

View this article online at: [patient.info/doctor/headache-pro](https://patient.info/doctor/headache-pro)

## Headache

This article represents an overview of primary and secondary headache types as defined by the International Headache Society (IHS). Further details on the epidemiology, presentation and management of each type are covered, where indicated, by linked articles.

### Epidemiology

Headache affects almost everyone at some time. It is more common in women than in men. The IHS classifies headaches into primary and secondary headache disorders<sup>[1]</sup> <sup>[2]</sup> .

### Primary headache

Over 90% of headaches seen in primary care are primary headaches<sup>[3]</sup> . The primary headaches consists of four categories, of which the first two are the most common. The four categories are<sup>[2]</sup> :

#### Tension-type headache (TTH)

See the separate [Tension-type Headache](#) article.

- These are the most common type of headaches. Estimated lifetime prevalence of episodic TTH has not been clearly measured. Figures of 30-78% are widely quoted but there are no published studies which support these numbers.
- The classification includes both episodic and chronic TTH.
- TTH characteristics are that they are bilateral, pressing or tightening in quality, mild-to-moderate in intensity and with no nausea. They are not aggravated by physical activity although there may be pericranial tenderness and sensitivity to light or noise<sup>[1]</sup> .

#### Migraine

See the separate [Migraine](#) article.

- Migraine headaches tend to be unilateral, throbbing and disproportionately disabling. Nausea is common.
- Migraine can occur with or without aura.
- Visual symptoms are the most common manifestation of an aura and consist of flickering lights, spots or zig-zag lines, fortification spectra or blind spots.

### **Trigeminal autonomic cephalgias** <sup>[2]</sup>

The IHS's International Classification of Headache Disorders third edition (ICHD-3) has introduced a new sub-classification of primary headaches, trigeminal autonomic cephalgias (TACs). This encompasses cluster headaches, paroxysmal hemicrania, short-lasting unilateral neuralgiform headache attacks and hemicrania continua. The TACs are characterised by hemicranial headache, usually with ipsilateral autonomic features. They are thought to arise from a trigeminal-parasympathetic reflex.

### **Cluster headaches**

See the separate [Cluster Headaches](#) article.

- Cluster headaches are characterised by attacks of severe unilateral pain in a trigeminal distribution. They are more common in:
  - Men.
  - People who smoke.
  - Adults older than 20 years.
- They occur in clusters followed by a remission period of months or years.
- They often begin during sleep and may wake the patient, as the pain is severe. They are associated with ipsilateral watering of the eye, conjunctival redness, rhinorrhoea, nasal blockage and ptosis.

### **Paroxysmal hemicrania**

These are characterised by attacks of severe, unilateral pain, in the orbital, supraorbital or temporal areas, or any combination of these sites. They last 2-30 minutes and occur several or many times a day. They are usually associated with ipsilateral conjunctival injection, lacrimation, nasal congestion, rhinorrhoea, forehead and facial sweating, miosis, ptosis and/or eyelid oedema.

### **Short-lasting unilateral neuralgiform headache attacks**

These are attacks of moderate or severe, strictly unilateral head pain lasting seconds to minutes. They occur at least once a day and are usually associated with prominent lacrimation and redness of the ipsilateral eye.

### **Hemicrania continua**

This can be considered a prolonged form of paroxysmal hemicrania in which symptoms last for up to 24 hours. The headache is often more severe and accompanied by restlessness and agitation. Both paroxysmal hemicrania and hemicrania continua respond to indometacin - this can be considered a pathognomonic feature.

### **Other primary headache disorders** <sup>[2]</sup>

This is a heterogeneous group of headaches with poorly understood pathogenesis, whose currently established treatment is often based on anecdote or on uncontrolled trials. Some of them, such as primary thunderclap headache, will have significant and even life-threatening conditions such as [subarachnoid haemorrhage \(SAH\)](#) in the differential diagnosis, and will require imaging. The list of other primary headaches is as follows:

- **Primary stabbing headache** (also called ice-pick headache): this consists of a single stab or series of stabs in the distribution of the first trigeminal nerve with no other accompanying signs or symptoms.
- **Primary cough headache** (also called Valsalva headache): a headache precipitated by coughing or straining in the absence of any other headache disorder.
- **Primary exercise headache**: this is a pulsating headache brought on by exercise and lasting 5 minutes to 48 hours. It occurs particularly in hot weather or at high altitude. Due to its sudden onset, SAH may need to be excluded. At altitude it is essential to consider [acute mountain sickness](#) and [high-altitude cerebral oedema](#), and in view of their seriousness these should be the first-line diagnoses until disproved.

- **Primary headache associated with sexual activity** (PHASA, or coital cephalgia): a headache precipitated by sexual activity, usually starting during intercourse and peaking at orgasm. It may have an explosive onset at orgasm, in which case SAH will need to be excluded at least on the first occurrence.
- **Primary thunderclap headache** is a high-intensity headache of sudden onset reaching maximum intensity in under a minute and lasting from  $\geq 5$  minutes. It resembles SAH, from which it cannot be distinguished on clinical grounds alone. When such a headache presents in primary care, without other symptoms, there is a 1 in 10 chance that this represents SAH. Primary thunderclap headache is not recurrent, generally, although it may recur in the first week after onset:
  - Evidence that thunderclap headache exists as a primary condition is poor – the search for an underlying cause should be exhaustive, as the differential diagnoses are serious.
  - Thunderclap headache is frequently associated with serious vascular intracranial disorders, particularly SAH – it is mandatory to exclude this and a range of other such conditions including intracerebral haemorrhage, cerebral venous thrombosis, unruptured vascular malformation (mostly aneurysm), arterial dissection (intracranial and extracranial), CNS angiitis, reversible benign CNS angiopathy and pituitary apoplexy.
  - Other organic causes of thunderclap headache are colloid cyst of the third ventricle, CSF hypotension and acute sinusitis (particularly with barotrauma).
- **Cold-stimulus headache:** this is headache brought on by a cold stimulus applied externally to the head or ingested or inhaled.
- **External-pressure headache:** Headache resulting from sustained compression of or traction upon pericranial soft tissues. Examples include wearing a tight band around the head, a hat or helmet, or goggles worn during swimming or diving, without damage to the underlying scalp.

- **Hypnic headache:** this is a dull headache that wakens the patient from sleep, occurs on at least half of all days and lasts at least 15 minutes after waking. It affects those aged over 50 years only. There are no other signs or symptoms but intracranial disorders must be excluded.
- **Nummular headache:** this describes pain of highly variable duration, but often chronic, in a small circumscribed area of the scalp and in the absence of any underlying structural lesion. It can be experienced anywhere on the scalp, but frequently occurs in the parietal region.
- **New daily persistent headache:** this is a headache that is daily and unremitting virtually from onset. It can resemble TTH but may build to become severe. If nausea is present it is only mild, but photophobia or phonophobia can also occur. It is very difficult to treat.

## Secondary headaches

See the separate [Secondary Headache](#) article. These include:

- 'Not immediately life-threatening' headaches:
  - [Secondary to a substance, or its withdrawal](#) - eg, carbon monoxide, alcohol, [medication-overuse headache](#).
  - Secondary to structures of the head and neck - eg, [sinusitis](#), [glaucoma](#), [temporomandibular joint \(TMJ\) pain](#), tooth pain.
  - Secondary to homeostatic dysfunction - eg, hunger headache, headache secondary to hypertension, headache associated with hypoxia, [dialysis headache](#).
  - Secondary to psychiatric disorder - eg, somatisation, psychosis.

- Dangerous headaches:
  - Dangerous headaches tend to be 'first and worst'. They occur suddenly, and are progressive, with onset usually later in life.
  - They represent a small proportion of patients. Causes may include:
    - Vascular intracranial disorders - eg, [SAH](#), [temporal arteritis](#), [subdural haemorrhage](#).
    - [Raised intracranial pressure](#) (of whatever cause).
    - Intracranial infection - [meningitis](#), [encephalitis](#).
    - [Space-occupying intracranial lesion](#): fewer than 1% of patients who are referred to outpatient headache clinics have an intracranial lesion <sup>[4]</sup> .

## History<sup>[4]</sup>

Classifying headache type and reaching a diagnosis based on the features of the headache allow people with a primary headache disorder to receive appropriate treatment and prevention for their headaches. Some people will have more than one headache disorder and therefore have more than one classification. Accurate classification (and appropriate treatment) will help reduce referrals for unnecessary investigations and contribute to improved outcomes for people with a headache disorder. This is particularly true for people with tension-type headaches and migraine, who are often referred for imaging solely for reassurance <sup>[5]</sup> .

Consider using a headache diary to aid the diagnosis of primary headaches. Do not use a headache diary to delay investigation in patients with red flag symptoms <sup>[1]</sup> . If a headache diary is used, ask the person to record the following for a minimum of eight weeks:

- Frequency, duration and severity of headaches.
- Any associated symptoms.
- All prescribed and over-the-counter medications taken to relieve headaches.
- Possible precipitants.

- Relationship of headaches to menstruation.

### **How many different headache types does the patient experience?**

- Separate histories are necessary for each headache.
- It is sensible to concentrate on the most troublesome to the patient, but always take full histories about the others in case there are red flags.

### **Timing questions**

- Why is the patient consulting now?
- When did the headaches first start?
- Any previous similar episodes in the past?
- Are things getting worse, getting better or staying the same?
- How frequent are they, and what temporal pattern (especially distinguishing between episodic and daily or unremitting)?
- What is a typical headache like? How long do they last?
- How severe are they? Scale of 1 to 10?

### **Character questions**

- What is the intensity of pain?
- What is the nature and quality of pain – eg, dull, throbbing, stabbing?
- Site and spread of pain?
- Are there associated symptoms?

### **Cause questions**

- Are there predisposing or trigger factors?
- Are there aggravating or relieving factors?
- Is there any family history of similar headache?

### **Response questions**

- What does the patient do during the headache?

- How much are activities limited or prevented?
- What medication has been tried and how has it been used?

### **State of health between attacks**

- Completely well, or any residual or persisting symptoms?
- Concerns, anxieties, fears about recurrent attacks or their cause?
- What is the patient's medication history (paying particular attention to any newer medications)?

## **Examination**

The onset of a new type of headache needs careful history taking and examination, keeping red flags in mind.

Most dangerous headaches suggest themselves by clues in the history and symptoms but even if the history sounds benign, a clinical examination is essential. This will reassure the patient that their problem has been fully assessed, exclude signs and explanatory features of secondary headache, and detect red flags (see below). If patients with headache are not thoroughly examined they are likely to feel that their worst fears have not been considered or excluded.

### **Conduct a general and then a focused examination, depending on the features of the headache described by the patient.**

- The optic fundi should always be examined.
- Blood pressure measurement is recommended.
- Temporal artery palpation is essential in patients aged over 50 years.
- Perform a full neurological examination if focal neurological symptoms are present.
- Assess and record cognitive level if this is in any way disturbed.

Additional physical examination may be suggested from the history – for example:

- Fever and neck stiffness (meningitis).



- Scalp or temporal artery tenderness (giant cell arteritis).
- Examine the head and neck for muscle tenderness and stiffness.
- Painful red eye with dilated pupil (primary angle-closure glaucoma).
- Papilloedema (intracranial tumours, adult idiopathic intracranial hypertension).
- Fever (infections, systemic illness).
- Features of hypothyroidism.

## Management

### General measures

Reassurance is part of successful management for most patients with headache.

### Tension-type headache

See the separate article [Tension-type Headache](#).

### Migraine

See the separate article [Migraine Management](#).

### Cluster headache

See the separate article [Cluster Headaches](#).

### Medication-overuse headache

See the separate article [Medication-overuse Headache and Headache Triggers](#).

## When to refer: red flag headache features

The difficulty lies in separating the very many non-serious headaches, which may nevertheless be severe, from the fewer but significant headaches, particularly those needing very urgent intervention.

The National Institute for Health and Care Excellence (NICE) has issued a quality standard on recognition and referral of suspected neurological conditions<sup>[6]</sup>. It recommends that all children aged under 12 years with red flag symptoms accompanying their headache be referred immediately for neurological assessment within hours or sometimes sooner. You can find more details on the rationale in our [Migraine in Children](#) article.

The following groups of symptoms and signs can be suggestive of headache of serious significance and in some cases suggest an urgent need for neuroimaging or other further investigation<sup>[1]</sup>:

### **Onset features**

- New onset of, or change in, headache in patients who are aged over 50 years.
- Headache in patients who are aged under 5 years.
- Thunderclap: rapid time to peak headache intensity (seconds to five minutes) – same-day specialist assessment required.
- Headache waking the patient up (**NB**: migraine is the most frequent cause of morning headache).
- Headache precipitated by physical exertion or Valsalva manoeuvre (eg, coughing, laughing, straining).
- Headache onset with exertion or sex.

### **Neurological red flag features**

- Headache onset with seizure or syncope (SAH).
- Headache associated with altered conscious level, memory loss, altered cognitive state or change in personality.
- Focal neurological symptoms (eg, limb weakness, aura <5 minutes or >1 hour).
- Non-focal neurological symptoms (eg, cognitive disturbance).
- Abnormal neurological examination.

### **Headache features**

- First or worst headache of the patient's life.
- Headache that changes with posture.

### **Associated features**

- Patients with risk factors for cerebral venous sinus thrombosis (including pregnancy).
- Jaw claudication or visual disturbance.
- New-onset headache in a patient with a history of HIV infection.
- New-onset headache in a patient with a history of cancer which can metastasise to the brain (or any history of cancer in a patient aged under 20 years).
- Symptoms suggestive of [giant cell arteritis](#)
- Symptoms and signs of [acute narrow-angle glaucoma](#).
- Vomiting without any other obvious cause.
- Headache after head injury or within 90 days of head injury (subdural in the elderly).
- [Papilloedema](#).
- Immunosuppression.
- Headache associated with neurological deficit.
- Headache associated with visual disturbance or jaw claudication ([temporal arteritis](#)).
- Abnormal physical findings.
- Headache with fever, rash or neck stiffness.

In one study, altered consciousness, altered neurology and papilloedema correlated particularly highly with positive neuroimaging findings<sup>[7]</sup>. In another study, age over 50 years at diagnosis, altered consciousness and thunderclap headache correlated most highly with the occurrence of fatal headache<sup>[8]</sup>.

# Complications

- [Depression](#) secondary to chronic headache.
- [Medication-overuse headache](#).
- Sleep disturbance.

*Dr Mary Lowth is an author or the original author of this leaflet.*

---

## Further reading

- [Caronna E, Pozo-Rosich P](#); Headache during COVID-19: Lessons for all, implications for the International Classification of Headache Disorders. *Headache*. 2021 Feb;61(2):385-386. doi: 10.1111/head.14059. Epub 2021 Feb 1.
- [Gazerani P](#); A Bidirectional View of Migraine and Diet Relationship. *Neuropsychiatr Dis Treat*. 2021 Feb 11;17:435-451. doi: 10.2147/NDT.S282565. eCollection 2021.

**Disclaimer:** This article is for information only and should not be used for the diagnosis or treatment of medical conditions. Egton Medical Information Systems Limited has used all reasonable care in compiling the information but makes no warranty as to its accuracy. Consult a doctor or other healthcare professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).

<b>Last updated by:</b> Dr Laurence Knott 22/06/2021	
<b>Peer reviewed by:</b> Dr Hayley Willacy, FRCGP 22/06/2021	<b>Next review date:</b> 21/06/2026

---

View this article online at: [patient.info/doctor/headache-pro](https://patient.info/doctor/headache-pro)

Discuss Headache and find more trusted resources at [Patient](#).



To find out more visit [www.patientaccess.com](http://www.patientaccess.com)  
or download the app



Follow us

