

## FEELING STRESSED?

With the pressures of today's busy lifestyle, stress has become an ever increasing cause of disease. In fact most of the leading causes of illness in our western world can be blamed on our inability to cope with stress.

The HPA axis is the term used for three parts of our body that are designed to deal with stress. At KingsWilliam, we can help restore your system to normal balance. This allows many of the symptoms of chronic stress to improve, or in many cases to disappear all together.

### About the HPA

H stands for hypothalamus, P for pituitary gland and A for adrenal glands.

#### **Hypothalamus:**

The hypothalamus is the first in charge. It's the part of the brain that controls the pituitary and adrenals. It decides whether a stress response should be started. It also helps to regulate some hormonal rhythms.

#### **Pituitary Gland:**

The pituitary is the second in charge. It's the part of the brain that releases various hormones under the direction of the hypothalamus. The hypothalamus and the pituitary link the body's nervous system (the brain and nerves) to the hormonal system.

#### **Adrenal Glands:**

The adrenal glands are under the control of the hypothalamus and pituitary. Their main function is to regulate our body's stress response. They make several hormones, including adrenalin and cortisol.

Under normal conditions the HPA axis helps us respond to immediate short-term stress, such as a threat of physical danger.

The stress message is received by the hypothalamus which then activates the "fight or flight" part of our nervous system. It directly influences the adrenals and stimulates them to release adrenalin. At the same time, the hypothalamus sends a signal which tells the pituitary and adrenals to release certain stress hormones.

This combined nervous system and hormonal response causes changes in our body to help us deal with the acute stress.

These changes include:

- A faster heart rate so that blood is diverted to the muscles in case we need to move away quickly.
- Blood volume increasing to prepare for excessive sweating, or loss of blood.
- Carbohydrate and fat stores are mobilized to provide more energy.
- Airways get bigger to allow more air into the lungs.
- Metabolic rate increases to provide energy.

All of these changes produce a “fight or flight” response that helps us to avoid physical harm. Once the source of stress has been avoided, these changes return to normal.

The HPA axis responds well to short-term stressors where a rapid physical response is required. However, most of the things that stress us in today’s world are not physical, and can be long lasting. For example, conflict with a loved one or co-worker, anxiety about finances or an impending exam, frustration about sitting in a traffic jam are the more common types of stressors we come across today. Our HPA axis can’t tell the difference between a short-term physical stress and nonphysical stress, so it responds to both in the same way. This means that in today’s busy, stressful world our HPA axis is being activated more frequently and for longer periods than simply to avoid an immediate physical threat.

Under conditions of chronic stress, the effect of having our HPA axis activated for long periods of time can be harmful:

- There are increased demands on the heart and blood vessels, and increased blood volume. This can lead to high blood pressure and heart disease
- The demand for mobilization of carbohydrates and fats over the long term leads to an increase in blood sugar. This can lead to carbohydrate intolerance and blood sugar problems.
- Long term release of cortisol and adrenalin from the adrenal glands leads to suppression of the immune system. This leads to increased susceptibility to colds and flu and allergies.
- Prolonged exposure to cortisol can affect part of the brain, resulting in problems with memory, spatial awareness, and mood changes.
- Chronic activation of the HPA axis stress response leads to an increase in inflammation in the body. This can produce aches and pains, as well as poor gut function, constipation and/or diarrhea.
- Long-term stimulation of the hypothalamus and pituitary can lead to complex hormonal changes. These changes can affect thyroid function and contribute to menstrual problems in women, and infertility.

As you can see, chronic stress can have a very serious effect on your body. Once the HPA axis has been unbalanced for a long time it can be very difficult for it to return to its normal state. The HPA axis protocol at KingsWilliam Chiropractic restores this system to its healthy balanced state. This allows many of the symptoms of chronic stress to improve, or in many cases to disappear all together.