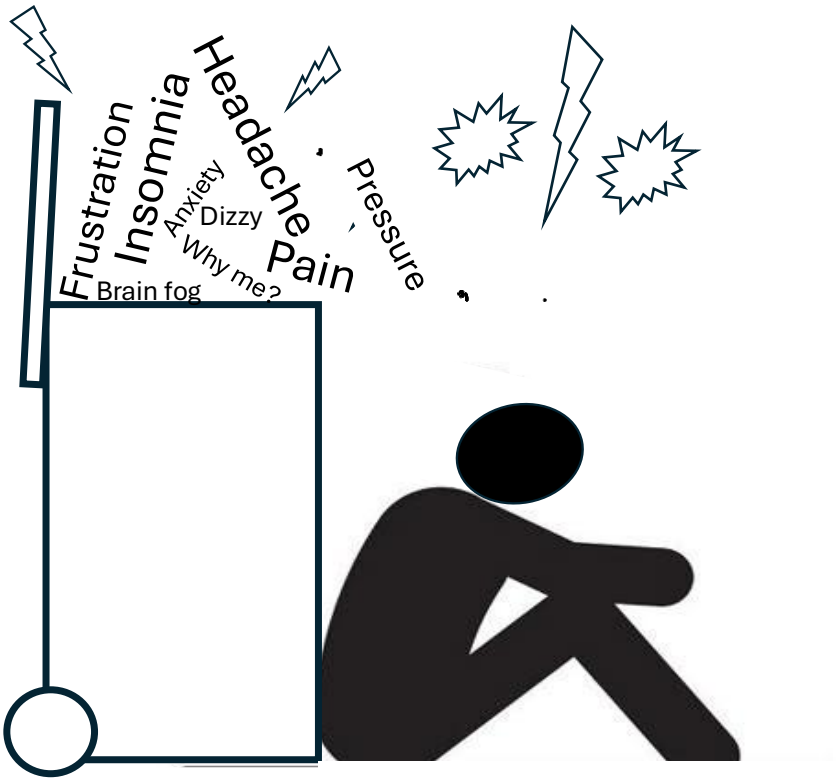
Manage your migraine holistically

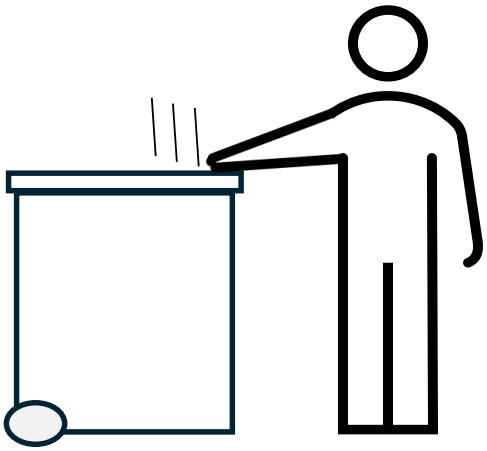
Time to take back control



Dr David Kernick

The Exeter Headache Clinic

Outline of handbook



Edition 1. September 2025

Introduction to the handbook

Fortunately, I don't get headache. If I saw someone with migraine in the early part of my career, I am ashamed to say I would not have taken them very seriously. Since accidentally drifting into the area 25 years ago and leading an NHS headache clinic for that time, I now realise what a very significant impact it has on the lives of so many people and how poorly their needs are addressed.

Unfortunately, little headway has been made in reducing the burden of migraine. A recent study suggested that less than 15% of people with migraine have their needs adequately addressed. You may have to take responsibility for addressing your problems and taking back control.

Modern medicine is certainly very effective but overlooks the insight that the body has an intrinsic ability to heal itself. We see this routinely in medical trials when the action of a dummy drug or placebo is never far from the active drug. But rarely do we ask, "what's going on here and how can we mobilise this effect?"

This project is designed to create a space to support you on a journey of recovery. It combines best medical practice combined with approaches that mobilise the body's intrinsic ability to heal itself. The handbook has at times taken on a life of its own. In the spirit of holistic practice, it is produced from head and heart and from a very personal perspective. I must apologise that it falls short of design and editorial rigour at times.

I am very grateful to Georgina Rose for the audio practices in the handbook. Georgie has a deep knowledge of holistic practices, and her support has been invaluable.

How to navigate the handbook

What is the intention of this handbook?

To combine best medical practice with the body's intrinsic ability to heal itself.

There is a bewildering array of self-help gurus, books, web sites, videos and podcasts out there. I want to explore a combination of medical treatment, environmental management and holistic approaches that are appropriate for migraine, setting them within a theoretical framework wherever possible. Although this project is for people with migraine, it does wade out into deeper theoretical waters at times, although these areas are tucked out of harm's way in an online appendix. This is because I want to raise the profile of broader approaches to migraine management amongst the medical community, where viewpoints are often intrenched.

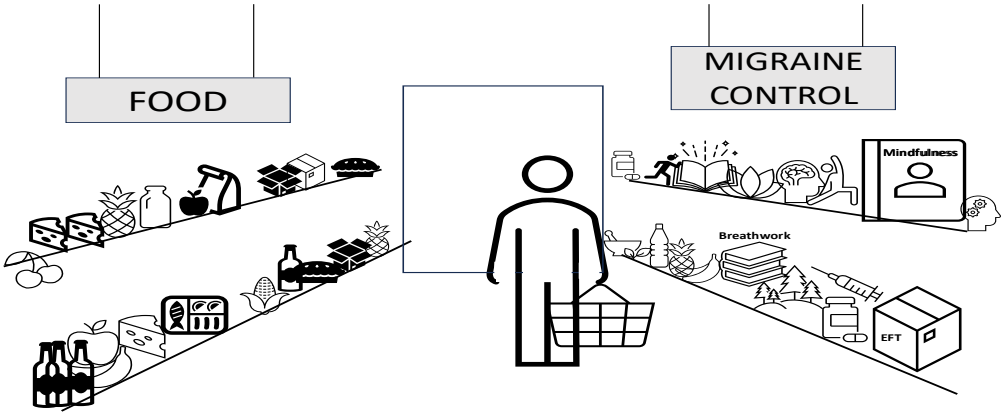
Who is the handbook appropriate for?

The handbook's contents are relevant for everyone, wherever they are in their migraine journey. If you have infrequent migraine, then a simple medical approach may be all you need. However, with increasing frequency of migraine comes other physical, psychological and social challenges and a more integrative approach using a range of options will be more appropriate.

How do I use the handbook?

You may feel overwhelmed by the amount of information to take in. There is certainly too much to assimilate in one go, and you can't explore the holistic practices all at once.

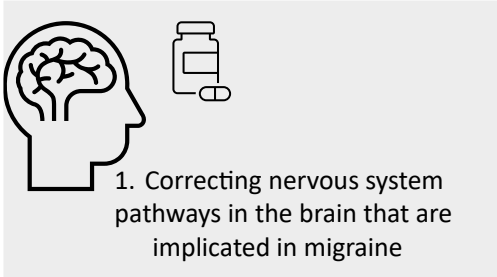
A useful approach is to view the handbook as a supermarket. Have a wander down the aisle first, reading through the handbook to get a feel of it. What resonates with you? Once you have done this, follow the online programme, supported by the handbook. This gives a more structured and measured way forward. Don't underestimate the challenges. Change is not going to happen overnight. It takes time and considerable effort. It may be better to have a hard copy of the handbook. The online course will be easier to follow if you do, and you can scribble notes on it as you go. Any profit will go towards the education initiatives of the Exeter Headache Clinic.



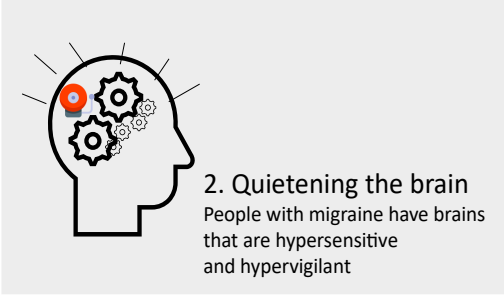
Look at the handbook as a supermarket shelf, not a cookbook. What feels right for you from the produce on offer?

The basic principles of what is on offer (and a word of caution).

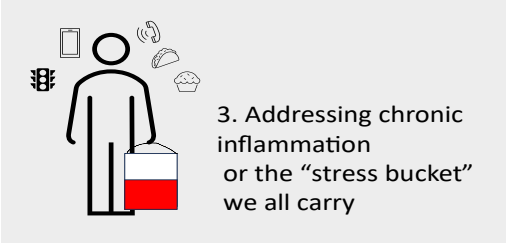
Four basic themes run through the handbook to help you to take back control:



Modern migraine drugs can be very effective, and you need to make sure you are on the treatment that is right for you.



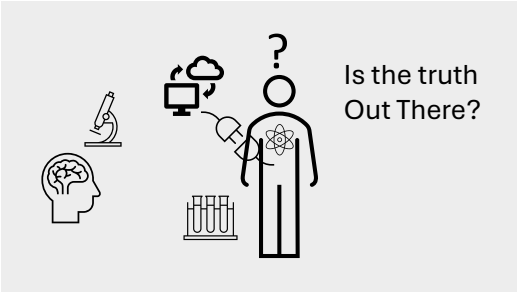
Holistic practices can help. We probably all need to quieten our brains.



Physical, psychological and social stressors can cause chronic inflammation which can make migraine and other associated problems worse. Lifestyle and holistic practices can help.

Holistic is derived from the Greek for "Whole." In our modern world it is easy to lose touch with much of what it is to be human. This can give rise to stress and unhelpful chronic inflammation. Lifestyle, psychological and holistic practices can help us to reconnect.

But a word of caution.



Science proceeds with certainties. This is how it is and soon we will fill in all the gaps in our knowledge. I am more cautious. My hunch is that things are far more complex than we may like to think. We construct models that are approximations to how the world works. They give us glimpses of how things might be and offer options to move forward. So, one way to look at this handbook is as an atlas of maps. Maps are never an exact representation of the terrain. Nevertheless, they are useful to help us navigate our way forward.

How is the handbook structured?

The handbook is in three parts. Part 1 sets out the stall and gives an overview of the terrain to be covered. It includes some important theory which underpins holistic practice. It may be heavy going in parts but it's important to get to grips with the basics if you want to get the best out of this project.

Part 2 maps out medical treatment and a wide range of other approaches that may be helpful to you.

Part 3 covers other issues relevant to migraine including the medical problems that are associated with it. The areas of women's health and children are explored. Also included are issues around managing migraine in the workplace and how migraine care is delivered focussing on how to manage the migraine consultation with your doctor.

This manual often draws upon metaphor, either written or visual. Metaphor asks us to think about one thing in terms of another, opening new insights and inviting us to see things in different ways. A useful metaphor is to view this handbook as a house. (See figure 1.)

On the ground floor can be found four approaches to taking back control. In the basement, the focus is on how migraine can affect your sense of self and approaches to address this challenge. The cellar contains theoretical underpinnings which you may find interesting but not necessary for the journey. These are tucked away in a separate appendix online.

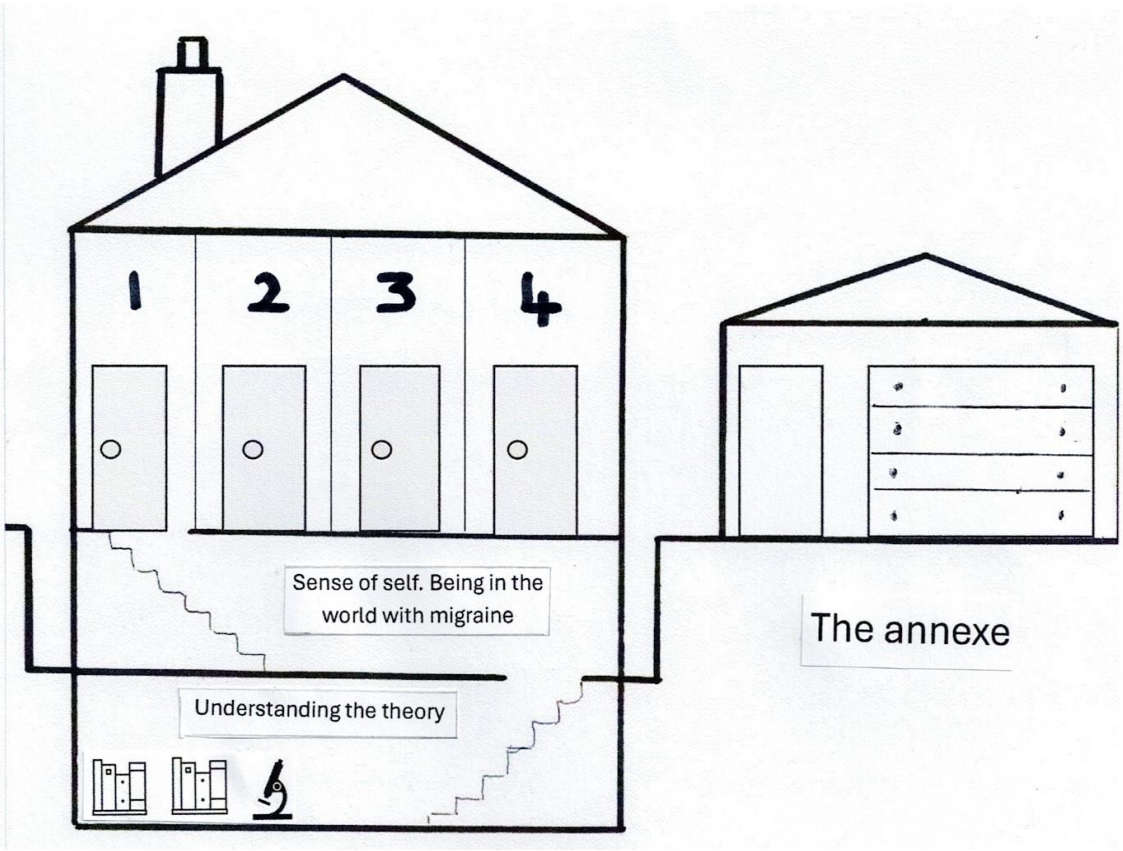


Figure 1. An outline of this handbook.

The ground level. Taking back control**.**

1. The Medical approach.
2. Getting the external environment right.
3. Managing interactions in the internal environment.
4. Managing interactions between internal and external environments.

The basement. Reclaiming sense of self and how you are in the world.

The cellar. Appendices that contain theoretical underpinnings and further discussion.

The annex. Additional material you may find useful:

- Managing other conditions associated with migraine.
- Migraine and Women's Health.
- Migraine and children.
- Migraine in the workplace.
- Navigating the health service
- How to manage your headache consultation with your doctor

Figure 2 describes the ground floor and basement in a little more detail.

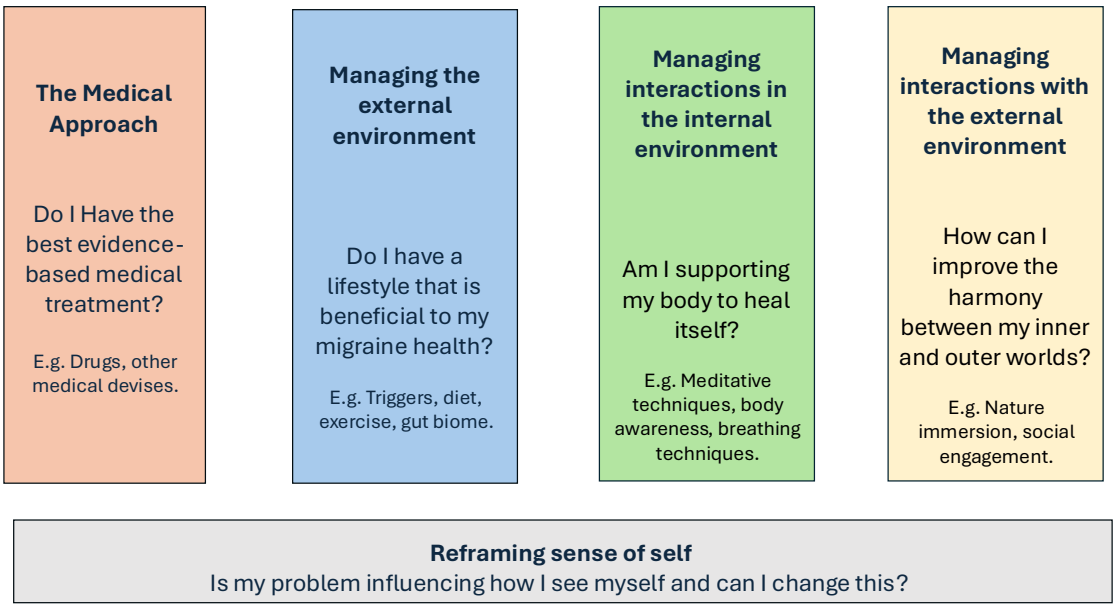


Figure 2. The four pillars of a holistic approach underpinned by a solid foundation.

Want to know more?

In some areas I give references to further reading, podcasts or scientific papers which you may like to look at, but the handbook is not a referenced work. Other useful resources are given at the end of the handbook.

THE ONLINE COURSE

Content	Links
Session 1 (34 minutes) Some important starting points	
Have I got migraine?	
Setting migraine in context	
Project overview	
What does "Holistic mean?	
Cure or control?	
Holistic practice	Journaling. Setting an intention
Session 2 Explaining the migraine attack	
How we classify headache	
Why we get migraine	
The phases of the migraine attack	
What's happening in the brain during a migraine attack?	
Migraine doesn't come alone. Other associated medical problems.	
Holistic practice	Body awareness practices
Session 3 Getting to grips with some important theory	
How the nervous system works	

The brain and body as one unit	
The problem of chronic inflammation	
Psychological distancing	
Holistic practice	Therapeutic breathing
Session 4 Medical management of migraine and its associated problems	
Medical management of the migraine attack	
Medical management to prevent the migraine attack	
Medication overuse headache	
Medical problems associated with migraine	
Holistic practice	Visualisation
Session 5 Managing the external environment	
Migraine triggers	
Keep things constant	
Healthy diet	
Migraine diet	
Gut biome	
Exercise	
Sleep and rest	
Resilience	
Holistic practice	Mindfulness
Session 6 Managing favourable interactions between the internal and external environment. Section 10.	

Nature immersion	
Music therapy	
Socialisation	

Session 7

Letting go of the story. Renegotiating sense of self

Holistic practice	Emotional freedom technique

Session 8

Migraine and women's health

Menstruation	
Contraception	
Pregnancy	
Menopause	

Session 9

Migraine in children

Session10

Migraine service delivery

NHS delivery of migraine care	
Managing your GP migraine consultation	
Migraine in the workplace	

Session11

Pulling it all together

Part 1. Getting to grips with the basics.

There is quite a bit of background to cover before we get to explore how to manage your migraine. It is important to have a good understanding of the basics before moving on.

Section 1 offers an overview of the migraine landscape to help you identify where you are and give you some context. It also helps you to identify some realistic intentions and expectations.

Section 2 describes migraine in more detail, why it occurs, and the mechanisms involved in its production.

Section 3 explores the meaning of "holistic" and its interpretations from the context of this handbook.

Section 4 may be more challenging and looks at some of the important theory that underpins migraine management. Three key areas are considered.

- How the nervous system works, how things can go wrong with migraine, and how they might be alleviated.
- The suggestion that the mind and body are not separate units but are all part of one interconnected whole. This is an important concept for many holistic practices and finding support in mainstream medicine.
- Chronic inflammation results from a wide range of physical, social and psychological challenges or stressors. This can lead to important consequences not only for migraine, but our general health.

Finally, in Section 5 we get back down to earth and start with some basic practical first steps to move forward.

Section 1. Some important starting points

In this section I want to lay out some important starting points and principles for the journey. Many people will have spent years looking for the right treatment without success. But you are not alone, and it is not your fault you have migraine. There is much you can do to move forward.

1.1. Migraine is not just a headache

Migraine is a complex condition. There can be symptoms in between attacks; it can be associated with a number of other physical and psychological challenges; it can impact on how you feel about yourself and who you are. Unfortunately, it is often stigmatised and carries a negative label. We don't like diseases we can't see, confirm with a test, or put a number on.

1.2 It's not your fault you have migraine

Migraine runs in families, and a strong genetic link drives a susceptibility to migraine. This susceptibility interacts with factors inside and outside of the body leading to the migraine attack and its associated problems.

1.3. You are not alone

In the UK 14% of people have migraine, twice as common in females than males. It can occur at any age (11% of school age children have migraine) but is most common between 25-55 years as shown in figure 1.1.

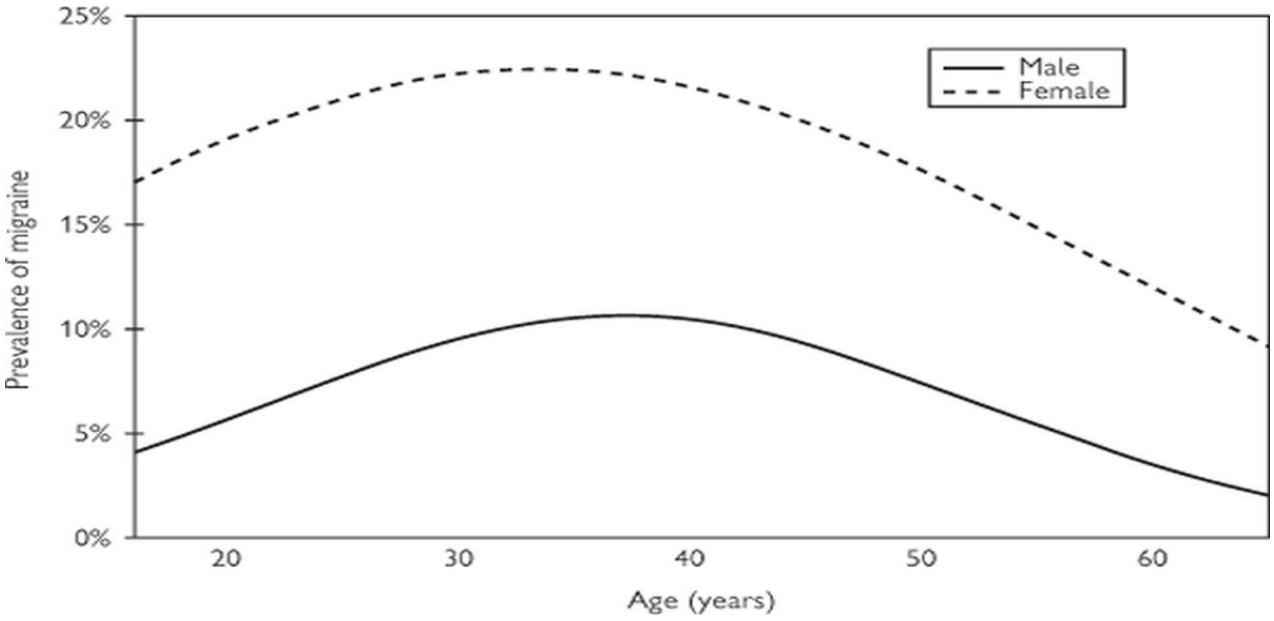


Fig.1.1. The percentage of the population who have migraine in England with age.

1.4. Where have you come from on your migraine journey?

Figure 1.2 shows a typical migraine journey with its ups and downs.

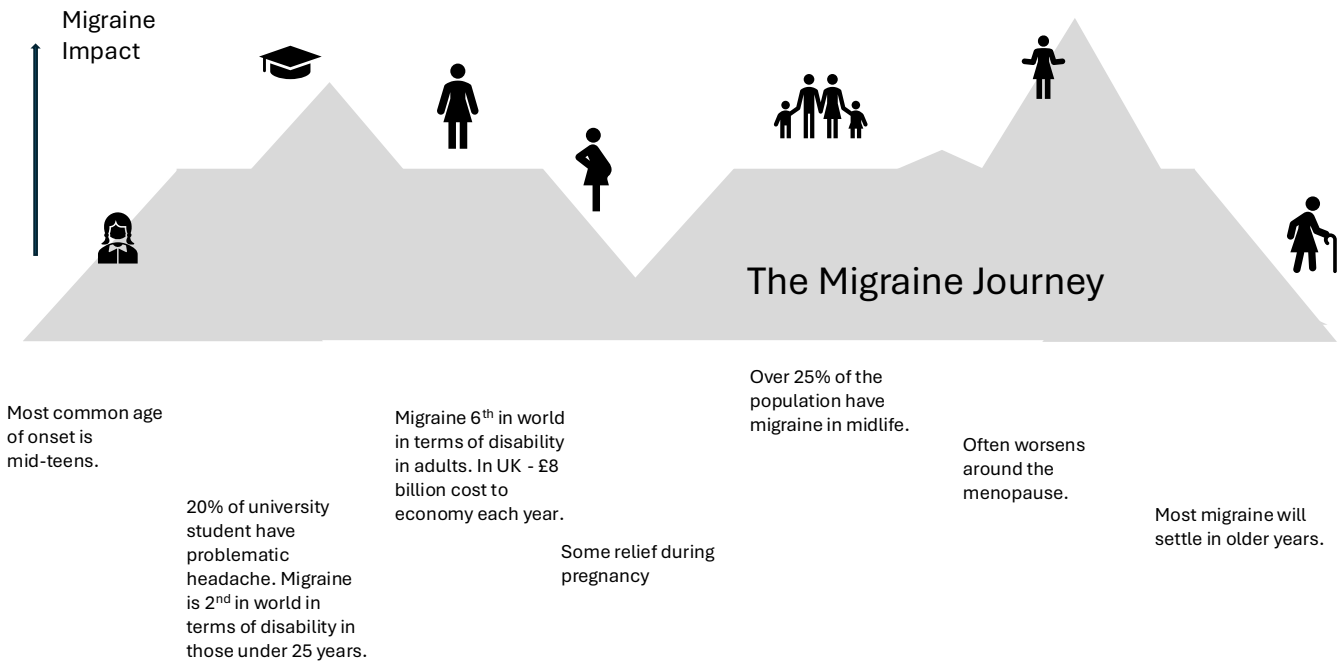


Figure 1.2. A typical lifetime migraine journey.

It is likely that your journey will have taken you on a long and winding road with many blind alleys – a continual search for the right solution that seems forever out of your reach. Frustration and often despair is common. Less than 15% of people will be receiving optimum migraine management. See figure 1.3.

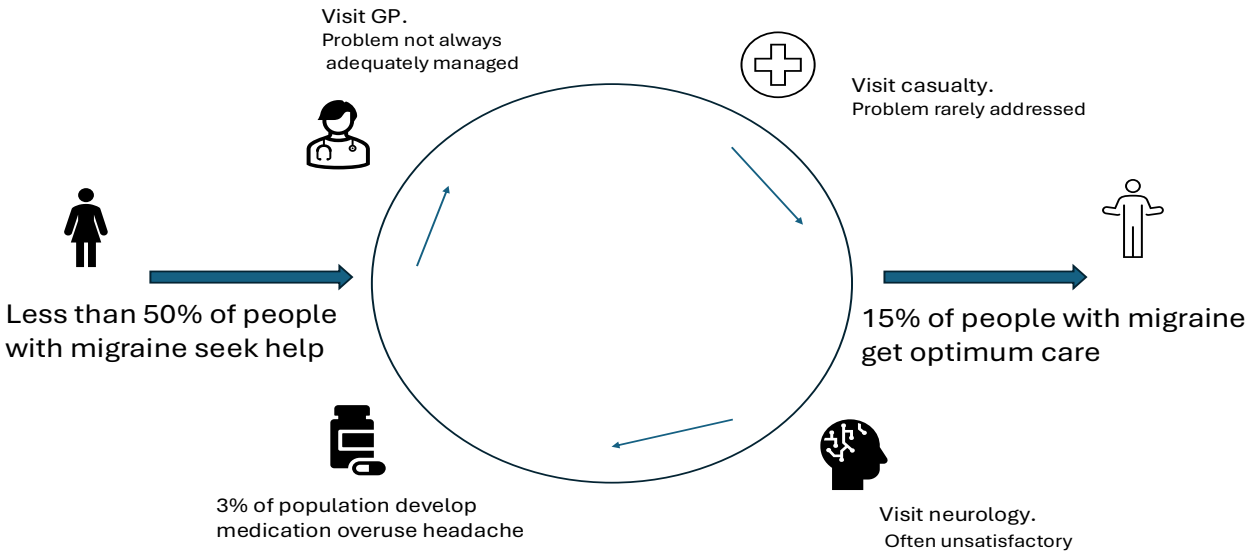


Figure 1.3. The endless search for relief on the health system roundabout.

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1.5. What type of migraine do you have?

Migraine is classified as:

- *Episodic* - distinct migraine attacks with pain free intervals

  or

- *Chronic or persistent* – Headache on more than 15 days of the month of which at least eight days are migraine or migraine like.

  Over time, episodic migraine can become more frequent transforming into chronic migraine when other types of headaches can develop. (See figure 1.4.) For example, a dull background headache (often called a tension type headache) or a sharp stabbing headache. It is best to think of all of this as part of a migraine spectrum. Headache caused by overuse of medication can also add to the mix.

Migraine is associated with other medical conditions that can become problematic. These associated problems are explored in section 12.

For people with occasional episodic migraine, simple medical treatments and lifestyle approaches may be sufficient. However, as migraine becomes more frequent, the focus shifts from a simple physical fix to an approach that includes a broader holistic framework that seeks to integrate a body that has become out of harmony.

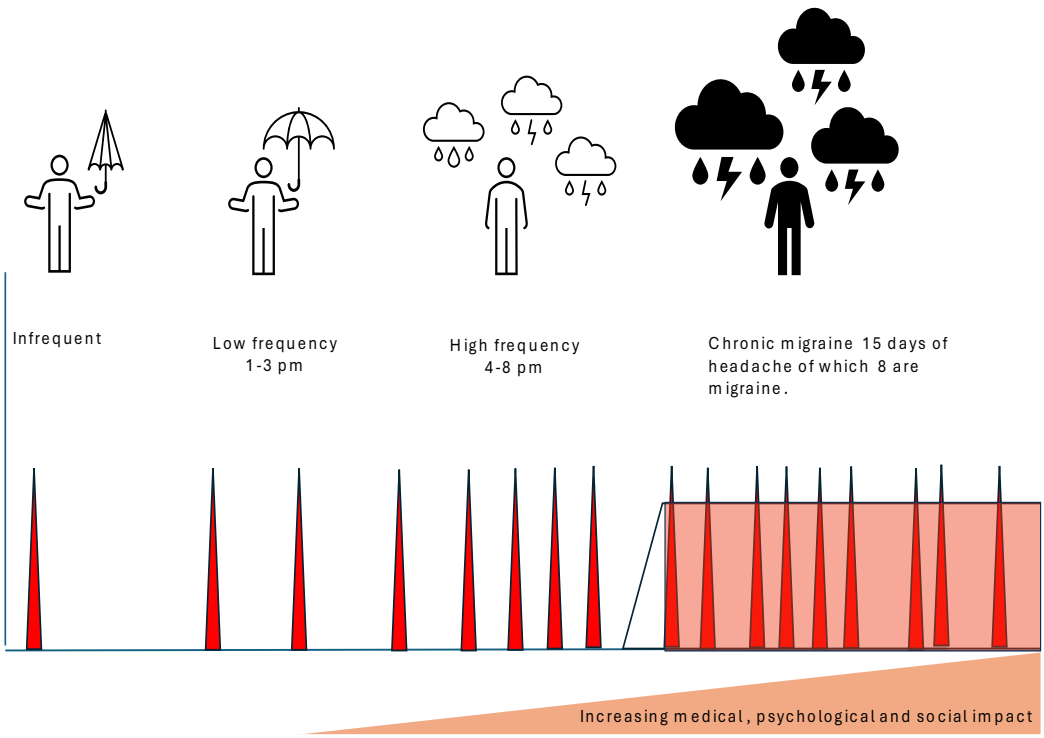


Figure 1.4. With increasing frequency of attacks (red spikes), migraine can transform into chronic or persistent background headache (red shading) on top of underlying migraine, together with more medical, psychological and social problems. Medication overuse headache can also occur.

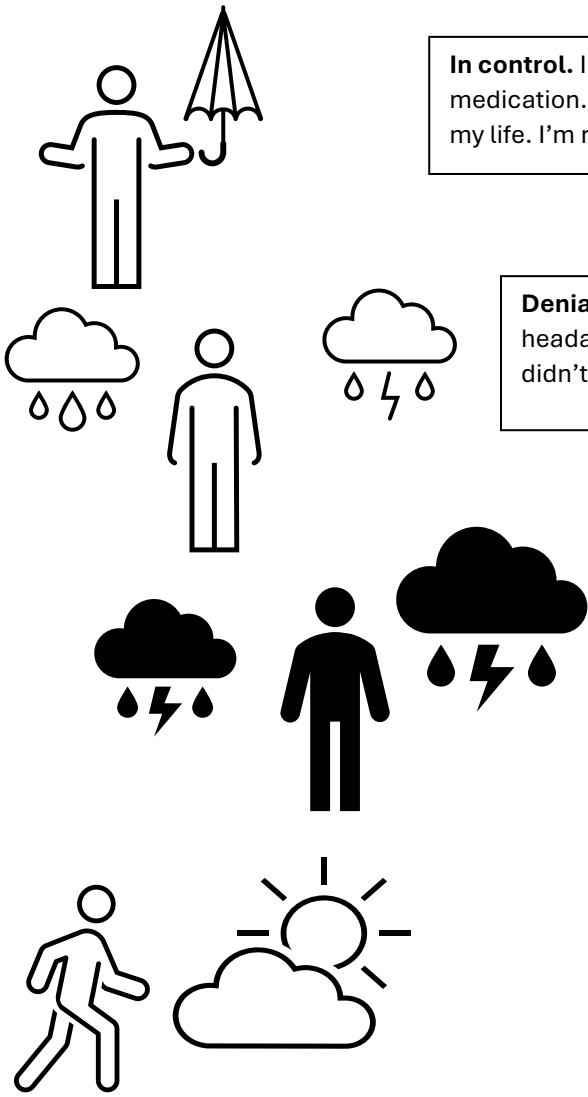
What is happening here? A wide array of stressors can cause a build-up of inflammation in the body which sensitises the migraine mechanism. Stressors can include:

- Physical problems such as ill health, lack of exercise, poor diet, overweight. Migraine itself is a stressor.
- Psychological problems such as anxiety, depression, traumatic life events.
- Social challenges such as bereavement, rejection, work pressures, bullying, poor social circumstances, discrimination.

This is a theme that we will meet throughout the handbook. Do you recognise it?

1.6. How are you feeling about your migraine?

Four landscapes can be recognised in a migraine journey. Where are you?



In control. I'm using effective relief or preventative medication. "It's a bit of a nuisance but doesn't impact on my life. I'm ready for it when it comes"

Denial. "My migraine is bothering me, but everyone gets a headache. It's not life threatening and it will pass. My doctor didn't take me seriously when I mentioned it last time."

Anger. "Why me. I've done nothing to deserve this."

Guilt. "It's all my fault. I'm always letting others down."

Depression and withdrawal. "It's difficult to keep going. It's a real struggle to manage. I feel so worthless"

Reconstruction. "It's time to move on. I need to do everything I can to help myself."

Acceptance. "There may still be challenges I have to face but I will accept them for what they are and treat myself with kindness."

Figure 1.5. You do have a choice. No one is stopping you from taking a new journey and rewriting your story. This handbook will help you take the first steps.

1.7. What is causing my migraine attack?

We can never be sure why we get migraine, but an over-sensitive brain and a modern unfavourable environment is the most important story. How people with migraine generate energy in the brain may also be important factor.

An over-sensitive brain.

The nerve pathways and control systems of our bodies developed hundreds of thousands of years ago when we were evolving on the plains of East Africa. It was an advantage to have a brain that was both vigilant and sensitive. You

would have a better chance of survival if you could track your prey quickly or spot the ever-present danger from lurking predators.

These advantageous characteristics developed against a background of a quieter environment – wide horizons, big skies and soft natural outlines.

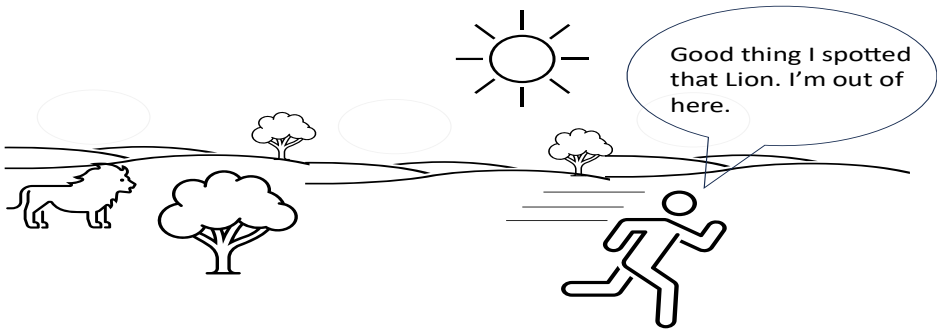


Figure 1.6. The environment where our brains evolved. It would be an advantage to have a sensitive brain.

Figure 1.7 shows the differences between the migraine and non-migraine brain. The migraine brain has:

- A wider focus of awareness and a higher sampling rate of the environment (hyper-vigilance).
- Sensory signals less filtered (hyper-sensitive).
- Higher computing speed of the brain (hyper-responsive).

This leads to a disposition to brain overload and shut down.

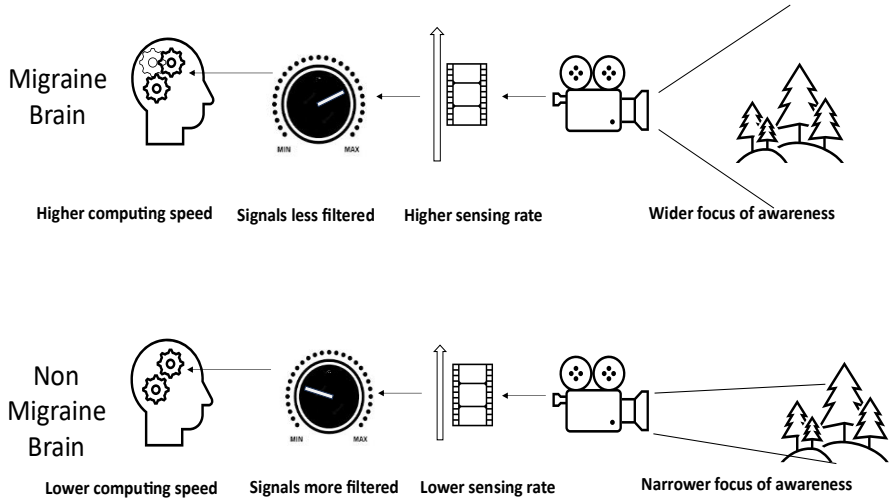


Figure 1.7. The differences between the migraine and non-migraine brain. The brain becomes more easily overloaded.

When the hypersensitive brain becomes overloaded it attempts to withdraw itself from its surrounds, manifesting as the migraine attack. The system crashes and a period of enforced rest ensues which allows the brain to recover. Overload can happen when:

i). The brain is unable to deal with a specific single trigger causing a biochemical cascade that starts an attack. For example, a foodstuff such as cheese or alcohol.

ii). The brain is overloaded with sensory information. The main difficulty is accommodating things that change, in either

the external environment (for example changes in sounds, shapes, movement, weather patterns), or internal environment (for example hormone changes, irregular sleep patterns, fluctuating levels of hydration.)

iii). There may be unprocessed emotions from current or past experiences overloading the brain. Your migraine is trying to tell you something. Take a few moments to ask yourself "is my migraine is trying to tell me something?"

Figure 1.8. Same hypervigilant brain, different unfavourable environment

The situation is exacerbated by the impact of chronic inflammation which can be caused by a wide range of physical, psychological or social factors. This further increases the brain sensitivity. We will this concept in section 4.

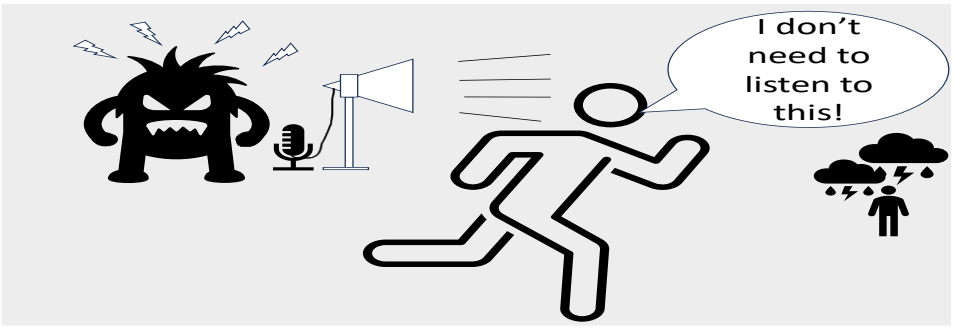


Figure 1.9. Is your migraine trying to tell you something?

Problems with energy production.

Although the brain is only 2% of the body's weight, it is energy hungry and accounts for 20% of the body's energy requirement.

The energy producing components of the cell are called mitochondria which combine oxygen and glucose to provide energy. The fuel produced is a chemical known as ATP. Most energy is consumed supporting the background activity of the brain. However, when the brain becomes more active with tasks such as thinking through problems or ruminating, this power requirement can increase by up to 10%. Evidence suggests that the process that produces energy does not work as efficiently in people with migraine. This combined with a brain that is working at a higher energy demand due to the increased sensitivity may exacerbate migraine and contribute to lethargy and brain fog that can occur.

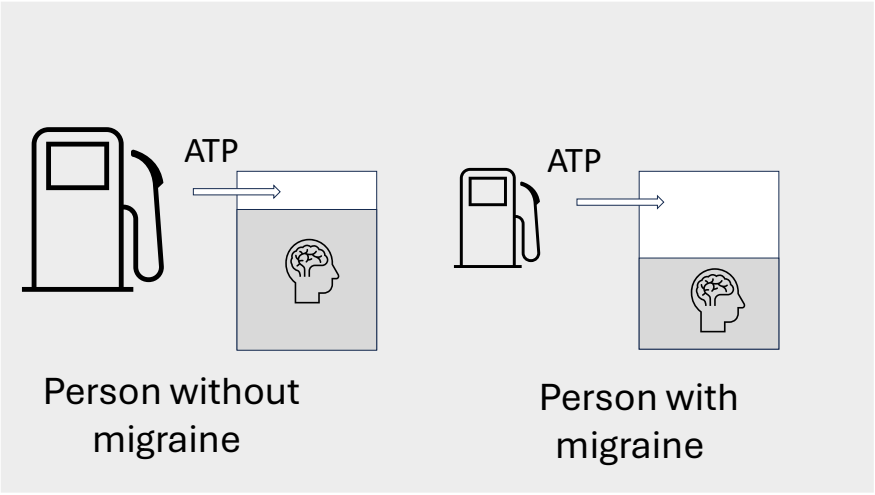


Figure 1.10. Energy production in the brain may be compromised in people with migraine. ATP is the fuel that drives all body processes.

Let's try and put this into an overarching framework which essentially summarises this handbook. Figure 1.11 shows the four relevant factors: *predisposing factors* (why me?); *precipitating factors* (why a migraine attack now?); *perpetuating factors* (why does it continue?); and *protective factors* (what can I do to prevent it recurring?)

Factor	Input	Mediated by
Predisposing factor	Family predisposition	**Genetics**
Precipitating factors		**Specific triggers.** **Sensory overload.** Changes in internal and external environment. **Problems with energy production**.
Perpetuating Factors	Physical, social and psychological stressors. Unprocessed emotions. Our "stress bucket."	**Mediated by chronic inflammation**
Protective factors	Medical treatment, healthy lifestyle, holistic practices, resilience.	Addresses unhelpful chemical pathways. Quietens the brain. Reduces the impact of inflammation.

Figure 1.11. The four "P" s of migraine.

Take a moment to think about where you are.

Predisposing factors - "Is there a migraine disposition in the family?"

Precipitating factors - "Is there anything or circumstances that set off my migraine?"

Perpetuating factors - "Are there any stresses in my life, current or past. Is there anything I have not fully come to terms with?"

Protective factors - "Have I got the best approach to managing my migraine?"

1.8. Cure sometimes, understanding and being in charge always

Is it possible to cure migraine? It can be in some circumstances. For example, if you have a single, well recognised trigger, removal may cure your migraine. If migraine causes anxiety which then makes the migraine worse, a migraine drug may break this vicious cycle, allow you to address your anxiety and get back to a normal life.

However, as attacks becomes more frequent and associated with other problems, a realistic goal is to get back in charge of your migraine.

People with migraine describe it as a beast sitting on their shoulder – always ready to pounce at an unwanted moment. My aim is to give you an understanding of what is going on and tools to take the beast under control - a shift from your migraine being in charge of you to you being in charge of it.

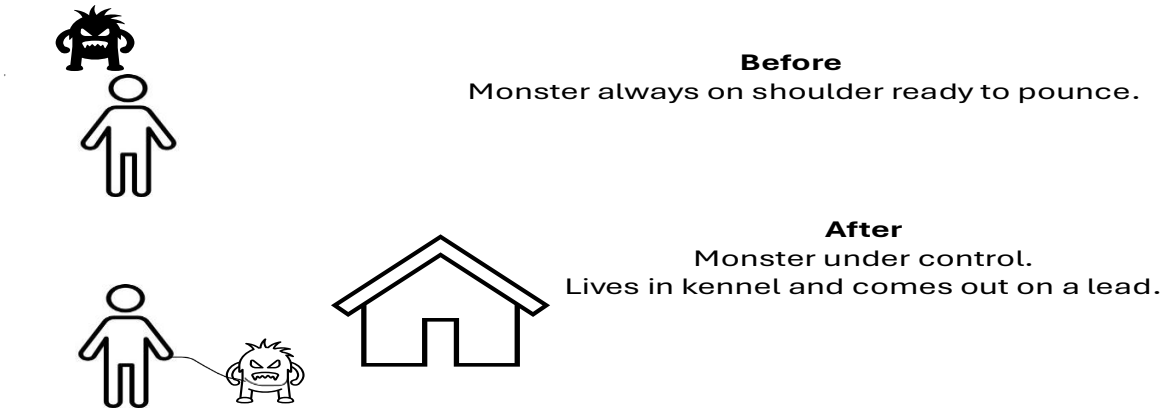


Figure 1.12. Shifting who is in charge of your migraine.

An important concept is your approach to control or where your "locus of control" sits. Do you feel in control of your circumstances and able take charge of your direction, or do you see yourself a passive victim of forces beyond your control. Figure 1.13 shows these two extremes, and you may be somewhere on this spectrum. Moving forward with your migraine will need active control. This will need commitment, time and effort. It may not your fault that you find yourself where you are. But you do have a choice how you move forward.

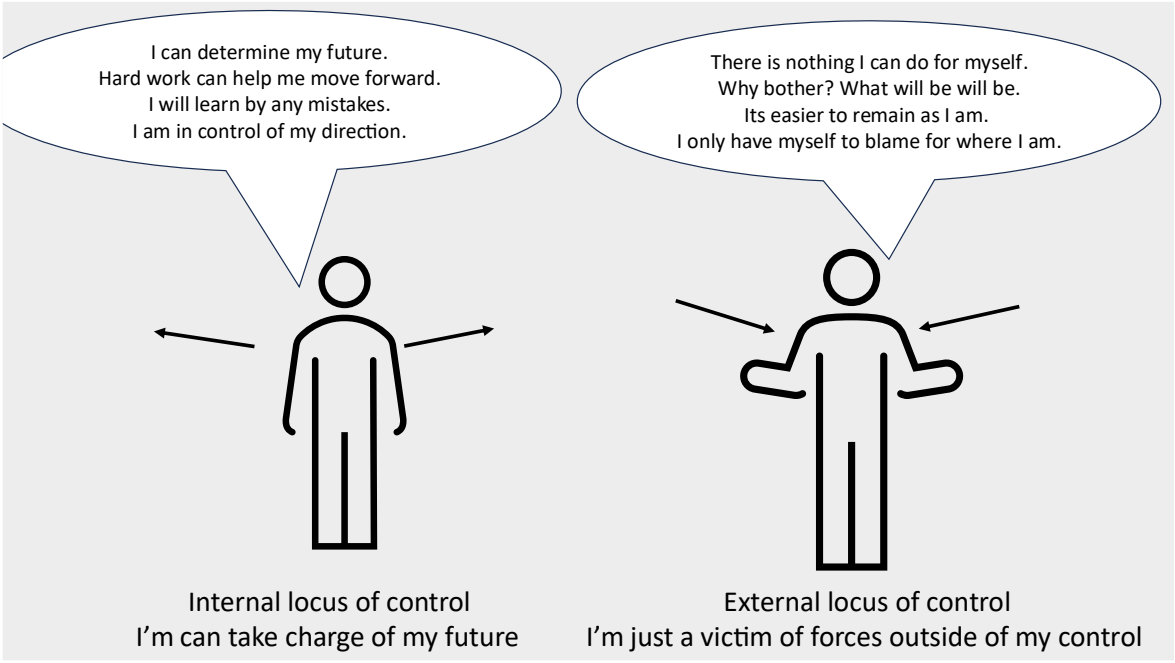


Figure 1.13. How much control do you feel you have over your problem. You do have a choice how you move forward.

1.9. Everyone is different. Your body will know what it needs.

Because migraine is a complex, shifting interaction of genes, environment, social and psychological factors, no two people are the same in how their migraine effects them and how the suggestions in the handbook will help them. So, there are no straightforward solutions that are right for everyone. You must decide what feels right for you and chart your way ahead appropriately.

This handbook does not offer one simple solution. But more of a toolkit of approaches and their rational that you can explore with the aim of finding what feels right for you.

Your body will know what it needs. Don't underestimate the healing potential that is held within it.

1.10. Needing an open mind for the journey

Holistic practices require a mind more open to approaches that our culture has made it difficult for us to accept. We are educated within the rigid framework of modern science, and its undoubted success has crowded out other world views. (How we come to know the world and the basis of the scientific approach is discussed further in appendix A1.)

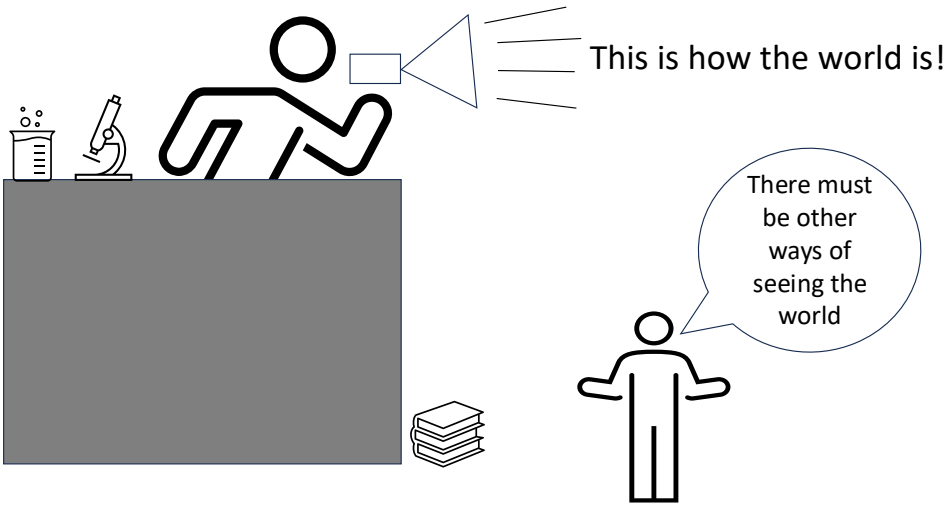


Figure 1.14. We need to mindful that there may be more than one way of seeing the world.

Many holistic practices have been used by thousands of years by other cultures. They are finding a home in modern medical practice, particularly in the areas of chronic disease, pain management and mental health and evidence is emerging to support their benefit. Approach each suggestion with an open mind and try it out. If it's not for you, then move on. Take what resonates for you and leave what does not. If you are finding you are resisting, perhaps just ask yourself why.

We'll look a little more into a holistic approach in section 3.

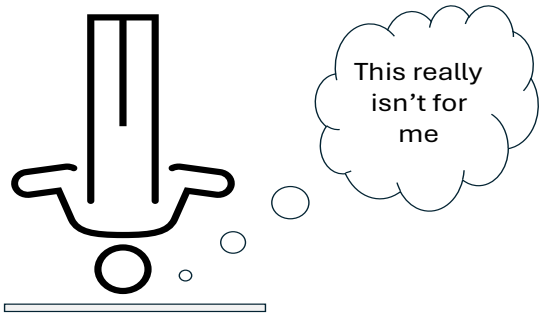


Figure 1.15. The latest Holistic Practice.

1.11. Don't underestimate the challenges.

If you have had severe migraine for some time, change may be challenging. Our bodies hold on to what we know, and any challenge can be perceived as a threat.

It is easier and safer to continue to replay the old familiar record. And how much easier is it just to pop a pill?

It's understandable that you want to get on with a normal life as much as you can in between the troughs of migraine. But this may be perpetuating the story you may be feeding off and prevent you from moving forward.

And don't be afraid what others may think about you as you try out new things.

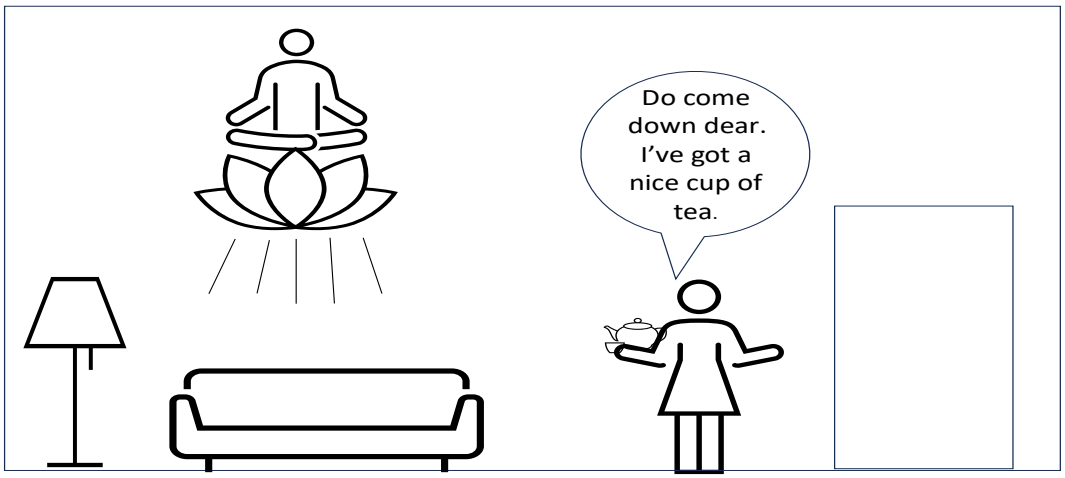


Figure 1.16. Keep an open mind.

Are you caught in the boom-and-bust cycle? Understandably when you are better you just want to get on with life. Take a moment to step back and think about a new journey. if you keep doing the same things, you'll always get the same outcomes.

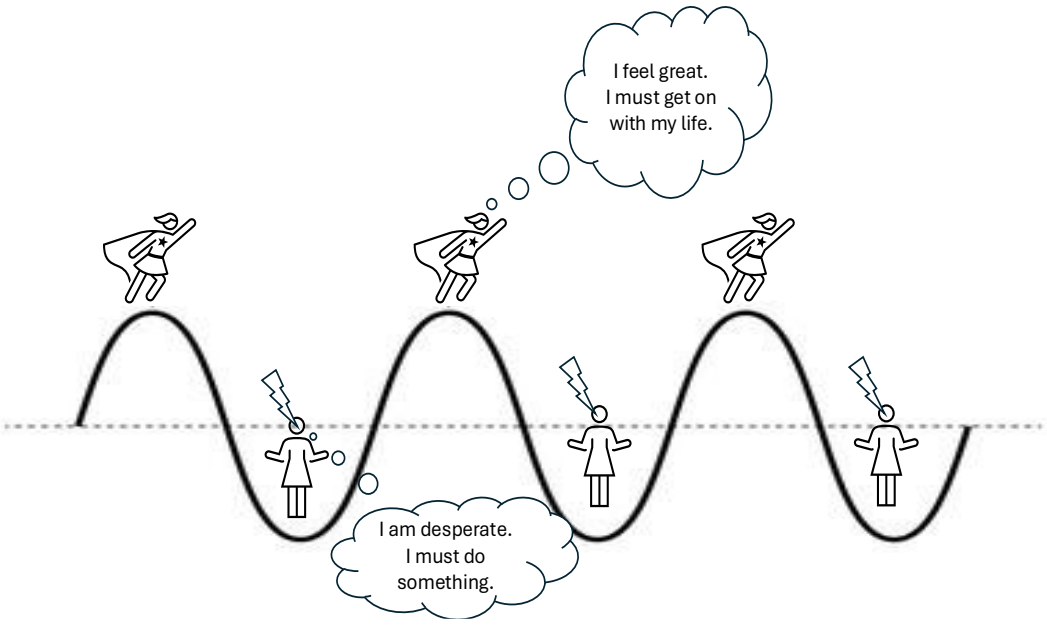


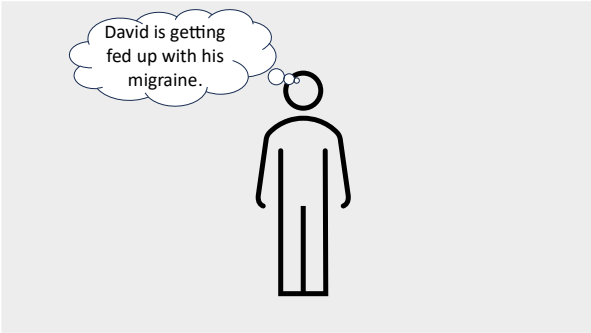
Figure 1.17. The boom and bust cycle

1.12. Psychological distancing.

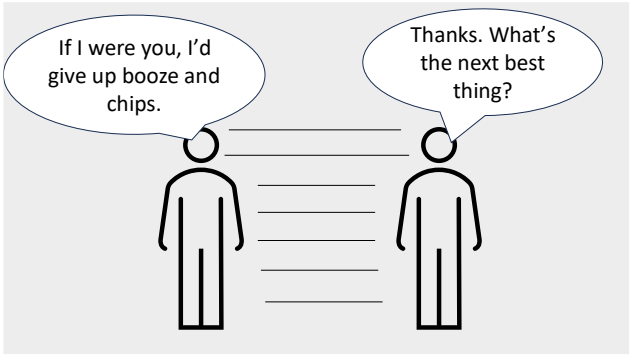
I want to finish section one by introducing some practical suggestions to hold onto, particularly When people are overwhelmed by their migraine and find it difficult to move forward. Psychological distancing is an approach that seeks to create space between yourself and your thoughts and emotions. It aims to give you a more balanced perspective, regulate your emotions and make more rational decisions. There are a number of approaches you might like to think about:

if you are in the boom and bust cycle or overwhelmed by your migraine. They will not be relevant for everyone.

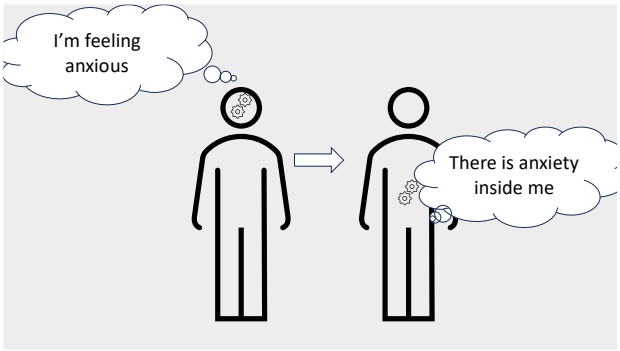
- **Third person distancing**. Talk to yourself in terms of an outside observer using the third person. For example, instead of saying “my migraine makes me feel so distressed” say “David's migraine Is making him feel distressed but he is taking steps to address it.” You could also think of journaling in this way.



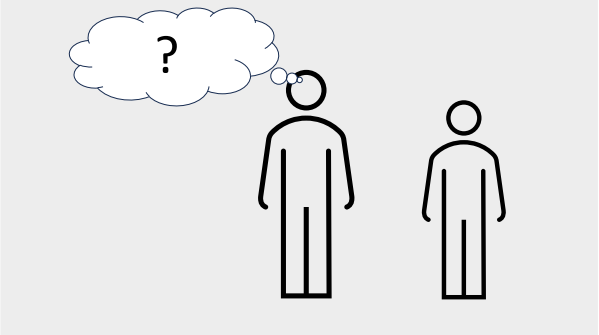
- **Advice to another**. Think what advice you would give to a friend facing the same problem.



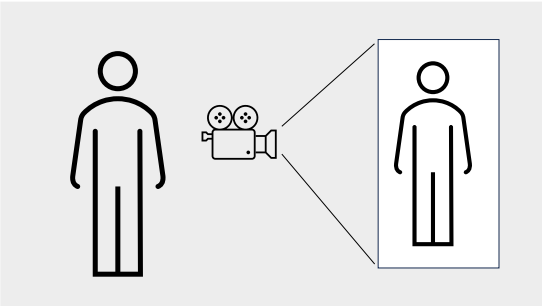
- **Language distancing**. Instead of saying “I am anxious” say “I am experiencing anxiety” or “there is anxiety in me.” Label your thoughts and emotions but don't engage or associate with them.



- **Hypothetical distancing.** Consider your situation as hypothetical. For example if someone else was in this position they would…..



- **Spatial distancing**, imagines viewing a problem as if looking down from above. Alternatively, imagine yourself in the audience of a cinema watching your story unfold on a movie screen.

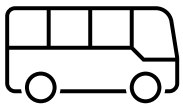


Conclusion to section 1.

This section has set out the migraine landscape and established some basic principles. You are likely to recognise where you are on your migraine journey. In the next section we explore migraine in more detail.

Section 2. Understanding Migraine

This section aims to give you a better understanding of migraine. The first step is to make sure you have the correct diagnosis and whether your migraine is exacerbated by medication overuse headache. We then explore why migraine occurs and the mechanisms that underpin it. Finally, several practical issues around the migraine attack are considered.



2.1 Am I on the right bus?

All headaches are classified into two main types:

- *Secondary headache* (less than 5% of headaches). These are headaches where a well identified problem can be identified. These are often more serious. For example, haemorrhage, blood clot, head injury, brain tumour, infection.
  or
- *Primary headaches* (>95% of headaches.) These are headaches where no clear underlying cause can be identified. The diagnosis is made on recognising the pattern of the headache. The three main primary headaches are tension type headache, cluster headache and migraine. (See table 2.1). A comprehensive description of all headache types can be found at:
  https://ihs-headache.org/en/resources/guidelines/

Features	Tension Headache	Migraine	Cluster Headache
People experiencing each year	Common 70%	14%. Females>males.	0.1%. Males>females
Location	Often at the back of the head or around it	Anywhere in the head. Can be in the face. One or both sided	Always one side, usually around the eye
Characteristic of pain	Dull or tight like a band	Severe, often throbbing	Excruciating
Duration	Very variable. Minutes to days	4-72 hours (shorter in children)	15 minutes to 2 hours
Associated features	None	Aura in 30%. Nausea or vomiting, light, sound, movement touch sensitivity	Red, drooping or watery eye; runny or blocked nose; swelling of face or inside ear. Agitation.

Table 2.1. Some differences in the common primary headaches.

2.2. Confirming the diagnosis of migraine

The pain of migraine is often pulsating and can occur on one or both sides of the head or be felt in the face. (Studies suggest that 80% of pain diagnosed as chronic sinusitis is migraine).

The formal criterion, used for research studies is shown below. This is rarely used in

Practice where - *any episodic and problematic headache that has features of nausea or enhanced sensitivity with the pain to light, sound or movement is very likely to be migraine*.

I. At least 5 attacks fulfilling criteria II-V
II. Headache attacks lasting 4–72h (untreated or unsuccessfully treated)
III. Headache has at least two of the following characteristics:
- o One sided
- o Pulsating quality
- o Moderate or severe pain intensity
- o Aggravating or causing avoidance of routine physical activity

IV. During headache, at least one of the following:
- o Nausea and or vomiting
- o Photophobia and phonophobia

V Not attributed to other disorder

Formal criteria used for diagnosing migraine. This is rarely used in practice.

Very rarely, a person can experience both cluster and migraine or can switch between the two. Tension headache and migraine in the same person is common, particularly with increased migraine frequency. When migraine becomes chronic, tension headache, stabbing pain and migraine like pain can all coexist, and the picture is often complicated by medication overuse headache

2.2. The stages of the migraine attack

Four stages can be recognised. Not all phases will be experienced during every attack or some not at all.

i). The pre headache or prodrome. This is a warning sign and consists of non-specific features search as yawning, lethargy, mood change, restlessness, food cravings, thirst etc. Often prodrome features can be mistaken for triggers.

ii). The aura. Experienced by 30% of people. See below.

iii). The headache phase. Often pulsatile in nature. Most commonly on one side of the head but can be on both sides or radiate into the face or neck.

iv). The post headache or postdrome. Often lethargy and lack of energy but can include high levels of energy or elation.

Sometimes symptoms can be bothersome in between attacks. (Known as inter-ictal symptoms). The brain is still not functioning normally. Symptoms can include brain fog, memory problems, word finding difficulties, dizziness and sensory sensitivities. This problem is probably higher than is generally recognised.

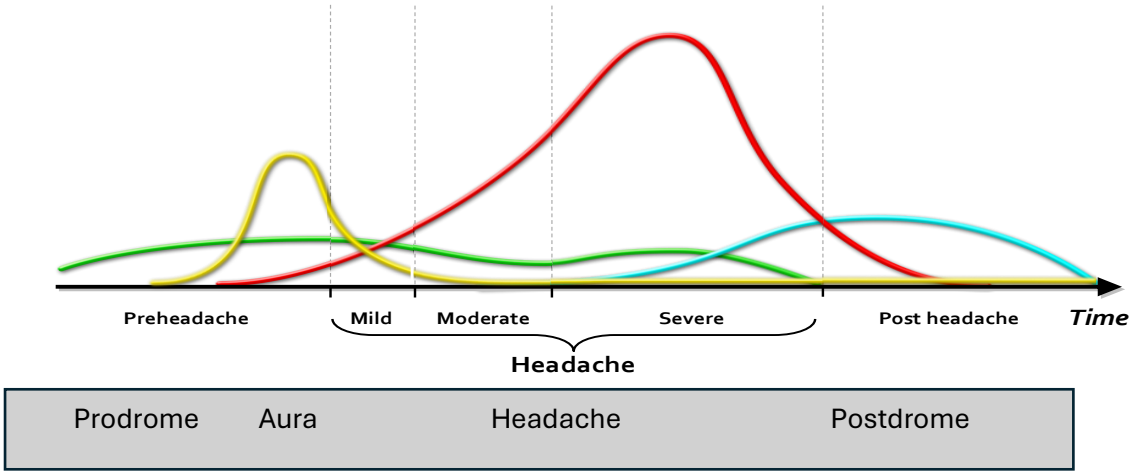
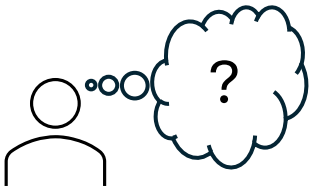


Figure 2.1. Stages of the migraine attack



Want to know more about the phases of migraine?

National Migraine Centre Heads Up Podcast. Series 1, episode 1.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

Peng KP. Redefining migraine phases - a suggestion based on clinical, physiological, and functional imaging evidence. Cephalalgia. 2020 Jul;40(8):866-870. doi: 10.1177/0333102419898868. Epub 2020 Jan 13. PMID: 31928343; PMCID: PMC7366426.

2.3. Types of migraine

Migraine is divided into episodic or chronic and with or without aura.

i). Episodic or chronic

Episodic migraine is headache on less than 15 days a month of which some are migraine. There are pain free intervals between attacks. *Chronic migraine* is headache on 15 days of the month or more of which at least 8 days are migraine or migraine like. Here, chronic refers to being persistent and not necessarily severe. Other physical and mental health problems are common as is medication overuse headache.

The most common migraine frequency is 2-3 a month. Approximately 10% of people with migraine will have chronic migraine.

ii). Migraine with or without aura

An aura is a passing neurological sensation caused by a wave of electricity travelling at approximately 3-6 mm per minute across the surface of the brain. It occurs in up to 30% of migraineurs.

Migraine with or without aura may fluctuate during a lifetime as can the type of aura. Auras are usually of one type but can be mixed with more than one type experienced. Features of aura are shown in table 2.2:

- Develops gradually over 5–30 mins. (In contrast to abrupt-onset stroke or transient ischaemic attack (TIA)).
- Typically comes before the headache phase but less frequently can occur at any time during the migraine attack.
- Aura symptoms can occur in the absence of headache in 20% of people with migraine but also in people who do not have migraine, particularly above the age of 50.
- Auras typically last less than 60 minutes but can be longer. In rare cases they can go on for days.
- Visual aura is the most common. They can migrate across the visual field, rotate, oscillate or flicker, and be of varying brightness. Areas of blindness can occur.
- Pins and needles are the second most common aura. Usually starts in the hands and migrates up the arm. It can involve the face, lips and tongue and is often followed by numbness.
- Speech and language problems occur in 10% of auras.
- Muscle weakness including paralysis can occur (hemiplegic migraine).
- Delusions and disturbed consciousness are particularly distressing but are rare.
- More than one type of aura can occur in a migraine attack.

Table 2.2. Features of aura.

2.5. What's going on inside the brain during an attack?

Five areas of the brain are implicated in the migraine process as shown as figure 2.2. However, how these areas interact to cause the migraine phenomenon is poorly understood.

1. Hypothalamus. The prodrome or pre-headache symptoms originate from here.

2. Migraine midbrain centre or "migraine generator." This is triggered in a migraine attack sending out signals along the Trigeminal nerve to the lining of the brain.

3. This activation of the Trigeminal nerve causes inflammation and pain of the brain lining. There are no pain fibres in the substance of the brain. Only in its lining.

4. A wave of electricity across the surface of the brain causes an aura. Not everyone with migraine will get this.

5. There is increased sensitivity of the nerves on the outside of the head in the scalp. This is called "peripheral sensitisation."

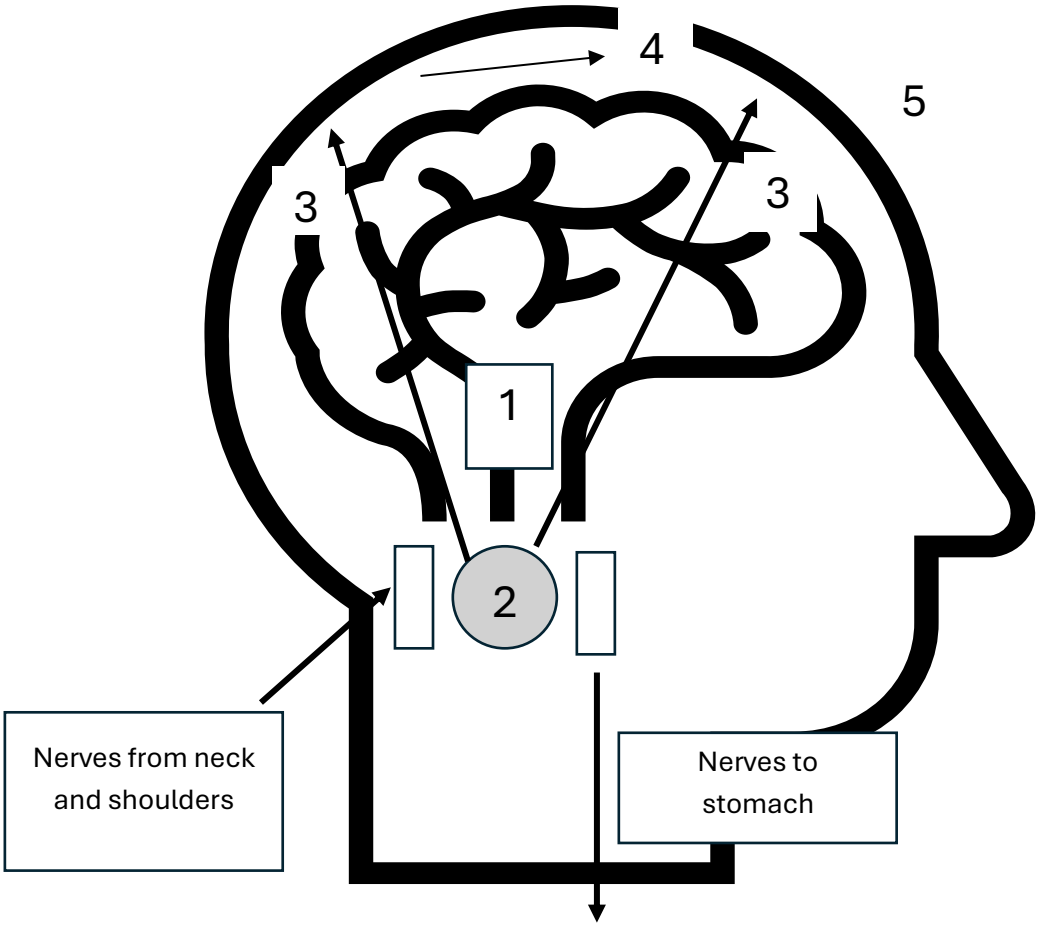


Figure 2.2. Important areas of the brain implicated in the migraine episode.

2.6. Migraine and the neck and shoulders

Over 80% of people with migraine experience neck or upper shoulder pain. This is due to the nerves of the ligaments and muscles of the neck and upper shoulder ending in the same area of the brain as the migraine generator.

There are rarely problems with the neck, but the pain reflects low level firing of the migraine centre, not sufficient to generate an attack but enough to send pain signals to the neck and upper shoulders. This can cause trigger spots and muscle spasm which in turn feeds back into and stimulates the migraine centre. Massage can help to alleviate this cycle, but other therapies are unhelpful.

2.7. Migraine and the stomach

The nerves that control the stomach originate in the brain close to the migraine generator. When this is triggered, these nerves are activated causing nausea or vomiting. This has an important implication for treatment, as drugs taken by mouth may not be absorbed well.

2.8. Migraine and your genes

A predisposition to migraine is predominantly genetic although it can be difficulty untangling the impact of genes from the environment. If you have a close family member with migraine, you have up to an 80% chance of having the problem.

Apart from a rare condition called familial hemiplegic migraine which is regulated by a single gene, many migraine genes interact in a complex manner to causes a migraine

disposition but how they do so is poorly understood.

It was always thought that the way genes control our cells is fixed but the emerging science of epigenetics suggests that the action of genes can be enhanced or suppressed by a range of factors including hormones and chronic inflammation. This adds even more complexity to an understanding what is going on.

2.9. Does my migraine need investigating?

There is always a concern that headache reflects a serious underlying cause, particularly a brain tumour.

Why not scan everyone with headache? There are two considerations:

i). Incidental abnormalities are deviations from normal but of no relevance to the migraine or cause for concern. They occur in over 15% of scans and can be a cause of considerable unnecessary anxiety.

ii). Health care resources are limited, and money invested in one area will always be at the expense of spending it elsewhere.

When a person with migraine presents to their GP, the chances of an underlying tumour are less than 1 in 2000. If there are no abnormal neurological symptoms and examination is normal, the chances of a tumour are vanishingly small.

An important examination is identification of raised pressure in the brain by looking at the back of the eye. This can be done very effectively by an optician, particularly if an optical coherence tomography (OTC) instrument is used.

If you are concerned that things aren't right, discuss things with your doctor.

Two approaches to investigation are available. I). A computerised axial tomography (CAT scan) is based on multiple X rays of the brain, combined into a picture using a computer. It is quicker and more accessible than magnetic resonance imaging (MRI).

ii). MRI is a more sensitive test but takes longer and often less accessible. It is based on analysing the signal from water molecules in brain tissue as they relax following alignment in a strong magnetic field. 10% of people find claustrophobia in the scanner a problem.

2.10. Is my migraine exacerbated by taking too many painkillers?

If you take too many painkillers including the migraine specific drugs Triptans, this can sensitise the pain pathways in the brain and lead to additional headache, a phenomenon known as medication overuse headache.

It will occur if over a three-month period you take any painkiller or anti-inflammatory medication for more than 15 days of the month or a Triptan on more than 10 days of the month. The number of days is important and not the number of tablets.

This is a common problem affecting 3% of the population and most people with chronic migraine will experience it at some time. It is not an addiction to painkillers but more of an understandable dependency. Unfortunately, things will not move forward with treating your migraine until it is addressed. It does not occur with preventative drugs, but these may not work so well if you are taking too many painkillers.

There is no easy management but acknowledging the problem is an important first step. The best option is:

1. Ensure your migraine is adequately managed with preventative medication.

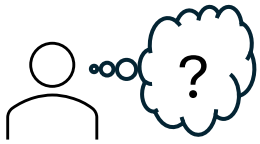
2. Choose a suitable time to stop. For example, when you are not under excessive pressure.

3. Stop abruptly. Tailing off does not seem to be as helpful.

4. The anti-inflammatory Naproxen can be useful to cover this difficult period.

5. Don't be disappointed if you don't manage to do this first time.

6. Switching a Triptan for the new drug Rimegepant to help your migraine attack can be a useful option if you are taking too many Triptans.

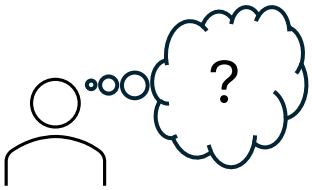


Want to know more about whether you need a brain scan?

National Migraine Centre Heads Up Podcast. Series 1, episode 3.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

Kernick DP. Imaging patients with suspected brain tumour: guidance for primary care. British Journal of General Practice. 2008 Dec 1;58(557):880



Want to know more about medication overuse headache?

National Migraine Centre Heads Up Podcast. Series 1, episode 8.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

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Conclusion to section 2.

This section has described the main features and underlying mechanisms of migraine, a predominately genetically inherited condition. It emphasises that migraine is due to an over sensitive and over vigilant brain, which was once an evolutionary advantage but unhelpful in the environment in which we find ourselves today. Migraine does not routinely need investigation.

Section 3. What is a Holistic approach?

The first step is to look to the Greek origin of the word “holos” which means “whole” and finds a derivation in the words “healing” and “health”. In this section I introduce the concept of holistic theory, holistic practice and a holistic approach. All have slightly different interpretations. From the perspective of this handbook:

- *Holistic theory*. This takes as its starting point the idea that everything is interconnected to everything else i.e. one integrated whole. Holistic theory takes its inspiration from Eastern philosophies (predominately Indian and Chinese). Here things are viewed as networks and there is a shift to an appreciation of the patterns that emerge from their interaction and the harmony between them.
- *Holistic practice*. This reflects a range of overlapping practises and tools which are built upon holistic theory, focusing on the interplay between thoughts, emotions, body awareness and connection with the external world. *Healing* is seen as a reflection of the body’s intrinsic ability to help itself. This contrasts with medical practice that offers external interventions such as drugs.
- *A Holistic approach*. This encompasses a range of complementary ways of approaching a problem derived from different disciplines including holistic practices and medical management.

We first explore holistic theory by understanding the difference between complicated and complex systems, a key departure point from modern science. Finally, the holistic approach that forms the framework for the handbook is described.

3.1. Holistic Theory

This sees everything as interconnected. An important first step is the difference between looking at things as “complicated” or “complex”. Although we use these words commonly in everyday life, we don't stop to think about the difference between them. Looking to the original Latin root is instructive.

“Com” – with.

“Plicated” – folded.

“Plexus” – entangled.

Complicated things can be unfolded and be understood by breaking them down into their component parts. You can take it to bits to understand it, like a car.

Science views everything as complicated. We can reduce things into their component parts, understand them, and build up a picture of the whole from the sum of the parts.

An alternative viewpoint is to see things as complex. Not only are complex things entangled but breaking them down destroys the nature of what you are trying to understand. (This approach is explored in appendix A2 if you want to know more.)

Examples of things that can be appropriately viewed as complex systems are: the body; the brain; a woodland; a social gathering; human organisations.

A key insight from holistic theory is that many of our problems are due to a disconnection. Between our brain and body, with others, with our environment, with our supressed emotions and our sense of who we are. These themes, their implications for migraine and how holistic practices can help will be explored in subsequent sections.

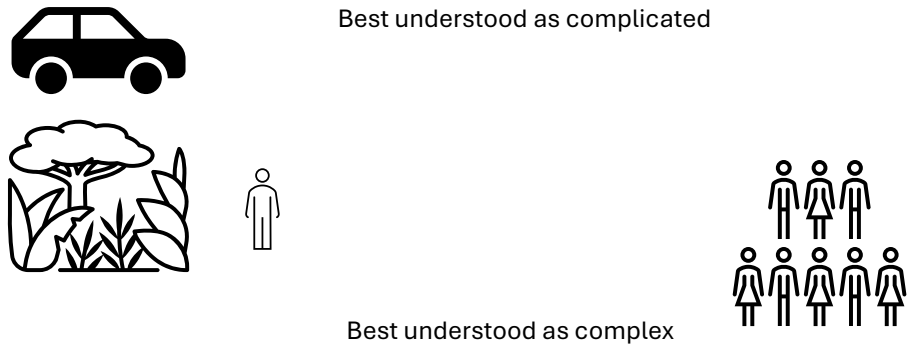
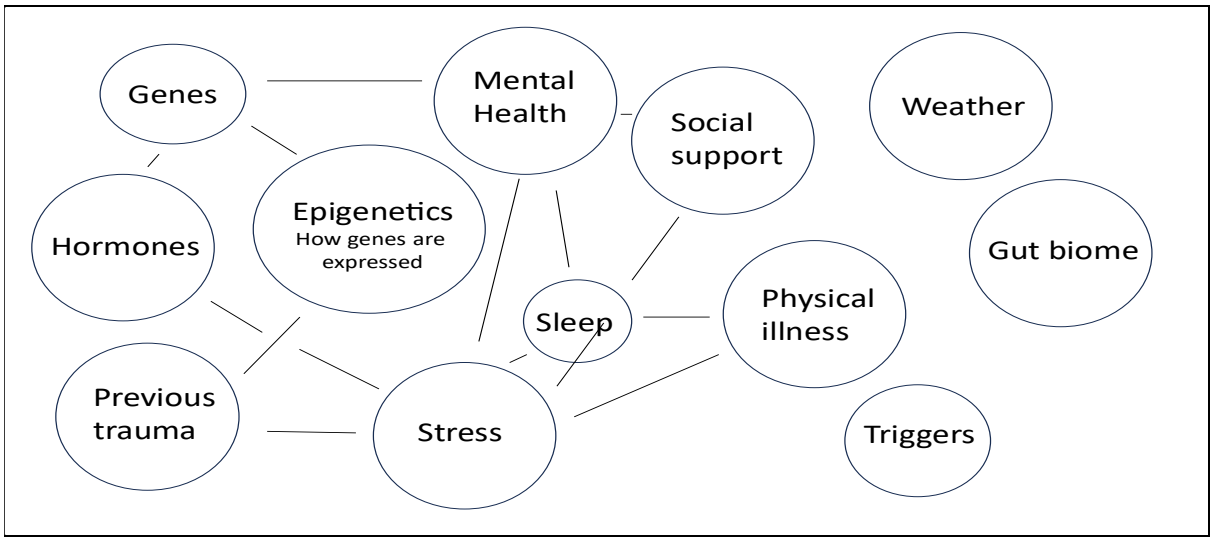


Figure 3.1. Complicated and complex. Complicated systems can be best described by breaking them down into their component parts. When systems are best seen as complex, this is problematic.

Some important factors in migraine are shown in figure 3.2. A traditional approach views these interactions as complicated whereas a holistic practice would view them as complex. Both approaches can give important insights.



3.2. Some of the interacting factors that can be involved in migraine giving rise to a complex system

3.2. Holistic practice.

Holistic practice builds upon holistic theory and offers different perspectives on the meaning of health and its attainment. The practices are drawn mainly from Eastern (Chinese and Indian) traditions, many of which have entered mainstream medical practice.

Traditionally, health has been seen as maintenance of normal function – a "fix it" approach. Health includes physical, social and psychological well-being and ability to flourish. Holistic practice takes a different starting point and views health as an integration or harmonisation of interacting systems, whether it be internal parts of the body or between the body and the wider external environment. Or to quote an ancient Chinese definition, "*A dynamic harmony between inner and outer worlds*."

Holistic interventions are aimed at restoring this harmony. (This is explored from a theoretical perspective in Appendix A2.)

3.3. A Holistic Approach.

In this context, holistic takes a different meaning. A holistic approach infers a broad range of disciplines which include holistic and medical practice. Figure 3.3 shows the four pillars of the holistic approach used in this handbook. They are underpinned by a foundation based on a more appropriate sense of how you see yourself or your "sense of self." This can often change with chronic illness in ways that are not always helpful.

Some holistic practices may resonate with you more than others.

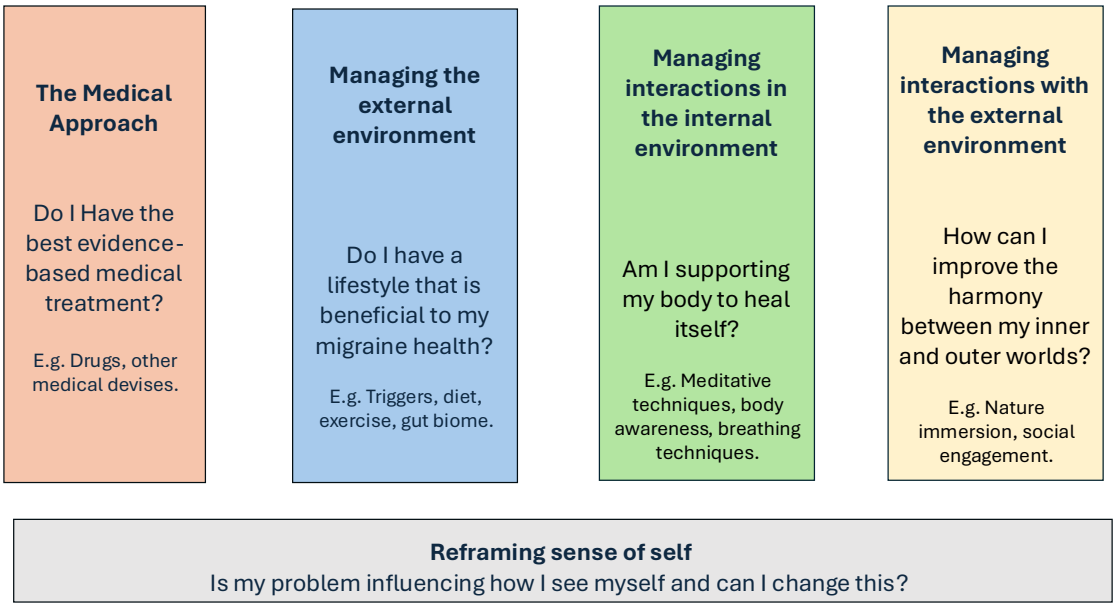


Figure 3.3. The four pillars of a holistic approach underpinned by a solid foundation.

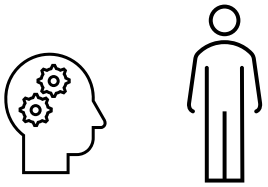
These pillars are explained in a little more detail below and form the basis of subsequent chapters.

i). The medical approach

A medical approach uses drugs and medical devises, developed and tested using observation and experimentation. This has been the prevailing method, but due to its success, other approaches that may be useful have been crowded out. Medical approaches to managing migraine are explored in sections 6 and 7.

ii). **Managing the external environment**

Here the focus is on maintaining a beneficial environment to help prevent migraine. Due to the complexity of environmental interactions, the scientific approach to a clear understanding can be more challenging. The impact of environmental factors is explored in section 8.



iii). Managing favourable interactions in the internal environment

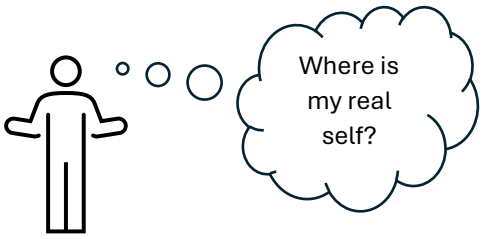
Here, healing is seen as utilising the body's intrinsic ability to help itself and being able to communicate what it needs. The focus is on harmonising mind and body with "mind-body" practices.

If you find healing a difficult concept, consider as example evidence from one of the latest migraine preventative drugs. The active drug gives a significant reduction in migraine in 49% of people, but an identical dummy or placebo drug in 41%[1]. (Appendix A3 tells you about references to scientific information and how you can access them if you want to investigate things in more detail.)

The drug has a clear benefit, but we should be asking "what is going on in the 41% of people that respond to the dummy drug, and how can we mobilise this healing effect?" Holistic practices are explored in section 9.

iv). Managing interactions between internal and external environment

Hoe we interact with a wider external environment is important for our health and sense of self. For example, there is now evidence that our interaction with nature brings health benefits. More contentious is the suggestion that there are areas of life that transcend conventional notions of scientific understanding and are not accessible to measurement. For example, energy healing such as Reiki. This area is explored in section 10.



V). Rewriting the story and reframing sense of self

As migraine becomes more burdensome it can impact upon the way we feel about ourselves. Our migraine experience can become who we are and prevent us from moving forward. Chapter 11 explores this potentially challenging area.

[1] Croop R, Lipton RB, Kudrow D, et al. Oral Rimegepant for preventive treatment of migraine: a phase 2/3, randomised, double-blind, placebo-controlled trial. The Lancet. 2021 Jan 2;397(10268):51-60.

Philosophical perspectives shift very markedly across the spectrum of holistic approaches as shown in figure 3.4.

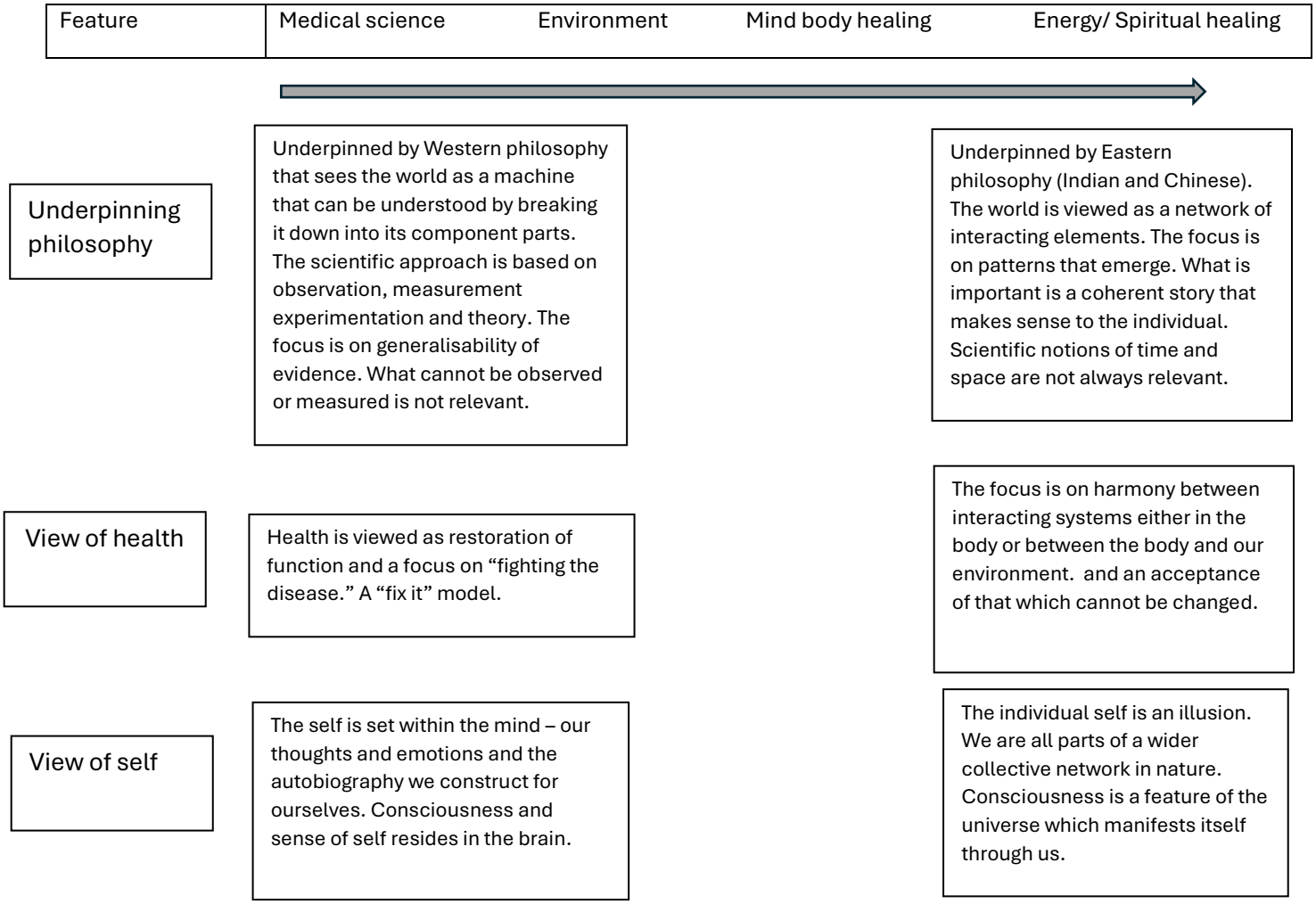


Figure 3.4. A shift in philosophical perspectives across a holistic approach.

Conclusion to section 3.

The word holistic has different connotations depending on the context in which it is used. This section has drawn the distinction between holistic practices underpinned by holistic theory and a holistic approach. Holistic practice draws upon non-medical techniques involving various mind body approaches whose starting point is to see the mind and body as one complex interacting network and health as a harmony between interacting networks. A holistic approach encompasses a wide range of approaches including modern medicine and is derived from a number of different philosophical viewpoints.

Section 4. Getting to grips with some basic theory.

In this section, I introduce some basic theory. Although it may be a bit heavy going, it gives us a solid grounding into what is happening. It will also help to explain how many holistic practices work.

There are four main themes:

Section 4A). An explanation of how the nervous system works.

Section 4B). The concept that the mind, brain and body are best viewed as one integrated unit.

Section 4C). The concept of chronic inflammatory load, induced by a wide range of stressors.

Section 4D). Finally, I integrate these insights into a common framework to help you understand what is going on in migraine and how holistic practices can help.

The important insights to take away from this section are shown in table 1. I'll unpack them slowly in the accompanying online programme.

- The mind, brain and body are more appropriately viewed as one complex network rather that separate parts.
- Physical, social and psychological stressors can build up to cause a chronic inflammatory load - our "stress buckets." Migraine is an inflammatory process and contributes to this process.
- This inflammatory load is held in the brain and body. It can interfere with how the brain functions and interprets signals from the body which can lower the migraine threshold and exacerbate its associated problems.
- Holistic practices can help to address these unhelpful mechanisms by acting on brain processes, quietening the brain and reducing inflammatory load.

Table 4.1. Key points of section 4.

Section 4A. Understanding the Nervous System.

In this section, we start by describing the components of the nervous system before thinking about how the brain works and when it may not serve us quite so well. (Appendix A4 expands how the nervous system works in more detail if you want to know more.)

An exploration of the nervous system may not be your cup of tea, but it can help to understand how many holistic practices work.

4.1. Components of the nervous system.

1. Nerve cells

The fundamental building block of the nervous system is the nerve cell or neuron. The brain has 86 billion neurons all have which have many branches that interact with other nerves.

Signals coming from the outside world (sight, sound, taste, smell, touch, pain, temperature) and signals constantly monitoring the internal state of our body, are processed before sending messages back to muscles that affect action.

The signalling process along nerves is electrical but between nerves is chemical. Information transmission between nerves is undertaken by chemical signalling compounds known as neurotransmitters. This process is an important site for drug action.

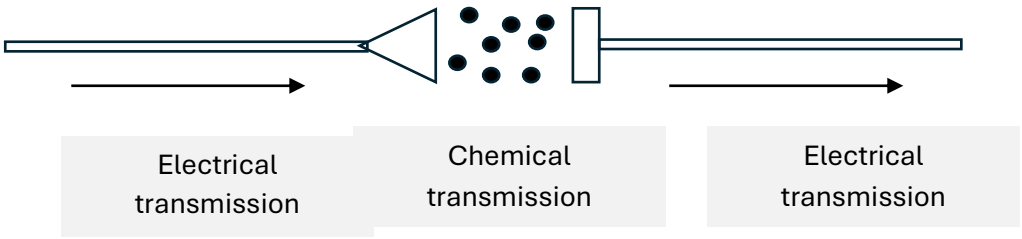


Figure 4.1. Nerve transmission is electrical along the nerve and chemical between nerves.

Migraine drugs act:

- By blocking the chemical transmission system. For example, Gepants block a signalling chemical known as CGRP.
- By interfering with electrical transmission along the nerve. For example, anti-epilepsy drugs such as Topiramate.
- By interacting with internal cell processes. For example, Magnesium and Coenzyme Q10 act on the energy generating pathways inside the nerve cell.

There are two parts to the nervous system:

1. The brain or central nervous system. This is the control centre where cognitive and emotional functioning takes. Cognition includes perception (integrating information from the senses), attention (selecting relevant input), memory, learning, thinking and planning. Some of this activity is under conscious control. Emotions are evolutionary older complex patterns of behaviour directed at survival, reproduction and social behaviour.

2. The peripheral nervous system. This system is found outside of the brain and has two parts.

i). The autonomic nervous system is an involuntary system (it runs autonomously) controlling internal body mechanisms. It consists of *sympathetic* and *parasympathetic* parts.

The sympathetic system comprises of nerves that exit from the spinal cord and are responsible for activating "fight or flight" body mechanisms. For example, increasing heart rate, breathing rate, blood pressure, sweating. If over activated it can cause fear, panic, anxiety, or anger.

The parasympathetic system is transmitted by the Vagal nerve. This supports immobilisation behaviours such as "rest and digest" and supports social engagement and connectedness. In the extreme it can cause defensive immobilisation (freezing with fear) which can be manifest as dissociation, numbness, depression, helplessness. Normally sympathetic and parasympathetic systems are in balance but in challenging circumstances, they can swing from one extreme to the other – from over activation to immobilisation. As we have seen, people with migraine are more hypervigilant and hypersensitive so they are likely to have more of a sympathetic drive.

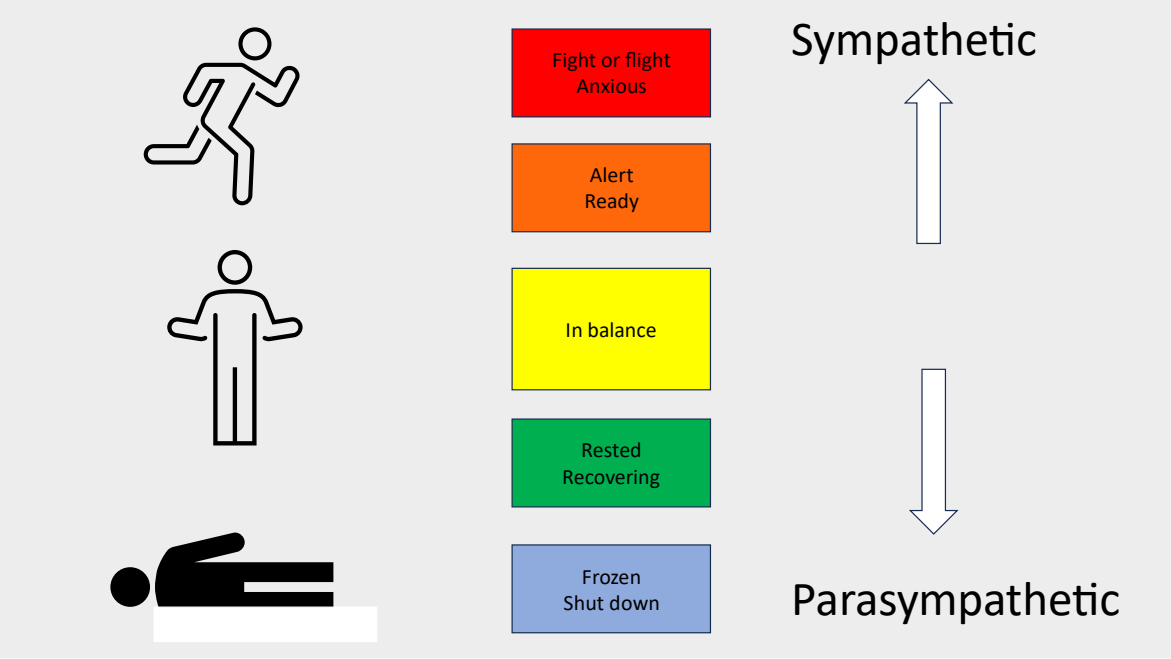


Figure 4.2. Where is your autonomic system functioning? Ideally it should change with the demands placed on you, but you may be stuck in one mode or swinging between the two.

ii). The somatic peripheral nervous system.

This part of the nervous system receives signals from sensory organs in the skin and sends action signals to muscles. Sensory nerves transmit signals to the brain where they are processed. Signals are then sent through motor nerves to effect appropriate muscle action. During a migraine attack, the sensory peripheral nerves can be more sensitive. For example, it can be painful to brush your hair.

4.2. How the nervous system functions.

The next step is to unpack what is happening from a more practical perspective.

Basic processes of the nervous system

There are three basic processes: sensing; processing; and action.

1). Sensing the environment. The brain takes in information continually from our external environment and from within the body. Due to the limited processing power of the brain (processing is very energy hungry), this information must be modulated or selectively "turned down". Our brain focusses on and turns up the sensory information it thinks is important and turn down what it thinks is less useful.

People with migraine will scan the environment more rapidly (hypervigilant) and are more sensitive to sensory stimuli (hypersensitive). i.e their volume controls are set higher.

2). Information processing. Incoming information is processed, and the brain decides what it needs to do to achieve its objectives. This is a complex process and is influenced by our experience of what has gone before (memory) and our current mood and emotional state. Processing takes place above our level of consciousness (our thoughts) or below it in our subconscious. Two important networks have been identified which help to control this processing:

i). The task negative network. This supports imagination, memory and reflection. When strongly activated rumination can occur – intrusive and negative loops of thought patterns trapped in cycling between the past and the future. Over-activity of this network can also activate pain networks.

ii). The task positive network. This supports more focussed activity and a more positive mode. When strongly activated, we can lose sense of time, for example when we are absorbed in an activity. Holistic practices, and in particular meditative practices can help to activate this network.

3). Action. We act as a result of this information processing to achieve our objectives.

Mood and emotions.

Emotions are evolutionary older, complex patterns of behaviour that have evolved to keep us safe and promote social behaviour. They are usually short lived but can be prolonged, particularly if negative emotions are not processed, when they can lurk in the sub-conscious. A mood is an emotional feeling of lesser intensity and longer lasting.

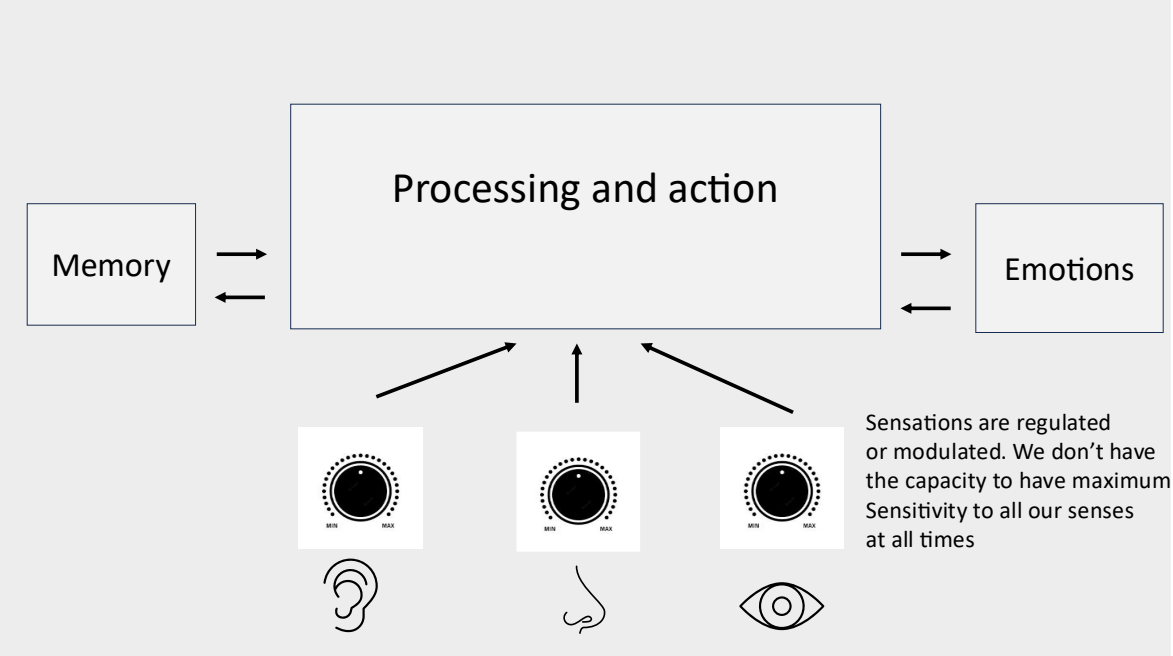


Figure 4.3. Basic functioning of the nervous system. Information is processed consciously or sub-consciously with inputs from memory and emotions.

4.3. When nervous system functioning becomes unhelpful.

All the functions described above can interact, often in ways that are not helpful. They get tangled in a repetitive loop. See figure 4.4.

For example, our thoughts can draw upon previous unhelpful memories. Thoughts can trigger emotions which feedback to the thoughts you continue to have. (Negative emotions are stronger than positive ones as they have evolved to protect us.) Body functions such as heart rate and breathing rate can be affected which in turn feedback to how we think and feel. So, the treadmill continues.

The problem gets even more complex as other factors come into play. For example, genetic dispositions, hormone fluctuations, seasonable variation, childhood experience can affect these interactions.

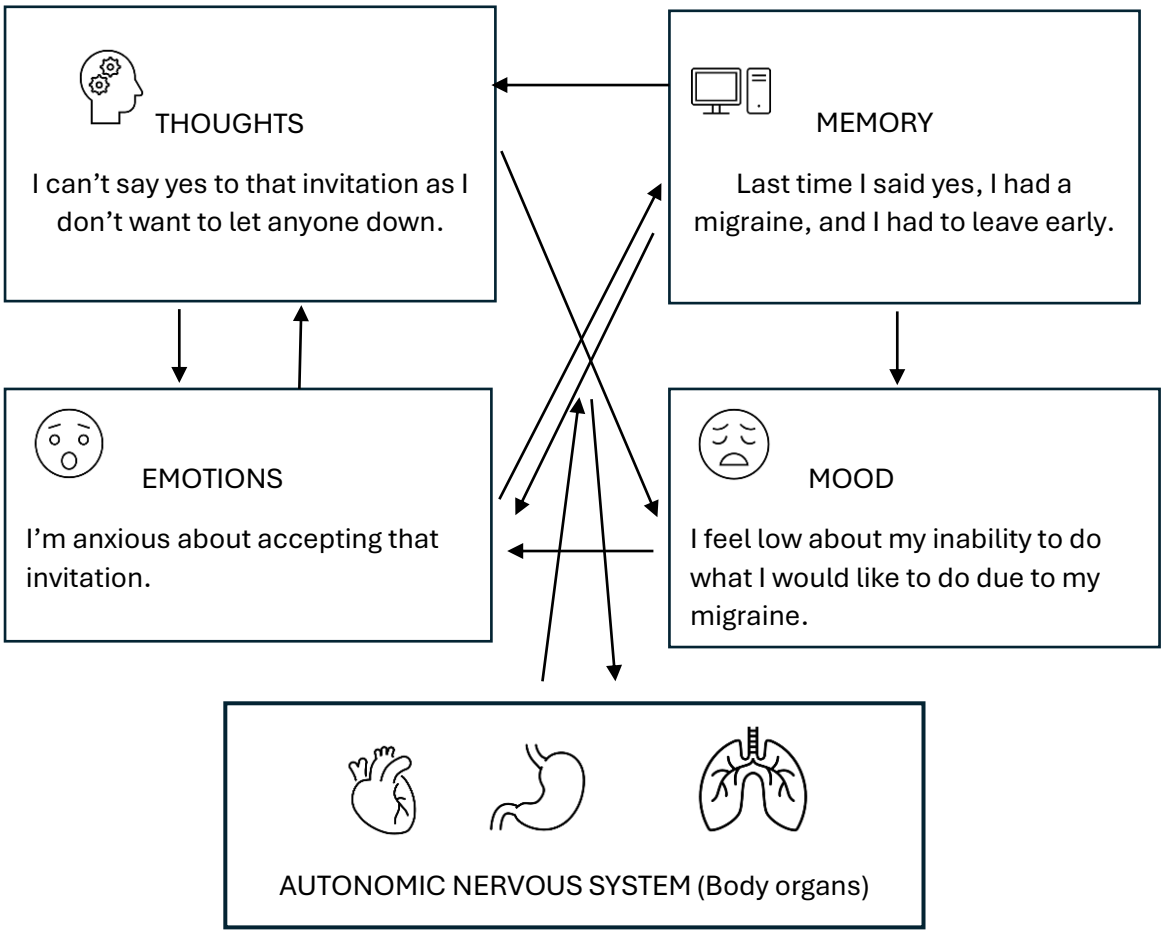


Figure 4.4. The complex interactions between thoughts, memory, moods, emotions and the autonomic nervous system which controls the functions of our organs. You can see how these interactions can be unhelpful and get tangled up making the problem worse. An important approach for many holistic practices is to quieten the mind.

It may be worth pausing for a moment and reflect on where you are.

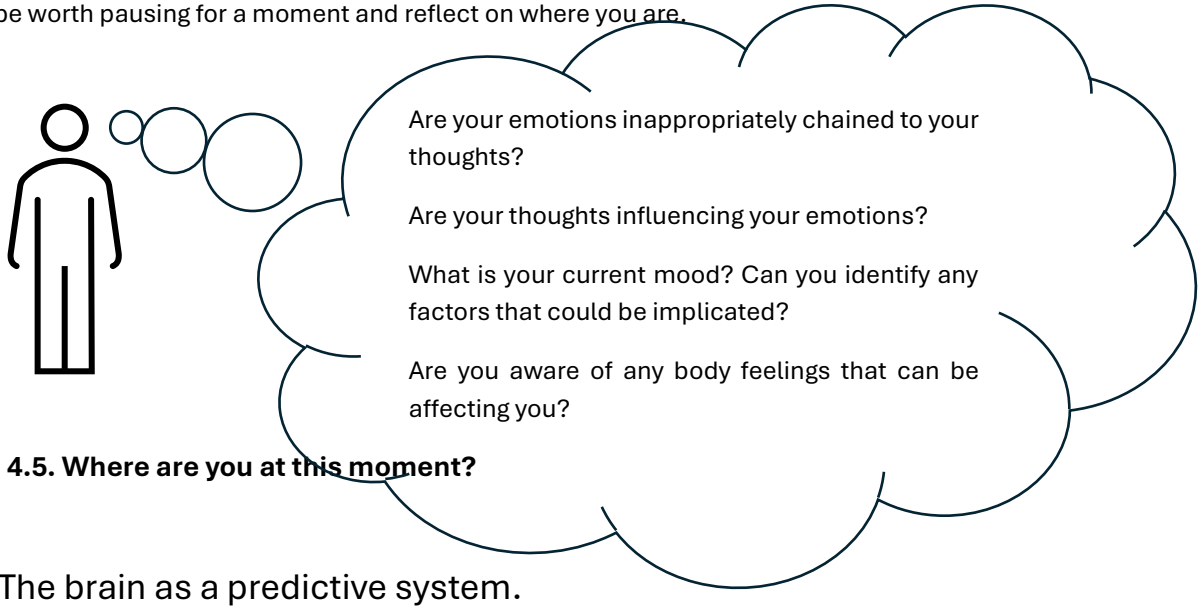


Figure 4.5. Where are you at this moment?

4.4). The brain as a predictive system.

This concept helps to understand how some holistic practices work.

Current thinking sees the brain not just processing and reacting to the stream of information it takes in but predicting what will

happen and acting based on previous experience. It continuously checks its assumptions and corrects its predications if they are not accurate. (See figure 4.6). With experience we shift from a reactive to a predictive mode.

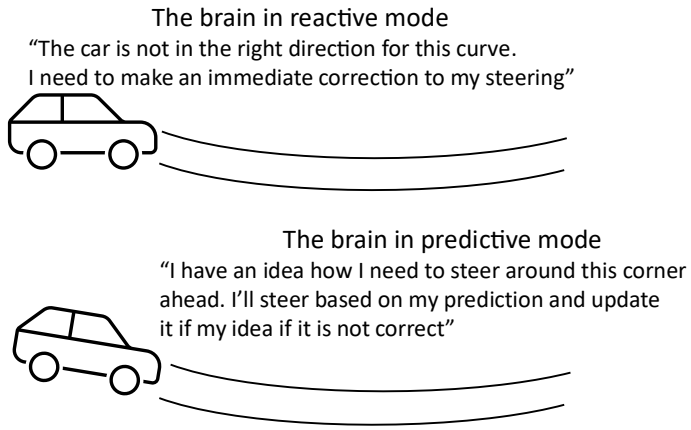


Figure 4.6. Reactive and predictive brain modes.

This phenomenon explains the placebo response seen in all medical interventions where a dummy drug can give a positive response. This response can be enhanced with positive anticipation. For example, if the doctor emphasises how good the drug is.

The placebo effect has historically been stigmatised and ignored rather than recognising it as a reflection of the body's ability to heal itself.

In summary, the predictive brain anticipates a particular outcome and acts appropriately. If the prediction is not correct it is updated. (This concept is expanded in more detail in appendix A5.)

This mechanism can help to explain many holistic practices such as visualisation, emotional freedom technique and mindfulness that we will meet in section 9.

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Figure 4.7. The power of changing the predictive model or how we anticipate what will happen.

Section 4B. The concept of mind, brain and body as one unit.

Since the evolution of modern science in the early 1700's, it was believed that brain and body functioned as separate units. The mind and our sense of self was firmly set in the brain. The body simply supported this function.

The brain does have a major role in regulating what we do, but it is now generally accepted that the body contributes to our emotional experiences, how we see and analyse the world, and our sense of self.

Brain and body are more appropriately viewed as one complex interacting network. Feelings, emotions and motivations are built from an ongoing conversation between body and brain.

We have always had an intrinsic feel for the contribution of our bodies to how we see the world.

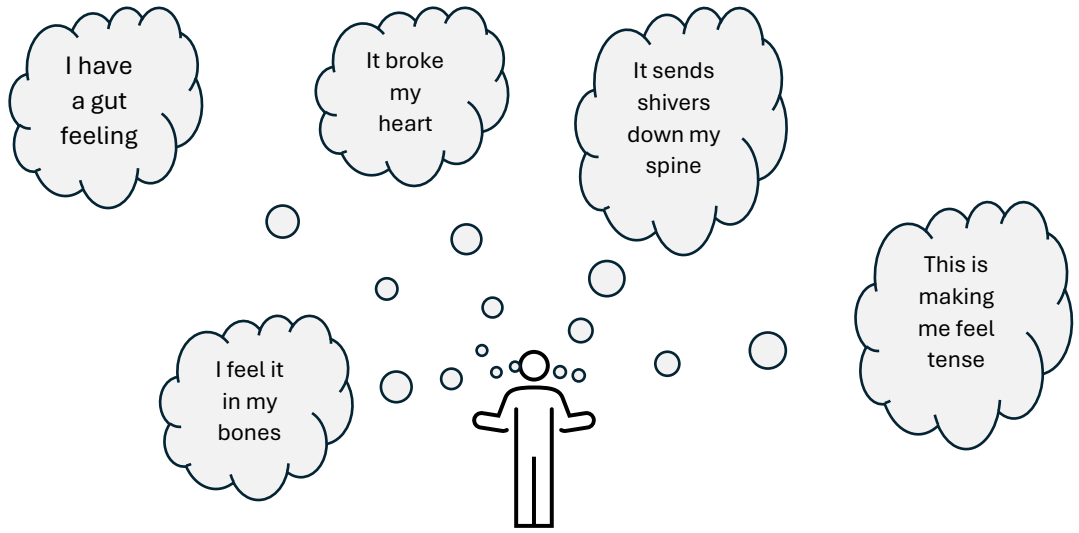

Figure 4.8. Our intrinsic awareness of the importance of our bodies.

The concept of "embodiment" is the idea that we are fundamentally shaped by our whole body's interaction at every level and also with our environment. Rather than our blueprint being driven "bottom up" by our genes, there is a complex interaction both up and down the hierarchy of our biological scales from environment to our genes. See figure 4.9.

For example, the footprint of stress is held not just in the brain but in the whole body, from its impact on heart rate, breathing patterns, gut movement down to consequences at the level of individual cells. When challenged by stress, the impact can be felt or imprinted across the whole body at every level, even in the way in which our genes are expressed. "The body keeps the score."

(An emerging view goes further to suggest that all our organs, cells and networks within cells have intelligent competency. i.e. we have interconnected memory and problem-solving ability that occurs at every level of the body. (See Appendix A6).)

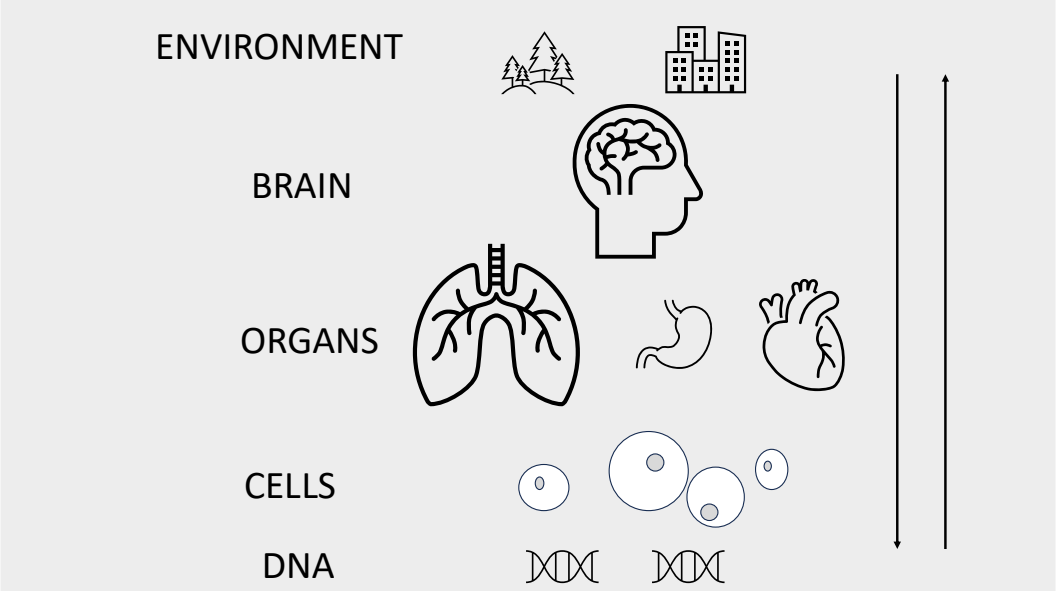

Figure 4.9. The concept of embodiment. The brain and body are one complex network interacting at organ, tissue, cellular and genetic level. Influence can be transmitted up and down the levels. We are the sum of all these parts and not just the processes occurring in the brain.

Section 4C. The inflammatory response and the problem of chronic inflammation.

When the brain encounters a challenge or stressor, a short acting inflammatory defence and repair reaction is mounted which aims to restore the body quickly back to normal function. If this reaction continues to be activated, it can impact upon the way the brain and body function. A stressor can be physical (for example infection, physical injury, disease such as migraine), social or psychological challenge. This can have negative consequences for migraine and its associated problems. Chronic inflammation is an important target for migraine management.

This section concludes with describing resilience, an important concept for managing stressors.

4.5. Getting the language right

We need to mindful about our terminology, particularly as the concept of trauma is so common and the term “stress” is so widely used. Box 1 shows how I want to use the terms.

- Stressor – any challenge to function or wellbeing that provokes an inflammatory response. From an evolutionary perspective this was physical challenge but now can include social or psychological challenge.
- Trauma – a stressor where the inflammatory process doesn't return to normal levels.
- Acute trauma – a one-time event. E.g. an accident, serious illness, an assault.
- Chronic trauma – repeated trauma that builds up over time or a single trauma whose effect is long term or persistent. E.g. migraine, bullying, neglect, abuse.

Box 1. Some important definitions. Note that the term "stress" is avoided, although I can't resist the term "stress bucket" as highlighted below.

4.6. What is an inflammatory response?

This is a response that evolved to protect us and facilitate repair of damaged tissue. It developed hundreds of thousands of years ago when our challenges were physical and short acting. E.g. Infection, injury, starvation.

It still serves us well from that perspective but unfortunately, it is also triggered by many other stressors that are a such feature of modern life and become persistent causing the buildup of inflammatory load or our "stress bucket." Stressors now include a wide array of physical, social and psychological challenge. (Migraine is an inflammatory process and contributes to this process).

The inflammatory response comprises of three elements:

i). Activation of nerve pathways, and particularly the autonomic nervous system.

ii). Activation of hormone pathways. For example, the production of adrenaline and cortisol.

iii). Activation of complex cellular and by chemical inflammatory pathways known as the "cytokine system."

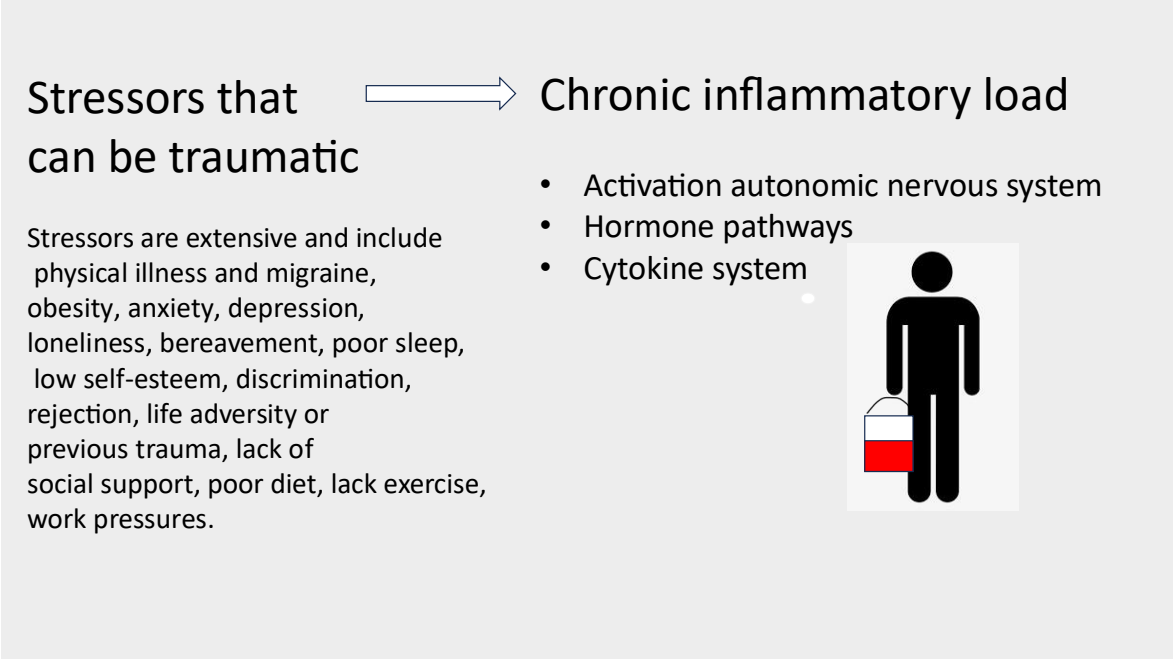

Figure 4.10. Important physical, social and psychological stressors on the body causing a chronic inflammatory load. How much inflammation is being carried in your stress bucket?

The activation of these systems has consequences across the whole body. For example, heart rate, blood pressure and breathing patterns, bowel motility, muscle tension, down to impact at the cellular level as explained in section 4B. Usually, the inflammatory process does its job and returns to normal. However, for an unknown reason, some single challenges do not return to normal or more commonly, repeated challenges cause the response to remain active leading to a chronic inflammatory load. A stressor is known as a "trauma" when the response doesn't return to normal.

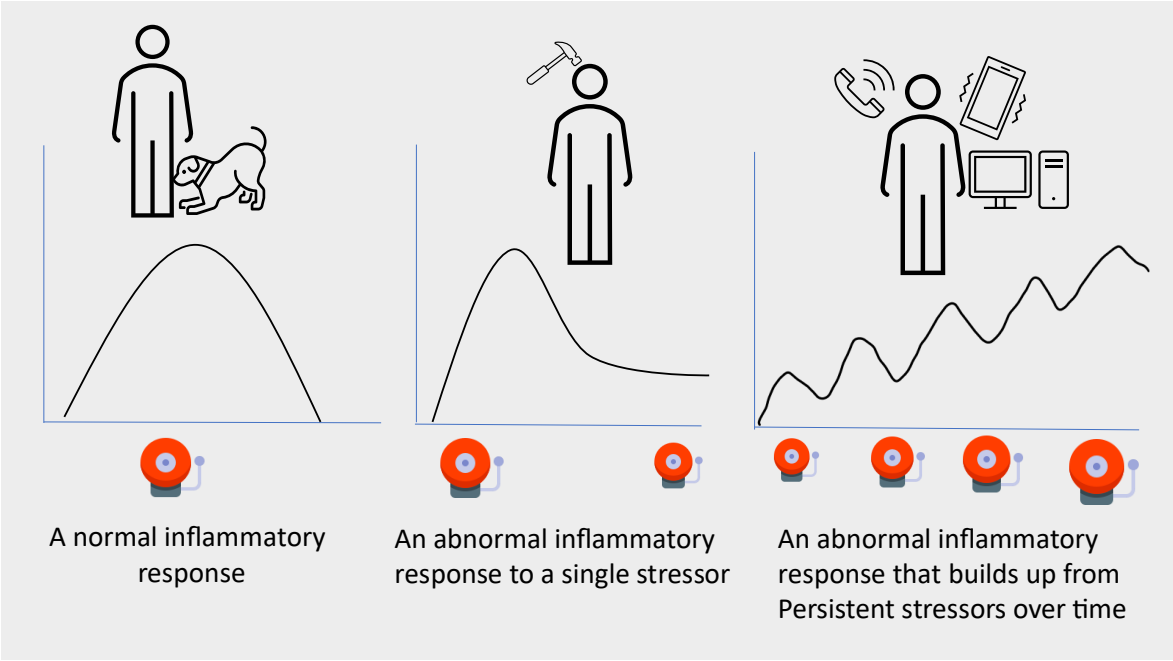

Figure 4.11. Normal and unhelpful inflammatory responses. The three possible responses to a stressor are:

i). A normal response to a single stressor, e.g. an infection, a physical injury or illness.

ii). A response to a single stressor which doesn't return to normal (a trauma), E.g viral infection, head injury, physical or psychological traumatic event.

iii). A build-up of inflammation over time with repeated stressors (repeated traumas) which can be quite minor. Migraine itself is a stressor.

4.7. The effects of chronic inflammatory load

Chronic inflammation can have a harmful effect on the body from brain to individual cells. (A useful metaphor is to consider a car in first gear. This is appropriate for a short time when starting but imagine the strain on the engine if the car was continually in first gear),

The consequences are:

- Lowering the migraine threshold making you more susceptible to an attack. The migraine alarm is triggered more easily.
- Impacting on the brain's processing ability. To resolve this, the brain amplifies incoming signals (as we might turn up the volume on the radio if it's not working properly). This leads to a vicious cycle of more migraine and a greater body sensitivity, exacerbating issues such as fibromyalgia, irritable bowel disease.
- Misinterpreting body signals that are a result of this inflammatory load. For example, increased heart rate is interpreted as anxiety.
- Patterning unhelpful, defensive responses and behaviours based on challenging past experiences.

4.8. How can we address the impact of stressors and their resulting chronic inflammatory load that can perpetuate migraine?

Practical approaches to addressing the inflammatory load we carry and reducing the impact of ongoing or future stressors are covered in part III of the handbook. They include lifestyle and holistic practices.

The concept of resilience is based on psychological practices and is the ability to cope with stressors in such a way that they don't cause negative consequences.

An individual's resilience is in part determined by genetic factors and upbringing which pattern how we respond to stressors. Resilient people are not free from emotions but are able to have more control of their negative emotions and thoughts.

The opposite to resilience is learned helplessness. This occurs when there are challenges it is difficult or not possible to avoid. It can be easy to slip into the trap of victimhood. Accepting that there is no hope, it is not worth trying and it's up to others to sort things out. But we always do have a choice, not necessarily on how our circumstances are, but how we respond to them.

Some things that have been shown to be useful for developing resilience are:

- **Disruption of negative thought patterns.** It can be useful to break down our internal patterns of thoughts and emotions and examine them individually. Do they make sense? Can we develop strategies for when they occur.
  This is the basis of cognitive behavioral therapy (CBT). Our thoughts can control our emotions which then feedback into our thoughts. The aim is to break the patterns of entrained negative thinking through self-awareness and replacing them with positive thoughts. For example, replacing "I am unworthy" with "I am good enough" and thinking of reasons why this should be.
- **Name your emotions and bring them to light.** Not "I am anxious" but "I have anxiety in me." You are not defined by your anxiety. You are not anxiety. Challenge the emotions that are attached to your thoughts. Are they realistic or of an appropriate magnitude? Are they helping you?

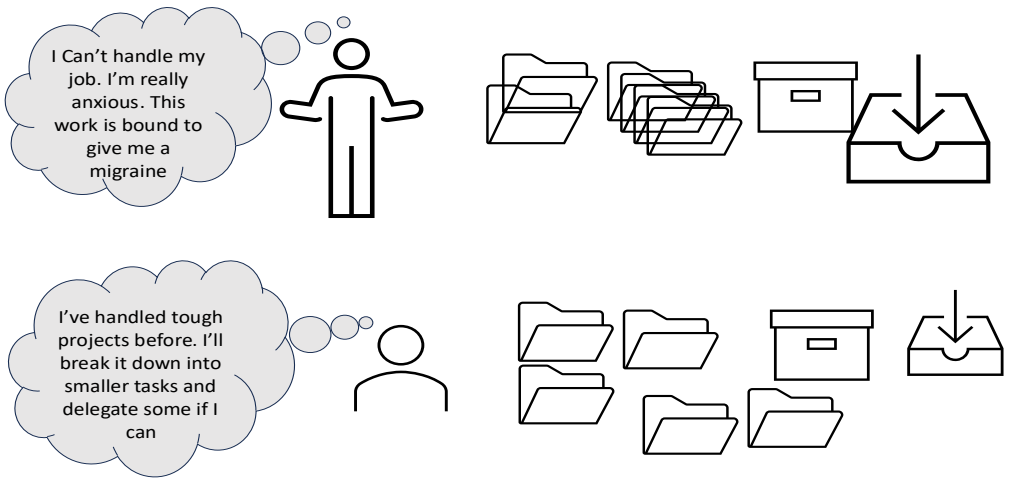

Figure 4.12. Identifying unproductive thought patterns and reframing them.

- **Respond not react.** When we are challenged, the temptation is to react or RE - ACT. i.e replay the same defensive patterns as we have always done. Try responding instead – take a breath and a few seconds to respond, mindful of what is

influencing the way you are replying. It may be based on stressors that you have experienced in the past. Perhaps you could go with the flow? Let any challenge flow around you like water around a stone in a river.

- **Accept that change is a part of living.** Certain goals may no longer be attainable. Accepting circumstances that cannot be changed can help you focus on circumstances that you can alter.
- **Set some manageable goals.** But be realistic about what you can do. Do something regularly that enables you to move forward, even if it's a small thing. "What's one thing I know I can accomplish today that helps me move in the direction I want to go?"
- **Learn from your experience**. Ask yourself – "what is this teaching me, how can I grow from this?
- **Make connections.** Good relationships with other people are important. Some people find that being active in civic groups, faith-based organizations, or other local groups provides social support. Reciprocating with others in their time of need can be beneficial.
- **Take care of yourself.** Pay attention to your own needs and feelings and ensure your work life balance is appropriate. Engage in activities that you enjoy and find relaxing. Give yourself "Me time." Learn to say no.
- **Keep a sense of humour.** Laughter and humour have been shown to promote resilience.

Section 4C. Putting it all together.

In this section I'll try and pull everything together that we have met in Section 4.

1). When a stressor challenges us, whether it be physical, social and psychological, we mount a defensive inflammatory response which is designed to protect us. This response activates nervous system, hormone, cell and chemical pathways.

2). If the inflammatory response does not return to normal, we call the stressor a trauma and we maintain a state of chronic inflammation. Our "stress bucket."

3). This chronic inflammatory load is held not just in the brain but across the whole body - "The body keeps the score."

4). This inflammatory load compromises the processing ability of the brain and increases the sensitivity of incoming signals. This leads to a lower threshold for triggering migraine and problems such as irritable bowel syndrome and fibromyalgia.

5). As the body thinks it is under continual threat, the autonomic nervous system shifts towards more of a sympathetic activation or swings between sympathetic and parasympathetic causing a tendency to anxiety and depression.

6). This over activity increases the energy demands of the brain. This can lead to feelings of lack of energy or lethargy as the body attempts to conserve energy.

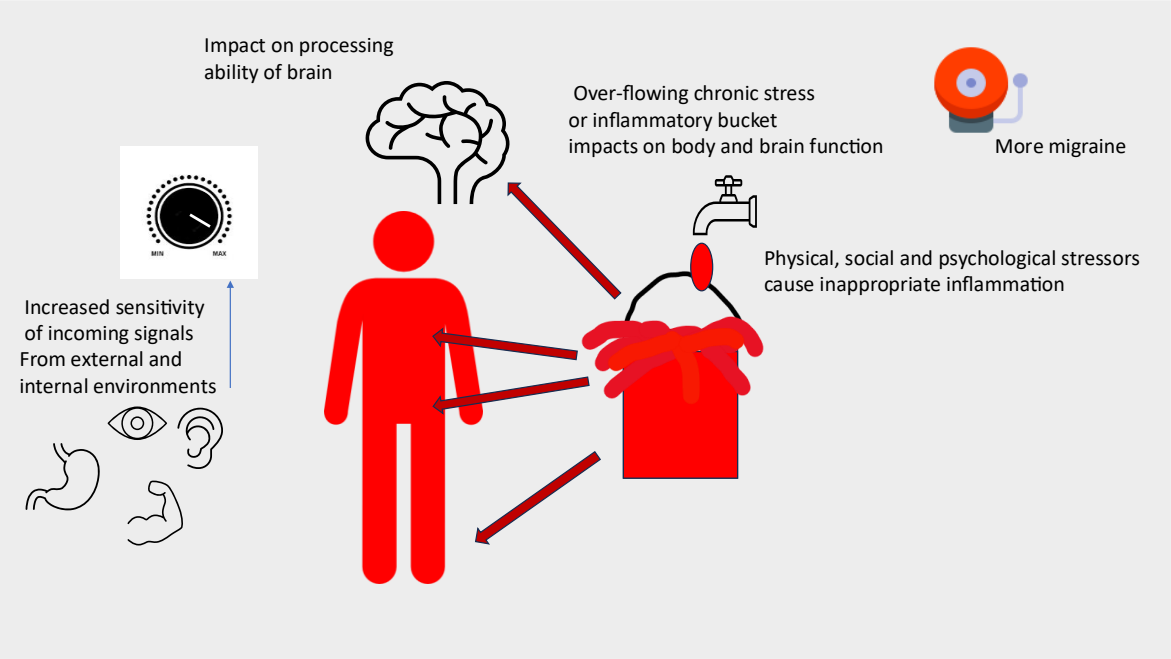

Figure 4.13. Chronic inflammation sensitises body and brain.

The path to Chronic migraine.

Figure 4.14 outlines the path to chronic migraine based on an accumulation of stressors and increasing inflammatory load. We are all somewhere on this path whether we have migraine or not. Many people with chronic migraine will recognise it. An autonomic nervous system not in balance often compounds the problem.

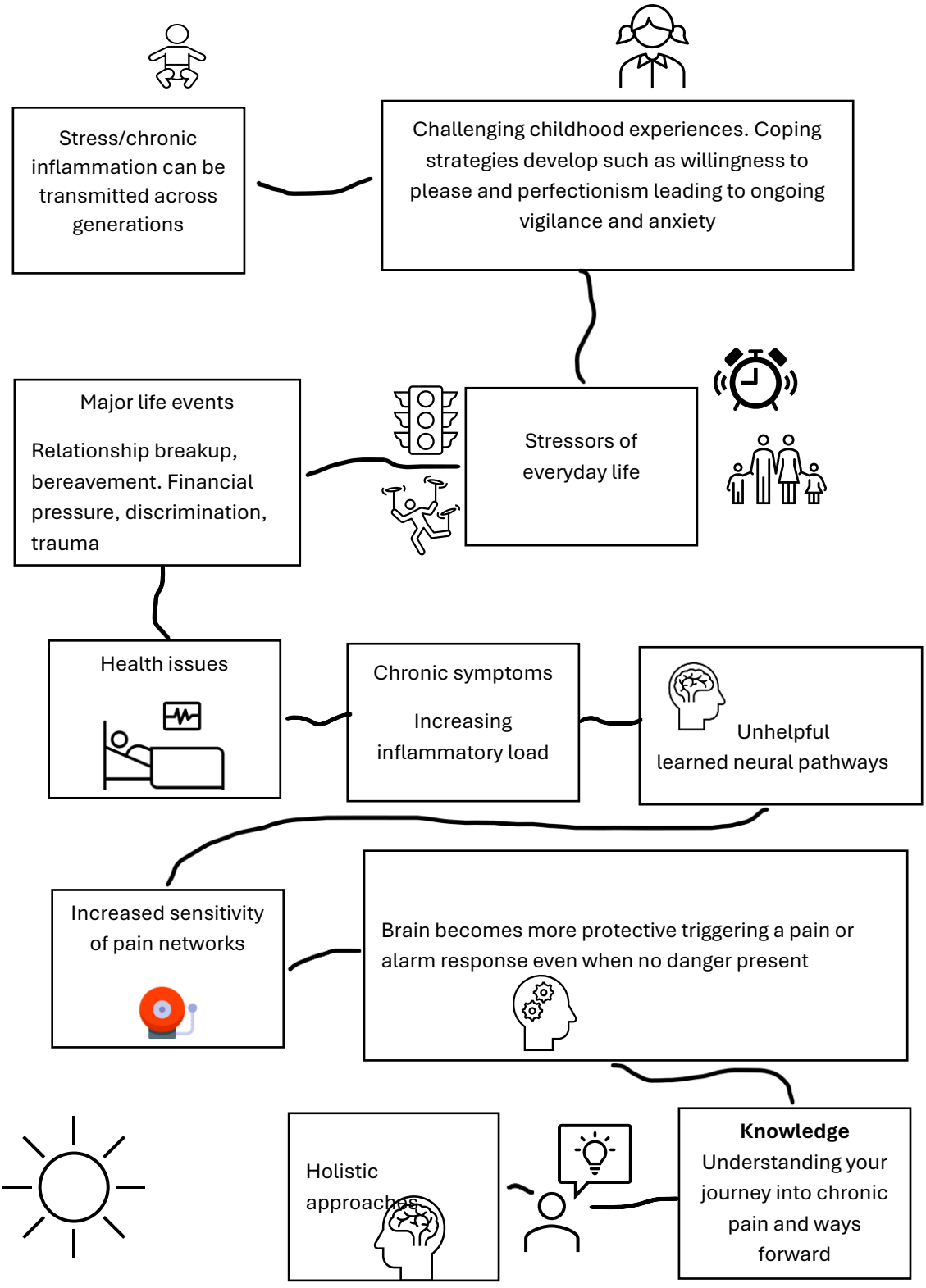

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Figure 4.14. The pathway to chronic migraine and hope for the future

How do we address this route to chronic migraine? These are the approaches covered in this handbook.

- Medical treatment. Can be very effective but may not address the root causes.
- Quieten the mind. Holistic practices such as mindfulness, therapeutic breathing, nature immersion.
- Minimise ongoing inflammation. Healthy lifestyle, developing resilience.

- Address historic inflammation. For example, psychotherapy, emotional freedom technique.
- Rewire the brain. For example, visualisation techniques.
- Balance the autonomic nervous system. E.g. breathing practices.
  Appendix 7 gives more information on how holistic practices might work.

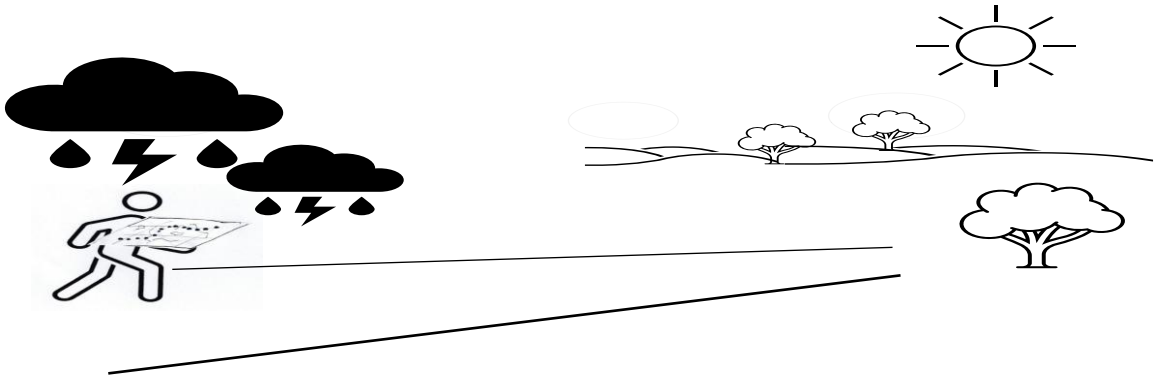
Conclusion to section 4.

We get migraine due to an overactive brain that once had evolutionary benefits. A wide range of stressors mediated through inflammatory load exacerbates this mechanism worsening migraine and causing other associated problems. The importance of considering the mind, brain and body as one complex network has been emphasised.

In the next section we take some first steps on the practical journey.

Section 5. First steps on the journey

Having got some grounding with the basics, we start out on our journey by establishing a baseline and exploring some initial steps. First, an invitation to think about a journal or keeping a reflective diary to record your journey. We then discuss the differences between setting an intention and defining goals before describing some simple holistic practices you may like to consider as a starting point.



First steps on the journey.

5.1. Journaling – keeping a reflective diary

You may find it helpful to map out where you are and keep a record of your journey. Journaling is different from keeping a diary which is a factual record of events that take place. It encourages you to write more freely, reflecting on how you feel about things and your emotions related to them helping to clear unprocessed thoughts and emotions.

Research has shown a wide range of benefits when individuals write about their experiences. They include thinking more clearly; better being able to understand your thoughts and emotions; better management of traumatic events and identifying sources of stress.

- Don't worry where your writing may take you. Let your thoughts flow freely.

Handwritten notes are important rather than putting your thoughts down digitally. Writing has been shown to facilitate brain re-processing in a way that a computer input cannot.

- Sometimes we can meet resistance when writing but just notice this resistance without judgement and allow yourself to lean into the process.
- Some people may prefer to keep voice notes. Recording your voice may be a more natural way to express yourself.

Here are some initial questions you may like to journal about if a prompt would be helpful. Answer these questions as honestly as with as much detail as possible. Just put down whatever comes into your mind rather than think about it first.

Impact

Where am I on my migraine journey?

How are my migraines impacting my life?

How are they impacting those around me?

Figure 5.1. Some things to journal about.

5.2. Setting an intention

Our next step is to focus on where we are and how we want to start moving forward. The traditional approach is based on setting specific goals, measurable targets you aim to achieve and focus on. They usually come within a structured plan and timeline. For example, "I want to reduce the number of migraines I have each month by 50% at the end of six months." There is nothing wrong with keeping goals and you may wish to monitor progress with a simple measure that you can make a note of in your journal as your healing journey progresses. (Figure 5.2 gives some other ways to measure progress.)

i). A simple score - My migraine is having an impact on my life:

0 (not at all).....10 (the worst I can imagine)

ii). The migraine impact disability assessment test (https://headaches.org/wp-content/uploads/2018/02/MIDAS.pdf)

iii). The headache impact test. (https://headaches.org/wp-content/uploads/2024/05/HIT-6-1.pdf)

Figure 5.2. Measures of migraine impact.

However, setting goals may set you up for failure and continuation of the boom-and-bust cycle. Setting an intention is a different but complementary practice to goal setting and more suited to a holistic approach.

The focus is creating an environment for how you want to be or feel from moment to moment, your underlying values that direct your behaviour and the kind of person you aspire to be. They're more about how you are on the journey and how you want to approach it, in the present rather than a specific future outcome in the future. It shifts the focus from the destination to the journey itself.

We will revisit this concept in more detail in section 11

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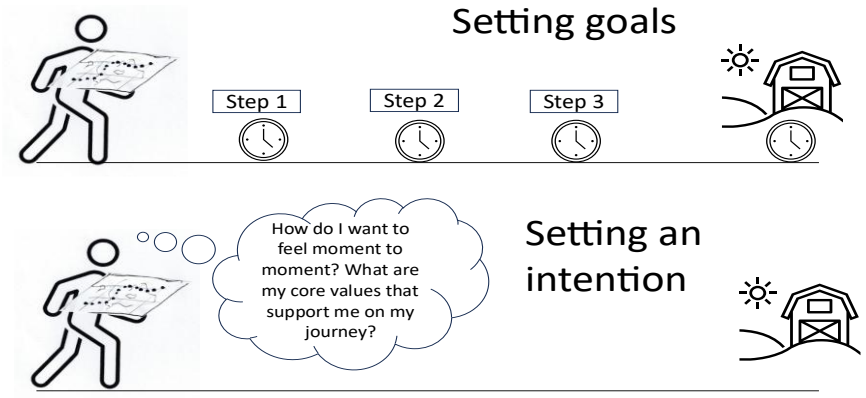


Figure 5.3. Setting goals and setting intentions. From what am I doing to who I am being.

It is important to be mindful of the language you use. See figure 5.4.

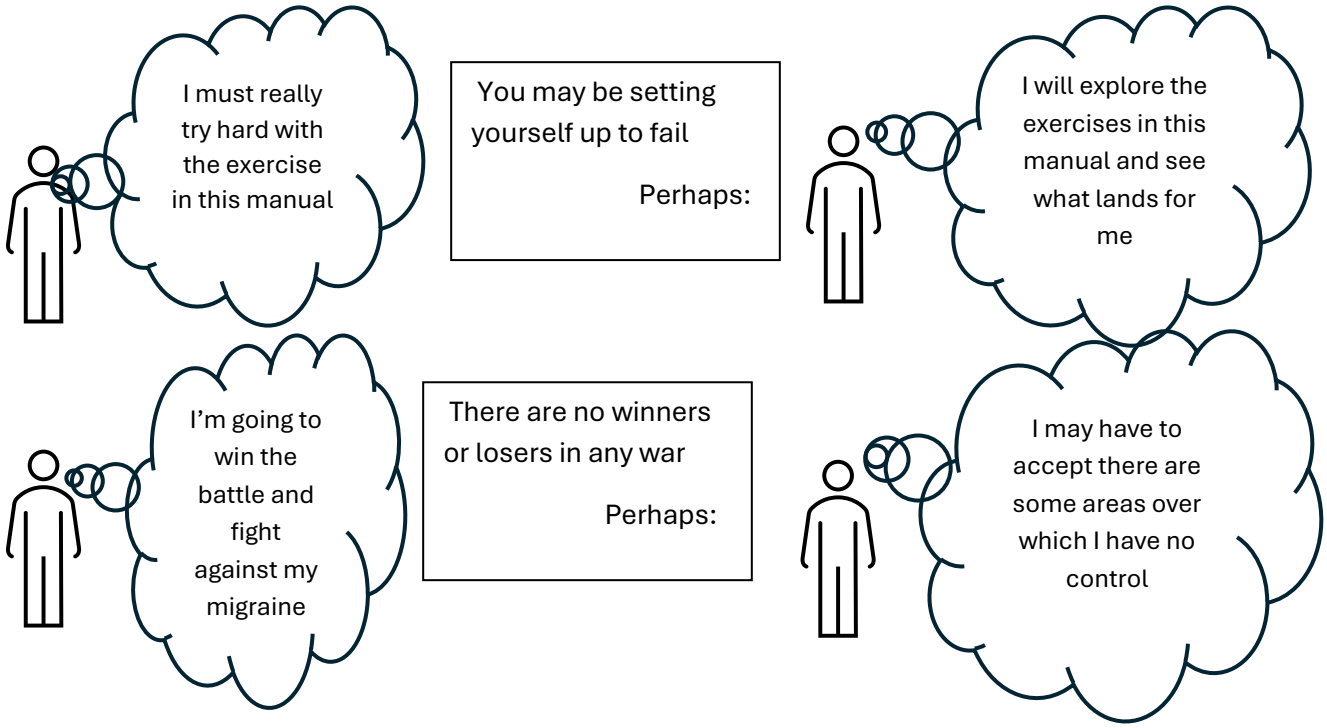


Figure 5.4. Be mindful of the language you use

Audio Exercise

What is the difference between an intention and a goal or objective? Here Georgie explores what this means and guides us through an intention setting exercise. It is an exercise to ascertain what your body needs and what feels right for you.

https://youtu.be/toF4HduXBww (14 Minutes)

5.3. Some starting practices for the everyday. An awareness of where your mind and body are.

An important first step is to just develop an awareness of where you are from moment to moment. This is the first step in holistic practice.

1. Mind awareness - where your mind right now?

So, where is your mind right now?

i). Sensation awareness. *What sensations am I aware of, internal from my body or external from my environment?*

ii). Thought awareness. *Where are my thoughts - past present or future?*

Are you aware of any self-defeating thoughts such as “I'm not good enough” or “I'm bound to fail”. Our brain is naturally inclined to focus on negative bias, a trait that probably evolved as a survival mechanism.

Instead of fighting negative thoughts, observe them without judgement and acknowledge them. See them as merely words or images. Perhaps just be a little kind to yourself and say to yourself, ”OK - this is just a thought.”

iii). Emotional awareness. *What emotions am I witnessing? Strong/weak*.

Name them but perhaps you can let go of the label you attach to them that they are good or bad.

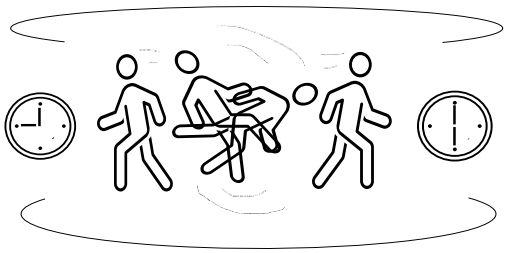


Figure 5.5. Where is your mind in time right now?

2. Body Awareness – where is your body right now?

i). Body muscle awareness. *Which muscles are active? Where is the tension feeling in my body for example neck, jaw, throat, hands, arms*.

ii). Breathing awareness. *What is the rhythm of my breathing?*

The breath is the main body function over which we have direct control, and it is richly connected to other parts of the nervous

system. When the breathing is calm, the mind becomes more settled.

Focus on your breathing. The breath is a central focus and anchor for holistic practice. What is your breathing doing? Slow, rapid, irregular rhythm? Is there a gap between inhale and exhale?

iii). Posture awareness. Where is your posture right now? As we have discussed in section 4, we need to reduce our excess sympathetic drive which is such a feature of modern life and move towards a state of balance with our parasympathetic system. Posture is a good place to start. The relationship works in both ways – the state of our autonomic nervous system (see section 4A) influences our posture, and our posture can influence our autonomic state.

When you are in sympathetic mode, muscles are tense particularly in the neck shoulders and back. You adopt a closed, protective posture reflected you are in fight and flight mode. Posture can have an important impact on migraine. This is for two reasons:

i). The nerves of the neck and shoulders terminate in the same part of the brain as the "migraine generator." Slumping may exacerbate activity of this migraine centre.

ii). Trunk and head posture deviations from neutral, particularly forward flexion or forward head posture, can activate autonomic stress responses which are not helpful for migraine.

These are some simple things you can do:

- We spend much of our time slumped over our computers. Ensure your screen is at eye level.
- Avoid sitting still for long periods.
- Keep your neck extended, looking straight ahead if you can.
- Try and keep your chin tucked in to correct the head being too far forward. Look straight ahead and draw your chin straight back.
- Keep your body balanced about the mid line.

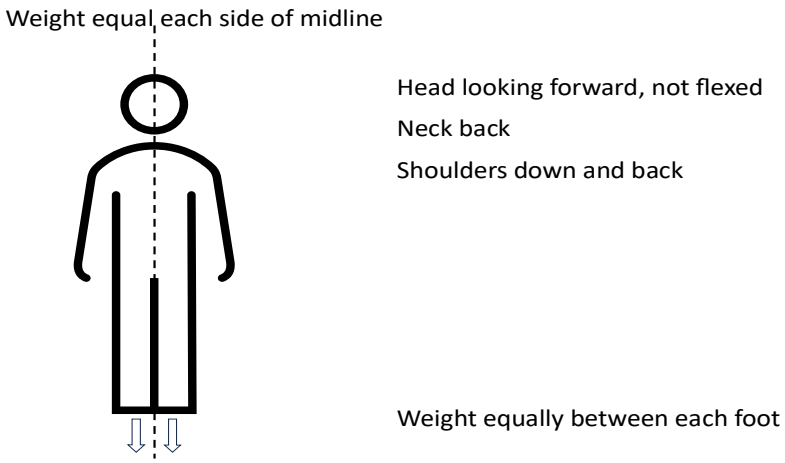


Figure 5.7. Think about your posture.

Conclusion to Part 1 of the handbook.

Hopefully, by now you will have a better idea of what is going on with your migraine and a basic understanding of what a holistic approach might look like.

People with low frequency migraine may find adequate control from simple medication. The holistic approaches that are described in the handbook may be more appropriate for those

who carry a significant chronic inflammatory load that can be caused by a wide range of physical, psychological and social stressors.

However, most of us carry around our “stress buckets” whether we have migraine or not. It is a feature of modern life and most of us will live our lives in “sympathetic mode.” We attempt to find peace, running from yesterday while chasing tomorrow. Of course, we need to be time focussed but it is not the only experience available to us. A focus on the present moment runs parallel to the world of time and is available to us wherever we are. Perhaps we all would benefit from a more “parasympathetic way” of living?

In conclusion, we have established some important starting points for the journey. Where you are now and how you want to feel along the way. I have suggested some simple holistic practices to start with, but it is important not to do too much too soon. New challenges and concepts need integration – the space to mentally and emotionally take things in and digest them both consciously and sub-consciously.

In the next two sections we return to more mainstream ground and explore the medical management of migraine.

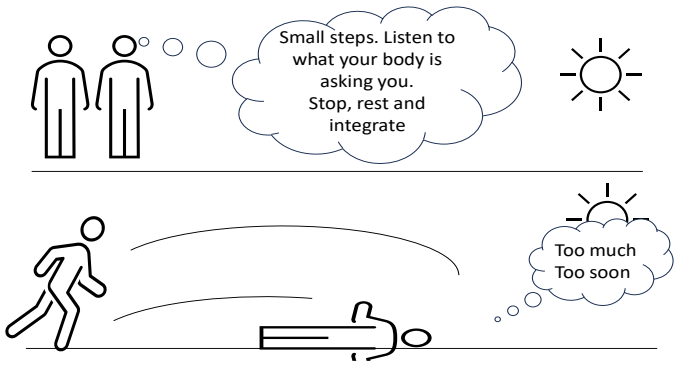


Figure 5.8. The importance of integration before moving on

Section 6. Medical management of the migraine attack.

Interventions are either directed at the migraine attack once it has started or preventative medications that are taken on a regular basis that aim to stop the migraine attacks from occurring.

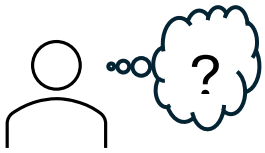
The next two sections offer a brief overview of treatment options and are not intended as a substitute for the comprehensive 'product information' leaflet found inside all boxes of medication. The 'product information' leaflet should always be read before taking medication. For prescribed drugs, your doctor will discuss the risks and benefits of the medication as it relates to you and answer any further questions you may have. If you are pregnant, planning a pregnancy or on other medication, seek further qualified advise.

6.1. Nerve stimulator devices.

These devices can all be used for the migraine attack and some can also be used on a regular basis to prevent migraine attacks. The evidence to support them is not as rigorous as drugs and they need to be purchased privately in the UK.

Devise	Action	Use
Cephaly	Stimulates nerves on the forehead (the Trigeminal nerve)	Treats and prevents attack
Gammacore	Stimulates Vagus nerve in neck	Treats attack
STMSmini	Stimulates brain directly	Treats attack
Nerivio	Stimulates nerves in arm	Treats attack

Figure 6.1. Electrical devises used in migraine.



Want to know more about electrical neuromodulation devises

National Migraine Centre Heads Up Podcast. Series 2, episode 10.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

6.2. Pharmacological management of the migraine attack.

There are two treatment approaches:

- Stepped care within the attack, i.e., starting with simple analgesics. If ineffective, moving towards stronger drugs.
- Stratified care, matching the approach to the severity of the attack.

A pragmatic option is to establish what is best for you.

Simple pain killers/anti-inflammatory/anti sickness medication

A useful first step is paracetamol 1500mg, ibuprofen 400–600mg (or aspirin 900mg). Higher doses help quick action but don't take more than the daily recommendation of tablets.

Nausea will hold up drugs in the stomach and prevent absorption. Aways use an anti-sickness medication if nausea is present. Metoclopramide 10 mg or Prochlorperazine 5mg are the main prescribable drugs used. (The latter can be bought without a prescription as a 3mg formulation that dissolves in the mouth – "Buccastem").

Triptans

Triptans have revolutionised the management of the migraine attack. People will vary in their response and tolerability to Triptans. If you fail to respond, there is a >70% chance that an alternative triptan will be successful.

Available triptans in the UK are: Sumatriptan, Rizatriptan, Zolmitriptan, Eletriptan, Almotriptan. Naratriptan and Frovatriptan may not be so effective but last longer and may have fewer side effects.

Triptans:

Soluble preparations work better and can be absorbed quicker with a fizzy drink. (Many people find Coca-Cola useful). This can be a useful option prior to taking a Triptan if you are unsure how a migraine will develop.

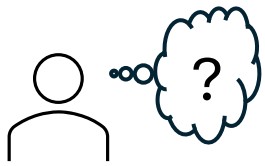
- Can be taken with pain killers/anti-inflammatory/anti-sickness drugs.
- Should be taken at the onset of pain. They may not work so effectively if taken during the aura phase.
- Failure to respond or side effects to one Triptan do not indicate others will be the same – try another
- Maximum 2 doses in 24h.
- Unlicensed for >65 years. Triptans can constrict arteries. There is the concern of an increased possibility of underlying vascular disease in this age group. However, in some cases the benefits may outweigh the potential risks if there are no risk factors other than age.
- Not to be used in heart disease active or previous, uncontrolled or severe hypertension, cerebrovascular disease (stroke), peripheral vascular disease
- Triptans are available in the UK. in injectable, nasal or oral formulations

See Table 6.1. Sumatriptan 50 mg can be bought direct from the pharmacist

.

Preparation	Drug	Indication
Injectable	Sumatriptan 3mg or 6mg SC	Severe vomiting, rapidly developing symptoms
Nasal	Sumatriptan 10mg and 20mg nasal spray, zolmitriptan nasal spray 5mg	Useful where vomiting or severe nausea is a problem. Approximately 20% gets absorbed through the nose
Oral	All triptans. Orally dissolvable formulations are for convenience only and do not get absorbed through the mouth lining.	

Table 6.1. Triptan delivery modes



Want to know more about Triptans?

National Migraine Centre Heads Up Podcast. Series 1, episode 5.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

Gepants

A recently developed group of drugs used for both the attack and prevention block the action of a nerve transmission molecule that is important in migraine. (CGRP.) We will meet these drugs again in the next section.

- Rimegepant 75mg licensed in the UK as of March 2024 and available on NHS prescription if two Triptans have failed.
- Much better tolerated than Triptans with fewer side effects and relatively safe in vascular disease as they do not cause constriction of arteries.
- Similar effectiveness to Triptans in comparator studies.
- Evidence suggests they are not associated with medication overuse.

Section 7. Medical management to prevent the migraine attack.

Preventive medications are taken regularly and can reduce the frequency, duration or severity of migraine attacks. There are no rules as to when they should be started, but relevant factors are:

- Impact upon disability and headache-related quality of life.
- Overuse of acute medication, particularly where there is potential for medication overuse headache.
- Attitude towards taking medication on a regular basis.

7.1. Nerve stimulator devices.

See section 6.

7.2. Natural preventative therapies.

They are not available on prescription and need to be bought privately. Most recognised health shops would sell them. The evidence to support them is variable and not as strong as drugs.

Magnesium

Magnesium is needed as part of a healthy diet. It comes in cereal, nuts, spices, coffee, tea and vegetables.

There is evidence that some people with migraine have low levels of magnesium; this may be the case especially with menstrual migraine.

The suggested dose is 600mg daily. Side effects are uncommon, but diarrhoea can occur. Magnesium citrate may be less likely to cause problems.

Co-enzyme Q10

Co-enzyme Q10 is a compound linked to the production of energy in cells. It is also an antioxidant, clearing up “waste products” from cells.

It is found in oily fish (e.g. salmon, tuna), offal such as liver, and whole grains. Some minor side effects have been reported including a burning feeling in the mouth, nausea and diarrhoea. The suggested dose is 100mg three times a day.

Riboflavin or Vit B2

Riboflavin or vitamin B2 has a similar role to Co-enzyme Q10 and is found in meat, eggs, green vegetables, cereals and dairy products.

The dose is 400mg a day and there are few side effects apart from a slight yellow discoloration of the urine, passing urine more frequently and diarrhoea.

Butterbur

There are different types of Butterbur, a fleshy creeping plant of the Asteraceae family. The medicinal one is Butterbur Petasin. In its natural form it is toxic and can only be used when purified.

The suggested dose is 50 to 75 mg twice a day (with at least 7.5mg petasin and isopetasin).

Do not use butterbur products unless they are certified and labelled as free of pyrrolizidine alkaloids which can cause serious side effects.

Feverfew

Feverfew is a herb traditionally used for headache, pain and fever. Doses are not clear – some studies have looked at chewing leaves, others 6.25mg of a prepared product.

Side effects include mild stomach upset, increased heart rate and mouth ulcers if chewing leaves. There have been some concerns about the effect on the liver and is not recommended to take in diabetes, liver conditions, alcohol dependence or with anticoagulant drugs.

Vitamin D

Involved in several pathways of neurotransmission. Low levels have been detected in people with migraine. Benefit has been claimed from high daily doses 100mcg (4000IU) of Vit D. (Current recommended dietary daily dose is 15mcg or 600IU.) There is potential for harm at prolonged high doses, including high calcium levels.

7.3. Pharmaceutical drugs for prevention

These drugs are available on prescription only and the product information leaflet in the package should always be read. Except for CGRP pathway blockers, preventive drugs have been discovered when people have taken them for other reasons and found that their migraine has improved. They are:

β-Blockers. E.g. Propranolol. Useful if there is co-existing anxiety. Not for use if you have asthma.

Amitriptyline. Originally introduced as an antidepressant, it has a direct effect on migraine and is not used for its antidepressant effects. However, it can be useful if there is co-existent anxiety, poor sleep or depression. Nortriptyline can be used if side effects are problematic.

Pizotifen. Commonly used in primary care but limited effectiveness and troublesome weight gain. Useful in children.

Anticonvulsants. Topiramate has most evidence of benefit but avoid if you are a woman of childbearing age. Side effects can be problematic.

Angiotensin II receptor antagonists. E.g. Candesartan. Blood pressure drop may be a problem.

Botox. Licensed for chronic migraine only where three standard preventers have failed or not been tolerated. Given 3 monthly. Relatively few side effects.

Flunarizine. Doesn't have a UK license but is in widespread use in Europe and used by headache specialists. Useful in hemiplegic migraine.

Calcium gene-related peptide (CGRP) blockers

This group of drugs are the first specifically designed for migraine prevention. CGRP is an important neurotransmitter involved in the

migraine process. Two groups of drugs have been developed.

i). CGRP monoclonal antibodies

- Currently available in the NHS when three previous preventive medications have failed.
- Prescribed in specialist care only.
- When there are four or more migraine days a month.
- Low side effect profile includes inflammation at injection site, constipation and potential increase in blood pressure.
- Cannot be taken by mouth. Injection and infusion only.

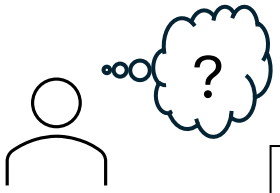
ii). Gepants.

- Taken by mouth.
- Currently available in the NHS when three previous preventive medications have failed
- GPs can prescribe in many areas of the UK but in some they remain specialist initiated. Check your local NHS formulary guidance.
- When there are four or more migraine days a month.
- Effective for migraine attacks and for prevention
- Low side effect profile

Monoclonal antibody	Dose	Current UK license
Erenumab (Aimovig)	140 mg monthly self-injection	Episodic and chronic migraine
Fremanezumab (Ajovy)	225 mg monthly or 675 mg three-monthly self-injection	Episodic and chronic migraine
Galcanezumab (Emgality)	120-240 mg monthly self-injection	Episodic and chronic migraine
Epinezumab	Intravenous infusion	Episodic and chronic migraine
Rimegepant (Vydura)	75mg every other day by mouth	Migraine attack and episodic migraine prevention
Atogepant (Qulipta)	60 mg daily by mouth	Prevention of episodic and

	chronic migraine

Table 7.1. Anti CGRP drugs at March 2024



Want to know more about anti CGRP injections

National Migraine Centre Heads Up Podcast. Series 2 , episode 8.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

When using preventers, start at a low dose and increase slowly to the maximum recommended dose or when side effects become problematic unless there is only one recommended dose. Continue for at least 8 weeks on the maximum dose that can be tolerated before judging effectiveness. Consider discontinuation at 6-12 months and reduce drug slowly if stopping.

Some drugs have the potential to cause harm to the fetus. Always tell your doctor if you are planning a pregnancy.

(See www.exeterheadacheclinic.org.uk for a range of patient information sheets.)

7.4. Other preventative options

Occipital nerve injection.

Local anaesthetic is infiltrated into the nerves in the back of the neck. Steroids are often added. Relief can be up to three months. Can be used in pregnancy.

Acupuncture.

There are many variables in the technique which makes evaluation difficult. Although recommended for migraine by NICE, it is unlikely to be available on the NHS, although some centres do offer a limited course. Judge effect of benefit after 6-8 weeks.

Visual Stress and coloured lenses.

Visual stress (Irlen's syndrome) is a processing and visual perceptual disorder associated with several problems of which migraine is the most common. Symptoms of visual stress include: screwing up of eyes with visual tasks; blurred vision; print jumbling, vibrating, moving or merging; pain around the eyes; light sensitivity especially to glare, white pages or screens; problems with car headlights at night. Formal colorimetrical assessment and the prescription of appropriate tinted lenses can help some people. Only a few opticians will have the facility to perform this test.

7.5. Interventions where there is no evidence of benefit.

Homeopathy.

Homeopathy is a therapeutic method using preparations of substances whose effects when administered to healthy people correspond to the manifestations of the disorder. Remedies are made from preparations of the starting substance which are very dilute.

Hole in the heart or (PFO) closure

There is a strong relationship between migraine with aura and the size of a hole in the heart, a remnant of embryonic development. This is important in foetal circulation but usually closes at birth. Studies have shown potential for harm and no benefit from closure, which is not recommended.

Conclusion to section 7 and 8.

The last two sections have reviewed the medical approaches to the management of migraine. Recently new drugs have been introduced which are changing the migraine landscape with very significant benefit to people with migraine.

But medical interventions are not the only answer and many of the benefits of drugs may be due to the power of expectation and prevent us from exploring the potential of the body to heal itself.

In the next sections we move on to looking at broader approaches to the management of migraine.

Section 8. Managing a favourable external environment.

In this section we explore the wide range of environmental factors that impact upon migraine. These factors interact in a complex manner so it can be difficult to unpack what is relevant.

An important starting point is that people with migraine do not respond well to changes in their environment, either internal or external. Some of these factors can be addressed, others may be outside your control. Common factors are hormonal change in females, changes in the weather, irregular eating or drinking patterns and particularly skipping a meal, irregular sleep patterns or poor sleep, erratic stress levels, (weekend and holiday headache when stress levels are suddenly reduced). It is important to keep things as constant as you can.

We have seen in section 4 that a chronic inflammatory load can be unhelpful. A healthy diet, regular physical exercise and a healthy gut biome will help to address this.

8.1. Migraine triggers

The mode of action of most triggers is poorly understood but they are thought to act directly on the migraine pathway in the brain. Many people spend a lifetime in the search for an elusive trigger. As triggers interact with each other, environmental factors and our current body state, their action is usually inconsistent. ***If a trigger is not obvious it is not worth consuming time identifying one.***

Premonitory or warning symptoms of migraine such as craving for a specific food, may be mistaken for a trigger.

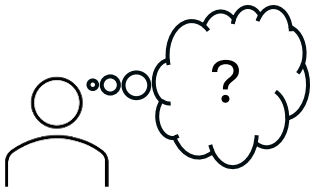
Food might be considered a trigger if headache occurred in ≥50% of instances within one day of exposure. A dietary diary can be useful. The most common triggers are chocolate, citrus fruits, nuts, ice cream, tomatoes, onions, dairy products, alcoholic beverages, coffee, caffeine, monosodium glutamate (MSG), histamine, tyramine, phenylethylamine, nitrites, aspartame, sucralose, and gluten.

Caffeine is often implicated not just as a trigger but as a general brain stimulant. Caffeine in the context of medication overuse headache can also be a problem as it is a component of pain killers. Dietary intake can also contribute to a caffeine load which should be kept to a minimum. (see figure 8.1).

Item	Item size	Caffeine content
Coffee	150ml (5oz)	60–150mg
Coffee, decaffeinated	150ml (5oz)	2–5mg
Tea	150ml (5oz)	40–80mg
Cocoa	150ml (5oz)	1–8mg
Coca Cola®	12oz	64mg
Diet Coca Cola®	12oz	45mg
Dr Pepper®	12oz	61mg
Pepsi Cola®	12oz	43mg
Kit-Kat® bar	1 bar, 47g	5mg
Chocolate brownie	1.25oz	8mg
Chocolate ice cream	50g	2–5mg
Milk chocolate	1oz	1.15mg
Special dark chocolate bar	1 bar, 41g	31mg
After Eight® mint	2 pieces, 8g	1.6mg

Figure 8.1. Caffeine content of some common drinks and chocolate.

Food allergies act via a different mechanism. An allergic reaction is a consistent occurrence and mediated by specific allergic pathways. The role of allergy in migraine is not supported by evidence and allergy testing is not recommended.



Want to know more about triggers?

National Migraine Centre Heads Up Podcast. Series 1, episode 2.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

Martinelli D. Triggers of migraine: where do we stand? Curr Opin Neurol. 2022 Jun 1;35(3):360-366. doi: 10.1097/WCO.0000000000001065. PMID: 35674080.

8.2. Diet and Migraine

There are three areas to be considered. Firstly, diets that are beneficial for overall health either directly or on their effect on chronic inflammation. Secondly, diets that are claimed to reduce migraine attacks. Thirdly, diets that improve the bacteria that live in our gut. The gut biome is considered in section 8.3.

Eating a healthy diet.

We ingest food to provide energy and provide the materials to maintain the integrity of our bodies as our cells are continually being broken down and renewed. (Approximately 1% of our cells are turned over daily).

A healthy diet reduces the chances of many diseases and in particular cardiovascular disease and diabetes. We have described the importance of chronic inflammation in migraine in section 4 and diet and weight have an important role to play, mediating inflammatory load. However, as we have seen above, it is also important not to skip meals and aim to keep blood levels constant.

For a balanced diet we should:

- Eat at least 5 portions of a variety of fruit and vegetables every day.
- Base meals on higher fibre starchy foods like potatoes, bread, rice or pasta.
- Have some dairy or dairy alternatives (such as soya drinks).
- Eat some beans, pulses, fish, eggs, meat and other protein.
- Choose unsaturated oils and spreads and eat them in small amounts.
- Drink plenty of fluids (at least 6 to 8 glasses a day).
- Avoid ultra processed foods.

For more information on fruit and vegetable portions see:

5 A Day: what counts? - NHS (www.nhs.uk)

For more comprehensive information on eating well see:

The Eatwell Guide - NHS (www.nhs.uk)

Ultra processed food

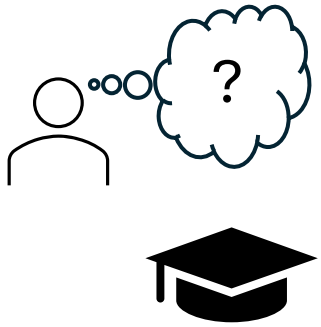
Humans have been processing food for millennia – salting, pickling, making cheeses, butter. But *ultra* processed foods are manufactured by reducing food into its component parts and re constituting them, invariably by chemical modification and the addition of other components of which sugar and fats are most common. E.g. packaged cereals, ready-made pizza, reconstituted meat products, cakes, biscuits and snacks. They are powerful stimulants of inflammation.

Ultra processes foods account for approximately half of the UKs calorific intake, are affordable, convenient, and aggressively

marketed. The presence of fat and sugar stimulates consumption, bigger meals, weight gain and further inflammatory load.

A study found that when given an ultra-processed diet, volunteers gained 0.9 Kg in two weeks compared with a similar loss on an unprocessed diet. They also have a detrimental effect on the gut biome.

The message is clear – resist the temptation and avoid them if you can.



Want to know more about diet?

National Migraine Centre Heads Up Podcast. Series 6, episode 1.

https://www.nationalmigrainecentre.org.uk/understanding-migraine/heads-up-podcast

Tu YH, et al. Dietary Patterns and Migraine: Insights and Impact. Nutrients. 2025 Feb 13;17(4):669. doi: 10.3390/nu17040669. PMID: 40004997; PMCID: PMC11858445.

Maintaining a satisfactory weight

Carrying too much weight stimulates chronic inflammation. You can get an idea if you are overweight on the NHS calculator.

Calculate your body mass index (BMI) for adults - NHS (www.nhs.uk)

To lose weight a general guide is to aim for weight loss of 0.5 to 1 kg a week. For most men this means 1900 calories a day and for women, 1400 calories a day. The NHS website offers useful information.

Lose weight - Better Health - NHS (www.nhs.uk).

Check with your surgery if there are local weight loss clinics or whether you can be referred to a prescribed exercise scheme which will help. Drugs to help weight loss are becoming more available.

8.3. Migraine diets

Several migraine diets have been suggested but the evidence for benefit is poor.

High omega-3/low omega-6 diets

This is the most promising approach. Omega 6 (O6) and omega 3 (O3) are fatty acids, both essential for our metabolism. Omega 6 is inflammatory and omega 3 anti-inflammatory. Consumption patterns are shifting rapidly with an increase in O6 and a reduction in O3, a ratio

Ketogenic diets.

This is a high fat, adequate protein, low carbohydrate diet that forces the body to burn fat for energy and not carbohydrates, leading to the formation of ketones. It shares many similarities with the Atkin's diet typically containing 70% fat, 20% protein and 10% carbohydrate.

There are several speculative mechanisms including lowering chronic inflammatory load. An interesting suggestion is that manipulation of genetic expression may occur in ketogenic diets.

High salt diet.

People who have a high salt diet have noted a reduction in their migraine and a high salt diet has helped some people. However, there is no rigorous evidence to support this and there is a concern that increased salt may have an unfavourable impact upon blood pressure.

8.4. Staying hydrated

The last decade has been characterised by an obsession with hydration - the ubiquitous water bottle and smart watches that now purport to tell us if we are sufficiently hydrated. The fact that the bottled water industry is estimated to be worth $240 billion a year may be a relevant factor.

Our bodies can closely regulate our requirements by a combination of thirst regulation and kidney control and dehydration will be unlikely. (Old people are more vulnerable to dehydration as the thirst reflex can diminish with age and urine is concentrated less well.)

The key points are:

- A sensible intake is at least 6-8 glasses a day. The average male will require 1.5-1.8 litres a day and the average female1.3-1.4 litres.
- For migraineurs, the important thing is to drink regularly throughout the day to avoid fluctuations in hydration.
- Sports drinks are only of benefit to high performance situations.
- Avoid energy drinks – they contain stimulants.
- Avoid excess caffeine and drinks containing artificial colouring.
- There is nothing wrong with tap water!

8.5. The Gut microbiome and migraine

We are not alone. We co-habit with trillions of other microbes and the ones that have gained increasing attention over the past few years are the residents of our gut – the gut microbiome. Rather than being passive recipients of our hospitality, they form an important part of our immune system and produce compounds that influence how the brain works.

Considerable evidence is emerging that a healthy microbiome is a marker of a healthy body. An important action is the contribution to the control of our old friend chronic inflammation. Evidence is emerging that the gut microbiome is different in migraineurs compared to non-migraineurs.

Research is challenged by the bi-direction nature of the interactions (is it the disease that leads to a poor biome or vici versa?), and the fact that we respond uniquely in different ways. However, there is broad agreement on the things we can do to promote a healthy biome and facilitate its control of chronic inflammation:

- Probiotics. These are microbes that can help to improve the biome and are marketed under several guises. It is claimed that they can help boost resilience to stress, improve mental health and cognitive decline. They remain unregulated and rigorous evidence is awaited. The European Food Safety Authority has yet to approve any health claims (2023).
- Prebiotics. This is food that is beneficial for bacterial growth. They include complex sugars that are contained in dietary fibre and polyphenols, natural chemicals that occur in a wide range of foods. Yoghurts, kefir, kombucha, kimchi, vegetables, nuts, berries, omega 3 fats from oily fish and particularly coloured fruit and vegetables are important sources.
- Postbiotics. A wide range of chemicals that are important signalling molecules are also produced in the gut such as dopamine and serotonin. Signalling molecules are also used to communicate with the Vagus nerve which transmits signals from the gut to the brain. Postbiotics are in the development stage only.
- Get a dog. Ons study found that dog owners had their microbiome boosted and other pets may have similar impact.
- Faecal transplants. Transplanting healthy gut biomes is an interesting possibility but clear evidence of benefit is awaited.

In summary, this is an important and rapidly developing field. At this time, a sensible modification of diet as outlined above is a first step. It has been suggested that individual response to the effect of biome manipulation vary and approaches to target action more appropriately are being developed.

But as in all areas where there are commercial opportunities, it is wise to proceed with caution.

8.6. Good posture

Important and likely to be of benefit via migraine and neck nerve pathways and the autonomic nervous system. See section 5.

8.7. Exercise and migraine

There is now a substantial body of evidence that exercise benefits migraine. It has a powerful effect on inflammatory pathways, improves cardiovascular health and has been shown to improve mental health.

During an attack, exercise will make things worse and should be avoided. Rarely, exercise can trigger an attack, and this situation does

need further investigation although it is usually a normal phenomenon.

There are evidence-based recommendations for exercise but as a rule of thumb any exercise is beneficial, and more exercise usually gives more benefit. The bottom line is, just get more active. Your GP may be able to direct you to an exercise prescription scheme in your area.

The NHS recommends, depending on your starting fitness:

- Do at least 150 minutes of moderate intensity activity a week or 75 minutes of vigorous intensity activity a week.
- Spread exercise evenly over 4 to 5 days a week, or every day.
- Reduce time spent sitting or lying down and break up long periods of not moving with some activity.

See Physical activity guidelines for adults aged 19 to 64 - NHS (www.nhs.uk)

8.8. Sleep and migraine

I have put sleep in this section as it removes us from our external environment. We don't know why we sleep. It has been suggested that it allows our body to refresh its energy stores, consolidate memories and organise brain pathways.

There are two drivers for sleep. Firstly, the clues we get from the day-night cycle. This is known as our circadian rhythm. Secondly, a build up of specific chemicals in the brain during the day which causes a "sleep pressure."

Sleep problems are very common in people with migraine and are important to address. Poor sleep causes migraine, which in turn causes poor sleep. Invariably anxiety comes into the mix.

Adults need between 7 to 9 hours sleep a night, but there is a very wide normal range of between 4 and 12 hours. As we get older requirements are generally less. The key criterion for sufficient sleep is the ability to function normally during the day but for the migraineur sleep has many other implications:

- Sleepiness can be part of a migraine attack.
- Sleep can relieve a migraine attack.
- Disturbed sleep can cause migraine.
- Irregular sleep patterns make migraine more likely. It is important to keep sleep patterns constant.
- Migraine can awake from sleep. There is an important treatment indication here. The migraine process will have developed momentum before awakening and be more treatment resistant. Non-oral treatment formulations are often indicated which act quicker and help to avoid the problem of poor absorption.
- Physical problems which can affect sleep are more common in migraine. For example, restless leg syndrome, sleep apnoea.

There are a wide range of sleep problems as shown in figure 8.2. The focus of our attention is insomnia which is by far the most common problem. This is experienced by 10% of the population, over 25% of people with migraine and two thirds of people with chronic migraine.

- Hypersomnia - excessive sleep.
- Narcolepsy - falling asleep at inappropriate times.
- Parasomnias - abnormalities during sleep such as sleepwalking, sleep talking, sleep paralysis, night terrors.
- Dream sleep disorders - thrashing, punching, jumping out of bed.
- Rhythm sleep disorders where the 24-hour clock is shifted. Normal variations are "night owl" or "lark."
- Sleep deprivation - lack of sleep that is imposed by some external factor that restricts the opportunity to sleep.
- Insomnia. This is by far the most common affecting 10% of all adults - a sense of inadequate quantity or quality of sleep which impacts upon daytime functioning.

Figure 8.2. Types of sleep problem.

Insomnia

Insomnia is defined as a sense of inadequate quantity or quality of sleep which impacts upon daytime functioning.

The most common problem is difficulty in maintaining sleep, but other issues are difficulties in falling asleep and early-morning awakening. This results in reduced attention, sleepiness, fatigue and mood change during

the day, all of which can lead to significant impact on quality-of-life and impact upon migraine frequency.

Insomnia can be transient lasting less than two weeks or chronic/prolonged (lasting three nights a week over at least three months.) Insomnia is divided into two types depending on the underlying problem.

Primary insomnia.

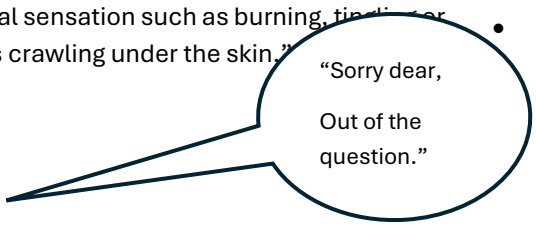
This is the most common form. There is usually a trigger or precipitant such as a stressful event that causes arousal patterns of the nervous system. Normally a transient insomnia occurs lasting approximately 2 weeks before sleep patterns returned to normal. However, in some cases this initial response can trigger physiological and psychological mechanisms that become perpetuated within a complex cycle of rumination, anxiety, depression, body dysfunction such as muscle tension and sleep problems.

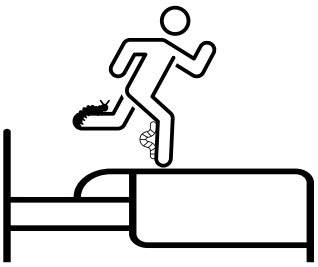
Secondary insomnia.

This occurs when there is an ongoing identifiable underlying physical or mental cause:

- Drugs. For example, thyroid hormones, corticosteroids, decongestants.
- Mental health issues. Anxiety can cause difficulty getting to sleep and depression is characterised by early-morning waking.
- Medical disorders. A wide range of medical disorders are associated with insomnia. From the perspective of the migraineur, important ones are:
  i). Pain. Any painful condition can be more problematic at night when there are fewer surrounding distractions. Migraine and associated conditions such as fibromyalgia, irritable bowel syndrome, tension headache can be problematic at night.

  ii). Restless leg syndrome. More common in migraine. Typical features are an urge to move or spontaneous movement (usually the legs), abnormal sensation such as burning, tingling or "insects crawling under the skin."





The cause is not known, but low iron can be implicated, and certain drugs can exacerbate the problem. Specific drug treatment is available so see your GP if this is a problem.

iii). Obstructive sleep apnoea. This is the cessation of breathing due to obstruction of the upper airway. It is more common with migraine resulting in poor quality sleep.

It occurs mainly in those who are overweight and is characterised by snoring, nocturnal choking, daytime sleepiness, waking unrefreshed and morning headache. Weight loss and continuous positive airway pressure as the mainstay of treatment. Surgery and devices to maintain the airway are other options but the evidence for them is poor. For further information see:

(http://www.stopbang.ca/osa/screening.php

Practical approaches to the treatment of insomnia.

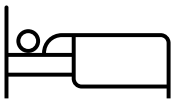
i). Sleep hygiene. These are practical measures to control the environment and behaviours that are associated with sleep:

- Avoid alerting substances such as caffeine, nicotine and alcohol three hours before bedtime. (Although alcohol may be initially sedating it causes poor quality sleep and early-morning waking.)
- Engage in relaxing activities prior to going to bed, such as reading, listening to music, or taking a bath.
- Electronic devices, including TV are alerting. There is evidence that the light emitted from electronic screens can reduce melatonin and therefore the onset of sleep.
- Although social convention designates a sleeping partner, it may be better to sleep alone rather than have a disturbed night.

Lying in bed when you're awake can become a habit that leads to poor sleep. If you are not asleep after 20 minutes, or if you wake during

the night for more than 20 minutes, get up, go to a place outside the bedroom and undertake a quiet, enjoyable activity such as reading or listening to music.

- Only use the bedroom for sleeping - no TV, no reading, no mobile phone or devices. It is a sleep room



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- Don't nap. If an acceptable sleep pattern is established, power naps of less than 20-30 minutes before 3 pm are acceptable. Longer naps can disturb body rhythms if deep sleep occurs when other parts of your brain think you should be awake.

ii). Sleep scheduling. This attempts to anchor the circadian rhythm or sleep cycle.

Keep a sleep diary to estimate how much you're sleeping and how much time you're spending in bed. Add 30 minutes to the actual amount of time you sleep, and this will now be your *time in bed*. Set a fixed waking up time and work backwards using your time in bed to set your time to go to bed. Use an alarm clock fixed your waking time. Keep to this regime, irrespective of how tired you may be with no lie ins.

This treatment reduces the time you spend in bed causing partial sleep deprivation. Avoid the temptation to go to bed before your set time, however tired you are. Once your sleep has improved, your time in bed can be gradually increased.

iii). Progressive muscular relaxation. This is based on the premise that mental calmness results from physical relaxation.

Muscles are tensed and relaxed, starting with the legs and working upwards. Tightly tense each muscle group for approximate five seconds and then relaxed for approximately 10 seconds. Exhale as you relax and focus on the difference between tension and relaxation. With practice you become more aware of your muscle groups, how they respond to stress and anxiety and how you can relax them with a beneficial effect.

iv). Thought stopping. Rumination is often a problem. Articulatory suppression uses an irrelevant speech sound repeated out loud. For example, repeating the word THE, THE, THE.....preferably with the eyes open.

v). A better way to worry. One approach is to offload as much as possible from our brains to other storage devices such as a diary or mobile phone.

This technique allocates a buffer zone, ideally an hour and a half before bedtime, during which your body and mind is moved to a relaxed state ready to sleep. This can be any relaxing activity, but a bath may be particularly helpful as temperature can have a physiological benefit. During this buffer zone, write down a list of what had gone well during the day and name any worries (negatives first). Then what went well today. Writing is important and has been shown to deactivate an important part of the brain involved in anxiety.

Then write down actions for the next day. Look at the action list in the morning and rate as: do now; do some other time; delete.

vi). Relaxing background noise. Several apps are available that play soothing music to encourage sleep. It has been suggested that noise at a frequency of around 15 Hertz can be helpful. See section 10.2.

Figure 8.4 summarises these suggestions.

Scheduling

Maintain a constant sleep wake time. (Anchor the day.) Don't deviate from it even at weekends.

Sleep Hygiene

Exercise regularly but not in evening.

No naps after 3 pm and no longer than 45 minutes.

Avoid caffeine, tobacco, alcohol in the evening.

Avoid electronic devices last thing at night.

Stimulus control

Don't use the bedroom for anything else other than sleep (and intimacy).

Get out of bed if unable to fall asleep after 15-20 minutes.

Relaxation

Offload your worries before going to bed.

Warm bath.

Progressive muscle relaxation.

Relaxing sound

Figure 8.4. Summary of some basic rules for sleep.

Medical treatment of Insomnia.

Amitriptyline is a useful first choice. Originally introduced as an antidepressant it is used widely as a migraine preventer. It can cause drowsiness at higher doses and can be useful to help sleep.

Hypnotics have been specifically developed to facilitate sleep. Benzodiazepines (for example, Temazepam) were used widely in the past. However, they interfere with deep restorative sleep and dependency can be a problem. The current generation of hypnotics (for example, Zolpidem, Zopiclone) have fewer problems but there is concern that their effects can carry over into the morning and dependency can occur. Hypnotics can be used for over short periods of time, but whether they can "break the cycle" of chronic insomnia is more controversial. A short one-week course may be worth considering. In all cases there should be an exit strategy at the onset with a slow reduction rather than an abrupt cessation for longer courses.

Daridorexant (Quviviq) is a recently introduced drug that works by blocking a specific chemical in the brain that keeps you alert (orexin). It is claimed to improve sleep quality without causing hangover the next day with no dependency problem. Availability on the NHS may vary across the UK.

Melatonin, a naturally occurring substance and important in the brain's biological clock, is less effective but very safe. Circadian 2mg is the only melatonin compound that can be prescribed within the NHS and can be used as a short-term hypnotic. Melatonin bought without a prescription is often of poor quality and may be ineffective.

Sleeping remedies bought from a pharmacist directly usually contain an antihistamine which can induce sleepiness, but they can last into the next day and tolerance can occur.

Herbal medicines are usually based on Valerian with similar problems to antihistamines.

Psychological therapy - Cognitive behavioural therapy for insomnia. (CBTI).

A range of psychological approaches, ideally delivered in a healthcare setting, have been combined under the label of CBTI and are as effective as hypnotics.

Unlike hypnotics, CBTI can be curative. The focus is on changing behavioural patterns and addressing unhelpful ways of thinking. For example, having realistic expectations about sleep, not trying hard to sleep, preventing life revolving around sleep concerns and catastrophic thoughts about the consequences of insomnia. Mindfulness and self-hypnosis can be incorporated into insomnia treatment regimens, but their evidence is limited.

A wide range of Apps are available to facilitate sleep (for example CBT i coach) which may be useful.

For help with anxiety or depression the NHS has a network of services under the Improving Access to Psychological Therapies programme (IAPT). People can refer directly to these. https://www.england.nhs.uk/mental-health/adults/iapt/

Sleep devices.

Many smart watches offer sleep trackers which can be quite accurate. They detect sleep versus wakefulness and report the percentage of time spent in bed that is asleep. However, as with all wearable devices there is a danger you become addicted to monitoring which may not be helpful. Several active devices are available. For example, a smart mattress cools down when it's time to go to sleep which is claimed to promote sleep, warming up in preparation for waking while a smart pillow detects snoring and adjusts the head position to open the airway. Smart headphones fade out any audio when the wearer is drifting off to sleep and can also mask nocturnal disturbances such as snoring. The latest generation of devices are worn as an array of sensors around the head and actively monitor brain state and improve sleep through targeted electrical stimulation. However, these

devices are only in the early stages of development.

8.9. Rest We have seen that there is a suggestion that energy production may be compromised in migraine. Rest recharges our energy supplies and has been shown to boost creativity and benefit work time. Historically rest was prized as a gift but today, rest is seen as laziness and being busy is a badge of honour.

A first step is to establish clear boundaries between work and personal time and if you can, over your daily routine. Alternate periods of uninterrupted work with breaks can recharge your batteries. And if your body is asking you to rest there's probably a good reason for it, and you should listen to it.

Mindfulness techniques can help with resting the mind. The parasympathetic nervous system facilitates rest, and this can be activated with breathing techniques. These aspects are described in section 9.

Conclusion to section 8

This section has reviewed a wide range of physical, social and psychological factors in the external environment that can be detrimental to migraine. There will be too many to focus on all at once and some will resonate with you more than others.

In the next section we move inwards and explore a number of approaches that focus on the interaction between mind and body.