



CLARITY
COGNITION®

Anxiety & Stress

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All domains of our cognition are impacted by our environment. Stress and anxiety are two factors that can affect our cognitive health. While we might think of stress and anxiety in different ways, the emotional response often feels very similar and this is due to the same biological mechanisms being triggered. We will consider what stress and anxiety are, how they can leave us feeling, why exactly this is and the impact it can have on our cognition.

What is Stress?

Stress is something that we all will have experienced at one point or another. Stress can work in our favour by motivating us to do things, sometimes quicker due to us feeling a sense of urgency. It can however work against us and it is important to understand why this is. We should also consider the cognitive costs of letting stress take over and how we can get our stress levels under control which will allow us to optimise our thoughts.

Stress is the physiological and psychological response to pressure and the balancing of multiple responsibilities in our life. The demands that are placed on us as humans is greater than ever before. We are demanding more from our brains and this can result in us feeling overexerted mentally.

Stress can be triggered by both **external** and **internal** events. We all deal with a number of outside factors that can cause stress: *work, family, health, study, finances* etc. Internal stressors include the pressure that we place on ourselves to do things, and how we perceive the resources we have to deal with these things. This can be related to our perception of how we think we might cope in certain situations. Often both internal and external stressors combine causing us more stress than we can healthily deal with. When this is the case, a whole host of physiological, psychological and behavioural responses ensue.

What is Anxiety?

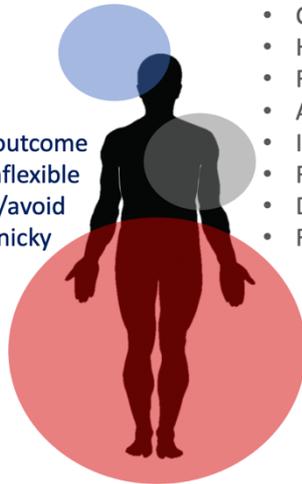
Anxiety is a very common and natural response we have to something that we can consider dangerous and/or threatening. Our mind can conjure up what often seems like an endless stream of alarming possibilities that create a background noise of uncertainty. While uncomfortable, the truth is that we need to have fears, worries and anxiety in order to survive, but we need to work with these instead of allowing them to work against us. The problem is that anxiety can all too easily overstay its welcome and be falsely triggered in situations in which the threat is not as great as it might appear.

The Threat Response

Both anxiety and stress can trigger what is known as our **threat response**. This is a cognitive, psychological, physiological and behavioural response that is triggered when we feel anxious and/or stressed. While this response can feel distressing, it is completely normal as these responses help us cope by priming our bodies for action. As you can see below, these emotions can give rise to a host of symptoms:

Cognitive & Psychological + Physiological = Behavioural Symptoms

- Difficulties concentrating
- Difficulties processing information
- Going blank
- Frequent ailments
- Feeling forgetful
- Confusion
- Worrying/ruminating
- Predicting the worst outcome
- Becoming rigid and inflexible
- Urge to procrastinate/avoid
- Feeling anxious or panicky
- Fearful
- Low self-esteem
- Short-tempered
- Excessive worry
- Apathy
- Agitation
- Feeling tearful & low



- Muscle tension
- Disrupted sleep
- Blood pressure changes
- Changes in libido
- Headaches
- Fatigue
- Aches and pains
- Increased sweating
- Faster breathing
- Digestive changes
- Restlessness

- Rushing around
- Fidgeting
- Forgetting things
- Difficulties concentrating
- Working longer
- Sleeping less
- Avoidance
- Cutting down on activities that bring pleasure
- Taking things out on others
- Drinking too much
- Under or overeating
- Losing touch with friends or loved ones
- Finding it difficult to organise things
- Making mistakes

The part of the brain that gives rise to the anxiety and stress responses is known as the amygdala. This part of the brain is located in the emotion centre of our brain and is the size of an almond. It is a very *primitive part of the brain* which we share with other creatures. In prehistoric times, the amygdala proved very useful by giving rise to the **fight, flight** or **freeze** response. When confronted with predators, it enabled humans to act in a way that would ultimately save their life, allowing us to quickly act as opposed to needing to think things through, which in such situations could cost one's life. While the stressors we face now may be subtle, and not as obvious as those our predecessors had to face, the brain's response **is the same**.

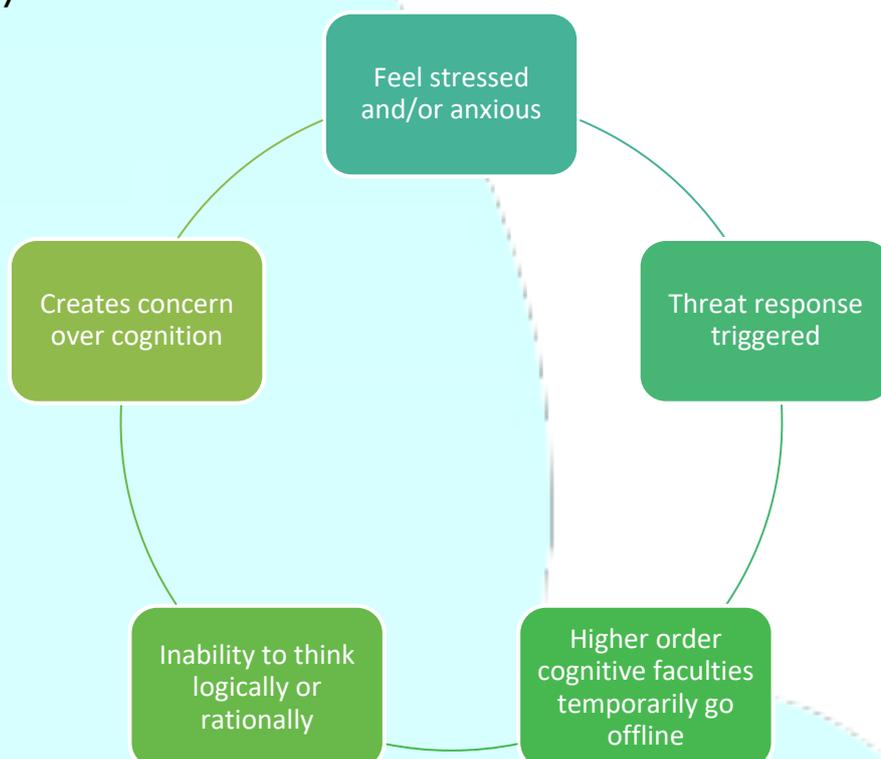
How does stress and/or anxiety cause memory worries?

Common “traps”

When subjective memory worries occur as a result of stress and/or anxiety, we know that things can be done to relieve the problem. However, we can fall into anxiety/stress traps that impact cognition and cause us to **do** things that cause the problem to persist. So, it is important to know what to do to make things easier and avoid falling into the following “traps”.

The primitive brain trap

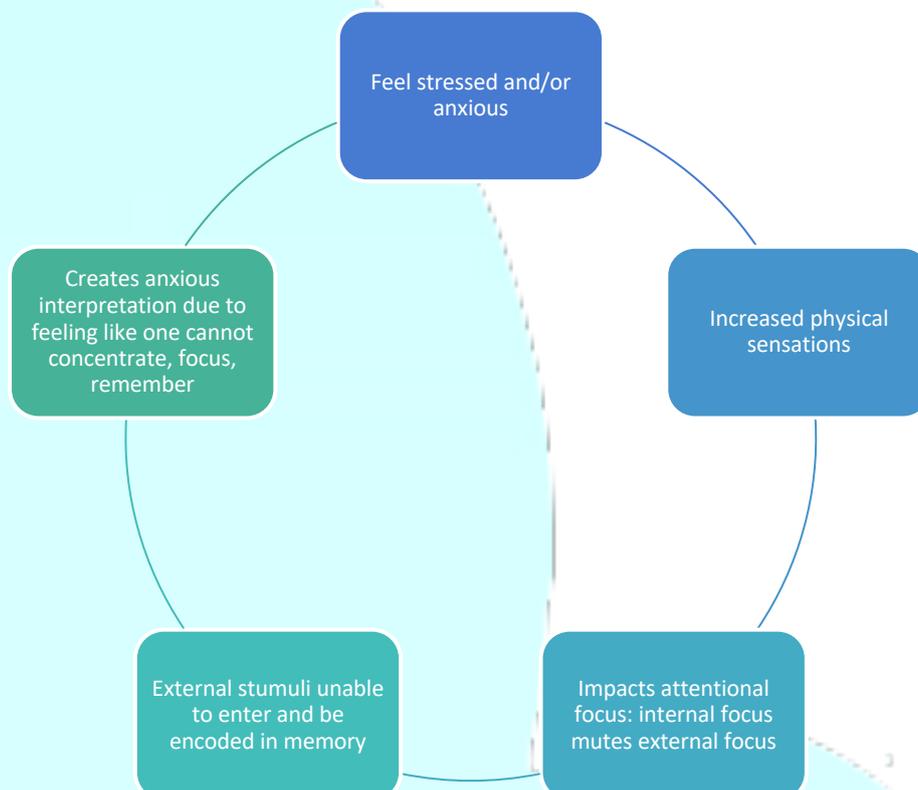
The primitive part of our brain which gives rise to our threat response has not evolved like other areas. While we now have much greater cognitive skills, such as being able to reason, problem solve, and multitask among other things, these skills are not deemed as important when faced with situations in which we feel highly stressed and/or anxious. In these situations, our brain will tune into the sources of stress or anxiety, seeing them as the priority and other cognitive faculties like concentration and memory temporarily go **offline**. This makes it almost impossible to think logically or rationally when we are primed for danger. Understandably, we can feel very frustrated with these situations but it is important to know that we have little control. This is a hardwired response in our brain that can be difficult to override unless we understand the source of anxiety or have the correct tools to train the brain to react differently.



Selective Attention Trap

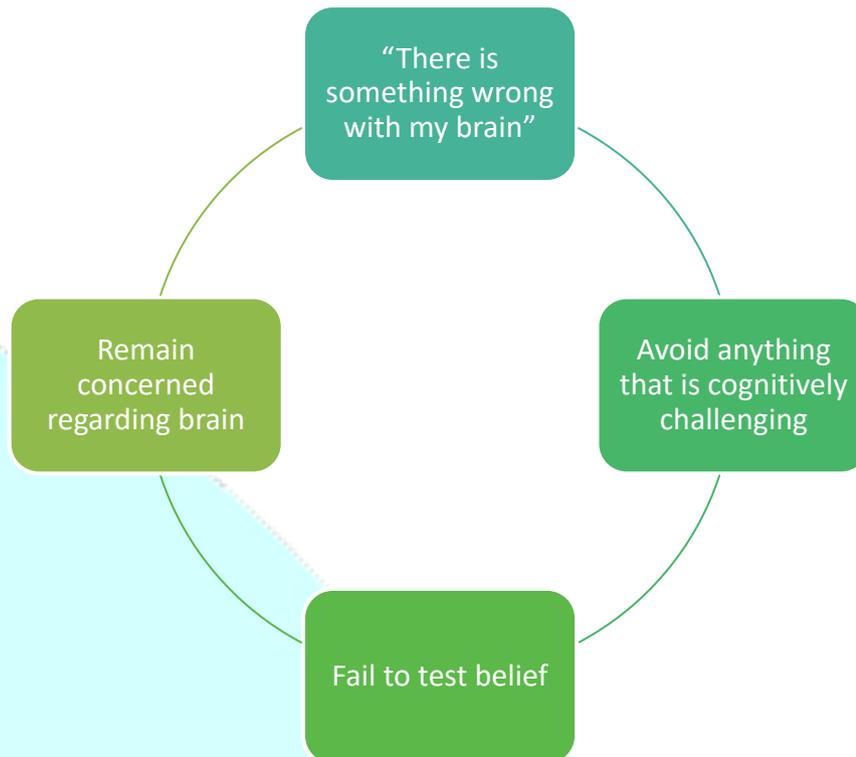
When we feel stressed and/or anxious, it is normal to focus on the physical sensations that occur with these emotions. This can have an impact on our attentional focus, which can commonly cause us to think physical sensations are a further source of threat, or, that others might be noticing how we are coming across. These common reactions can cause us to displace our attention from things in our environment to ourselves, focusing on our own internal processes which can affect our attention and also our perception of our own performance.

If our attention is selectively focused on our anxiety or stress, we don't have the concentration to allow things to enter into our memory and be properly interpreted and stored. When this is the case, we can notice changes in our attention and memory capacity. When an obvious reason for these deficits in memory cannot be found, this can cause frustration and continued searching for answers. In this process, we can look to ourselves, questioning whether there is something wrong. It is therefore unsurprising that we often question our cognitive health and attribute it to reasons that can seem very scary, like dementia. Such cognitive symptoms can account for the difficulties we see in problems like Subjective Cognitive Impairment (SCI), where concentration and memory are impaired without an underlying medical cause. SCI refers to a personal experience of decreased cognitive function in the absence of objective signs of memory impairment on scans or neuropsychological testing.



The Behavioural Traps

People are often unaware of the behaviours that keep the problem going. These are often attempts intended to make us feel better, or for things to feel easier, and more manageable. These responses are what we refer to as **safety seeking behaviours** that in the long run may maintain anxiety and/or stress, which can further impact our cognitive capacity. Behavioural traps include avoidance, as detailed in the diagram below, cutting down on activities that give us pleasure and overindulgence.



The importance of addressing stress and/or anxiety

Common to all of these traps are excessive feelings of anxiety and/or stress. These feelings can in turn impact our cognition. In order to increase our stress and anxiety threshold and decrease the likelihood of activating our threat response, there are a number of things we can do. These range from controlled breathing, deep muscle relaxation, exercise, mindful and relaxing activities, and testing out our anxious predictions to establish whether our fear is exaggerated unnecessarily.

Sometimes you will be able to break free from these traps yourself. However, although the notion of getting a balance is simple, it's not always so easy to put it into practice. It is not unusual to need support from a healthcare professional. If you feel that this is the case, speak to your GP, a neurologist or a therapist regarding these issues.

My thoughts and action plan, based on the information in this leaflet:

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