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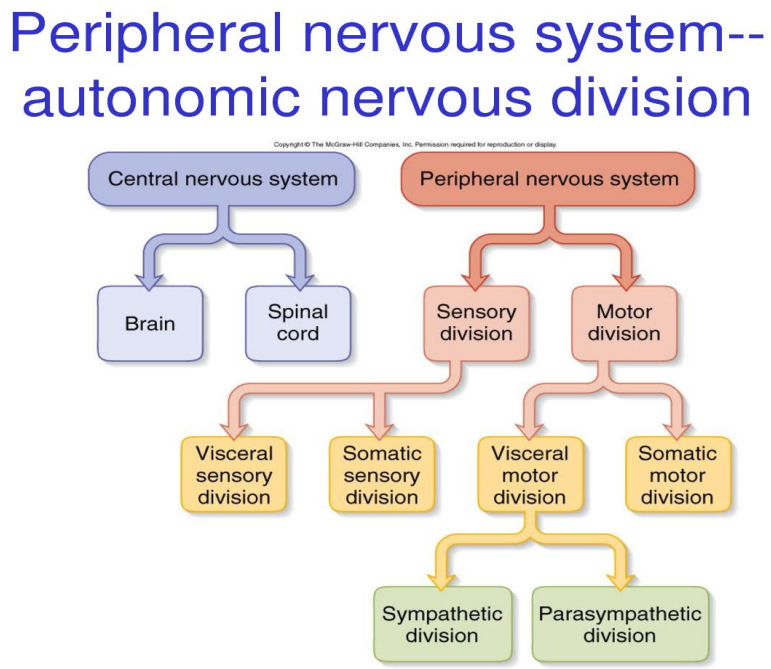
STRESS AND PAIN

The nervous system in the body consists of 2 parts:

1) The central nervous system (CNS)
2) The peripheral nervous system (PNS)



This handout focuses on the peripheral nervous system. The sensory division of the peripheral nervous system gives us sensation (pain, temperature, touch, pressure). The motor division is divided into:

1) the somatic part that gives us voluntary control of our muscles and allows us to move the different portions of our body at will.
2) the visceral part that controls many of out bodily functions (breathing, digestion, circulation, heart rate, sweat production etc.) without conscious effort.

The visceral motor division is also known as the Autonomic nervous system (ANS). The ANS has a significant influence on your immune, endocrine (hormonal), muscular, and nervous systems. It is run automatically and is primarily directed by the primitive parts of your brain, especially the brain stem. The ANS itself is made up of 2 components: the sympathetic and the parasympathetic systems.

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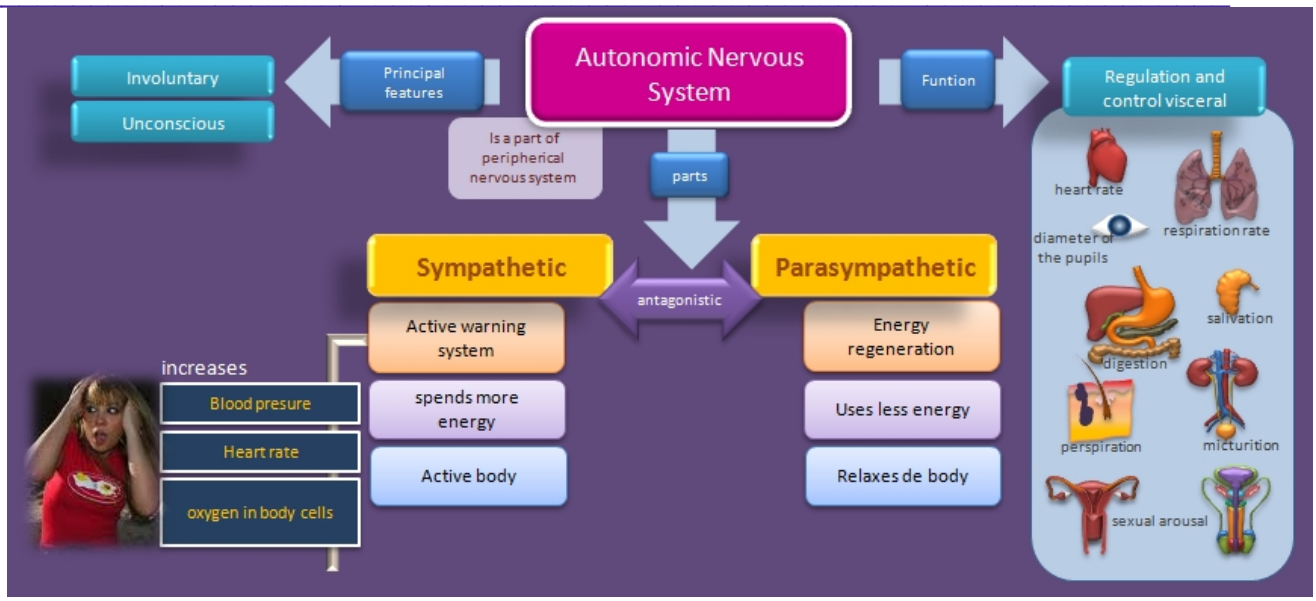


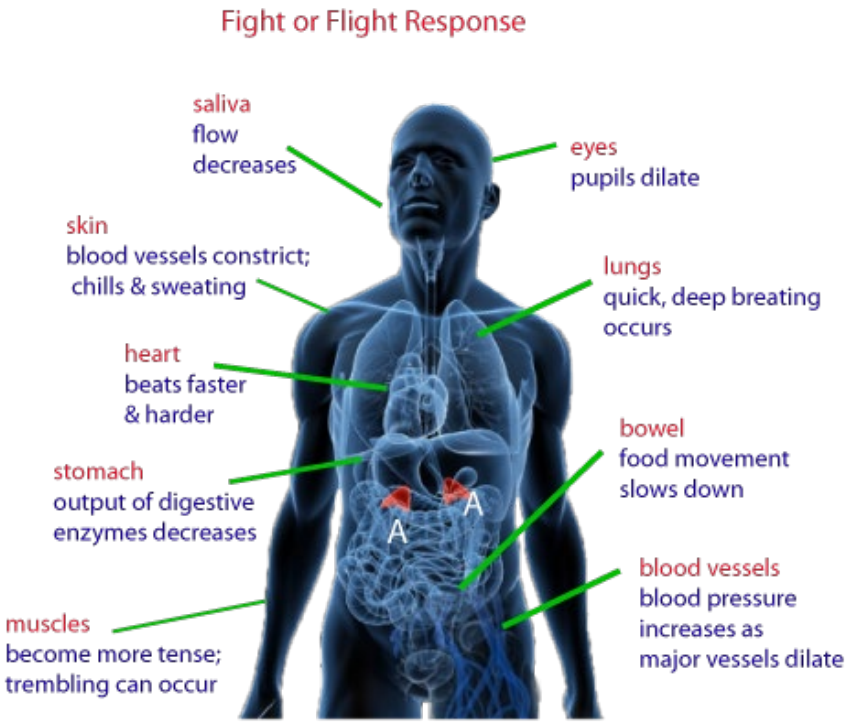
What is the function of the autonomic nervous system?

The sympathetic branch's role is protection. It does this through protective reflexes aimed at quickly altering body systems in order to respond to danger. Hence, it is commonly referred to as the "fight or flight" response. The parasympathetic branch's role is energy regeneration. It does this through calming and relaxing the body. Hence, it is commonly referred to as the "rest and digest" response.

What has this got to do with my body aches and pains?

The answer to this question involves exploring the sympathic system in more detail. Normally, the sympathetic system kicks in when you are in danger, for example, when a dog runs out snarling and barking at you unexpectedly.

The sympathetic system ramps your body up to prepare it for action (fight or flight) by doing the following things:

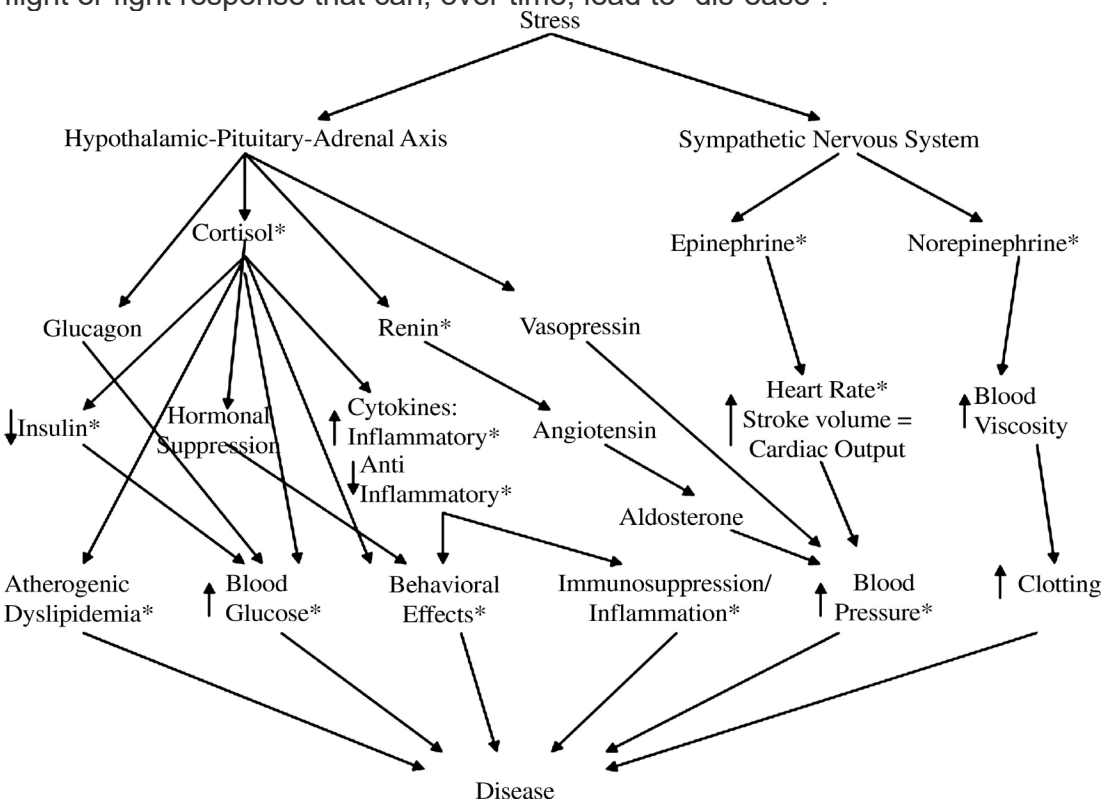


This is the classic adrenaline response that gets your heart pounding and body ready for action. This response is usually short lived and calms down (via the parasympathetic system) once you are out of harms way.

Unfortunately in our modern world we have too many stressors that the body perceives as life threatening. These stressors can include a job interview,

transport delays, work pressures, difficult family issues, a job you do not like, fear of redundancy, fear of loneliness, fear of a meaningless life etc.

So even though a transport delay isn't necessarily a life-threatening situation, the body may deal with the stress in the same way it handled the dog chase. The body activates your fight or flight response, causing chemical and physiological changes in your body. When we don't complete the act of fight or flight, these stressors get trapped in our body. Unlike the dog chase, the stressors in our modern world may be too often, too long and/or too intense and so we never really get out of harm's way and don't get sufficient downtime (parasympathetic). It is this constant exposure and subsequent activation of the flight or fight response that can, over time, lead to "dis-ease".



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Now add to this, real dangers such as a car accident, trauma, surgery, etc. and you can see how your nervous system becomes one-sided, operating primarily out of the sympathetic mode.

When we operate from the sympathetic mode, our primitive protective muscles (primarily in the head, neck, and spine) carry increased tension and tone ready for action. This does not allow them to relax, causes metabolic changes in the tissues, and can be a major factor in persistent pain. Add in the other systems affected by an over active sympathetic nervous system and you get changes throughout your body that can cause cognitive problems, fatigue, gut problems, sleep issues, depression, anxiety, and a host of systemic problems that are difficult for physicians to find a cause for.

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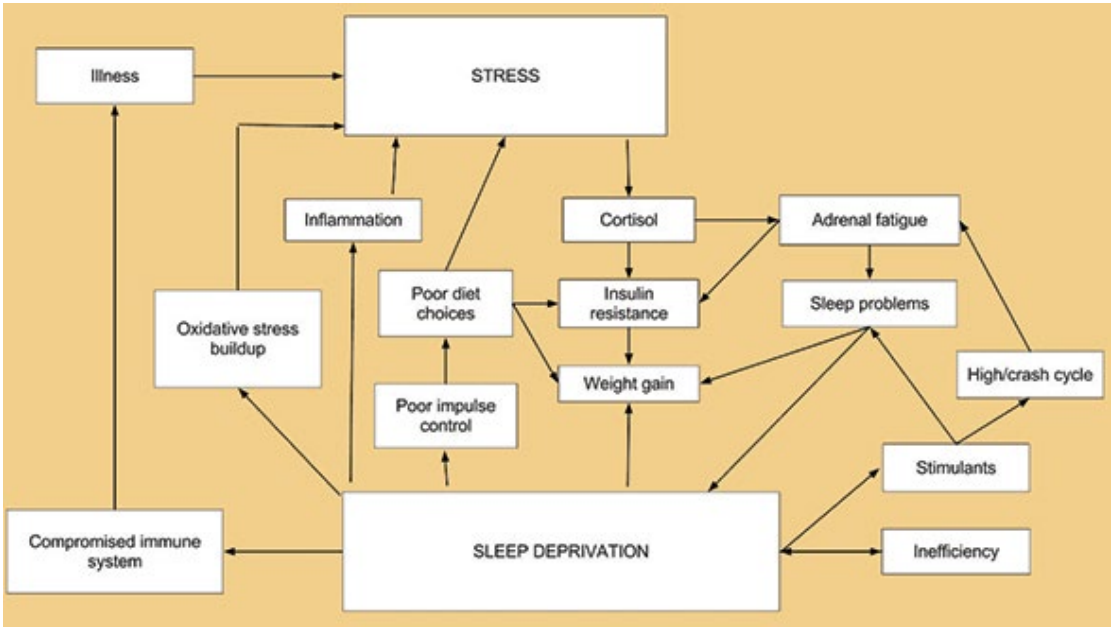
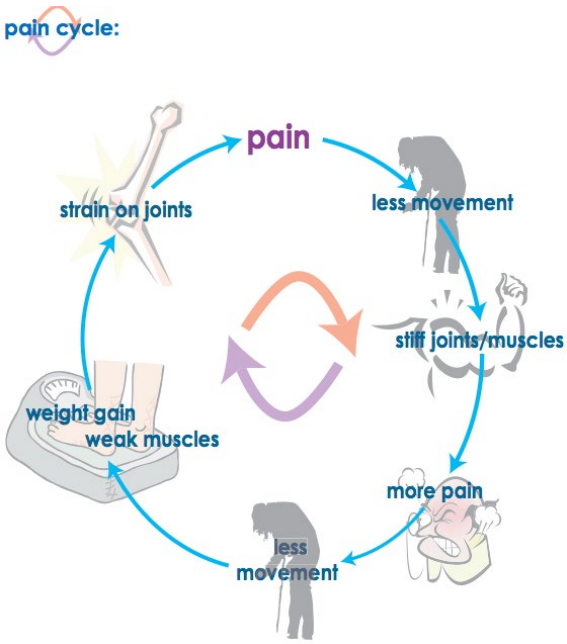
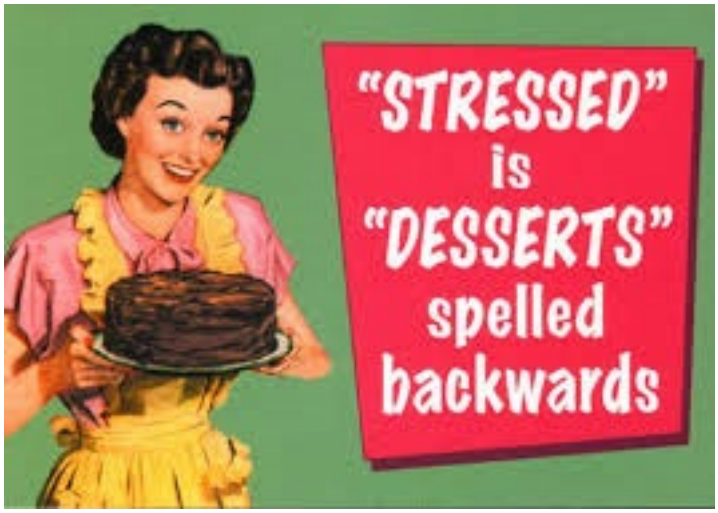
These all compound to create numerous unhealthy cycles on a:

1) Physical level – boom/bust or high/crash cycles; decreased sleep; increased pain; increased weight etc.







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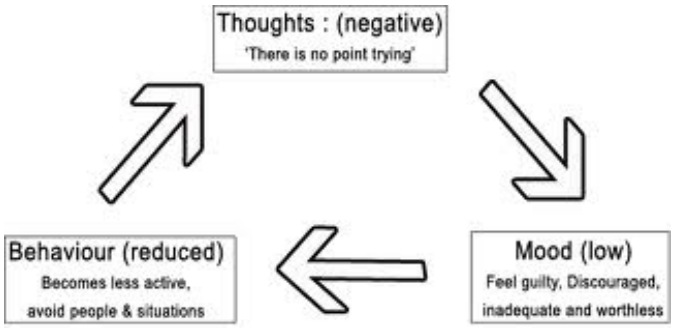
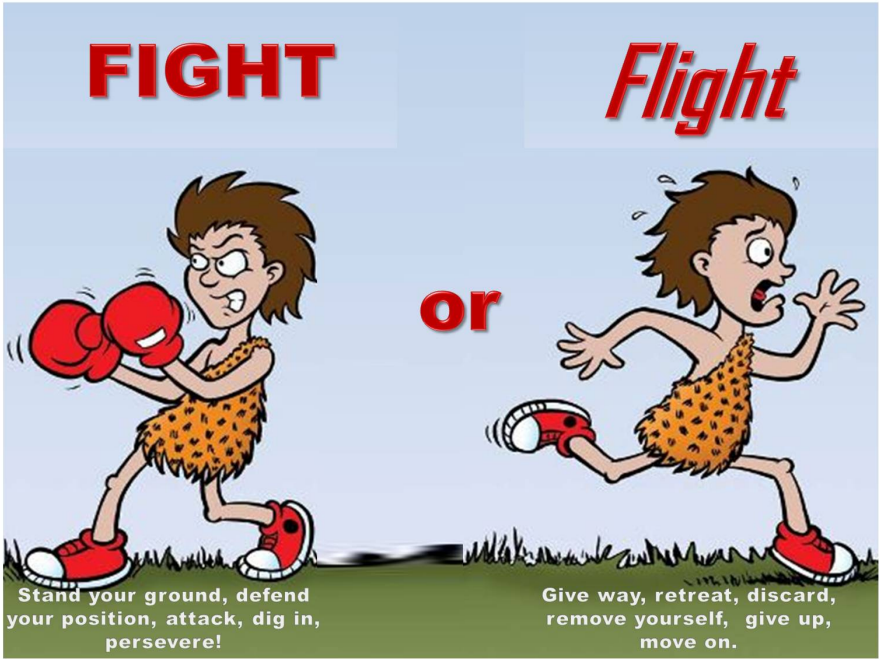
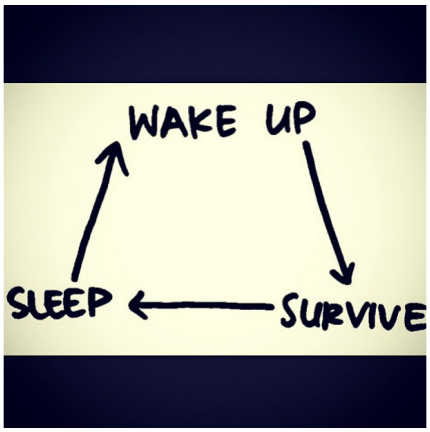
2) Mental level – negative thoughts, feelings and behaviour





3) Life level – life becomes mundane and you feel “stuck in a rut” or “lost”.



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How do I know that my autonomic nervous system is not functioning properly?

A plethora of systemic symptoms have already been mentioned (fatigue, IBS, depression, anxiety, repeated minor infections, lingering colds etc.) But from a musculoskeletal pain perspective, your affected body part or related body part may:

- be cold to touch
- be hypersensitive to touch (with or without goose bumps)
- have tender points in muscles (trigger points or knots)
- have excess sweating
- have associated hair and or nail loss

Can I get my my dysfuntional autonomic nervous system to starting working propely again?

Yes, you can by getting to the root of the problem instead of chasing the symptoms. By reprogramming and rebooting the Autonomic Nervous System, we can allow the body to function like it was designed to function. This includes a relaxed nervous system, relaxed muscles, positive thoughts and feelings, and body systems operating in a balance of stimulation and rest. The body is really an amazing creation, and given the environment it was designed to operate around, it can perform miracles.

How can this be done?

A comprehensive assessment can determine the most appropriate course of action for you. A multidisciplinary approach is then helpful in addressing the various contributing factors and treatment may consist of:

- Education
- Relaxation and visualisation
- Graded motor imagery
- Re-education of a healthy breathing pattern
- Acupuncture
- Electrotherapy
- Manual therapy (massage, joint manipulations)
- Graded exercise
- Life coaching (cognitive-behavioural coaching, NLP etc.)
- Ergonomics
- Postural correction
- Re-education of healthy movement patterns
- Medication
- Other support

Please chat to your physiotherapist about the options that are appropriate for you.