



## Physiotherapist's Explanation Of System Wind-Up

Many people are aware that a dysfunction in the muscles, joints, bones or nervous system can lead to injury within the human body. However, it is not well publicised that thoughts, emotions and behaviours can also lead directly to injury and pain within the body. When we recognise the primary cause to a condition can be these factors, we have the chance to address them.

The concept of wind up occurs in the body when there is too much tension/electrical-impulse activity within the neural system of the brain & spinal cord. This wind up can be likened to the tension in a spring; there is an optimal range, above which there is an increase in stress which can lead to overload & dysfunction. Too much wind-up can be the primary cause of a condition or a result of a condition, and this is what we at Moore Health can help you determine.

### How can we recognise Wind-Up?

Activities which cause this increase in negative signals arise from different areas within the mental and physical regions of the body such as:

**Thoughts** ⇒ Hyper-vigilance, unhelpful beliefs, mismatching ideas, unhelpful expectation, lacking confidence in what the problem is and how to fix it, memory of pain

**Feelings** ⇒ Frustration, stress, worry, anxiety, fear, depression

**Actions** ⇒ Self massage, excessive joint cracking, jittery movements, overdoing it, excessive stretching, excessive rib-cage breathing

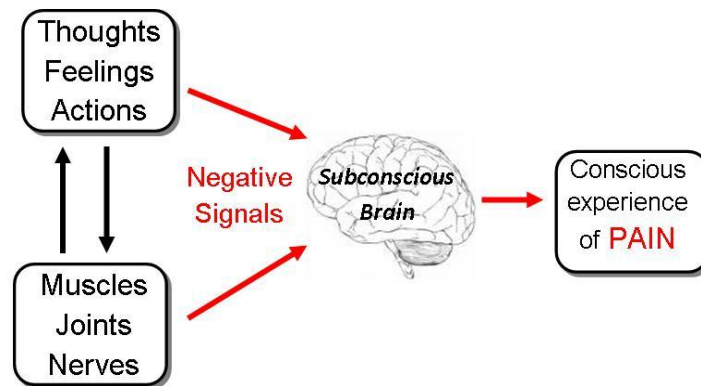
**Muscles** ⇒ Tight, ache, spasm

**Joints** ⇒ Stiff, clicking, cracking, giving way

**Nerves** ⇒ Pins/needles, shooting pain, burning sensation

**Organ Conditions** ⇒ Immunological, illness; endocrinological, hormonal

Dysfunction of each of these parts of the system results in negative signals informing the brain of an 'unhappy state':



The above diagram shows the interactions between the mental & physical systems of the body and how these influence the brain & pain processing. For example an increase in mental stress from **anxiety**

can lead to an increase in muscle tension around a body part (e.g. the neck-shoulder muscles or low back muscles) however another example maybe anxiety and joint stiffness leading to an **action** of excessive behaviour of joint cracking.

Some of the most common categories for our mental state directly influencing the musculoskeletal system are negative attitudes, unhelpful behaviours, worries about a diagnosis, negative emotions, family stressors, work stress, relationship stress and financial compensation stress.

When dysfunctional, these systems can transmit negative signals to the subconscious brain which contribute to “wind up” within the nervous system. Once this wind up is processed by the brain, and the tension in the 'spring' reaches a threshold, **the final outcome is the brain creating pain & discomfort**. This painful experience is our protection mechanism, an indicator that **something needs to change to turn off the negative signals**.

## What can be done about Wind-Up?

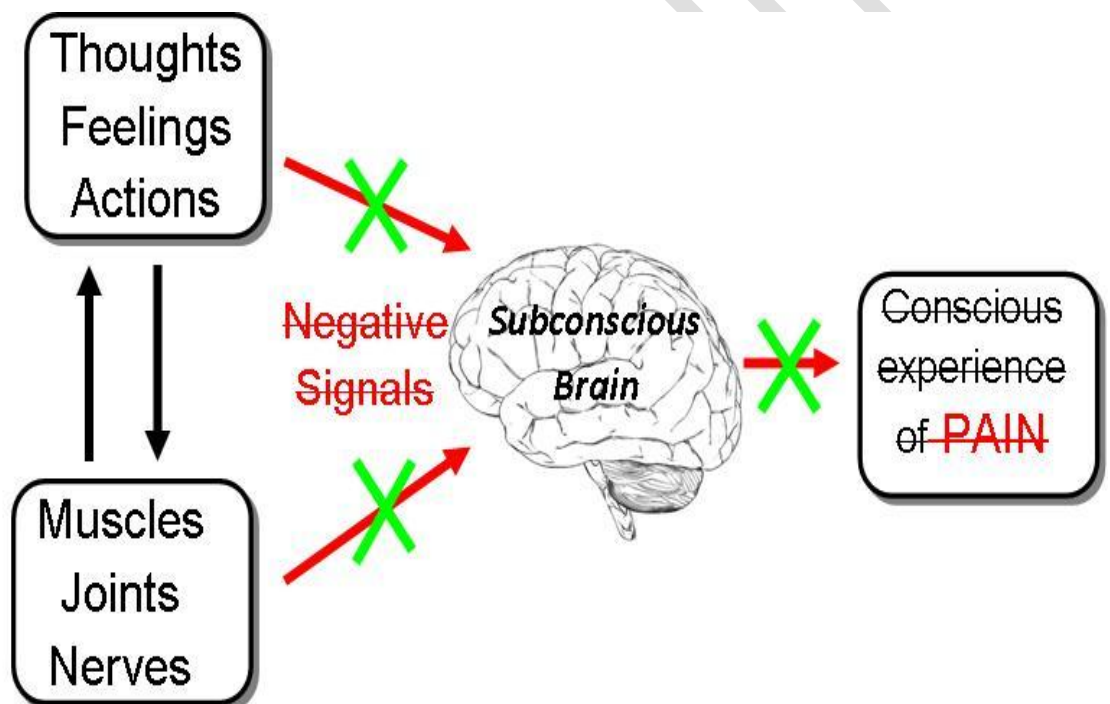
The negative signals to the brain can be turned off rapidly once the primary, or most significant, mental or physical factor is changed. In some conditions many of the above factors transmitting a negative signal have an accumulative affect on the nervous system. Therefore in order to solve wind up within the system, the most significant negative signals from the mental & physical components must be addressed. Addressing these components, and **making positive changes, is like releasing tension from the 'spring'** and allowing optimal function.

The physical components are addressed with good physiotherapy treatment/interventions to ensure muscles, joints and nerves are functioning in an optimal state. This is achieved most

rapidly with solving the most significant factor that contributes to a condition - we call this the Primary Contributing Factor (PCF).

The mental components can be changed in a number of ways ranging from physiotherapy treatment with pain education; specific behaviour modification; changing unhelpful thoughts and unhelpful beliefs; and in the more complex cases referral to a mental health expert. However **once the mental and physical components are tailored to the individual needs of each person, and addressed, there are no longer negative signals contributing to wind up within the system.**

The outcome of solving the components that lead to wind-up, is the brain not receiving as many negative (unhappy) signals and therefore there is less reason for the brain to create pain; as is seen in the below diagram:



Practically speaking, these changes can be as simple as learning that a condition which is creating pain is not a result of damaged tissue and it's best to continue work/training with confidence that injury won't result. In another similar condition causing pain it may be that continuing activity will create further damage, so learning this ensures the correct actions are taken to prevent further injury and continue with non-aggravating activities with confidence.

The **Ridgway Method** is a unique process for finding the Primary Contributing Factor (PCF), which is the most significant factor that is the underlying cause to a condition; whether it be physical or mental factor. The **Ridgway Method** is based on the newest, exciting research into brain processing and it's relationship to pain, that is being carried out by some of the world's top physiotherapy and

neuro-science researchers. If you would like more information or presentations on this topic to your coaches/athletes/co-workers then please feel free to [contact us](#) to arrange information sessions with practical outcomes.

At **Moore Health** we treat you using the **Ridgway Method**

***Important:** All information provided is the general opinion of highly qualified and experienced musculoskeletal physiotherapists. Individual conditions vary and advice regarding your specific condition requires consultation with a registered health professional.*

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