Stress, Health and Osteopathy

The subject of this article is stress, its effects, and how osteopathy can help with its physical manifestations, thus enabling us to cope with it better. I see a great deal of patients for neck, shoulder and upper back pain, a significant number for whom stress is a major contributing factor. Aching shoulders, neck and back go hand in hand with feeling stressed, overstretched or fatigued, and only serve to make us feel less comfortable, more tired and less able. It's pretty well accepted that feeling stressed makes our muscles feel tighter; but what is the reason for the tension, and how can osteopathy help?

Most of us are familiar with the expression the 'fight-or-flight' response. It is this response that is initiated in a situation such as being attacked by a dog. The responses are immediate, mobilising the body's resources for immediate physical activity. The integration of the stress response, which takes place in the central nervous system, is complex, and not well understood. It relies on communication along neuronal pathways between several different centres in the brain, which then modulate responses to the body's organs via the autonomic nervous system (the nervous system that controls our body's systems unconsciously, such as digestion and heart rate) and the endocrine (hormonal) system. So, when we encounter a stressful stimulus – having to make a speech or presentation, for example – the various centres in the brain mount their response to the stress, and we may experience a host of effects such as increased heart rate and rate of breathing, sweating, dry mouth, increased muscle tone etc. We may view these as disadvantageous to our giving a good performance, and indeed, when the stress response is too great, this is sometimes the case. But the stress response has benefits too: for example, our cognitive abilities and level of attention are also raised. More importantly, it is exactly the same response that is launched should the body encounter almost any disturbance – be it extreme heat or cold, heavy bleeding from a wound or surgery, or a strong emotional reaction – and is the body's attempt to best regulate itself when its normal physiological limits are challenged.

The 'fight-or-flight' response is short-lived and largely mediated by nerve impulses. But if the stress continues, our hormonal systems become involved to help regulate the body. Cortisol is one of the main hormones involved and initiates a host of effects designed to get the body through the threat it is under. Interestingly, cortisol depresses inflammation and the immune response in general, so that neither become disruptive to "getting through" or protecting oneself; so prolonged stress lowers our immunity to infection and disease. Generally though, this 'resistance stage' is successful in seeing us through a stressful episode, and our bodies return to normal.

Chronic (ongoing, unresolved) and severe stressors may deplete the hormonal and other mechanisms of resistance and eventually lead to their failure to maintain the body within its physiological limits, resulting in what Hans Seyle (a pioneer in stress research) termed the 'exhaustion' stage. Alternatively, pathological changes may occur because resistance mechanisms persist and become habitual. In other words, stress-related diseases such as irritable bowel syndrome, hypertension, asthma, stomach ulcers, and depression, may result from a prolonged reaction to stress.

Hopefully, things don't go that far, though we probably all know people who have at some time suffered with stress-related diseases. For most of us the results of stress are limited to muscle pain and tension, fatigue, disturbed sleep, tension headache, tightness in the chest and upper back (due to shortening of muscles of respiration: a result of increased rate of breathing, or hyperventilation, over a period of time due to high levels of cortisol circulation in our blood), and perhaps the flare-up of a previous problem due to increased traction on the area caused by tight muscle. And of course, it tends to be the case that one's attention to good posture goes out the window when rushing to fulfil a deadline or suchlike, and so our already tense bodies suffer further assault.

Sometimes we find ourselves extremely stressed or anxious for one reason or another and removing the stressor from our lives is not always an option. One of the basic tenets of osteopathy is that the mind and body are interdependent. The stress response is a very good example of the direct effect of our emotions on our body. But it works the other way too: feeling good in one's body, being able to breathe comfortably, feel energised and free of pain, has a powerful effect on one's ability to cope, sense of wellbeing, and level of optimism. Muscle that is sustained in greater tone or tension than necessary is a huge drain on the body's energy resources. It is also painful, due to a build up of waste products such as lactic acid, and because blood does not penetrate tight muscle very well causing ischaemic pain (pain due to lack of blood). Alleviating muscle tension with massage and stretching techniques restores normal tone to the muscle, thereby freeing up considerable energy and allowing the free-flow of blood through the muscle and reducing pain. Hyperventilation results in reduced carbon dioxide in the blood, and can lead to symptoms such as lightheadedness, dizziness, and headache. It will also lead to a feeling of tightness in the chest and back as the muscles responsible for respiration shorten and fatigue, and the ribs and thorax become restricted in their movement. Rib-stretching techniques and thrust techniques directed at the ribs and thorax, in addition to massage, are extremely effective at alleviating the restriction that results from overbreathing. In addition, there is the therapeutic effect of touch itself, which tends to calm and relax us - patients often report having a great night's sleep after treatment - and the sense of regaining some control having taken action to improve one's sense of wellbeing by having a treatment.