

## Pain Management Service

### Stress and Chronic Pain

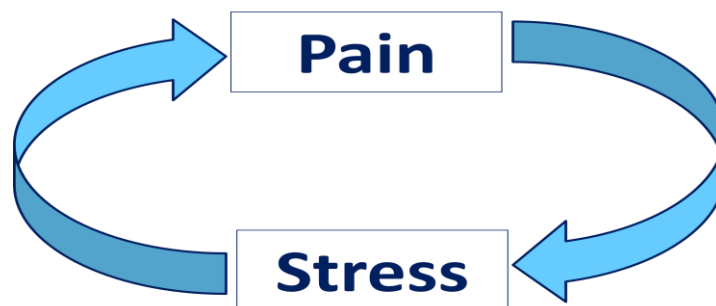
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## Aim

Being in pain is stressful, and we know that stress can affect the experience of pain because of the effect of stress chemicals in the body. So a vicious cycle can develop.

This information sheet aims to help increase your understanding of stress and chronic pain as well as what can be helpful including:

- The stress system
- How stress and chronic pain can affect each other
- The calming system
- Strategies that can help to reduce stress



## Why do we have a stress system?

Stress and anxiety are very normal emotions that we all experience. Sometimes a little bit of stress can even be helpful for motivating us to do things. However these emotions can also feel quite overwhelming at times.

The reason we have a stress system is to help us survive. It is there to protect us. You might have heard of it as the 'fight or flight' response. When faced with threat, the stress system kicks in instantly. The hormone adrenaline is released. This quickly causes changes in our body which help to protect us from danger by helping us to either fight or run away.

This is really helpful when we are faced with real physical danger, but less helpful if the threat we face is not physical and cannot be fought or run away from

## The stress system

When the stress system is active, our body and mind are on high alert.



Breathing becomes faster



Heart speeds up



Digestive system shuts down



Dry mouth



Muscles tense



Sweat



Thoughts focus on threat

Breathing becomes faster to increase oxygen to our blood and muscles. Heart rate speeds up to pump blood faster round the body to get oxygen to the muscles. The digestive system shuts down and blood is diverted to where it is needed more, causing symptoms such as a churning stomach, feeling sick or 'butterflies'. Muscles tense so they are ready for action which can lead to symptoms such as shakiness, tightness, and aches and pains. Saliva dries up as moisture is needed for sweat to cool us down, which helps our muscles to work better. Our thoughts focus on the threat so we can concentrate on getting to safety.

This all happens in an instant, it's an automatic response. Once the threat is over, the system calms down again. None of these symptoms are dangerous, they are part of a system designed to keep us safe.

However many of the stresses we face today are not physical and cannot be fought or run away from. So our stress levels can be high for a long time.

## Pain and stress

Stress and adrenaline can increase pain signals and add to sensitisation of the pain system.

Cortisol is another hormone that is produced when we are stressed. It is thought that high levels of cortisol over a long time (so, chronic stress) can contribute to low mood and a weakened immune system.

Another effect of chronic stress is that it reduces endorphins. Endorphins are hormones which can help to block pain signals. They are our body's own natural painkillers. Endorphins also help to reduce anxiety and depression.

Reducing stress can help to reduce pain and improve mood. This is why stress management is an important part of pain management.

## The calming system

As well as the stress system, we also have an opposite system, our calming system. It is also known as the 'rest and digest' system. Our stress system is actually the more dominant system. It's more easily activated for reasons of survival. We might have to put more effort into learning how to activate our calming system more easily.

When the calming system is active, changes in our hormone levels help both our mind and our body to feel calm and relaxed. This helps to calm down the pain system. The increase in endorphins plays a part in this. We know that relaxation helps to increase endorphins. The physical changes that happen with the calming system are opposite to those that happen with the stress system.



Breathing slows down



Heart rate slows



Digestive system is active



Saliva produced

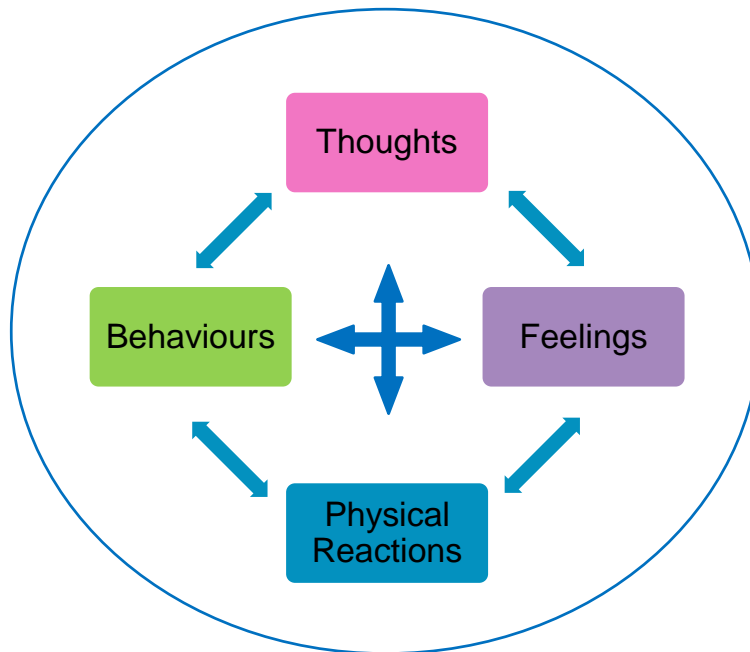


Muscles relax



Calm mind

## The impact of our thoughts

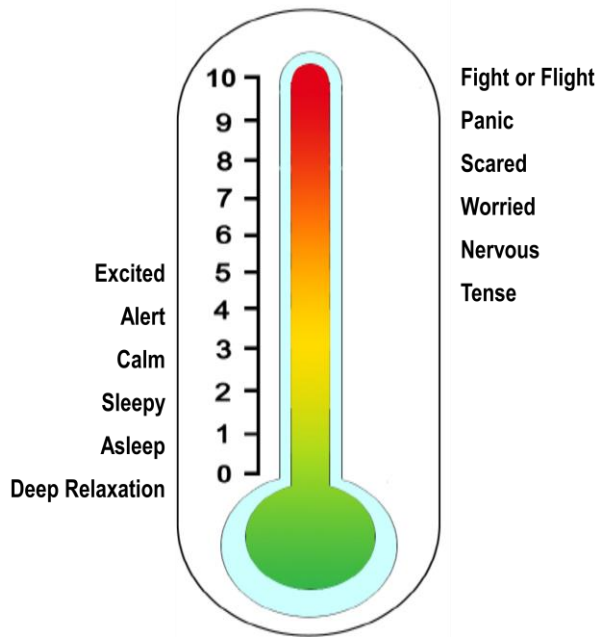


What we focus on with our thoughts can affect how we feel emotionally and physically, which can affect what we either do or don't do.

We might be thinking how awful things are or worrying that symptoms are getting worse and worse, or that we are causing harm to ourselves by doing something. There might be all sorts of 'what if' or 'worst case scenario' thoughts. There might also be lots of rumination, when we go over and over the same thoughts.

Of course it is normal to have some of these types of thoughts but if this sort of thinking starts to dominate, and it is difficult to shift our attention away, then this can lead to increased levels of stress. As stress levels rise, this can increase levels of adrenaline and tension, which can increase pain. Sleep might be affected, also fatigue and our ability to concentrate may worsen. Perhaps this leads to us doing less of the things that can actually help us to feel better. And if we avoid things, the more we do so, the more we might lose confidence in our ability to do these things.

## The adrenaline thermometer



This can be a helpful way of thinking about stress management. We can imagine ourselves as moving around on this stress thermometer throughout a normal day.

We are trying to keep the level of adrenaline in the useful range (e.g. calm, alert, excited) as much of the time as possible. It is normal, and not at all harmful, to climb higher than this through the day as things happen. The more you can use simple stress management strategies to bring the level down, maybe just by 1 or 2 numbers, the better for your pain management.

Practice checking in with yourself through the day. Noticing where you are on the adrenaline thermometer can be helpful as it can prompt you to do something to try to bring your stress levels down.



## Strategies for Managing Stress

### Managing thoughts

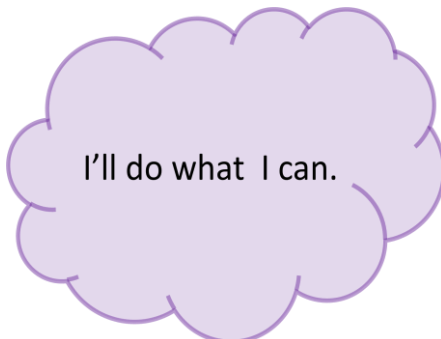
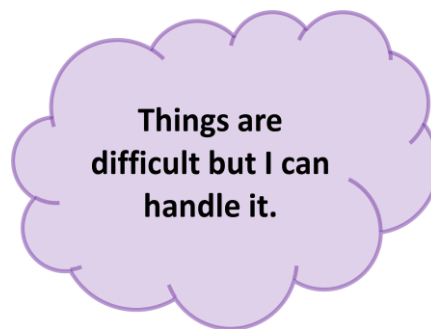
When we are in stress mode, our thoughts often focus in on what we are finding stressful and it can be difficult to shift our attention away. This can increase our stress or keep us feeling stressed for longer.



Sometimes we create further stress by thinking about worst possible scenarios. It is very normal for our minds to work in this way, especially when we are in stress mode. If we notice this happening, it can be helpful to remind ourselves that we don't know the worst will happen, we can't predict the future. Sometimes it can be more helpful to focus on the present and what we know to be true.

We can't stop the difficult or upsetting thoughts we might have when we're in stress mode but we can choose how to respond to them and how much attention we give them.

Self-talk statements can be helpful for reminding us that we can cope, or for talking back to some of the difficult thoughts we might have.





## Distraction

When thoughts and feelings become overwhelming it can be helpful to move our attention away and focus on something else. This may be for a short time or a longer time. Distraction is different than avoidance as we are aware that we are making a decision to move our attention away in order to manage our emotions.

## Be kind to yourself

It can be helpful to notice the way that we talk to ourselves. Do we have a kind inner voice or do we tend to be self-critical? The way in which we talk to ourselves can influence the amount of stress that we experience.

When thinking about the kind of inner voice that can help to reduce stress, think about how you would talk to a friend. What advice would you give them if they were in the same situation? Do you tend to be harder on yourself? It can also be helpful to think about what a friend or family member would say if they were here.

Remember to be kind to yourself. The harder and more critical we are on ourselves the more stress we may feel.



## Diary / notebook

Writing can help us to take a step back from our thoughts and look at them differently, as well as helping us to get to know how our mind works. Identifying unhelpful thoughts and noticing how often they occur can be a helpful first step in learning to challenge or distance ourselves from these thoughts. This can help us to see the situation in a different or more helpful way.

You can re-read what you've written, or if you prefer you can just destroy it afterwards. If you do sit down to write, try to take a few minutes to pause and focus your attention on the experience. Slowing down in this way will help to let it let it sink in and connect with it in a stronger way.





## Worry time

A strategy to help cope with worry and stress is to set aside specific worry time. The aim is to learn not to react to worrying thoughts during the rest of the day. This helps with taking control over the usual urge to worry.

First notice the worrying thoughts, then tell yourself "I'll not worry about that now", then shift the focus of attention back to what you were doing, or to something else. It might be helpful to carry a note book and write down each worry as it happens, or make a note on your phone. During worry time, only spend time thinking about those worries that are still a concern. You might find that many of the worries become less of a concern over time! You may be able to dismiss some worries, or postpone less urgent worries until next time.

When setting worry time think about:

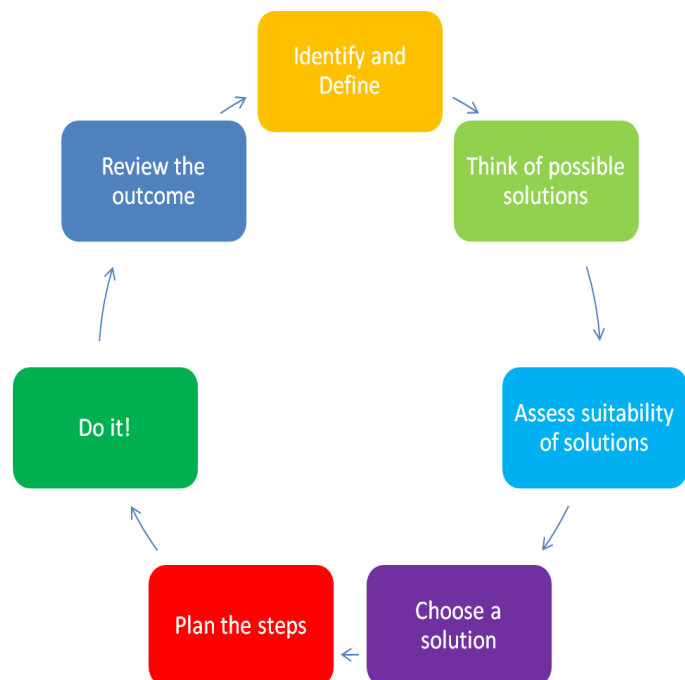
- Time, length of time, and place.
- Take this time to reflect on the reason for worrying and to work through the worries.
- Having this time can help to free up other time for activities that can be helpful for relaxation and reducing stress.

Some people like to do worry time in reverse and find it helpful to set specific worry-free zones. It might be helpful to try both and find out what works best for you.

## Problem solving

During worry time it can be helpful to list problems that are causing stress. These problem solving steps can then be followed.

This can help with identifying how to address problems. Having a plan of action can help to reduce stress.





## Grounding

Grounding can help shift the focus of your attention from your worries or stressful thoughts to focusing on the present moment.

A simple and effective exercise is the five senses. This exercise involves focusing your attention on your surroundings using each of your senses in turn.

Notice five things you see around you

Notice four things you can feel or touch

Notice three things you can hear

Notice two things you can smell

Notice one thing you can taste



Try to notice details or objects that you don't normally pay attention to. Perhaps you notice the feeling of your clothing against your skin or the ground under your feet. Can you notice any sounds that you were not previously aware of? Perhaps you can seek out something with a fragrance. Perhaps sip a drink or have a snack and focus on the flavours.

## Soothing rhythm breathing

Soothing rhythm breathing can help to activate the calming system and so can help us to cope with difficult emotions.

Because of the way that our bodies and minds are connected, the way we breathe can affect our minds and how we feel. Soothing rhythm breathing can help to slow down the mind and generate a sense of calm.

When we breathe a certain way, the vagus nerve is stimulated. This is one of the nerves that connects the brain and the body. It acts to slow down heart rate and tells the body to relax. It can send messages to the brain which help our mind to calm down.



Soothing rhythm breathing involves slowing our breathing down and finding a slow, gentle, even rhythm with our breathing. You can listen to soothing rhythm breathing and mindful breathing exercises on the Lothian Pain Management website.

## What helps you to feel calm?

There are many things we can do which can help us to feel calm. Here are just a few examples: meditation, relaxation exercises, spending time with pets, friends or family, sitting down with a cuppa, music, spending time in nature.

## Prioritise what you enjoy

Stress can influence our behaviours. When experiencing stress we may stop prioritising what we enjoy and what helps us to relax. Giving ourselves time to do what we enjoy can help us to relax and reduce stress. This includes exercise, hobbies and spending time with family and friends.



## Take control of time

We might find it difficult to free up time for ourselves, especially if we have a lot on our plate or we tend to prioritise doing things for others. It can be helpful to prioritise what is important and has to be done, and identify when we can say no!

Perhaps we need to ask ourselves if we are taking on too much. What can we delegate? What can we let go of?





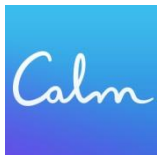
## Support

If it feels like stress and worry are becoming too much to cope with, remember to seek help or support. This can come in a number of different forms including:

- Family
- Friends
- Support Groups
- On-line Resources
- Health Professionals



## Useful resources



The **Calm app** is helpful for people experiencing stress and anxiety. It provides guided meditations, sleep stories, breathing programmes and relaxing music.



The **Smiling Mind app** is a way to practice daily mindfulness exercises. This can be helpful during times of stress.



The **Self-help for Anxiety Management app** might be helpful if you're interested in self-help for anxiety but meditation isn't your thing. You can use the app to build your own anxiety toolkit which helps you to track anxious thoughts and behaviours, and learn self-help techniques.

### Lothian Pain Management website:

<https://services.nhslothian.scot/painmanagement/AAH/Pages/default.aspx>

There are a variety of resources on the Lothian Pain Management website that you might find helpful including the following audio and video tracks:

- Soothing Rhythm Breathing
- Mindfulness of the Breath
- Calm Place
- Mindful Movement Based Tai Chi Exercises