

Subdural Hematoma (SDH)

A guide for patients and families

What is Subdural Hematoma (SDH)?

A subdural hematoma (səb'dūr-əl hē-mə'tō-mə) is a collection of blood that accumulates inside the skull but outside the brain. The bleeding occurs within the layers of tissue that surround the brain. It collects under the brain's tough outer wrapper known as the dura. The blood is then described as being sub (under) -dural.

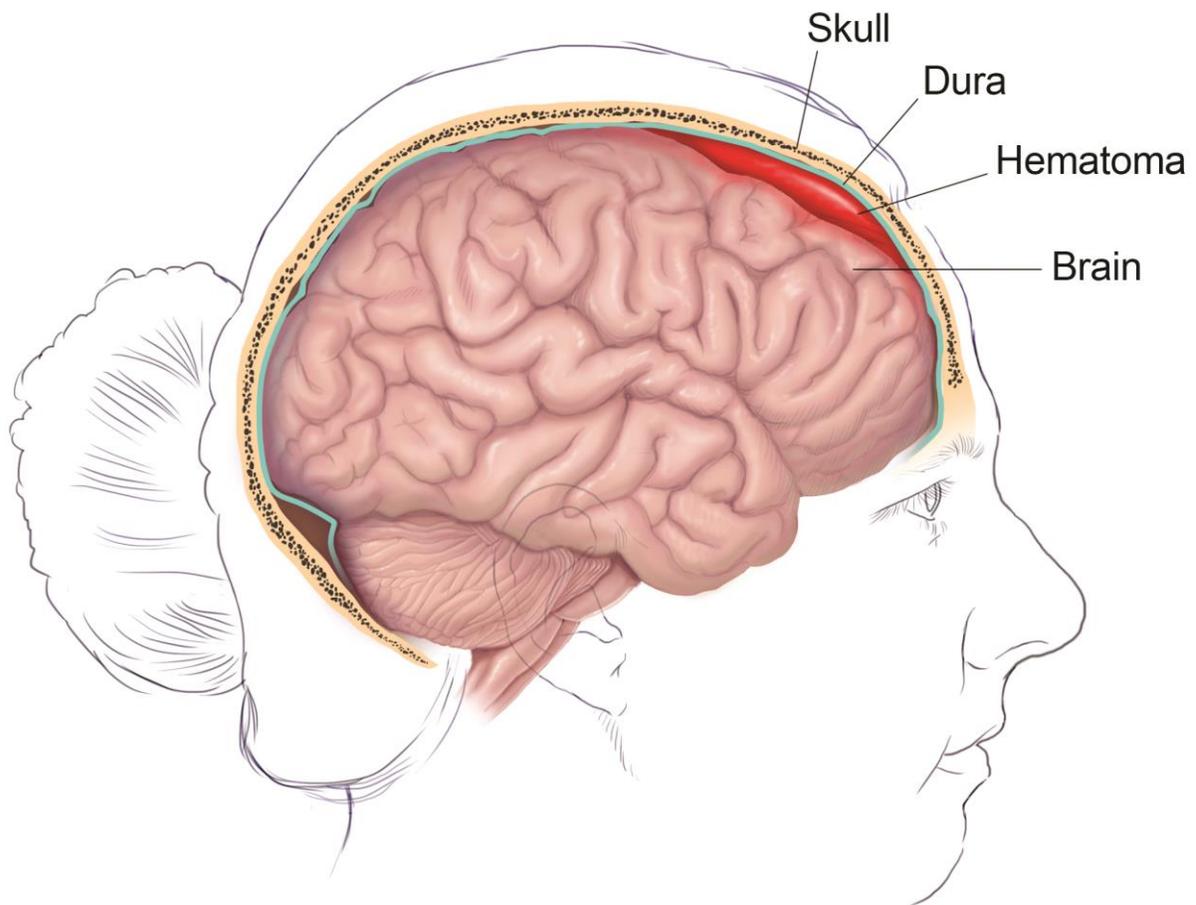


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Since the skull does not expand, any buildup of blood inside it can quickly put pressure on the brain. In cases where a large amount of subdural blood accumulates, the pressure inside the head can lead to brain damage, unconsciousness, and death.

How Common is SDH?

The National Institutes of Health reported in 2007 that subdural hematomas (SDH) caused nearly 92,000 hospital stays in a year. The cost of caring for people with this condition was \$1.6 billion nationally. As our national population ages, these numbers are expected to grow.

What are the causes of SDH?

SDH's are most often caused by sudden impacts shaking the skull. Sudden shifting of the brain within the skull (rattling around like a tennis ball in a can) can tear the small blood vessels that bridge between the skull and brain. Depending on the size and location of the torn vessels, this can produce brisk bleeding with a rapid patient collapse or much slower oozing with symptoms appearing many days after the event. The events do not have to be direct blows to the head. About half of the chronic SDH patients who report having fallen did so without hitting their heads.

While rare, SDH's can also appear without trauma. Abnormal blood vessels, dehydration, cancer, and blood clotting disorders have caused spontaneous SDH's. Blood clotting medications, anabolic steroids used in body building, or cocaine use might also be factors.

What are the different types of SDH?

Subdural hematomas are named based on how fast they accumulate.

- **Acute subdural hematomas** usually appear within 72 hours of a traumatic event.

- **Subacute subdural hematomas** are ones found within 3-7 days of an injury.
- **Chronic subdural hematomas** may take weeks to months to appear. These are more commonly seen in the elderly population where brain shrinkage stretches the blood vessels “bridging” between the skull and brain, making them more vulnerable. Brain shrinkage also creates more space within the skull, making the effects of blood accumulation slower to appear.

Who is at high risk to develop SDH?

People with the following conditions have an increased risk for having a subdural hematoma:

- Old age - this is the leading risk factor for having SDH's
- Taking a daily aspirin or anticoagulation therapy
- Blood clotting disorder
- Alcohol abuse
- Frequent falls
- History of repeated head injuries
- Having an intracranial shunt

What are the symptoms of SDH?

Acute subdural hematomas often follow head trauma forceful enough to temporarily knock someone unconscious.

Other associated symptoms include:

- Severe headaches
- Dizziness
- Changes in vision, speech, or mental clarity
- Seizures
- Nausea and vomiting
- Weakness on one side of the body

Chronic subdural hematomas are sometimes hard to diagnose because their symptoms can resemble so many different conditions. Up to 40 percent of SDH's among the elderly were misdiagnosed at the time of hospital admission, often as dementia.

Up to 80% of people with chronic SDH have a milder headache. They may also have any of the following symptoms, alone or in combination:

- Behavior and personality changes
- Confusion
- Speech changes
- Limb weakness, numbness, or tingling
- Apathy, lethargy, or drowsiness
- Double vision
- Balance changes and difficulty walking
- Memory loss

What is the treatment?

Small subdural hematomas with mild symptoms may require no treatment beyond observation. Repeated head scans will likely be needed to monitor hematoma size and trends. Larger hematomas that produce increased pressure or brain shifting need urgent surgery for removal.

There are three types of surgery used for removing hematomas. The technique chosen depends on clot size, location, and structure.

- **Burr hole trephination** is where surgeons drill a hole through the skull above the clot and wash it out with copious irrigation. This is most efficient for removing liquefied hematomas. This method is common for Chronic SDH's
- **Craniotomy** might be required for a larger and firmer clot. Here, a larger section of the skull is removed, the clot is lifted out, and the skull plate

returned to its original position. This is the most frequent method for Acute SDH's.

- **Craniectomy** is another procedure that removes a section of the skull, but with this method the bone plate is left off for an extended period of time after clot removal. This method is less commonly used, mostly in cases where the underlying brain tissue has experienced major swelling.

What is the outlook (prognosis)?

Outcomes are difficult to predict because they depends on many factors such as the size, location, and the patient's health before the injury. The factor that all the best outcomes have in common is time. Early detection and intervention are essential for limiting lasting damages. This is why it is important to call your doctor after a fall.

How can I prevent or avoid SDH damage?

Preventing falls and head injuries is the most effective way to prevent SDH and the damage it causes. Using safety equipment such as seat belts, cycling helmets and walking canes greatly helps to reduce the risk. Older people in particular must be careful to avoid falls.

If you experience a head injury, be sure to have a doctor evaluate it promptly. This is especially important if there was a loss of consciousness or if you have any of the risk factors listed on pages 2-3.

If you personally receive a significant blow to the head, ask someone keep an eye on you. Even if you feel fine initially, symptoms may develop later. Also, the impact may cause memory loss, impairing your ability to report it.

Who can I ask if I have more questions?

Please feel free to approach any member of the care team if you have additional questions. We pride ourselves in being a place that delivers knowledge as well as care.

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