

biology + psychology of panic



Panic attacks (the key feature of Panic Disorder) can be seen as a blend of biological, emotional & psychological reactions. The emotional response is purely fear. The biological & psychological reactions are described in more detail below.

Biological Reactions 1: Fight or Flight

When there is real danger, or when we believe there is danger, our bodies go through a series of changes called the fight/flight response. Basically, our bodies are designed to physically respond when we believe a threat exists, in case we need to either run away, or stand and fight. Some of these changes are:

- an increase in heart rate and strength of heart beat. This enables blood and oxygen to be pumped around the body faster.
- an increase in the rate and depth of breathing. This maintains oxygen and carbon dioxide levels.
- an increase in sweating. This causes the body to become more slippery, making it harder for a predator to grab, and also cooling the body.
- muscle tension in preparation for fight/flight. This results in subjective feelings of tension, sometimes resulting in aches and pains and trembling and shaking.

When we become anxious and afraid in situations where there is no real danger, our body sets off an automatic biological “alarm”. However, in this case it has set off a “false alarm”, because there is no danger to ‘fight’ or run from.

Biological Reactions 2: Hyperventilation & Anxious Breathing

When we breathe in we obtain oxygen that can then be used by the body, and we breathe out to expel the product of our metabolic processes - carbon dioxide. The body naturally maintains optimal levels of both oxygen and carbon dioxide. When we are anxious, the optimal level of carbon dioxide is disrupted because we begin to hyperventilate, or breathe too much. If the body cannot return carbon dioxide levels to the optimal range, we experience further symptoms such as dizziness, light-headedness, headache, weakness and tingling in the extremities, and muscle stiffness. For people with panic, these physiological sensations can be quite distressing, as they may be perceived as being a sign of an oncoming attack, or something dangerous such as a heart attack. However these are largely related to the fight or flight response and overbreathing, not physical problems.



Psychological Reactions 1: Thinking Associated with Panic

We’ve described the physical symptoms of panic. People who panic are very good at noticing these symptoms. They constantly scan their bodies for these symptoms. This scanning for internal sensations becomes an automatic habit. Once they have noticed the symptoms they are often interpreted as signs of danger. This can result in people thinking that there is something wrong with them, that they must be going crazy or losing control or that they are going to die.

There are a number of types of thinking that often occur during panic, including:

- Catastrophic thoughts about normal or anxious physical sensations (eg “My heart skipped a beat - I must be having a heart attack!”)
- Over-estimating the chance that they will have a panic attack (eg “I’ll definitely have a panic attack if I catch the bus to work”)
- Over-estimating the cost of having a panic attack: thinking that the consequences of having a panic attack will be very serious or very negative.

Psychological Reactions 2: Behaviours that Keep Panic Going

When we feel anxious or expect to feel anxious, we often act in some way to control our anxiety. One way you may do this is by keeping away from situations where you might panic. This is called avoidance, and can include:



- Situations where you’ve had panic attacks in the past
- Situations from which it is difficult to escape, or where it might be difficult to get help, such as public transport, shopping centres, driving in peak hour traffic
- Situations or activities which might result in similar sensations, such as physical activity, drinking coffee, having sex, emotional activities such getting angry

A second response may be to behave differently, or to use “safety behaviours”. The following are examples of these; you might make sure you are near an escape route, carry medication with you, or ensure that you are next to a wall to lean on. Or you may use other more subtle methods like trying to distract yourself from your anxiety by seeking reassurance, reading something, or bringing music to listen to. Although this may not seem harmful to begin with, if you become dependent on these behaviours you can become even more distressed if one day it’s not possible to use them.