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# Migraine and other headache disorders

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## Key facts

- Headache disorders are among the most common disorders of the nervous system.
- Headache disorders ranked third (after stroke and dementia) in accounting for overall neurological disease burden as measured by age-standardized disability-adjusted life years (DALYs) in 2019.
- Headache disorders, which are characterized by recurrent headaches, are associated with personal and societal burdens of pain, disability, damaged quality of life and financial cost.
- Worldwide, only a minority of people with headache disorders are appropriately diagnosed and treated by a health care provider.
- Headache has been underestimated, under-recognized and under-treated throughout the world.

## Overview

Headache disorders, characterized by recurrent headaches, are among the most common disorders of the nervous system. A headache is a painful and disabling feature of primary headache disorders, namely migraine, tension-type headache and cluster headache.

Headaches can also be caused by or occur secondarily to a long list of other conditions, the most common of which is medication-overuse headache. Headaches, particularly migraine, can also affect children and adolescents but can affect them in different ways. Children's

migraines often affect both sides of their head and are usually shorter in duration. But, similar to adults, migraines in childhood and adolescence can result in missing school, sports and other activities.

## Prevalence

Globally, headache disorders affect approximately 40% of the population, or 3.1 billion people in 2021, and are more common in females compared to males. They are among the top three most common neurological conditions for most age groups, starting with age 5 and remaining in the top three until the age of 80. Despite some regional variations, headache disorders are a worldwide problem, affecting people of all races, income levels and geographical areas (1).

Not only is a headache painful, but it is also disabling. According to [Global Health Estimates 2019](#), headache disorders were found to be third highest cause of disability-adjusted life years (DALYs) worldwide, after stroke and dementia.

Headache disorders impose a burden on individuals that can include substantial personal suffering, impaired quality of life and financial cost. Repeated headache attacks, and often the constant fear of the next one, damage family life, social life and employment. The long-term effort of coping with a chronic headache disorder may also predispose the individual to other illnesses. For example, anxiety and depression are significantly more common in people who experience migraines than in healthy individuals.

## Types of headache disorders

Migraines, tension-type headaches and medication-overuse headaches are of public health importance since they are responsible for high population levels of disability and ill health.

### Migraine

Migraine is a primary headache disorder, in most cases episodic, that usually lasts 4–72 hours, accompanied by nausea, vomiting and/or photophobia and phonophobia. It is sometimes preceded by a short lasting aura of unilateral, reversible visual, sensory or other symptoms.

Migraine most often begins at puberty and generally affects those aged between 35 and 45 years. It is more common in women, possibly because of hormonal influences. Children typically experience migraine of shorter duration and abdominal symptoms are usually more prominent.

The exact cause of migraine is currently unknown but it is thought to result from the release of pain producing inflammatory substances around the nerves and blood vessels of the head. It can be triggered by alcohol and certain foods.

Migraine is characterized by recurring attacks and is often life-long.

Attacks typically include:

- **headache, which is**
- **of moderate or severe intensity**
- **one-sided or behind the eye**
- **pulsating in quality**
- **aggravated by routine physical activity**
- **with duration of hours to 2–3 days;**
- **sensitivity to light and sounds; and**
- **nausea.**

## Tension-type headache

Tension-type headaches (TTH) are described as pressure or tightness, often like a band around the head, sometimes spreading into or from the neck. They may be stress-related or associated with musculoskeletal problems in the neck. They often begin during the teenage years and affect 50% more woman than men.

Episodic TTH, occurring on fewer than 15 days per month, is reported by more than 70% of some populations. Episodic TTH attacks usually last a few hours but can persist for several days.

Chronic TTH can be unremitting and is more disabling than episodic TTH.

## Cluster headache

Cluster headache (CH) is a primary headache disorder characterized by frequently recurring (up to several times a day), brief but extremely severe headache, usually focused in or around one eye, with tearing and redness of the eye. The nose often runs or is blocked on the affected side and the eyelid may droop.

CH is relatively uncommon affecting fewer than 1 in 1000 adults, affecting six men to each woman. Most people developing CH are in their 20s or older. CH has episodic and chronic forms.

## Medication-overuse headache

Medication-overuse headaches (MOH) are caused by chronic and excessive use of medication to treat headache. MOH is the most common secondary headache disorder.

It may affect up to 5% of some populations, women more than men. MOH occurs by definition on more days than not, is oppressive, persistent and often at its worst on awakening.

## Social and economic burden

Migraines and other headaches can affect people's ability to work, through decreased productivity, and interpersonal relationships. Often people continue to try to work despite the debilitating symptoms that can occur. Headache-related productivity loss may affect people's careers and/or security, financial situation, relationships, and mental health. It also causes economic loss to companies and society.

## Treatment

Many of those troubled by headaches do not receive effective diagnosis and care. Appropriate treatment of headache disorders requires training of health professionals, accurate diagnosis and recognition of the conditions, appropriate treatment with cost-effective medications, simple lifestyle modifications and patient education. The main classes of drugs to treat headache disorders include analgesics, anti-emetics, specific anti-migraine medications and prophylactic medications. For migraine treatment, analgesics need to be taken at the first sign of symptoms (such as visual aura) to prevent the associated headache. Simple interventions to educate people on medication overuse headaches, migraine triggers and lifestyle modifications are highly effective. Restricting or eliminating alcohol, regular sleep and exercise schedules, healthy diets, staying hydrated and using a headache calendar to identify other triggers are often all that is needed to provide relief.

## Barriers to effective care

Lack of knowledge among health care providers is the principal clinical barrier. Many people with headache disorders are not diagnosed and treated. In many countries medications, such as sumatriptan for migraines, are not available.

Poor awareness extends to the general public. Headache disorders are not perceived by the public as serious since they are mostly episodic, do not cause death and are not contagious. The low consultation rates in developed countries may indicate that many affected people are unaware that effective treatments exist. Half of people with headache disorders are estimated to be self-treating.

Many governments, seeking to constrain health care costs, do not acknowledge the substantial burden of headache on society. They might not recognize that the direct costs of treating headache are small in comparison with the huge indirect cost savings that might be made (e.g., by reducing lost working days) if resources were allocated to treat headache disorders appropriately.

## WHO response

These evident burdens call for action. WHO recognizes this and partners with multiple non-governmental organizations to address headache. WHO published the [Atlas of headache disorders](#) in 2011, describing the burden due to headache disorders and resources available to reduce them.

In May 2022, the World Health Assembly endorsed the [Intersectoral global action plan on epilepsy and other neurological disorders 2022–2031](#). The action plan addresses the challenges and gaps in providing care and services for people with epilepsy and other neurological disorders such as headache disorders that exist worldwide and ensure a comprehensive, coordinated response across sectors. This includes raising policy prioritization and strengthening governance, providing effective, timely and responsive diagnosis, treatment and care, implementing strategies for promotion and prevention, fostering research and innovation and strengthening information systems.

WHO's position paper on [optimizing brain health across the life course](#) is a technical complement to the global action plan. The position paper provides a conceptual framework for brain health and how brain health can be optimized throughout life with actions across the following clusters of determinants: physical health, healthy environments, safety and security, learning and social connection, and access to quality services.

## References

1. Jaimie D Steinmetz, Katrin Seeher, Nicoline Schiess, Emma Nichols, Bochen Cao, Chiara Servili, Vanessa Cavallera, Christopher J L Murray, Kanyin Liane Ong, Valery L Feigin, Theo Vos, and Tarun Dua on behalf of the GBD network. Global, regional, and national burden of

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