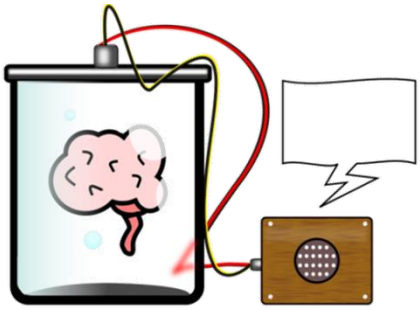
Our Vision
The best care for every patient

NHS
Norfolk and Norwich University Hospitals
NHS Foundation Trust

Pain Management Seminars

Knowledge about Pain



The pain system is incredibly complex, and involves the nerves in our tissues, the spinal cord, and many areas of the brain. The pain system works differently for long-standing pain, than it does for pain from a temporary injury.
Signals are transmitted from an area (for example from our back, or from our neck/ head) to our spinal cord, and are sent on a pathway towards the brain, where the brain labels them as pain.
However, there is a second pathway which is travelling down the spinal cord, which alters the signals which are being sent up towards the brain. This pathway can do 2 things:

1	It can <u>increase</u> the message travelling upwards. We think of this as a volume switch, turning up the volume on the messages. The volume can get louder and louder, even when there is no new information (no new damage, no new changes) in the painful parts of our body.
2	It can <u>decrease</u> the intensity of the messages, or turn down the volume on the pain messages.
!	This is a real, chemical and electrical process which has a measurable effect on signals in our nervous system.

The spinal cord can magnify or quieten messages going up to the brain

When does the volume get turned up or down?

The volume switch gets turned up when our brains have decided that we are facing some threat or risk to our system. This could include:

1. Being put in a position which you know is uncomfortable
2. Being kept in a position too long
3. Doing too much of an activity
4. Doing too little movement
5. Experiencing stress, or problems with our mood

The opposite is also true. When our brain spots that we're relatively ok, or in a familiar situation, it turns down the volume on pain signals. This includes:

1. Regular changes of position, posture, activity (we call this 'pacing')
2. Movement, stretch or exercise (doing the right type of it, and the right amount of it, for you)
3. Finding ways to settle ourselves down emotionally
4. Relaxation

Most of the strategies we talk about in Pain Clinics are strategies which help your spinal cord to turn the volume down on the signals which your body is sending to your brain.
If you would like more information about the biology of pain we would suggest reading some of the literature in the reference section.

Medication

Medications to treat pain are typically used early in your pain journey. You may have found these helpful, and you may have found them unhelpful. Some people find that they may have helped in the beginning of their journey, but they no longer have much of an effect on their pain. You may have experienced side effects from these medications, which in turn may have led you to discontinue them.

As you have read on the previous page, sensations that we experience travel as messages to our brain in the form of chemicals and hormones. Our bodies have their own natural pain relievers: these are affected by the medication that is used in pain management. The chemicals responsible for improving our pain experience are Serotonin, Noradrenaline and Dopamine. Collectively, these are referred to as catecholamines. These chemicals float around in our central nervous system and require regulating and "clearing up" once they have been used. Some medications can encourage these chemicals to be utilised in a better way to improve people's pain experience. Other medications can reduce the production of some of these chemicals.

You may be familiar with the medications used in this way, these include – Anti-neuropathics, anti-inflammatories, anti-depressants and Opiates.

These medications are about finding the balance between MAXIMUM benefit with MINIMUM side effects. This can take some trial and error to achieve.

Side Effects

Drowsiness
Nausea
Dry mouth
Vomiting
Diarrhoea
Constipation
Cognitive Blunting
Dizziness
Poor Memory
Pick up infections more easily
Changes to mood
Hallucinations
Pain (Hyperalgesia)
Headaches
Insomnia
Nightmares/Vivid dreams
Fatigue
Weight gain
Changes to appetite
Blurred vision
Rashes
Itching
Hormonal changes

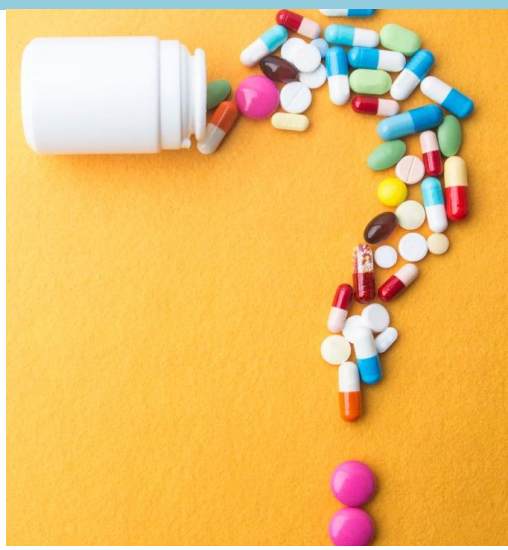
And many more……..

- Take all medication as prescribed.
- Any increases or decreases in medication should be supervised by a medical professional.
- Try to have regular medication reviews to assess continued benefit.
- Do not stop medications abruptly as this can make you feel quite unwell.
- Try to avoid polypharmacy; where more medication is prescribed to counteract side effects of other medications.

Opiates are considered some of the strongest painkillers available.
Opiates are helpful to reduce pain levels in the short term (less than 6 months).
Opiates are rarely helpful in persistent pain; in fact they only reduce pain for about 10% of people in the long term.

Opiates become less effective with time and more is required to get the same effect; this is called **opiate tolerance.**
Using opiates for long periods or at high doses can be more harmful than helpful for both your pain and general health.

You can also become **dependent** on opiates, which means you experience side effects if you do not take them (this can include increased pain).

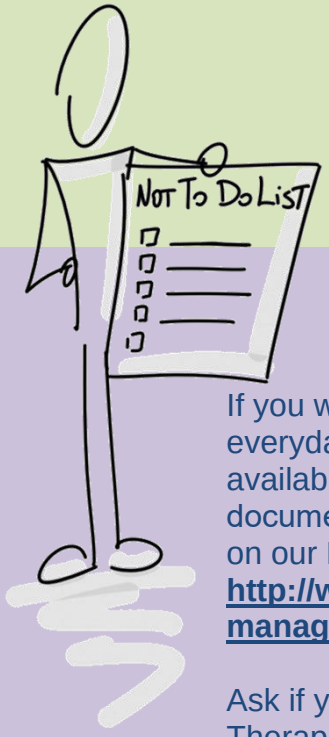


Pacing

Living with persistent pain is difficult, to say the least. Pain can wear you down and it's frustrating when you can't do what you used to be able to do. You may feel like you have become a different person. As human beings we tend to respond to pain in a few common ways. There are two cycles of unhelpful behaviours that most people struggle with.

The Avoidance Cycle:
Many people are concerned that they will make their pain worse or hurt themselves in some way and become fearful of doing things. They avoid lots of activities and do very little, to try and keep their pain low. They may give up their normal roles at home and work and stop hobbies, leisure activities and socialising. Instead they rest and sleep more.

The Boom or Bust cycle:
It is natural to use pain as a guide. To many people it seems sensible to make plans and do things based on the amount of pain they are in at the time. We all tend to 'tune in' to our bodies to see how much pain we are in before we decide what we are going to do. But, when we are guided by pain levels this can lead to a pattern of over activity followed by under activity. We call this pattern 'Boom or Bust'.



If you want advice about how to manage your everyday activities there is lots of help available. We have a comprehensive document on 'Managing Your Daily Activities' on our Pain Management Website **http://www.nnuh.nhs.uk/departments/pain-management/**

Ask if you can talk to one of our Occupational Therapists at the Pain Management Centre.

There are a number of key strategies involved with managing activities more effectively when you have persistent pain. We call them the **4 Ps**:

1. Pacing - Knowing your limitations. Knowing how much of an activity you are physically capable of doing without flaring your pain. Stopping *before* your pain tells you to. Doing less, more often. Doing small manageable amounts of activity regularly. Having a pattern of varied activity each day/week and steadily increasing the amount you do and the types of activity you do over time.

2. Planning - Rather than allowing pain levels or how you feel to dictate what we do on the day we make a plan of action for the week.

3. Prioritise: Pain places limitations on you. You can't do everything so you need to make sure you are doing the most important things. We need to look at our 'To Do List' and ask:
-Does it need to be done now? By you? At all?
-Will you "Do it, Dump it or Delegate it"?

4. Problem solving: working out the most easy and efficient way of doing things. If you have noticed that you always tend to overdo certain tasks or that some jobs always cause you problems then ask yourself:
How can I do this differently?
How can I make this easier?

Other People

Talk to people about your problems/plans
Ask for help with all or part of tasks
Ask for advice
Whose job is it?

Pacing

How much is too much?
What are my warning signs?

- Manageable chunks
- Regular short breaks
- Vary the type of activity
- Use a Timer – not pain as a guide
- Increase slowly – baby steps

Environment

Does it help or hinder?
Organise/declutter
Right place? Right height?
Easy clean/maintenance

Planning

How can I best organise my day/week/month?
Activity Diary – awareness/planning
When is the best time to do this?
What do I need to plan around?
Have I included work, rest & play?
Have I included activities that help me?

The 4 Ps

Prioritising

How important is this?
Does it have to be done?
At all? Today? By me?
Do it, Dump it, Delegate it

Posture/Technique

How am I doing this?
Am I bracing/tensing?
Am I stooping, twisting, bending?
Am I rushing?
Change posture regularly – Sit/stand/move/stretch

Problem Solving

How can I do this differently?
What is the easiest way to do this?
Is what I am doing working?

- Yes = Carry on
- No= Try something different!

Equipment

Is there a gadget/equipment that will help me?
Could technology help?
Are there materials e.g. cleaning products to make this easier?

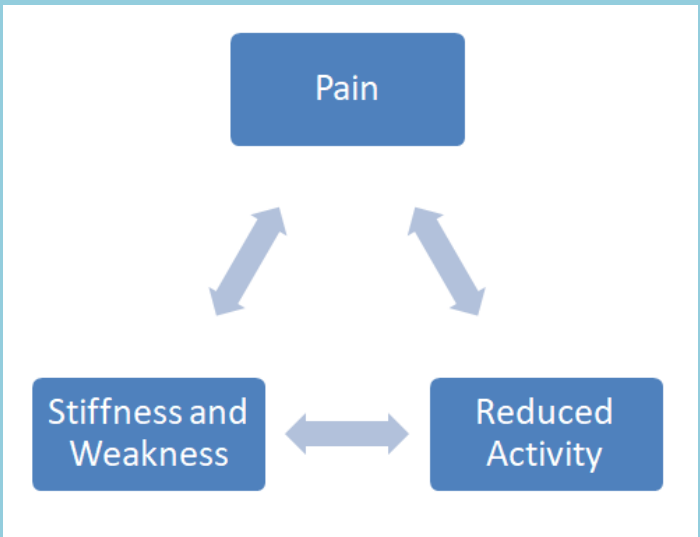
Activity Diary

Day	Morning	Afternoon	Evening
Sunday			
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			

Pain and Exercise

Pain can make it difficult for us to move and as it progresses people increasingly struggle to maintain their previous activity levels.

There are many consequences of reduced activity due to pain such as muscle weakness, joint stiffness, reduced exercise tolerance and muscle tightness to name a few. Unfortunately all of these can lead to further increase in pain.



The main message is that **"Exercise Is Good"**. There are very few situations when movement is not encouraged however it needs to be done in a way that does not aggravate your pain. It may be tempting to try and do the level of exercise you used to do prior to the onset of your pain but this might be too much so it is important to start very gently.

Exercise can include any gentle movement or physical activity – it doesn't have to be an energetic workout!

Find out how much of an activity you can do without aggravating your pain. You can then slowly start to build on this.

What works for one person may not be appropriate for someone else so it is important to find what is right for you.

It is good to do 'little and often' and pace yourself.

Don't push into the pain thinking that it will get easier – that's very unlikely to help. Instead stop before your pain starts to escalate.

It's a good idea to set goals to measure your progress but it's important that they are realistic. Start with small, short term goals rather than focusing on bigger, longer term ones. You are more likely to maintain motivation if your goals are realistic and achievable.

Don't try looking for progress on a daily or even weekly basis. It can take a long time to increase activity levels and there will be lots of ups and downs/good and bad days along the way so it can be better to look at progress on a monthly basis.

Pain can be very variable. Some days will be better than others and there will not always be a reason as to why. Try not to let this affect your motivation for increasing your activity and exercise levels.

Relaxation

In the busy modern world, few of us make time for rest and recuperation. Having enough 'down time' and good quality sleep is important for everyone, but even more so when you are living with persistent pain. When we ask people: "What do you do to relax?", many of them say "nothing", or "I haven't got time for that!". Many think that spending time relaxing is lazy.

Relaxation is especially valuable when you have persistent pain because it:

-Reduces muscle tension, and the pain from tight over-sensitive muscles. It is impossible to have ongoing pain without having muscle tension. Wherever you have an area of pain you will have an area of tight muscles. Unfortunately, when muscles are tense, it can cause additional pain, or make existing pain worse. Many people find their muscles go into muscle spasm, which is incredibly painful and can feel like you are locked into position. Learning to notice when your muscles are tense is helpful so that you can reduce it before it builds up and makes the pain worse. Relaxation allows blood to flow more easily to those tight and oversensitive muscles that contribute to your pain.

-Releases natural chemicals in the brain which reduce pain and produce feelings of calm. These chemicals are called 'endorphins'. Endorphins are hormones which are the body's natural pain killers. Endorphins are also responsible for improving sleep and for increasing feelings of enjoyment, calmness and wellbeing.

-Will train your brain and nervous system to calm down, which can reduce your pain levels

-Helps to reduce stress and anxiety by shifting your attention away from worrying thoughts and distressing images in your mind

-Improves your sleep. We know that pain disturbs sleep. When we are not sleeping properly, we feel tired, low in energy and low in mood. We cannot concentrate and our memory is affected. Lack of sleep leads to more aches and pain, and makes it harder to cope with your pain. Relaxation can help you get off to sleep more easily and to return to sleep if you wake in the night.

-Improves concentration and memory

-Improves digestion

-Lowers the heart rate and blood pressure

Relaxation is free, there are no side effects.

There are many types of relaxation techniques you can try. There are lots of free audio and video tracks available on the internet. You can download apps onto your phone to try. We have some on our website you can use. We also have a 'Relaxation Information Pack' if you want to learn more. Talk to us if you want to learn more.

Pain and Emotions

Living with long-standing pain inevitably has an effect on our mood, and how we feel about ourselves.
We can map out a cycle of the way pain starts to influence our thoughts, our feelings, and how we behave.

Sometimes this cycle can look quite positive:

The way we think
I can get on with some of my jobs

Our physical state
Pain a bit better

How we feel
Feel positive/ upbeat

What we do
Get busy with things we like to do

But sometimes this cycle can get us caught up in a difficult loop:

The way we think
This pain is awful. Will it always be like this for me?

Our physical state
Pain a lot worse

How we feel
Fed up, irritated, worried

What we do
Not able to do much at all

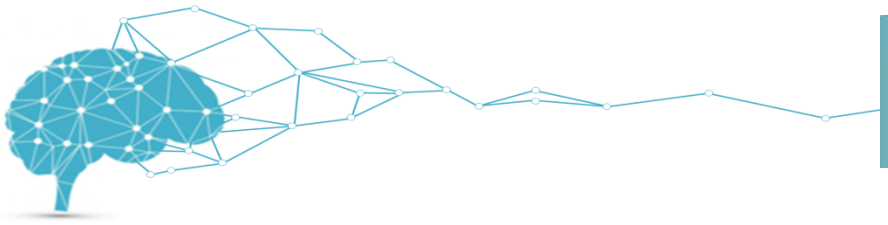
We know that the volume of pain messages is turned up or down by many things, including our emotions.

Everything we do which improves our emotional state, will have a very real chemical effect, quietening pain messages being sent up to the brain.

Tips

We would encourage you to do things which are good for your emotional wellbeing. This may include:

- Taking time to relax
- Spending time with people who make you feel better
- Doing activities which bring you pleasure
- Seeking psychological help if you feel you would benefit (counselling, therapy, support groups)



References

There are a number of useful references on the Pain Clinic website:
http://www.nnuh.nhs.uk/departments/pain-management/

If you would like more information on some of the information above, we would recommend:

Knowledge about Pain

"Understanding Chronic Pain in 5 minutes". This is a useful video on YouTube, explaining some of the science behind longstanding pain:
https://www.youtube.com/watch?v=C_3phB93rvI

Taming the Beast
https://www.tamethebeast.org

Medication

This link can provide you with comprehensive information about the medications used in pain management**: https://www.fpm.ac.uk/about-pain-medicine-patients-relatives/patient-information-leaflets**

For information about opioids, visit:
https://www.fpm.ac.uk/opioids-aware/understanding-pain-and-medicines-pain

Pacing

"Chronic Pain and Pacing Activities". This is a video on Youtube, explaining more detail about pacing:
https://www.youtube.com/watch?v=EPsWYO-kWdU

A leaflet about pacing activity on the Live Well with Pain website:
https://livewellwithpain.co.uk/wp-content/uploads/pacing.pdf

Pain and Exercise

Active Norfolk: **https://www.activenorfolk.org/**

NHS Live well: **https://www.nhs.uk/live-well/exercise/**
Includes advice on getting started. 10 minute workouts and a fitness studio (you can access yoga and Pilates sessions through the fitness studio)

Chartered Society of Physiotherapy
https://www.csp.org.uk/public-patient/keeping-active-health

Pain and Emotions

"Living Beyond Your Pain" (book) by Joanne Dahl and Tobias Lundgren
(https://www.newharbinger.com/living-beyond-your-pain)

Sleep

-There are leaflets about sleeping well with pain, and common sleep problems on the Live Well with Pain website:
https://livewellwithpain.co.uk/resources/resources-for-your-patients/

-"This Book will make you Sleep" (book) by Jessamy Hibberd and Jo Usmar
-"The Sleep Book" (book) by Guy Meadows