

# Headache: Identifying Life-Threatening Conditions for Adult Patients in a Primary Care Setting

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## Headache Red Flag Signs and Symptoms (SNOOP)

Red Flag	Possible Conditions
S Systemic symptoms and signs	Meningitis, vasculitis, cancer, infection
N Neurologic symptoms or signs	Neoplasm, stroke
O Onset sudden, "thunder-clap"	Subarachnoid hemorrhage, reversible cerebral vasoconstriction syndrome
O Older age at onset (>50 years)	Giant cell arteritis, neoplasm
P Pattern change/progression	Neoplasm
P Precipitated by Valsalva maneuver	Posterior fossa lesion
P Positional aggravation	High or low pressure headache
P Papilledema	High pressure headache

### Suspicion for These Headache Conditions Need Emergency Evaluation

- Subarachnoid hemorrhage
  - Thunderclap headache – an abrupt onset, very severe headache that reaches peak intensity within 1 minute
- Cervical artery dissection
  - Neck pain, acute or subacute, or headache with Horner syndrome and/or neurologic deficit
  - Horner syndrome classic signs are pupil constriction, eyelid droop, and inability to sweat; seen in 39% of those with carotid and 13% of those with vertebral artery dissection
- Meningitis or encephalitis
  - Fever, altered mental status, headache, with or without nuchal rigidity
- Increased intracranial pressure
  - Headache with global or focal neurologic deficit or papilledema and positional (worse when lying down)
- Acute angle closure glaucoma
  - Headache with orbital or periorbital symptoms (visual impairment, periorbital pain, ophthalmoplegia)
- Carbon monoxide poisoning
  - Headache, nausea, vomiting, blurred vision; varies in severity by level of exposure
- Pituitary apoplexy
  - Severe headache, change in peripheral vision
- Cerebral venous sinus thrombosis
  - Headache with papilledema, focal neurologic symptoms, encephalopathy
  - Increased risk with oral contraceptive pills (OCP) and J&J Covid vaccination

## Subarachnoid Hemorrhage (SAH) and Ruptured Cerebral Aneurysm

SAH are rare. In a primary care practice of 2,000 patients, on average one patient every 7 to 8 years will present with SAH. Most subarachnoid hemorrhages are caused by ruptured saccular aneurysms. Nonaneurysmal SAH comprise 15-20% of cases and have diverse etiologies.

### Signs and Symptoms of Subarachnoid Hemorrhage (SAH)

The primary symptom is a sudden, severe (thunderclap) headache: "Worst headache of my life". Additional signs are:

- Impaired consciousness, momentary loss of consciousness, or buckling of legs
- Neck stiffness
- Nausea, vomiting
- Exertion or Valsalva immediately preceding onset of headache
- Elevated blood pressure (160/100 mm HG or higher)
- Occipital headache
- New or atypical headaches in past days or weeks
- Meningismus and lower back pain may develop several hours after the bleed

### Risk Factors for SAH

- Cigarette smoking
- Hypertension
- Family history
- Age 40 years or older
- Oral contraceptive use

### Questions for Patients with Headache and Possible SAH

Question	Comments
How severe is your headache? Did it come on suddenly or gradually? Have you had similar headaches in the past? If so, when?	This is to determine whether the patient is having a thunderclap headache or if the headache is different from previous headaches.
Have you ever been diagnosed with an aneurysm or SAH?	Untreated aneurysms have a significant risk of rebleeding, whereas patients with previous aneurysms have a high risk of developing new or additional aneurysms.
Do you have any family members who have had an aneurysm or SAH?	A patient with a first-degree relative who has had SAH has three times the risk of the condition compared with the general public.
Do you smoke tobacco, drink alcohol excessively, or use illicit drugs? If you use illicit drugs, when did you last engage in this activity?	Smoking and heavy alcohol use are risk factors commonly associated with SAH; recent use of sympathomimetics (e.g., methamphetamine, cocaine) has also been associated with the condition.
Have you been diagnosed with hypertension?	Hypertension is a risk factor SAH.

### Rapid Response

If patient is suspected of SAH, a CT scan should be performed within 6 hours of headache onset to optimize diagnostic accuracy.



**Differential Diagnosis:  
Normal Pressure  
Hydrocephalus (NPH)**

- Build-up of cerebrospinal fluid (CSF) in brain's ventricles
- Idiopathic or secondary causes
- Age >60 years at highest risk
- Triad of classic symptoms:
  - Incontinence ("wet")
  - Gait instability ("wobbly") - key feature
  - Cognitive changes ("wacky")
- Signs and symptoms can be subtle
- NPH may be reversible, making prompt diagnosis crucial

**Non-Life Threatening  
Headache Types  
Commonly Seen in Clinic**

- Migraine with and without aura
  - Episodic
  - Chronic
- Tension type headache
  - Chronic > Episodic
- Trigeminal Autonomic Cephalalgia
- Concussion
- Brain tumors
  - Benign
  - Malignant
- New daily persistent headache



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