

• • • Your 'at a glance' guide to staying healthy for life By Quest Vitamins • • •

Modern life is fast paced; most of us are juggling a demanding job, a family and a social life. This level of continuous stress puts considerable strain on the body, increasing nutritional requirements in circumstances where eating properly and exercise are low priority. Stress is an inevitable part of modern life; however certain key nutrients help the body to react appropriately to both short term and chronic stress.

## Stress

What we define as stress is the physiological response of the body to a situation or stimulus which is perceived as "dangerous". When stress is constant it adversely affects both physical and mental health.

The immediate response to stress is known as "fight or flight". When a stressful situation occurs the hypothalamus, a tiny region at the base of your brain, sets off an alarm system.

Through a combination of nerve and hormonal signals, this system stimulates the adrenal glands, situated atop your kidneys, to release a surge of hormones — the most abundant being adrenaline and cortisol.

Working together, adrenaline and cortisol ensure the generation of extra energy to deal with the stress; heart rate and blood pressure increase, the release of carbohydrate stores (glycogen) and the breakdown of protein for energy increases. Cortisol also curbs functions that would be nonessential or detrimental in a fight-or-flight situation; it suppresses the immune, digestive and reproductive system and growth processes. Once the trigger is gone stress hormonal levels drop and the body returns to normal.

Most triggers of the stress response in the modern environment however are psychological and tend to be prolonged; the long-term activation of the stress-response system, and the subsequent overexposure to cortisol and other stress hormones, can disrupt almost all body processes, increasing the risk of obesity, insomnia, digestive problems, heart disease, depression, memory impairment, physical illnesses and other complications.



## The Busy B's

**Pantothenic acid:** Pantothenic acid is used to synthesise the important molecule coenzyme A. A form of coenzyme A, acetyl-CoA, is used to manufacture cholesterol, from which steroid hormones including cortisol are derived.

**Vitamin B6:** The active form of vitamin B-6 is pyridoxal-5-phosphate (PLP), which acts as an essential assistant for a number of enzymes (enzymes kick-start chemical reactions). PLP is required for the synthesis of the "feel good" neurotransmitter serotonin from the protein tryptophan.

Other neurotransmitters, such as dopamine, norepinephrine and gamma-aminobutyric acid (GABA), are also synthesized using PLP-dependent enzymes. Neurotransmitters have profound effects on mood and motivation, influencing our perception of, and reaction to, stress.

In addition PLP binds to receptors for steroid hormones in cells, competitively inhibiting the binding of steroid hormones and reducing their effects; this may have significant implications for the treatment of stress.

Information created by Quest Vitamin's Nutritionist. Questions and Comments please email us; [nutritionists@questvitamins.co.uk](mailto:nutritionists@questvitamins.co.uk)

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# Stress & Anxiety

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## B-Complex

There is evidence that high doses of B-complex vitamins can reduce the immune-suppressing effects of stress.

The B-vitamins are inter-dependant and work optimally to promote normal energy metabolism and mental health.

## Additional support

Vitamin C is involved in the metabolism of the amino acid tyrosine, used to synthesize the neurotransmitter dopamine, from which adrenaline is derived. Levels of vitamin C in the blood fall during periods of stress.

## Herbal support

St John's Wort is used very successfully as an anti-depressant.

The adaptogenic herb rhodiola has an observed ability to increase resistance to stress. Valerian is widely used to treat anxiety and insomnia.

## Omega-3 fatty acids

The omega-3 fatty acids DHA and EPA, found in oily fish, have profound effects in the body.

EPA serves as a source of active eicosanoids, chemicals with major regulatory roles in blood pressure, blood clotting, inflammation and neurotransmission.

The fat content of the retina and of grey matter in the brain is high in DHA; DHA is incorporated into the fatty membrane surrounding cells, it has a very flexible structure ensuring efficient transmission of signals between cells.

Fish oil supplementation has been found to decrease aggressive behavior and depression, both common symptoms of stress.

## Some life-style tips

Avoiding stress is difficult but there are a number of steps you can take to help manage it.

- ✓ Avoid skipping meals
- ✓ Eat a balanced diet rich in whole-grain carbohydrates and high quality protein such as organic chicken, eggs and oily fish; this will help prevent blood sugar fluctuations that exacerbate stress.
- ✓ Get moving! Exercise is a great stress buster and results in the production of feel-good substances called endorphins.

**Modern life is stressful, key supplements can help the body to respond appropriately and manage continuous strain.**

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