



The science of migraines

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Migraine is the most common neurological disease in the developed world. It's generally characterised by recurrent pulsating headaches combined with a number of autonomic nervous system symptoms.

Migraines typically affect one half of the head. Indeed, the term "migraine" derives from the Greek hemikrania, meaning "pain on one side of the head." The headaches can be moderate to severe, which can make it almost impossible for the sufferer to blank out the pain.

Associated symptoms will vary from sufferer to sufferer, but they can include nausea, vomiting, and sensitivity to light, sound, and smell. Migraines can last from two to 72 hours, and physical activity generally makes the pain even worse.

The Causes of Migraines

Before puberty, migraines affect slightly more boys than girls. But given that, among adults, migraines affect up to three times more women than men, some believe that changing hormonal levels might play a role in causing the condition. This theory is supported by the fact that the risk of migraines tends to decrease during pregnancy.

Beyond the theoretical underlying genetic causes, certain things might trigger migraines in sufferers. Again, triggers will vary from person to person, but they can include stress, hunger, fatigue, menstruation, and certain foods and drinks.

When it comes to the dietary triggers, though, the evidence is largely based on self-reports, and is thus not nearly rigorous enough to act as hard proof. The notion that environmental aspects such as the quality of the air or light can act as a trigger is similarly lacking in hard evidence.

Finally, there's evidence that migraines are neurovascular disorders that start at the brain and spread to the blood vessels. There's disagreement over which system plays the greatest role in causing migraines – the neuronal mechanisms, the blood

vessels, or both – but high levels of the neurotransmitter serotonin are thought to be involved. And yet, the precise mechanism of the head pain that occurs during a migraine remains unknown.

How to Treat a Migraine

Some people experience migraines more frequently than others. In particularly severe cases, such as for those who experience them more than two days a week, doctors may advise preventative measures such as medication, nutritional supplements, lifestyle changes, and even surgery.

However, for many sufferers, migraines cannot be cured or prevented – they can only be managed. Ibuprofen and paracetamol can be taken for the headaches, and antiemetics can be taken for the nausea, but beyond this, there's little that can be done beyond avoiding triggers and waiting for the pain to pass.

Physical activity can make things worse, and many sufferers become sensitive to bright lights and loud noises, so for a lot of migraine sufferers, treatment involves lying down in darkened rooms for as long as is required.

But of course, just like the symptoms differ from person to person, so too might the treatment. Many sufferers will have products or techniques that they claim work for them, but which, for others, may worsen symptoms. For example, some might insist that listening to soft music helps them to take their mind off the pain. But for others, all music, no matter how soft, might be intolerable.