

Information handout

UK English

Fight Or Flight Response



Fight Or Flight Response

Description

The fight or flight response is an automatic physiological reaction to an event that is perceived as stressful or frightening. The perception of threat activates the sympathetic nervous system and triggers an acute stress response that prepares the body to fight or flee. These responses are evolutionary adaptations to increase chances of survival in threatening situations. Overly frequent, intense, or inappropriate activation of the fight or flight response is implicated in a range of clinical conditions including most anxiety disorders. A helpful part of treatment for anxiety is an improved understanding of the purpose and function of the fight or flight response. This client information handout describes the bodily consequences of the fight or flight response.

Physiological responses

The fight or flight reaction is associated with activation of the sympathetic nervous system. The chain reaction brought about by the fight or flight response can result in the following physical effects:

| Body System | Physiological effect | Consequence |
|-------------|--|--|
| Heart | Increased heart rate. Dilation of coronary blood vessels. | Increase in blood flow. Increased availability of oxygen and energy to the heart. |
| Circulation | Dilation of blood vessels serving muscles. Constriction of blood vessels serving digestion. | Increased availability of oxygen to skeletal muscles. Blood shunted to skeletal muscles and brain |
| Lungs | Dilation of bronchi. Increased respiration rate. | Increased availability of oxygen in the blood. |
| Liver | Increased conversion of glycogen to glucose. | Increased availability of glucose in skeletal muscle and brain cells. |
| Skin | Skin becomes pale or flushed as blood flow is reduced. | Increased blood flow to muscles and away from non-essential parts of the body such as the periphery. |
| Eyes | Dilation of the pupils. | Allows in more light so that visual acuity is improved to scan nearby surroundings. |

Psychological responses

In addition to physiological reactions there is also a psychological component to fight or flight response. Automatic reactions include a quickening of thought and an attentional focus on salient targets such as the source of the threat and potential avenues for escape. Secondary psychological responses can include appraisals about the meaning of the body reactions. For example, patients with panic disorder often misinterpret fight or flight responses as signs of impending catastrophe (“I’m having a heart attack”, “If this carries on I’ll go mad”).

History of the fight or flight response

The fight or flight response was originally described by American physiologist Walter Bradford Cannon in the book *Bodily changes in pain, hunger, fear and rage* (1915). He noted that when animals were threatened, by exposure to a predator for example, their bodies released the hormone adrenaline / epinephrine which would lead to a series of bodily changes including increased heart rate and respiration. The consequences of these changes are increases in the flow of oxygen and energy to the muscles. Cannon’s interpretation of this data was that there were emergency functions of these changes. He noted that they happened automatically and they served the function of helping the animal to survive threatening situations by readying the body for fighting or running.

A more modern understanding of the fight or flight response is reflected in the work of Schauer & Elbert (2010). Their more elaborated model of physiological / psychological / behavioural responses to threat is termed the ‘defence cascade’. They describe a series of stages which individuals exposed to threat or trauma may go through, including: freeze, flight, fight, fright, flag, and faint.

Why the fight or flight response is important

The physiological responses associated with fight or flight can play a critical role in surviving truly threatening situations. However, many patients suffering from anxiety disorders or other conditions may have threat systems which have become over-active, or which are insufficiently counterbalanced by activity in the parasympathetic nervous system.

Practically, many patients who suffer from anxiety will benefit from a deeper understanding of the fight or flight response. For example, patients with panic attacks or panic disorder often misinterpret the bodily signs associated with fight or flight as signs of impending catastrophe and understanding the fight or flight response is therefore a helpful ‘decatastrophising’ technique. Similarly, patients with post-traumatic stress disorder (PTSD) may mistake the increased physiological arousal as an indicator that there is a genuine threat present: understanding more about the fight or flight response can help them to feel safer, and to implement relaxation and grounding strategies.

Instructions

This is a Psychology Tools information handout. Suggested uses include:

- Client handout – use as a psychoeducation resource.
- Discussion point – use to provoke a discussion and explore client beliefs.
- Therapist learning tool – improve your familiarity with a psychological construct.
- Teaching resource – use as a learning tool during training.

References

Cannon, W. B. (1915). Bodily changes in pain, hunger, fear, and rage. New York: Appleton-Century-Crofts.

Schauer, M., & Elbert, T. (2010). Dissociation following traumatic stress. *Journal of Psychology*, 218, 109-127.

Fight Or Flight Response

When faced with a life-threatening danger it often makes sense to run away or, if that is not possible, to fight. The *fight or flight response* is an *automatic* survival mechanism which prepares the body to take these actions. All of the body sensations produced are happening for good reasons – to prepare your body to run away or fight – but may be experienced as uncomfortable when you do not know why they are happening.

Thoughts racing

Quicker thinking helps us to evaluate danger and make rapid decisions. It can be very difficult to concentrate on anything apart from the danger (or escape routes) when the fight or flight response is active.

Changes to vision

Vision can become acute so that more attention can be paid to danger. You might notice 'tunnel vision', or vision becoming 'sharper'.

Dry mouth

The mouth is part of the digestive system. Digestion shuts down during dangerous situations as energy is diverted towards the muscles.

Heart beats faster

A faster heart beat feeds more blood to the muscles and enhances your ability to run away or fight.

Nausea and 'butterflies' in the stomach

Blood is diverted away from the digestive system which can lead to feelings of nausea or 'butterflies'.

Hands get cold

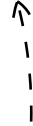
Blood vessels in the skin contract to force blood towards major muscle groups.

Muscles tense

Muscles all over the body tense in order to get you ready to run away or fight. Muscles may also shake or tremble, particularly if you stay still, as a way of staying 'ready for action'.

If we don't exercise (e.g. run away or fight) to use up the extra oxygen then we can quickly start to feel dizzy or lightheaded.

Dizzy or lightheaded



Breathing becomes quicker and shallower

Quicker breathing takes in more oxygen to power the muscles. This makes the body more able to fight or run away.

Adrenal glands release adrenaline

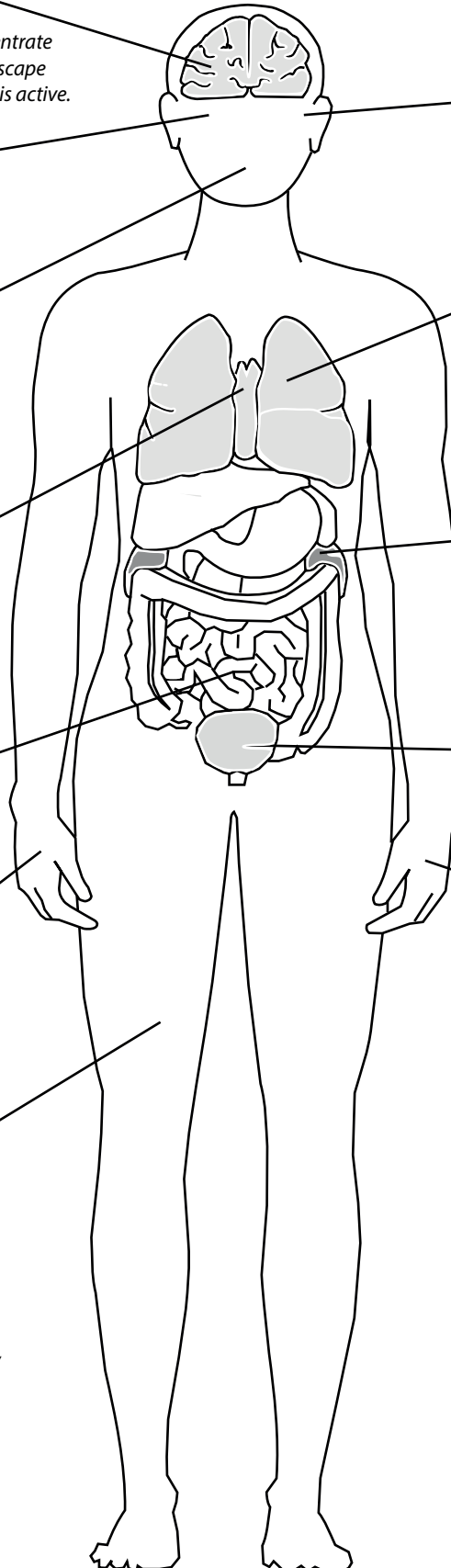
The adrenaline quickly signals other parts of the body to get ready to respond to danger.

Bladder urgency

Muscles in the bladder sometimes relax in response to extreme stress.

Palms become sweaty

When in danger the body sweats to keep cool. A cool machine is an efficient machine, so sweating makes the body more likely to survive a dangerous event.



Resource details

Title: Fight Or Flight Response

Language: English (GB)

Translated title: Fight Or Flight Response

Type: Information handout

Document orientation: Portrait

URL: <https://www.psychologytools.com/resource/fight-or-flight-response/>

Terms & conditions

This resource may be used by licensed members of Psychology Tools and their clients. Resources must be used in accordance with our terms and conditions which can be found at: <https://www.psychologytools.com/terms-and-conditions/>

Disclaimer

Your use of this resource is not intended to be, and should not be relied on, as a substitute for professional medical advice, diagnosis, or treatment. If you are suffering from any mental health issues we recommend that you seek formal medical advice before using these resources. We make no warranties that this information is correct, complete, reliable or suitable for any purpose. As a professional user, you should work within the bounds of your own competencies, using your own skill and knowledge, and therefore the resources should be used to support good practice, not to replace it.

Copyright

Unless otherwise stated, this resource is Copyright © 2020 Psychology Tools Limited. All rights reserved.