural hematoma can prevent problems and improve recovery.



Several protective membranes cover the brain. The outermost layer is called the **dura mater.** When blood leaks from veins and collects under the dura mater, it's called a **subdural hematoma**.

What causes it?

A subdural hematoma is usually caused by a head injury from a fall or other accident. Rarely, it can occur without a known cause. People with the following risk factors may be at higher risk for developing a subdural hematoma:

- **Advancing age:** Aging stretches and weakens the veins in the brain, and they are more likely to tear — even with a minor fall.
- **Long-term or heavy alcohol use**
- **Long-term use of medications** that interfere with blood clotting — for example: ibuprofen (Advil), aspirin, clopidogrel (Plavix), and warfarin (Coumadin).
- **Repeated falls or head injuries**

How is it diagnosed?

If your symptoms suggest that you may have a subdural hematoma, your doctor will start with a physical exam and medical history. Then, you will likely have a CT scan (also called a CAT scan) to identify the size and location of the hematoma.

How is it treated?

Treatment varies by the cause, timing, severity, and urgency of symptoms. Treatment can be very different for each patient. Treatment is best decided by doctors who specialize in treating problems related to the brain (neurologists and neurosurgeons). Possible treatments include:

- **Medications.** The following types of medications *may* be used:
  - **Anticonvulsants** to prevent seizures
  - **Hyperosmotic agents** to reduce swelling
  - **Other substances** such as plasma, platelets, and vitamin K to reverse bleeding problems
- **Hospital Stay:**
  - You will need to be admitted to the hospital so your symptoms can be closely watched. If your symptoms are severe, you may be admitted to the intensive care unit (ICU).
  - While you're in the hospital, your blood pressure, heart rate, temperature, respiratory rate, and neurological status (how alert you are) will be carefully monitored. This may require you to be woken up every two hours to ensure your condition does not get worse.
  - How long you stay in the hospital varies greatly based on your symptoms.
- **Surgery:** Many patients with subdural hematoma will not need surgery. For others, surgery may be needed to reduce the amount of blood and relieve pressure on the brain. For example:
  - **For smaller hematomas,** a neurosurgeon may drill small holes — called **burr holes** or **keyhole craniotomies** — which allow for draining or removal of the hematoma. This procedure may be done at the bedside or in the operating room.
  - **For larger hematomas,** a neurosurgeon may perform a **craniotomy** in the operating room. See below for more information.

What is a craniotomy?

A **craniotomy** is a surgery to cut an opening in the skull and expose the brain. Here's what to expect:

1. A neurosurgeon makes an incision through the skin and cuts out a small section of your skull, called a bone flap. The bone flap is removed to expose the brain underneath.
2. The hematoma is drained or removed.
3. The bone flap is secured back in place, and the incision is closed back up with either sutures (stitches) or staples.
4. You are closely monitored in the ICU.

The incision site on the head must be kept dry until the staples or sutures are removed. This is usually 7-10 days after surgery.

What happens next?

After a subdural hematoma, you may have no further symptoms or effects, or you may need to recover in a rehabilitation center or have ongoing therapy. Some effects of subdural hematoma may not completely resolve, especially in the elderly.

When to call the doctor

Contact your doctor right away if you experience either of the following:

- **Return of any of the symptoms** of subdural hematoma listed on the front of this handout.
- **Signs of infection** from the incision site of a craniotomy, such as swelling, pain, or pus.

Talk with your doctor about what you may be able to do to reduce your risk for further problems.