



Pain management following traumatic brain injury

a self-help guide



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Who is this guide for?

This guide is for people with brain injuries, their relatives, caregivers, and professionals working in this area. The guidance has been developed by the therapy team at Headwise Ltd and is based on best clinical practice guidelines around pain management. The aim of this guide is to help you understand the causes of pain and the therapeutic approaches that can be beneficial in reducing it. This guide should not be seen as a replacement for therapy. If you would like to discuss the appropriateness of psychological or physical therapy then please contact your GP or alternatively speak to one of the Headwise team.

What is pain?

Everyone has experienced pain in some form in his or her life to varying degrees. Sometimes it resolves on its own and other times it will need treatment/management. The International Association for the Study of Pain (IASP) defines pain as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage'. It can be described as 'acute' (i.e. short term) or 'chronic', (i.e. lasting at least 3 months). Acute pain can have an important role in informing us of a problem. However chronic pain is often unhelpful and can affect all areas of life, including our home life, mental health, and ability to work. The most disabling forms of chronic pain affects around 10% of the UK population.



"It is there every moment of every day. Some days it's bad; other days it's excruciating. There isn't any aspect of my life that hasn't been affected by it. I can no longer work or do the things I want to do. It's had a terrible impact on my relationship."

"It's always with you. I'm never entirely pain free but there are moments when it just becomes overwhelming. The worst bit is it's so unpredictable. I'm always tense, waiting for it to come on. I find it's best not to make plans because I never know how I'm going to be. I feel pretty fed up with life."



Types of pain

The main classes of pain are:

- **Nociceptive pain** – This refers to pain that is caused by stimulation of the pain receptors in the body. It is a pain that we are all familiar with following cuts and bruises. The pain is experienced in the region of the body that has been injured.
- **Neuropathic pain** – This results from damage to the brain or nerves that transcend from the spine. Pain can be felt in any region of the body even where there is no localised damage to that region.
- **Psychogenic pain** – This refers to a pain condition in which there is no biological basis for the individual's experience of pain. Instead it is felt that the pain is caused by psychological or emotional factors (e.g. stress, depression, trauma). Treatments for psychogenic pain are not addressed in this leaflet.



Pain after brain injury

People who have had brain injuries are much more likely to suffer from chronic pain, occurring in around half of survivors. This can result from direct damage to the brain or spinal cord. For example, damage to a region of the brain called the thalamus is linked with the onset of pain.

We also know that the process of concussion often brings about debilitating headaches. For most people the frequency and intensity of these headaches reduces over the days / weeks following their concussion, but for some individuals it can persist.

Finally, many brain injury survivors also sustain damage to other parts of their body (e.g. fractures, muscular injuries) during their head injury. This can result in nociceptive pain and this can also become chronic.



How should pain be treated?

The Scottish Intercollegiate Guidelines Network (SIGN) produced helpful national guidelines in 2013 on the management of pain. These guidelines are based on a review of the research evidence around various treatment approaches. The SIGN guidelines made a number of recommendations:

- Patients with chronic pain should be directed towards self-help literature to assist them in managing their pain.
- A number of medications were found to be effective and patients should have regular reviews of their pain medication.
- Psychological therapies can be effective for patients suffering from chronic pain, with cognitive behaviour therapy (CBT) having the best evidence-base.
- Physical therapies and exercise are recommended for patients suffering from chronic pain.

Pain Management Strategies

1. Medication

There are a variety of medications that can be effective in reducing pain intensity. The main classes of medication are:

- Over-the-counter painkillers – Medications such as Paracetamol and Ibuprofen are easily available and inexpensive, but are not always effective with more pervasive pain conditions.
- Antidepressants – Whilst initially developed to treat depression, these medications (e.g. Amitriptyline) have been shown to have a therapeutic effect on pain.
- Anti-epileptic medication – Similarly, whilst traditionally these medications (e.g. Pregabalin, Gabapentin) have been used with people with epilepsy, they have also been found to help with pain.
- Opiates – These medications (e.g. oramorph, Codeine, Fentanyl) are particularly powerful but have more side effects.
- Topical medications – These are primarily ointments and creams that are applied directly to the region of the body that is in pain.

* Whilst medications can prove effective in reducing pain intensity, many are associated with side effects such as fatigue, difficulties with concentration and memory, and addiction. Your medical consultant will be able to provide further details of the likely benefits or side effects of a proposed medication regime.

Pain Management Strategies

2. Understanding the factors linked to your pain

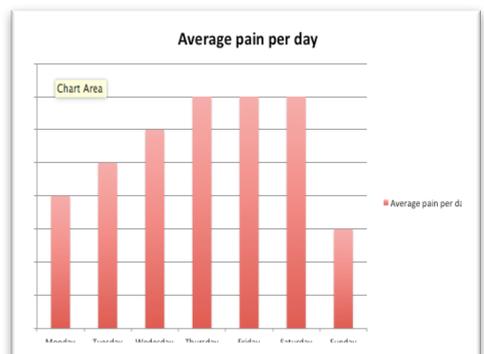
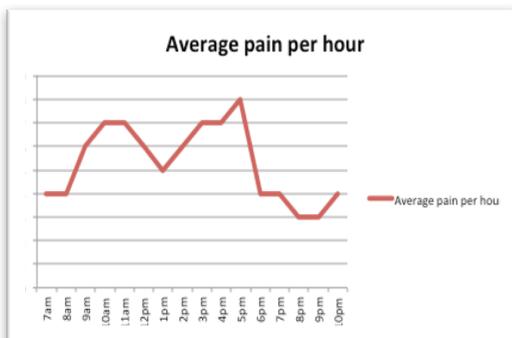
A common misconception about pain is that the intensity of our pain is solely down to biological factors. Instead, there is a wealth of research that shows that psychological and environmental factors moderate our pain perception. For example, many people report that their pain is worse during times of stress or at particular times in the day. In contrast, many people report that their pain is reduced when they are relaxed or when they are thinking of something pleasant.

Identifying the times at which our pain is increased or decreased, and the factors associated with this change, is important in combatting pain. The best way to ascertain this information is to keep a pain diary, making an entry every hour each day to record how bad your pain is and what you have been doing during that hour.

Date / Time	Pain intensity (higher scores = worse pain)	Situation
Monday 9am	6/10	Just woken up. Exhausted. Had breakfast and got ready for the day.
Monday 10am	7/10	Went to the supermarket. Very busy and stressful. I was scared someone would knock into me.
Monday 11am	7/10	Got home. Still stressed about supermarket. Had an argument with other half.

Monday 12pm	8/10	Went for a walk to calm down. Felt okay whilst walking but now feel very sore and exhausted.
Monday 1pm	4/10	Had a sleep after the walk. Feeling more refreshed after an awful night's sleep last night.

Through keeping a diary over a number of weeks it is possible to identify patterns in how bad our pain is. In the example below we can see that the person's pain is worst during working hours and increases across the working week. In this case, the person's pain may be improved if they modify their work pattern to incorporate more breaks.



Other factors that often influence pain intensity are:

- Lack of sleep / exhaustion
- Level of activity / exercise
- Stress
- Diet
- People you come in contact with
- Places you go
- Therapies you receive

Pain Management Strategies

3. Identify the negative thoughts

*“... for there is nothing either good or bad,
but thinking that makes it so.” (Shakespeare)*

Our perception of pain can influence its intensity and the way we respond to it. People who have chronic pain are at increased risk of emotional difficulties like depression and this can be tied to the way they make sense of their pain. Below are some examples of the types of thoughts we might have when we're in pain. See if you can identify some thoughts that might go in the empty spaces ...

Date / Time	Trigger	Thoughts	Emotions
Monday 9:15am	Tried to play football with my kid but it just made my pain much worse.	"I'm an awful Dad. I can't even do the basics right."	Sadness Frustration
Tuesday 7pm	The pain was so bad that all I could do was sit in my chair.		Sadness Despondent
Friday 9am	Woke up in agonizing pain.	"This pain is going to be with me forever and there's nothing I can do"	Frustration Sadness Anger
Sunday 5pm	Walking round the supermarket and I was sure someone would knock into my sore arm.		Scared Anxious On edge Irritable

Pain Management Strategies

3. Identifying negative thoughts continued...

When people are in pain often they engage in a thought bias that psychologists refer to as 'Catastrophising'. What this means is that they may magnify the negative impact of their condition. For example, they might feel that the pain means that further damage is happening to the affected region of the body. They may also magnify the consequence of the pain on other aspects of their life. Often they feel very little control over their pain and that there is nothing they can do to improve things.

Use the blank spaces below to record some of the thoughts you have when you are in pain ...

1. -----

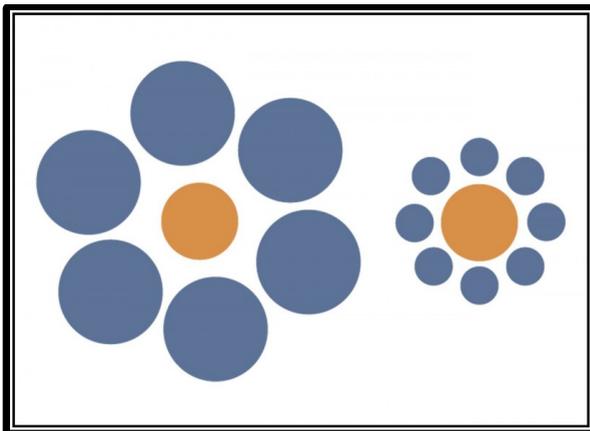
2. -----

3. -----

Pain Management Strategies

4. Challenging the negative thoughts

Our thoughts are not always accurate. There can also often be more than one way to see a situation. Take the pictures below. Most people believe the orange circle on the right to be larger than the orange circle on the left, yet they are in fact the same size. This shows that ***our perceptions can be fallible and influenced by other things going on around it.*** Now look at the picture on the right. Do you see a young lady looking away, or an old lady with a headscarf? The truth is that both images are present, but most people only see one picture until they know to look for the other. Therefore ***there are at least two ways to see the same situation.*** Both of these principles are crucial when we seek to challenge our negative thoughts.



A. Which orange circle is larger?



B. Old or young lady?

Pain Management Strategies

4. Challenging the negative thoughts continued...

In order to challenge our negative thoughts there are a number of strategies that can be helpful:

- a. Look over your thought diary when you are feeling better in mood or in less pain and note down a more balanced thought in its place.
- b. Ask a friend to read over your negative thoughts and ask whether they think your conclusions are fair. If they disagree then what is this based on?
- c. Look for the evidence and counter-evidence for your thoughts. For example, if your thoughts centre on the catastrophic consequences of your pain then what is the evidence for and against this?

Negative thought	Evidence for	Evidence against	More balanced thought
"This pain makes me completely useless. I can't do things with my family anymore."	It affects my ability to work. It affects my ability to play with the children.	There are still lots of other ways I can support my family such as listening, offering guidance and showing love.	"This pain has had a horrible impact on my life but there are still ways in which I can be of help to others."

Pain Management Strategies

4. Challenging our negative thoughts continued...

As we discussed earlier, it can often feel like pain affects all aspects of our life and we feel very little control over this. Over time this can increase the likelihood of a person becoming depressed. One way to challenge these negative thoughts is to note down 3 positive things that have happened each day and your role in bringing those things about ...

Day	3 Positive things	My role in bringing them about
Mon	1. Had a really nice drink with my friend Karen.	I suggested to Karen that we meet up. Before going I was anxious about my pain coming on, but I pushed myself through this.
	2. Went to parents' evening at my kid's school	I knew it would be a long evening so I rested the day before and made sure I paced myself on the day itself.
	3. Got really nice feedback from my physiotherapist, noting that my mobility had increased	I've been doing my physio homework exercises everyday this week, even when it was the last thing I wanted to do.

Pain Management Strategies

5. Distraction and relaxation

When we are in pain it is common for us to focus our attention inwards onto the unpleasant physiological sensation in our body. However, focusing on pain can actually make it feel more intense. There is only so much information that our brain can process at one time and so if you can find something to engage your thoughts, then you'll be less likely to focus on your pain. Common strategies include:

- Completing puzzles, quizzes or crosswords
- Watching a film or television programme
- Listening to music
- Watching videos on YouTube
- Reading jokes online
- Going for a walk
- Speaking to friends

Have a think about strategies you have found helpful in the past in taking your mind off things and list them below:

- | | |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

Pain Management Strategies

5. Distraction and relaxation continued ...

Another way to take our mind off our pain is to engage in relaxation exercises. Like the above distraction strategies, relaxation exercises help us focus our thoughts on something other than our pain. However, they have the additional benefit of creating a pleasant and relaxed physiological sensation in our body - the opposite of how it feels when we are in pain. Relaxation exercises fall into the following categories:

- ***Breathing exercises:*** These exercises focus on slowing down the rate of breathing and being increasingly aware of the physiological sensation of breathing.
- ***Progressive muscle relaxation exercises:*** These exercises involve tensing and relaxing various muscle groups across the body.
- ***Visual imagery exercises:*** These exercises involve listening to a scene being described and picturing that pleasant scene in your head.
- ***Mindfulness exercises:*** These exercises are based on meditation and encourage the listener to become increasingly aware of the 'here & now'.

There are numerous examples of each of these exercises available for free on the internet.

Pain Management Strategies

6. Social activities and hobbies

When we are in pain there is a temptation to withdraw from socialising and leisure activities. We may feel that these activities will exacerbate our pain or that we won't enjoy them due to our pain. However, there are risks in reducing our activity. Firstly, if we don't engage in physical activity then we can develop 'physical deconditioning', which is where our muscles deteriorate from lack of use. This tends to make our pain worse. Secondly, social isolation and reduced activity are risk factors for developing depression. Low mood has also been shown to contribute to increased pain severity. Thirdly, reduced levels of activity can exacerbate sleep difficulties that often accompany chronic pain conditions.

'Activity scheduling' is a term psychologists use to refer to the planning and undertaking of activities that are beneficial to one's well-being. We find that those patients who follow an activity schedule report improvements in their pain and mental health. It provides physical therapy, focuses attention outwards rather than on one's pain, and increases the likelihood of enjoyable experiences.

Often there can be anxiety about increasing one's level of activity. You may worry that it'll make your pain worse. However, increasing your level of activity in a graded fashion (i.e. gradual increase) should prevent against this.

Pain Management Strategies

6. Social activities and hobbies continued ...

In the table below, add in social activities or leisure pursuits that you can undertake during your week. Try to put something in every space, no matter how small.

DAY	MORNING	AFTERNOON	EVENING
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

Pain Management Strategies

7. Physical therapy

Pain intensity is due to a combination of physical and psychological causes. So far we have focused mainly on psychological approaches to pain management. However, there are also strategies we can use to improve the physical aspect of pain. A therapist that can help in this regard is a physiotherapist. Referrals to physiotherapists can be pursued privately or through your GP.

During your meeting with your physiotherapist they will ask you about:

- The factors that influence the severity of your pain
- The nature of your pain (e.g. tingling vs burning, constant vs intermittent)
- Your current level of activity
- Whether you have any reduction in range of movement
- Whether you have any muscular changes

This information will allow the physiotherapist to formulate a bespoke exercise programme to help you manage and improve your pain.

Pain Management Strategies

7. Physical therapy continued ...

Physiotherapy strategies may include:

- Electrical stimulation of the affected region
- Heat and/or cold therapy
- Ultrasound
- Massage therapy
- Manual therapy
- Spasticity management
- Aquatic therapy

You will also be encouraged to participate in general exercise, such as walking, swimming, yoga, tai chi, gardening ... something you enjoy and are able to do within your limitations. If you have been inactive for a long time, the physiotherapist will guide and support you through a gradual increase in activity. As well as reducing pain through improving your range of movement, exercise also helps stimulate the release of endorphins, which act as a natural painkiller.



Pain Management Strategies

8. Pacing, prioritising and delegating

A common trigger for increased pain intensity is over-activity. Often people try too quickly to get back to the levels of activity they engaged in before their injury. At other times they may engage in what is referred to as a 'boom-bust' approach whereby they overwork themselves during times when their pain is low, leading to increased discomfort the following day. Clinicians working in chronic pain clinics advise patients to engage in a more stable and manageable level of activity.

Pacing involves getting to know how much activity you can comfortably undertake each day (i.e. your baseline) and then gradually increase this. The table below shows how someone might look to gradually increase their level of daily activity having established a baseline level of activity of 30 minutes.

	DURATION OF EXERCISE		
	Week 1	Week 2	Week 3
Monday	30	37	44
Tuesday	31	38	45
Wednesday	32	39	46
Thursday	33	40	47
Friday	34	41	48
Saturday	35	42	49
Sunday	36	43	50

Pain Management Strategies

7. Pacing, prioritising and delegating continued ...

The amount of time you increase your activity by is up to you and ideally should be agreed in consultation with your therapist. If you're having a good day then you should try and avoid the temptation to do too much as this will lead to an increase in pain later on. Conversely, if you're having a bad day it is important that you try to stick to the plan.

In order to avoid excess activity and exhaustion, it is important to factor in rest times. If you feel that you are under pressure to get things done then you should consider ***prioritising*** and ***delegating***.

In terms of prioritising, try and split your list of tasks into things that: 1) must be done today, 2) ideally would be done today, and 3) can be done whenever. Address the essential tasks first and only attempt the other tasks if you feel able.

In terms of delegating, make a list of people who can help you complete various tasks if necessary. We recognise this can be hard to do, particularly if you like to be in control, have perfectionistic tendencies, or don't like asking for help. However, it is important to consider whether the benefits outweigh the consequences of exacerbating your pain.

Maintaining a balance between activity and rest will help you manage your pain, give you a sense of greater control over your day, and will lead to greater enjoyment of life.

Further information

Headwise Ltd

www.headwise.org.uk / 0121 222 5342
Headwise provides therapy services for people with brain injury and pain



The British Pain Society

www.britishpainsociety.org /
020 7269 7840
The British Pain Society provides information and support for people living with chronic pain



Headway

www.headway.org.uk / 0808 800 2244
Headway provides information and support for people with brain injury



the brain injury association

Pain Toolkit

www.pain toolkit.org.uk
Pain Toolkit provide additional self-help strategies for managing chronic pain.



Pain Concern

www.painconcern.org.uk / 0300 123 0789
Pain Concern provides information and support for people living with chronic pain



This information leaflet was developed by Dr Alan Gray (Clinical Psychologist) and Angela Perry (Physiotherapist) through Headwise Ltd. It should not be reproduced or altered in any way. This guide is designed to inform people about psychotherapeutic approaches to pain management after brain injury; it is not designed to act as a replacement to therapy.

Headwise Ltd is a leading national independent provider of specialist services to adults, children and families. We deliver rehabilitation and assessments to individuals with cognitive, physical, emotional and neurobehavioural impairments resulting from brain injury and other neurological conditions. If you would like to learn more about our services or if you wish to make a referral then please contact the Headwise team at the following address:

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