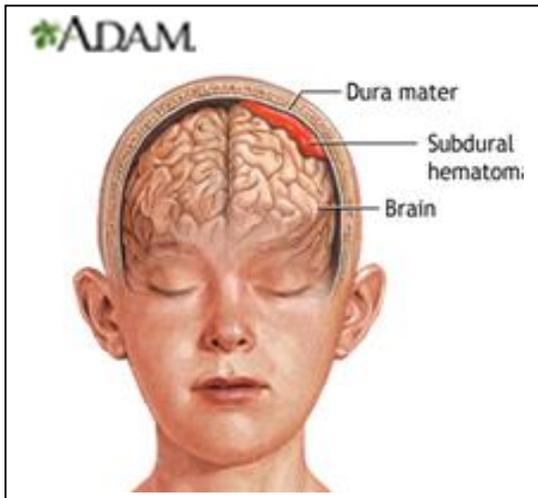


# Subdural Hematoma (SDH)

## What is a subdural hematoma?

It's a collection of blood resulting from bleeding between the dura matter and the arachnoid layer of the meningeal covering of the brain. It usually results from injury to the brain substance and its parenchymal vessels. The bridging veins that drain from the surface of the brain into the sagittal sinus are the source of most subdural hematomas. SDH is usually venous in origin and is much slower to develop into a mass large enough to produce symptoms. However, an SDH may also be caused by tearing of small cortical arteries, which would cause a more rapid development.



## What causes a subdural hematoma?

It is usually caused by a head injury from a fall, motor vehicle accident or assault. People who take blood thinners, have brain atrophy from advanced age or chronic alcoholism are also considered at higher risk of getting an SDH even with a minor head injury.

## What are the symptoms of a subdural hematoma?

Symptoms of an SDH will depend on the rate of bleeding (sudden severe bleeding may cause a person to lose consciousness and become comatose immediately).

A person may appear normal for days, but slowly become confused and then unconscious several days later (slowly enlarging subdural).

In a very slow growing subdural, there may be no noticeable symptoms for more than 2 weeks.

Symptoms from an SDH may vary depending on certain factors such as size of the bleed, age and other underlying medical conditions.

## COMMON SYMPTOMS

- ▶ Headache
- ▶ Confusion
- ▶ Nausea and Vomiting
- ▶ Drowsiness
- ▶ Weakness
- ▶ Intermittent numbness to extremities
- ▶ Dizziness
- ▶ Speech problems
- ▶ Vision changes (diplopia)
- ▶ Seizures
- ▶ Change in personality (noted by the family)

## Types of Subdural Hematomas

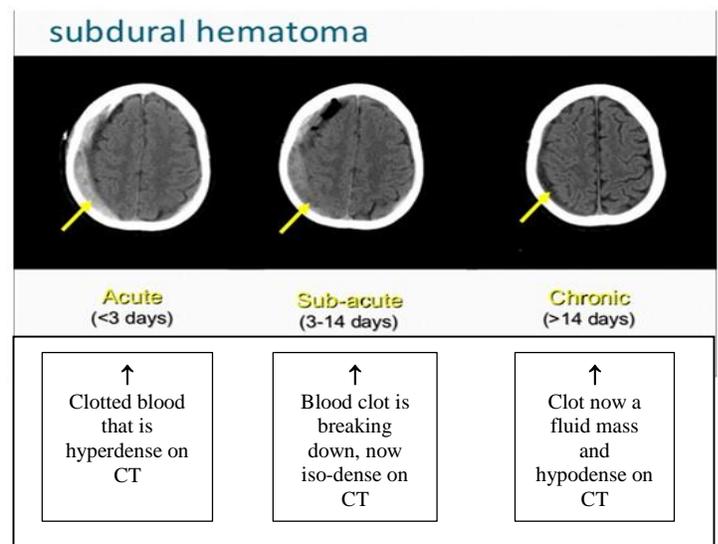
<u>Types</u>	<u>Time frame of injury</u>	<u>Cause</u>	<u>Presentation</u>	<u>Management/ Treatment</u>
Acute	Within 48hrs of injury	Major traumatic head injury	Decreased level of consciousness (LOC), headache, and signs of increased ICP. Presentation can range from drowsy to unconscious	Immediate recognition of increased ICP. Surgical intervention is often needed
Sub-acute	2-14 days	Often delayed onset of neurological deficits from a slowly expanding acute SDH	Focal deficits are common. May have decreased LOC	Surgical evacuation if neurological deficits are noted
Chronic	Develops over weeks to months	Minor trauma commonly associated with elderly people or those on anticoagulants	Focal symptoms are most common	Surgical evacuation if neurosurgical deficits are noted.

**NOTE:** Subdural hematomas may be mixed in nature, such as when acute bleeding has occurred into a chronic subdural hematoma.

### Management and Treatment

- ▶ Surgical evacuation (burr holes or craniotomy)
- ▶ Supportive care for patients and their families if surgery is not an option
- ▶ Medications to control symptoms (mannitol, 3% saline, decadron)
- ▶ Reverse coagulopathy (FFP, vitamin K, platelets etc.)
- ▶ Frequent neurological assessments using the GCS (LOC, pupils)
- ▶ Frequent vital sign monitoring (Cushing's triad)
- ▶ Motor function assessments (hemiparesis, hemiplegia, abnormal flexion or abnormal extension)

## SDH over time 3 days to 14 days



The earlier a neurological deficit is recognized and treated, the better the prognosis.

If analgesics are administered, consider their effects on consciousness and other neurological assessment findings

Beware of the intoxicated patient...don't miss a head injury.

## The Neurosurgery and Education Outreach Network (NEON)

The Neurosurgery Education and Outreach Network (NEON) is comprised of Neurosurgical Nurse Educators (NNEs), Clinical Outreach Specialists/Advanced Practice Nurses, and Hospital Administrators dedicated to the neurosurgical nursing program implementation and on-going educational and clinical support of nursing staff in the neurosurgical centres and the non-neurosurgical referral centres.

As a neurosurgery education support program, NEON reports to the System Capabilities Working Group, a sub-group of the Provincial Neurosurgery Advisory Committee, which supports system-wide improvements for Ontario's neurosurgery services. NEON also works in collaboration with Critical Care Services Ontario (CCSO).

## **Disclosure Statement**

The Neurosurgery Education and Outreach Network (NEON) has no financial interest or affiliation concerning material discussed in this presentation.

This handout provides an overview of the nursing care required for adult patients with a subdural hematoma to ensure consistency within and across organizations. It was developed by a sub-group of clinical neurosurgical nurses and neurosurgical educators for nurses across Ontario. This presentation is not meant to be exhaustive and its contents are recommended, but not mandated for use. Nurses should use their clinical judgment and utilize other assessment parameters if determined necessary.

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## References

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