

Stress, Pain and Relaxation

This leaflet is designed to help you understand what stress is, inform you as to why it is important to be able to relax when you have chronic pain and provide some relaxation exercises for you to try

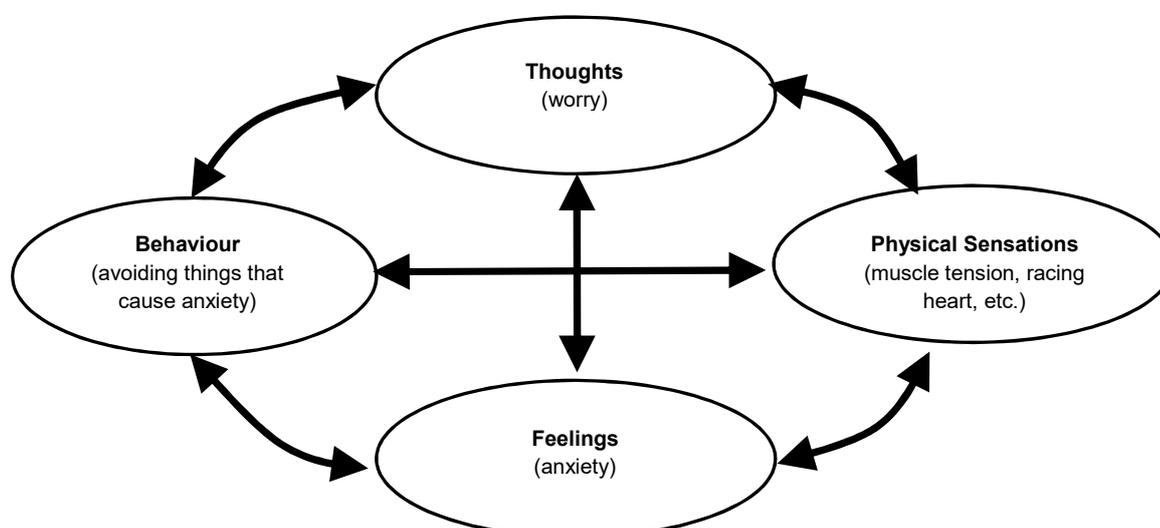
Feeling stressed is a common human experience. People experiencing stress describe feeling that there is too much mental or emotional pressure for them to control. They report struggling to cope with the demands upon them and often say that they feel anxious, ‘wound up’ and/or irritable. Stress can affect how you feel, how you view things, what you do, and it also produces physical reactions in your body.

You are likely to have noticed bodily reactions to stress in yourself, perhaps including tension in the muscles, an increased heart rate and a peculiar feeling like butterflies in the stomach. These, and other physical reactions, are part of the ‘fight or flight’ response, which is a mechanism that evolved to keep us safe from threats, most of which, in more primitive times, were physical. Essentially, these physical reactions ‘prime’ the body to either fight, freeze or run away.

Nowadays, we are more likely to feel stressed by relationships, money, work and so on. But we still react physically to these social or mental threats. It is these physical reactions that relaxation strategies seek to change.

Although learning to relax can reduce these physical reactions, it is also likely to affect, in a positive way, what you think and do.¹ That is because the stress response is not just emotional and physical, but it also involves thoughts and behaviour. You may have noticed these links between stress, thinking and behaviour yourself. When we are stressed, our thinking may become dominated by worrying thoughts and we may behave differently – for example, pushing to get everything done or avoiding situations that make us feel stressed. Unfortunately, these interactions can sometimes set up a ‘vicious cycle’ where thoughts, feelings, physical sensations and changes to behaviour all ‘feed off’ each other.

The stress cycle



¹ <https://www.mentalhealth.org.uk/a-to-z/s/stress>

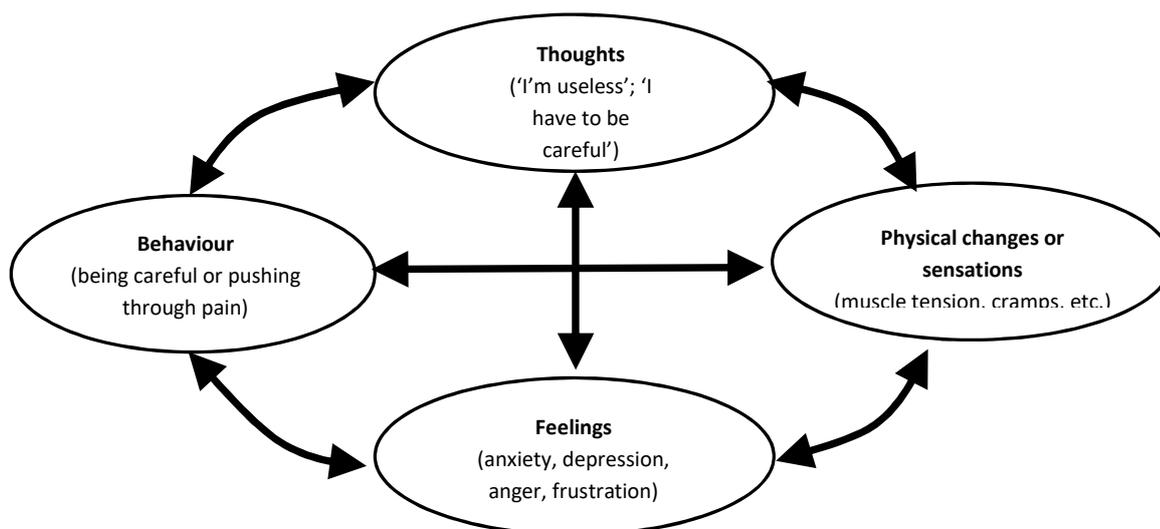
Why is relaxation important for people with chronic pain?

At a simple level, feeling stressed will cause physical reactions that can increase pain. For example, increased muscle tension around an area that is already sore is likely to make it even more painful. Stress also produces changes in the body's hormonal systems. These changes are thought to affect the pain system, making it more sensitive.²

These are fairly direct effects but your body is just one part of a living being made up of four systems (body, thoughts, feelings and behaviour). Since these four systems affect each other, a change in one system will cause a chain reaction of effects in the other three systems. For example, feeling anxious (feeling) might cause you to worry that you are doing too much (thought), which in turn might make you become more cautious, with the result that you do less (behaviour).

These changes in thinking and behaviour produced by stress can, if they persist, have other physical effects, such as a loss of fitness from doing less. Losing fitness can make a painful condition more likely to flare up,³ thereby adding to stress. In this way, a vicious pain and stress cycle can be set up which is difficult to break out of.

The pain and stress cycle



So far we have only looked at the negative effects of these interacting systems. The upside of these interactions is that an improvement in one system is likely to affect the other three in a positive way. So, reducing your stress and feeling emotionally calmer (feelings) can reduce worry (thoughts), making it less likely that things will get put off, making you more active (behaviour) and, in this way, helping your physical fitness and ultimately improving your ability to cope with life's demands.

² McBeth, J, Chiu, YH, Silman, AJ, Ray, D, Morriss, R, Dickens, C, Gupta, A & Macfarlane, GJ. (2005). Hypothalamic-pituitary-adrenal stress axis function and the relationship with chronic widespread pain and its antecedents. *Arthritis Research and Therapy*. 7(5): R992-1000.

³ Mayer, TG & Gatchel, RJ (1988). *Functional restoration for spinal disorders: the sports medicine approach*. Philadelphia: Lea & Febiger.

What can I do about it?

It is hard to take away all of the things that cause stress, some of which will be caused by your pain (and we know how hard it is to take pain away). Talking to friends and family about your difficulties can be the easiest way to relieve stress. They may be able to offer practical help, but even if they cannot, sharing your problems with others who care about you is often helpful. Physical exercise has been shown to reduce stress, but exercising when you are in pain is often difficult (see Pain Concern's booklet, *A Guide to Managing Pain*). Learning some relaxation strategies can provide you with techniques that have been shown to be effective and will address the stress response directly.

Can't I just 'chill-out' with a glass of wine and some music?

Unfortunately, this doesn't always work. Leaving the effects of alcohol to one side (it is rarely a good idea to use alcohol to cope), what people often find when they try to just focus on music, for example (or watching TV, or staring out the window, etc.) is that their mind will wander, often returning to the worries that preoccupied it previously. This type of informal method, which largely relies on distraction, is not very targeted, so the results are less reliable. The more formal relaxation techniques described below are widely used in professional pain management programmes and they help to make chronic pain more manageable and less disabling.⁴

What relaxation techniques are there?

There are a number of relaxation exercises available. Instructions for two of these techniques, diaphragmatic breathing and progressive muscular relaxation, are given below. You may find after trying these that you would like a more guided relaxation practice or that you would like to try other techniques, in which case, please explore the links at the end of this leaflet.

Practice is important. People usually report that they find these techniques more effective when they have been using them for a while. It is helpful to start practising these techniques at those times when you are not feeling highly stressed, as people do not tend to learn very well when distracted by high levels of anxiety.

Deep / Diaphragmatic Breathing

Find a quiet place where you will not be disturbed during the exercise.

1. Either sit or lie down. Make yourself as comfortable as possible but, if possible, try to keep your back straight. It can help to have one hand on your chest and the other on your stomach.
2. Close your eyes and start to focus on your breathing, concentrating on breathing in and out slowly with a regular rhythm.
3. As you breathe in gently through your nose, imagine that you're filling a light balloon with air. You will notice that your stomach will move out slightly.
4. As you breathe out through your mouth, letting the air out slowly, imagine that you are letting go of tension. You will notice that your stomach will move in slightly.
5. You may find it helpful to count as you breathe in and out: breathing in for three regular counts and out for four counts.
6. Continue to do this until you feel calmer or, if you are practising this at a time when you feel calm, do this for three to five minutes.

⁴ Scottish Intercollegiate Guideline Network. (2013). *Guideline 136: Management of Chronic Pain*. Edinburgh: SIGN.

Progressive muscular relaxation (PMR)

This is a process in which you tense and relax different muscle groups throughout the body. Through practising tensing and relaxing these muscles, PMR increases your awareness of how it feels for your muscles to be in these two different states of tension and relaxation. In turn, you will be able to recognise when you have tension in your body and will have practised letting go of this tension.

PMR is not meant to require great effort. Tense the muscles slowly and gently. If, when you tense certain muscle groups, it aggravates your pain then just practise the 'relax' part of the sequence.

You can do this exercise either sitting or lying down. Begin by closing your eyes and take a few minutes to practise the deep breathing exercise above.

For each muscle group hold the stretch for a few seconds and then relax for approximately ten seconds, repeating this a couple of times. It can be helpful to say to yourself something like 'relax' or 'let go' as you relax the muscle.

Relaxation Sequence

1. Foot

Starting with your right foot, curl your toes downwards, then let go.

2. Lower leg

On your right-hand side pull your toes towards you to get a stretch down your calf muscles, then let go.

3. Upper leg

Tighten your right thigh, then let go.

4. Hand

Make a fist with your right hand then uncurl your fist and let go.

5. Arm

Tighten your right arm muscles by pulling your forearm up towards your shoulder, whilst making a fist and then move your forearm down again and uncurl your fist.

Repeat steps 1-5 on the left side, then...

6. Buttocks/hips

Squeeze your buttock muscles and then relax them.

7. Stomach

Gently pull your stomach in/tighten your abdominal muscles and then let your stomach muscles go soft.

8. Chest

Tighten the muscles in your chest by taking in a deep breath and then exhale.

9. Shoulder Blades/back

Push your shoulder blades together, pushing out your chest.

10. Shoulders

Raise your shoulders up to your neck and then let them slowly drop down again.

11. Mouth/jaw

Open your mouth wide, as far as you can, as if yawning and then slowly let your mouth close.

12. Eyes/cheeks

Squeeze your eyes shut and then slowly let them open again.

13. Eyebrows

Push your eyebrows together as though frowning and then let the frown go.

When you have been through all of the various areas of your body you should, hopefully, be feeling relaxed. Take a couple of minutes to enjoy this feeling before getting up. If you are feeling under a lot of pressure you can repeat these exercises two or three times a day, otherwise, once a day will be enough to help you feel calm.

Useful Links

Two videos showing the techniques described above:

stepsforstress.org/take-action-now/relaxation-exercises.html

Tips on dealing with stress, including looking at your thinking:

moodjuice.scot.nhs.uk/Stress.asp

A number of audio guides to different relaxation methods:

moodcafe.co.uk/download-relaxation-exercises.aspx

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