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MEDICAL SCIENCE

UNIT 1: Human Health and Disease

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Level 3 Diploma in Medical Science

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Article adapted from: <https://www.bbc.co.uk/news/newsbeat-48294987> (May 2019)

Migraines: Calls for 'life changing' drug, Aimovig, on NHS in England.

People who suffer from chronic migraines are calling for a new drug to be offered on the NHS in England.

The monthly injection of Aimovig has been described as 'life-changing' by those who have tried it. If it gets approved, it will be for people who have tried other preventative treatments unsuccessfully.

NICE, which gives advice on healthcare, rejected the drug in England on cost grounds in January 2019, but the NHS in Scotland approved it.

Migraines affect around 1 in 7 people, according to the National Migraine Centre. More women get them than men, and they usually start to affect people when they are teenagers.

There is no known cure for migraines. People normally treat them with over-the-counter painkillers, but often the symptoms are too severe for those drugs to work. Some patients have reported that transcranial magnetic stimulation alleviates symptoms, but everybody reacts in a different way.

'We tend to borrow things from other areas of medicine,' explains a doctor from the National Migraine Centre. 'Heart medication, anxiety medication and epilepsy medication we use a lot.' She hopes Aimovig will be able to help many people. In the US where it is widely available, there is evidence it can reduce the frequency of migraine attacks significantly. It works by blocking the protein thought to play a major role in starting an attack.

Migraine

A migraine is usually a moderate or severe headache felt as a throbbing pain on one side of the head.

Many people also have symptoms such as nausea, vomiting and increased sensitivity to light or sound.

Migraine is a common health condition, affecting around 1 in every 5 women and around 1 in every 15 men. They usually begin in early adulthood.



**Migraine
headache**

Symptoms

The main symptom of a migraine is usually an intense headache on one side of the head. The pain is usually a moderate or severe throbbing sensation that gets worse when a person moves and prevents them from carrying out normal activities.

In some cases, the pain can occur on both sides of the head and may affect the face or neck.

Other symptoms commonly associated with a migraine include:

- nausea
- vomiting
- increased sensitivity to light and sound
- sweating
- poor concentration
- feeling very hot or very cold
- abdominal pain
- diarrhoea
- aura

Not everyone with a migraine experiences these additional symptoms.

The symptoms of a migraine usually last between 4 hours and 3 days, although a person may feel very tired for up to a week afterwards.

Symptoms of aura

About 1 in 3 people with migraines have temporary warning symptoms, known as aura, before a migraine. Aura symptoms typically develop over the course of about 5 minutes and last for up to an hour. Some people may experience aura followed by only a mild headache or no headache at all.

Symptoms of aura include:

- visual problems, such as seeing flashing lights, zig-zag patterns or blind spots
- numbness or a tingling sensation like pins and needles, which usually starts in one hand and moves up the arm before affecting the face, lips and tongue
- feeling dizzy or off balance
- difficulty speaking
- loss of consciousness, although this is unusual.

Stages of a migraine

Migraines often develop in distinct stages, although not everyone goes through all of these:

1. Prodromal: changes in mood, energy levels, behaviour and appetite that can occur several hours or days before an attack.
2. Aura: usually visual problems, such as flashes of light or blind spots, which can last for 5 minutes to an hour.
3. Headache: usually a pulsating or throbbing pain on one side of the head, often accompanied by nausea, vomiting or extreme sensitivity to bright light and loud sounds, which can last for 4 to 72 hours.
4. Resolution: when the headache and other symptoms gradually fade away, although a person may feel tired for a few days afterwards.

Causes

The exact causes of migraines are unknown, but they are thought to be the result of abnormal brain activity. It is possible that genes make a person more susceptible to certain triggers.

Migraine triggers

Many possible migraine triggers have been suggested, including hormonal, emotional, physical, dietary, environmental and medicinal factors. These triggers vary for each individual. Keeping a diary may help to identify any consistent triggers.

It can sometimes be difficult to tell if something is really a trigger or if the experience is an early symptom of a migraine attack.

Hormonal changes

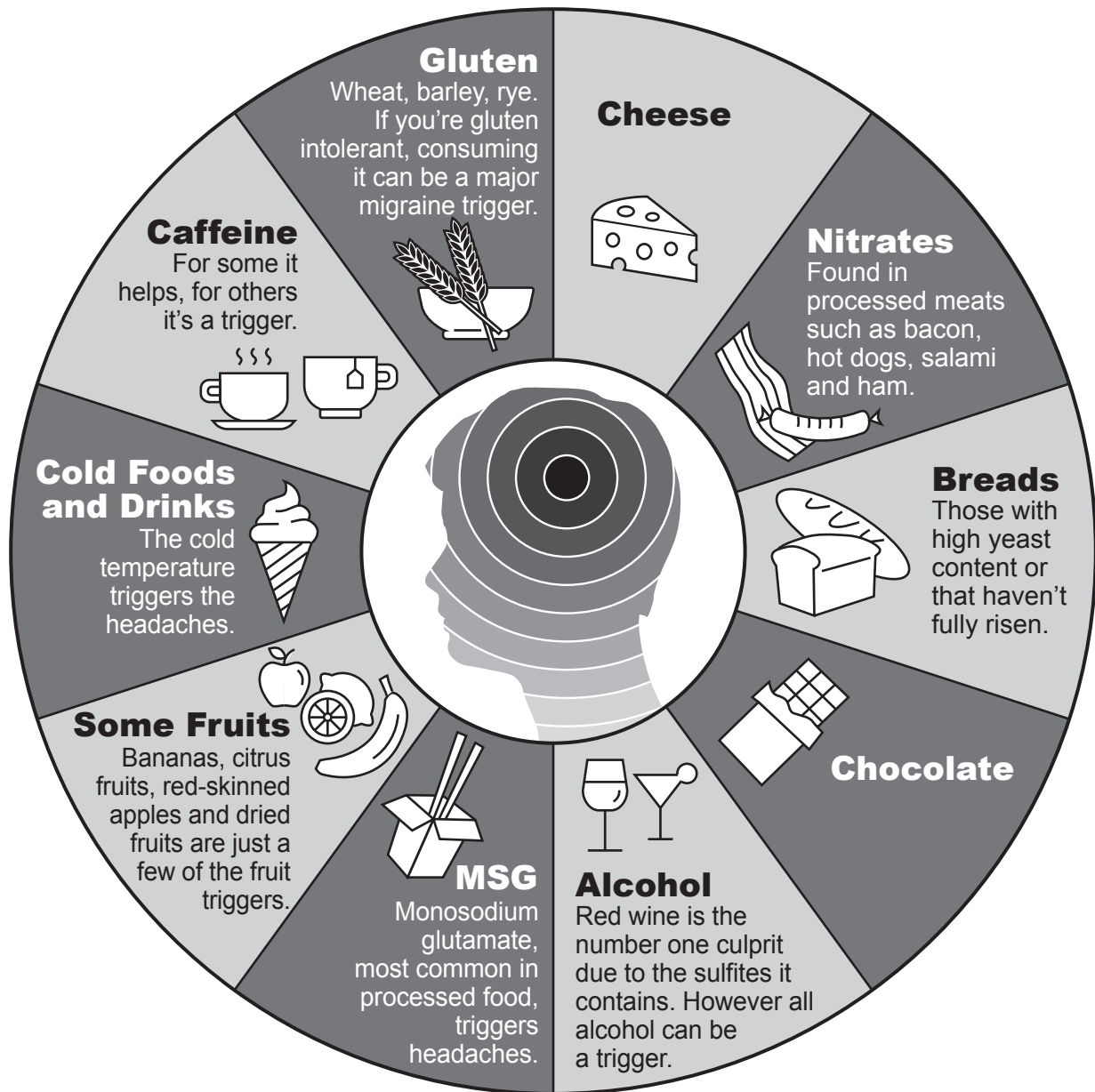
Some women experience migraines around the time of their period, possibly because of changes in the levels of hormones such as oestrogen. These types of migraines usually occur between 2 days before the start of the period and 3 days after.

Many women find their migraines improve after the menopause, although in some cases the menopause can trigger migraines or even make them worse.

Figure 1: Migraine triggers

Emotional	Physical	Dietary	Environmental	Medicines
stress	tiredness	missed, delayed or irregular meals	bright lights	some types of sleeping tablets
anxiety	poor-quality sleep	specific food triggers	flickering screens, such as a television or computer screen	combined contraceptive pill
tension	shift work		smoking	hormone replacement therapy (HRT)
shock	poor posture		loud noises	
depression	neck or shoulder tension		changes in climate, such as changes in humidity or very cold temperatures	
excitement	jet lag		strong smells	
	hypoglycaemia		a stuffy atmosphere	
	strenuous exercise if not regularly done			

Figure 2: Specific food triggers, and where they are found



Diagnosis

Migraines can be unpredictable, sometimes occurring without the other symptoms. Obtaining an accurate diagnosis can sometimes take time.

There is no specific test to diagnose migraines. For an accurate diagnosis to be made a GP must identify a pattern of recurring headaches along with the associated symptoms.

The GP may carry out a physical examination and check the patient's vision, coordination and reflexes. These will help rule out some other possible underlying causes of the symptoms.

To help with the diagnosis, the GP may ask the patient to keep a migraine diary for a few weeks to keep track of all of the headaches, symptoms suffered and possible triggers. The patient will also be asked to keep a note of any medication or painkillers that they have taken.

A GP may decide to refer the patient to a neurologist for further assessment and treatment.

Treatment

There is currently no cure for migraines, although several treatments are available to help ease the symptoms. Working out the correct treatment can take time and the patient may need to try different types or combinations of medicines before finding the most effective ones.

During a migraine attack, most people find sleeping or lying in a darkened room is the best thing to do. Others find that eating something helps, or they start to feel better after vomiting.

Many people who have migraines find that over-the-counter painkillers, such as paracetamol, aspirin and ibuprofen can help to reduce their symptoms. They tend to be more effective if taken at the first signs of a migraine attack.

Combination medicines are available for migraine without a prescription. These contain both painkillers and anti-sickness medicines.

A GP may recommend taking triptans if ordinary painkillers are not helping to relieve the symptoms. Triptan medicines are specific painkillers for migraine headaches. They are thought to work by reversing the changes in the brain activity that may cause migraine headaches. They cause the blood vessels around the brain to narrow, which reverses the widening of blood vessels which is believed to be part of the migraine process. Triptans are available as tablets, injections and nasal sprays.

Anti-sickness medicines can successfully treat migraine symptoms in some people, even if they do not experience nausea or vomiting. These are prescribed by a GP and can be taken alongside painkillers and triptans and are best taken as soon as the migraine symptoms begin.

Acupuncture can be an alternative option if medicines are unsuitable or do not help to prevent migraines. Some GP surgeries offer acupuncture, but most do not, so a person will usually have to go for the treatment privately. There is evidence to show that a course of acupuncture over an 8-week period can be beneficial.

Transcranial magnetic stimulation (TMS) is a treatment that can be used to treat and prevent migraine attacks. It involves holding a small electrical device to the head that will deliver a magnetic pulse through the skin. It is unclear how this is effective in treating migraines, but studies have shown that using it at the start of a migraine can reduce its severity. It can also be used in combination with the other medicines mentioned without interfering with them. TMS does not work for everyone, but is most effective against migraines with aura.

Associated risks

Migraines are associated with a slight increased risk of ischaemic stroke. This is when the blood supply to the brain is blocked by a blood clot or fatty material in the arteries. It is not clear why ischaemic strokes are linked to migraines.

Migraines are associated with a slightly increased risk of mental health problems, including depression, bipolar disorder, anxiety and panic attacks.

Figure 3: The cost of migraines to the UK (2019)

