

# Migraine

## Fact Sheet

### What is migraine?

**Migraine** (together with Tension-Type Headache and Medication-Overuse Headache) is the most common, burdensome **headache disorders** and the most relevant from a public health perspective. These three disorders affect men, women and children in every part of the world, including over half of Europe's adults.<sup>1</sup> However, headache disorders remain under-diagnosed and under-treated throughout Europe. In terms of funding and research, despite its prevalence, headache is often overlooked by key decision-makers.<sup>2</sup>

Migraine is a **primary headache disorder**, probably with a genetic basis. Activation of a mechanism deep in the brain causes release of pain-producing inflammatory substances around the nerves and blood vessels of the head. Why this happens periodically and what brings the process to an end in spontaneous resolution of attacks is uncertain.<sup>3</sup>

### Key facts



Migraine is estimated to affect **144 million people worldwide**.<sup>4</sup>



About **50% of people** with headache need **professional care** and cannot rely on self-medication: headache services should be based in primary care to provide sufficient reach and have to be supported by specialist care.<sup>5</sup>



Migraine is **3x more common in women** than men. Migraine affects over **30% of women** over their lifetime.<sup>6</sup>

# History

Migraine is one of the oldest ailments known to mankind. Some of the earliest cases of painful headaches were recorded by the ancient Egyptians and date back as far as 1200 B.C. Much later, in around 400 B.C., Hippocrates referred to the visual disturbances that can precede a migraine such as flashing lights or blurred vision, which we call aura. He also described the relief felt by sufferers after vomiting.

The credit for migraine discovery, however, was given to Aretaeus of Cappadocia, who described in the second century the one-sided or unilateral headaches that are typical of migraine attacks as well as the associated vomiting and the windows of time between migraine attacks that are symptom-free.

The word migraine was derived from the Latin word "hemicrania" meaning "half" (hemi) "skull" (crania). This term was first used by Galenus of Pergamon to describe the pain felt across one side of the head during a migraine. He also suggested that the pain originated in the meninges and vasculature of the head. In addition, he pointed towards a connection between the stomach and the brain due to the vomiting that seemed to be related to migraine attacks.<sup>7</sup>

## Known causes of migraine

The cause of migraine attacks is not yet known. It is suspected that they result from abnormal activity in the brain. This can affect the way nerves and brain cells communicate as well as the chemicals and blood vessels in the brain. Genetics may make someone more sensitive to the triggers that can cause migraine attacks. However, the following triggers are likely to set off migraine attacks:



**Hormonal changes:** Women may experience migraine symptoms during menstruation or during the month, due to changing hormone levels.



**Emotional triggers:** Stress, anxiety, excitement, and shock can trigger a migraine.



**Physical causes:** Tiredness and insufficient sleep, shoulder or neck tension, poor posture, and physical overexertion have all been linked to migraine attacks. Low blood sugar, trips in airplanes and jet lag can also act as triggers.



**Triggers in the diet:** Alcohol can contribute to triggering migraine attacks as well as some normal and usual foods for so many affected people. Additives such as tyramine or histamine can worsen the situation. Migraine triggers are as personal as the fingerprint and each person can be sensitive to different ones. Irregular mealtimes and dehydration have also been named as potential triggers.



**Medications:** Some sleeping pills, hormone replacement therapy (HRT) medications, antibiotics, the combined contraceptive pill and some others have all been named as possible triggers.



**Triggers in the environment:** Flickering screens, strong smells, second-hand smoke, and loud noises can set off a migraine. Stuffy rooms, temperature changes, and bright lights are also possible triggers.<sup>8</sup>

# Diagnosis

Migraine is diagnosed solely on history. **Headache diaries** clarify the pattern of headaches and associated symptoms as well as medication use or overuse. Investigations, including neuroimaging, are indicated only when the history or examination suggest headache is secondary to another condition<sup>9</sup>:



## MRI (Magnetic Resonance Imaging) scan

An MRI scan uses a powerful magnetic field and radio waves to produce detailed images of the brain and blood vessels. MRI scans help doctors diagnose tumours, strokes, bleeding in the brain, infections, and other brain and neurological conditions. .



## Computerized tomography (CT) scan

A CT scan uses a series of X-rays to create detailed cross-sectional images of the brain. This helps doctors diagnose tumours, infections, brain damage, bleeding in the brain and other possible medical problems that may be causing headaches.<sup>10</sup>

# Symptoms

Migraine attacks, which often begin in childhood, adolescence or early adulthood, can progress through four stages: prodrome, aura, attack and post-drome. Not everyone who has migraine attacks goes through all stages.

## Prodrome

One or two days before a migraine, you might notice subtle changes that warn of an upcoming migraine, including:

- Constipation
- Mood changes, from depression to euphoria
- Food cravings
- Neck stiffness
- Increased thirst and urination
- Frequent yawning
- Tiredness and "feeling of heavy legs"

## Aura

For some people, aura might occur before or during migraine attacks. Auras are reversible symptoms of the nervous system. They are usually visual but can also include other disturbances. Each symptom usually begins gradually, builds up over several minutes and lasts for 20 to 60 minutes.

Examples of migraine aura include:

- Visual phenomena, such as seeing various shapes, bright spots or flashes of light
- Vision loss
- Pins and needles sensations in an arm or leg
- Weakness or numbness in the face or one side of the body
- Difficulty speaking
- Hearing noises or music
- Uncontrollable jerking or other movements

## Attack

A migraine usually lasts from four to 72 hours if untreated. How often migraine attacks occur varies from person to person. Migraine attacks might occur rarely or strike several times a month.

During a migraine, you might have:

- Explosive throbbing pain in one or two sides of the head
- Pain that throbs or pulses
- Exacerbated sensitivity to light, sound, and sometimes smell and touch
- Nausea, vomiting or stomach revolutions

## Post-drome

After migraine attacks, you might feel very tired, drained, confused and washed out for up to a day. Some people report feeling elated. Sudden head movement might bring on the pain again briefly.<sup>12</sup>

# Treatment

Effective treatments exist for some headache disorders. For migraine, a very personalized treatment is needed depending on the severity and patient response. Currently there are some preventive treatments (calcitonin gene-related peptide) and some acute medications (triptans) that in many cases can help the affected ones. Besides the pharmaceutical treatment, lifestyle modification, healthy food and hygienic sleeping system, could reduce frequency of attacks.

Medications used to combat migraine attacks fall into two broad categories:



**Pain-relieving medications:** Also known as acute or abortive treatment, these types of drugs are taken during migraine attacks and are designed to stop symptoms.



**Preventive medications:** These types of drugs are taken regularly, often daily, to reduce the severity or frequency of migraine attacks.<sup>14</sup>

Implementation of good **headache health care** is likely to be cost saving. Headache care for most people can and should be provided by professionals such as primary-care physicians, using the skills they have with basic additional training. The solution is **implementation of headache services through education of professionals at primary care level:** structured, based in primary care to provide sufficient reach, and supported by educational initiatives that will enable to reduce the underdiagnosis of headache disorders. Structured headache services, at second or third level of care, should provide adequate diagnosis and treatments to the more complex situations such as high-frequency and chronic headaches or headaches complicated by comorbidities that require tailored multidisciplinary care.<sup>15</sup>

## Further information



**European Migraine & Headache Alliance**

[emh Alliance.org](http://emh Alliance.org)



**European Headache Federation**

[ehf-org.org](http://ehf-org.org)



**International Headache Society**

[ihs-headache.org](http://ihs-headache.org)



**The Migraine Movement**

[themigrainemovement.com](http://themigrainemovement.com)



**Lifting the burden**

[l-t-b.org](http://l-t-b.org)



**Danish Headache Center**

[rigshospitalet.dk](http://rigshospitalet.dk)

## REFERENCES

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