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## Stress

Who doesn't experience stress? Not many in our harried and hurried society. It's a matter of how much stress and our individual response to it. The effects of stress are many and can cause havoc within our bodies.

### An Overview Of Stress

Stress is defined as a physiological or emotional response to change or threat. A threat can be emotional, psychological or physical. It can be real or imagined. It can be in the past, present or future. The body's response is the same in every situation. Ongoing stress depletes the health reserve capacity of an individual, consequently increasing their vulnerability to health problems.

### The Stress Response

It's important to know about the body's response to stress so its impact on health can be understood. The following example is a way to grasp what's happening in your body when it is under stress: imagine you are living in caveman times. See yourself out there in the woods, foraging for food. You hear a noise, look up and a huge grizzly bear is coming towards you. It wants you for

dinner. In this situation the body has a very primitive response called 'fight or flight'. In other words you either stay and fight the bear or run away to save your life. Nowadays we don't face grizzly bears but we do face deadlines, traffic jams and information overload. Whilst none of these stressors are life-threatening, the body responds the same way, providing you with the means for fight or flight by secreting chemicals that maximise your potential to save yourself.

What happens in the body? The sympathetic nervous system is stimulated, producing adrenaline and noradrenaline from the adrenal glands. Your adrenal glands are also stimulated to produce a chemical called cortisol. Ideally cortisol is raised temporarily (15 – 20 minutes) until the threat has passed, then returns to normal. However in chronic stress cortisol levels remain high—the body's fight or flight response doesn't switch off. If this continues, the body becomes resistant to cortisol's message—stress hormone levels remain high, damaging health. This resistance to the body's stress messages is a reason high blood pressure is often found in stressed individuals.

When stress is experienced, the body rapidly mobilises fat, carbohydrates and protein for a speedy energy surge. This is a catabolic reaction—tissues are broken down. Testosterone and DHEA—anabolic hormones—decrease. Heart rate increases, blood pressure goes up, breathing rate rises, body temperature goes up causing sweating, and feelings of anxiety, nervousness, irritability, headaches or heartburn can be experienced.

One way to 'escape' the stressor is to exercise. This will trick our body into thinking we are escaping the threat.

THE ability to respond to challenges—the 'stressor'—utilises the body's coping mechanism, and is called adaptation. Adaptation is unique to each individual. There are a number of factors that influence a person's ability to adapt to stress, among which are physical and mental health status.

### What Are The Consequences Of Chronically Raised Cortisol Levels?

- Muscle breakdown (catabolism)
- Insulin resistance
- Increased appetite
- Suppressed serotonin production, the body's feel-good hormone, which can lead to mild depression and carbohydrate cravings
- Increased abdominal fat deposits
- Muscle weakness
- Decreased immunity

Ironically, stress is so common in modern society it isn't considered to be a health condition in itself. However, not only is it a stand-alone condition, it can lead to other chronic health conditions such as cardiovascular disease, obesity and blood sugar dysregulation.

## Signs And Symptoms Of Stress

- Flushed face at rest
- Agitation / anxiety
- Abdominal weight gain
- Inability to lose weight
- Inability to focus for longer periods of time
- Muscle loss / inability to gain muscle
- Insulin resistance
- Poor quality sleep
- Fatigued
- Teary / emotional
- Frequent infections – colds/flu, etc.

## Consequences Of Stress

The consequences of unaddressed chronic stress have the potential to be dire. Top of the list are cardiovascular disease, diabetes and depression. It is beyond the scope of this book to go into detail, suffice to say if you suspect your client is dealing with stress, they need all the support they can get, from you as their PT and other health professionals.

## Case History – Robert

Robert is a great example of the young stressed executive. He is typical of many men of his age group. He is 38, married with two young children and a demanding job. He is always very busy at work, and even though he loves his job, he feels constantly on the back foot in terms of getting on top of his work load. Robert regularly goes to the gym to release some of this stress and maintain his fitness. Physical activity, especially vigorous physical activity, is a great way to 'burn off' stress hormones.

Nevertheless, recently not only has Robert's blood pressure gone up, he is starting to gain weight around his abdomen.

Abdominal fat (visceral fat) has an abundance of cortisol receptors. Keep in mind that when cortisol goes up so does insulin. When insulin is raised fat cannot be burned and is deposited instead around the abdomen. This is the most dangerous fat of all because it is metabolically active. That means that abdominal fat, unlike fat on the thighs or buttocks, releases its own biochemicals such as hormones and triglycerides, into the bloodstream. This is why men with big bellies often have 'man boobs' because one of the hormones released by abdominal fat is estrogen, the feminising hormone. Cortisol also breaks down muscle and Robert is starting to 'go soft' in places that he wasn't before. He is understandably not happy about this.

Until Robert recognises and addresses his stress levels, his body will hold on to his abdominal fat, stubbornly resisting his exercise efforts to reduce.

## Who Stress Is Most Likely To Affect

Stress can affect all ages, both genders and people in all walks of life. Whilst we think of stereotypical scenarios such as the stressed executive, and they are worthy of that attention, mothers with young children often go unrecognised as one of the most stressed groups in our community, as are carers of the sick and elderly. Teenagers and University students also exhibit signs of stress, particularly around examination time.

## Relevant Questions To Ask Your Client

- On a scale of one to ten, one being relaxed and ten being completely stressed out, how would you rate your stress levels?
- How long have you felt this level of stress?
- How often do you feel stressed?
- What relaxes you?
- Do you take any medications for blood pressure?

- How do you cope with your stress?
- Is that a healthy or unhealthy coping mechanism?
- What could you do that is a better coping mechanism for your stress?

## Referrals And Recommendations

If the client is taking blood pressure medication it's very important that the GP monitors this. The Naturopath can also do regular blood pressure and assist with dietary and lifestyle strategies.

Exercise is a great way to release stress, reduce weight and decrease blood pressure. Over time, blood pressure medication may potentially be reduced or even discontinued, *on medical advice only*. Having said that, over-exercising can be an added source of stress. Keep in mind that strenuous exercise is a physical stress that will cause cortisol levels to rise. The body needs time to rest and recover and PT's need to be mindful of their clients who may be overdoing it and advise them accordingly. Including some stretching and focused breathing at the end of a session can be beneficial, especially for those who tend to push themselves hard during their workouts.

## The Bottom Line

Stress is endemic in our western society. It is extremely damaging to health, causing havoc in our bodies, sometimes catastrophically so. It is the number one symptom set for PTs to be mindful of when dealing with clients and should not be underestimated.