AMN CEREBELLUM MINI COURSE

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AMN Cerebellum Mini Course

As a high level personal trainer or therapist you have a desire to help the people you work with. If you're good at what you do, you most likely attract clients with bad knees, sore backs and sometimes very difficult, chronic pain problems.

To help your client base most effectively, a thorough understanding of how the body works is essential.

We're all taught and generally understand Movement and Pain from a biomechanics perspective, but there is a lot more to the workings of the body than these purely mechanical techniques are able to provide.

The future of the health, fitness/wellness industry lies in digging a little deeper

Would describe the first couple of layers. As you continue to peel your way through the layers, you will expose the inner workings behind the mechanics i.e, the neurology.

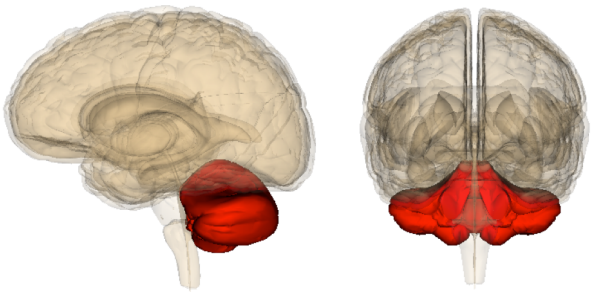
If you keep working your way through to the middle of the onion, you will find that the neurology itself is subject to the influence of another entire system of information that connects our bodies with the earth and the sun. This system is bioelectricity.

AMN practitioners learn how the neurological systems of the body control our movement. We then focus on learning how to communicate with the electrical communication networks which allows us to uncover the deepest of correlations between an ailing body part - the mechanical symptom and the rest of the body's physiology.

In this free mini course, we have put together an introduction to the future of the health, fitness and wellness industry to teach you about an important component of the controlling systems.

What is the Cerebellum?

The Cerebellum is a part of the Central Nervous System (CNS). A structure which lies at the back of the brain (the cortex) and at the top of the brainstem. If you place your hand across the very base of your skull, just above where it meets your Cervical spine, you are contacting the area which covers your Cerebellum.



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What does it do?

The Cerebellum is kind of a mini brain. It works closely with the Cerebral Cortex in modulating the Rate, Rhythm, Force and Accuracy of Movement. It is involved in coordinating the smoothness of our eye movements, thoughts, our balance and is even involved in the function of our hormonal and digestive systems.

If you deal with movement and muscles, especially when coaching people to build new movement patterns you are already working with the Cerebellum.

When we watch someone perform a movement and we decide to try that same movement for ourselves, the motor cortex in the brain produces a 'firing solution'. Based on what we have seen through observing someone else move, the brain shoots out an action plan of what to do.

One copy is sent to the spinal cord and on to the nerves which tell the muscles to contract, while an exact copy of that information is sent to the Cerebellum.

Its the Cerebellum's job to monitor, and then report back to the motor cortex as to how 'team muscle' performs. It then allows the brain to compare what you intended to happen with what actually happened.

Imagine the first time trying to play a musical instrument, what you want to play is generally not what comes out the first try. It's this process of comparing, and fine tuning that allows us to get more adept at motor tasks.

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Why does it matter?

The Cerebellum is important to the trainer or therapist because within its multitude of roles, it has developed some autonomy over the control of our muscles.

Specifically, the Cerebellum along with the balance system of the inner ear (the vestibular system) facilitates all of our extensor muscles.

When a muscle group is facilitated it has the capacity to contract, meaning when you decide to move in a certain way, be it a pull up or a sprint, the muscular system responds in the way you want it to.

The opposite of a facilitated muscle group is an inhibited one. Inhibited muscles mean that when you decide to sprint and your glutes don't fire properly, other muscle groups have to pick up the slack. Over time this increases injury risk, makes movement inefficient and can actually be what lies behind the 'poor mechanics' we see in our clients.

The Left Cerebellum reflexively-facilitates (switches on unconsciously) the Left extensors of the body

The Right Cerebellum reflexively-facilitates (switches on unconsciously) the Right extensors of the body

Understanding higher order systems that control the muscles of the body, allows us to improve performance, increase strength, rage of motion, reduce injury risk and improve pain presentations.

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What happens if it goes wrong

A decreased right cerebellum can lead to the following:

Muscle weakness

- Weak and poorly coordinated right spinal extensors
- Bilateral weak and poorly coordinated neck extensors
- Weak pelvic floor

- Decreased tone in right shoulder musculature, with a dominance of weakness to posterior muscles
- Weak right glutes
- Tight right psoas

Postural adaptations

- Right head tilt
- Right head rotation
- Rightward whole body rotation
- Right internally rotated shoulder
- Right internally rotated hip

Movement complaints

- Chronic neck and low back pain
- Recurring clicking/cracking/repeated minor subluxations of the spine
- Seemingly innocuous movements, injuring the back
- Inguinal and femoral hernias

Injury potential

- Right rotator cuff impingement/tendinitis
- Right lateral epicondylitis
- Right hip instability
- Right IT band syndrome
- Right trochanteric bursitis
- Recurring right ankle instability
- Right bunions
- Right plantar fascitis

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Why does it go wrong?

As you have already learned, the cerebellum is involved in the monitoring of movement information from the body and the modulation of the Rate, Rhythm, Force and Accuracy of those movements.

The vast majority of this movement information comes from muscle spindles. Muscle spindles are a hugely important part of the Peripheral nervous system (PNS). They are the stretch receptors embedded within the belly of the muscle tissues and along with joint mechanoreceptors and the constant information that floods in from the inner-ear their activity is imperative to the health and symmetry of the Cerebellum.

The quality and complexity of our movement matters. It serves as a necessary form of excitation to the very part of the CNS that is involved with our posture, coordination, balance and extensor tone

Through previous injury, poor movement practices and certain toxins such as drugs or alcohol, the Left and Right sided input to the Cerebellum can become asymmetrical.

Asymmetrical CB input = Asymmetrical CB output = Altered muscle facilitation, Increased injury potential, Reduced performance

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What can we do about it?

The first step to overcoming any problem is to know that it exists.

Through specific assessments we can gain insight as to the symmetry of Cerebellar function. Once we identify the weak areas (faulty output of the motor system) we can stimulate the Cerebellum with appropriate input.

Accurate Input to the Cerebellum includes;

- Specific peripheral joint mobility drills
- Spine mobility drills
- Specific head positions
- Rolling, Spiralling and level changing movement patterns
- Learning new movement skills
- Specific eye positions
- Combined head and eye movements
- Accurate Neuromuscular work (PNS)
- Stretching techniques
- Specific light stimulations
- Motor Imagery

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An assessment and drill for you to try

Sharpened Rombergs

The Sharpened Rombergs is a test that challenges the integration of the proprioceptive and balance systems.

A loss of balance in one direction can indicate a lack of muscle facilitation to the spinal musculature and extensor musculature on the side of the loss of balance. A specific zone of the Cerebellum (The Vermis) should modulate the information from the body and inner ear to help you maintain your balance in the test.

This is your first insight into the symmetry of the body's governing systems

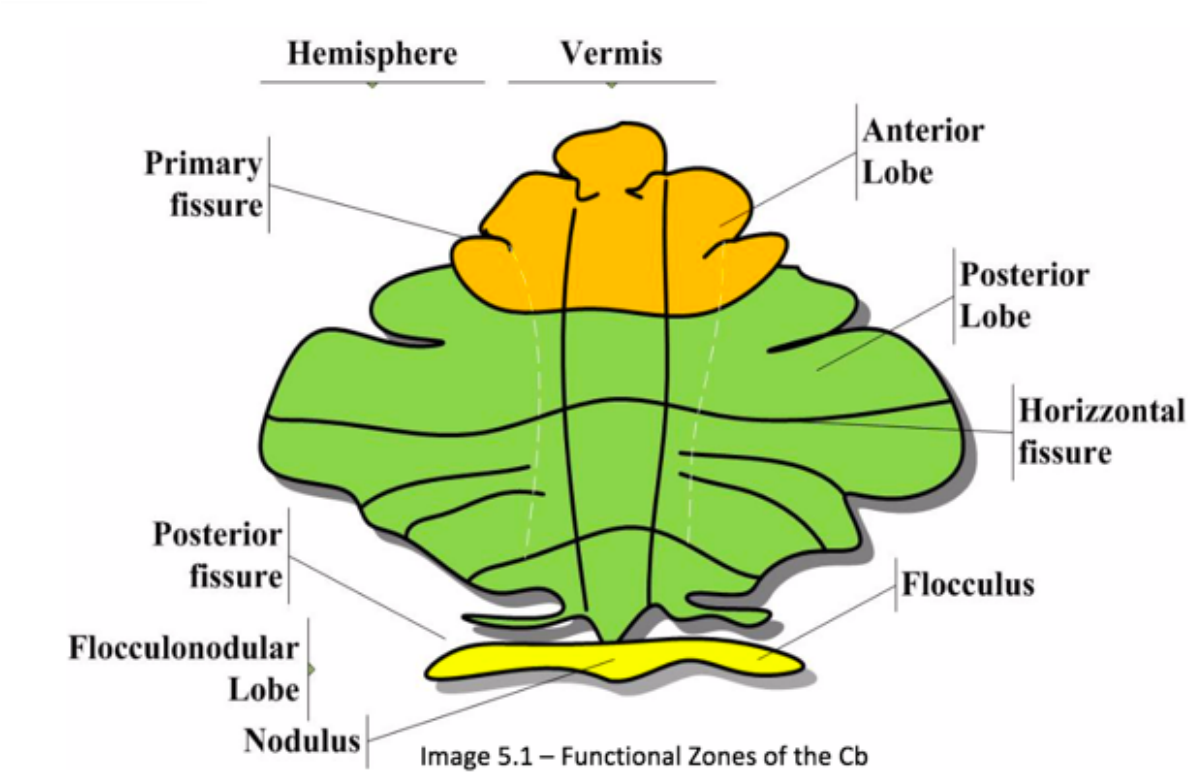

Image 5.1 – Functional Zones of the Cb

With the information gained from the test (faulty output to one side of the body) you can utilise a specific movement pattern as a stimulus to normalise muscle facilitation in seconds

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Advanced AMN practitioners learn not only the functional assessment and stimulation of the Cerebellum, but through the understating of bioelectricity can assess multiple causes and correlations of muscle dysfunctions.

Our top guys can even improve symptoms associated with more complex, systemic problems such as sleep problems, chronic pain, the effects of emotional conflicts and more.

For more information on what's possible with the AMN Techniques, please visit http://www.amnacademy.com/testimonial/ for detailed case studies.