



Best Practices in Chiropractic Treatment

Dr. Ken Larsen, Chairperson

Monday, March 28th, 2022

2:10-2:35pm



2022

Work Related Injuries
Workshop

Screening the Cerebellum in the Industrial Athlete

Jessica Camplese, DC, MS

New England Sports Therapy, Woburn, MA.

Chiropractic & the Brain

- Chiropractic was founded on 125 years ago
- Neurologically based chiropractic treatment applies the foundations of chiropractic care with the principles of functional neurology
- We base our treatments on a neurological evaluation
- Today we look at the cerebellum

Cerebellum

- The cerebellum accounts for approximately 10% of the brain's volume, it contains over 50% of the total number of neurons in the brain
- One major function of the cerebellum is to **coordinate the timing and force of these different muscle groups to produce fluid limb or body movements**
 - Posture, coordination, and balance
- The cerebellum receives extensive sensory input, and it appears to use this input to guide movements in both a feedback and feedforward control manner.

Questions for patients

- “Do you sway to one side when walking with friends?”
 - Spinocerebellum: integration of sensory input with motor commands to produce adaptive motor coordination
- “Any recent clumsiness in hand and/or feet, or tripping?”
 - Cerebrocerebellum: involved in the planning and timing of movements
- “Do your back muscles tire quickly with standing/walking?”, “do you have long term neck and back muscle stiffness?”
 - Vestibulo-cerebellum: involved in vestibular reflexes and in postural maintenance.

Examination: Common Tests

- Rombergs Test: sustaining balance while standing in an upright position depends on the sensory and motor pathways of the brainstem
- Fukuda Step Test: a rotation greater than 30 degrees is considered a positive Fukuda, indicating peripheral vestibular dysfunction likely consistent with the side to which the patient has rotated
- Dysmetria (upper/lower extremity): lack of coordination that occurs when the cerebellum isn't functioning correctly

How does cerebellar dysfunction happen?

- Joint complex dysfunction INCREASES nociceptive/noxious input into the CNS. Joint dysfunction occurs when an area is injured, structures are damaged, and the normal balance of feedback information is disrupted
 - Bad input leads to bad output
 - Increase in cerebellar dysfunction that will continue unless the cause is addressed.

“Increasing mechanoreceptor activity via a specific chiropractic adjustment has the potential to increase the ability of the NS to comprehend movements, joint position, and posture....the adjustment does this by facilitating the effects of the mechanoreceptor afferents...”

-Journal of Vertebral Subluxation Research

Treatments

- Chiropractic Manipulative Therapy (CMT)/Chiropractic Adjustments
 - Spinal and extremity adjustments improves proprioception, restore sensory transmission in the nervous system due to deafferentation, reduces inappropriate mechanoreception in joints and muscle spindle fibers, and helps restore proper neuromuscular control.
- Incorporate adjustments with exercises and neuromuscular reeducation based on the specific cerebellar findings.



Best Practices in Chiropractic Treatment

Return to Work

Treating the Worker's Comp Patient
like a Professional Athlete

Jessica Camplese, DC, MS

The Industrial Athlete

What do we have to account for when assessing and forming a treatment plan for the industrial athlete?

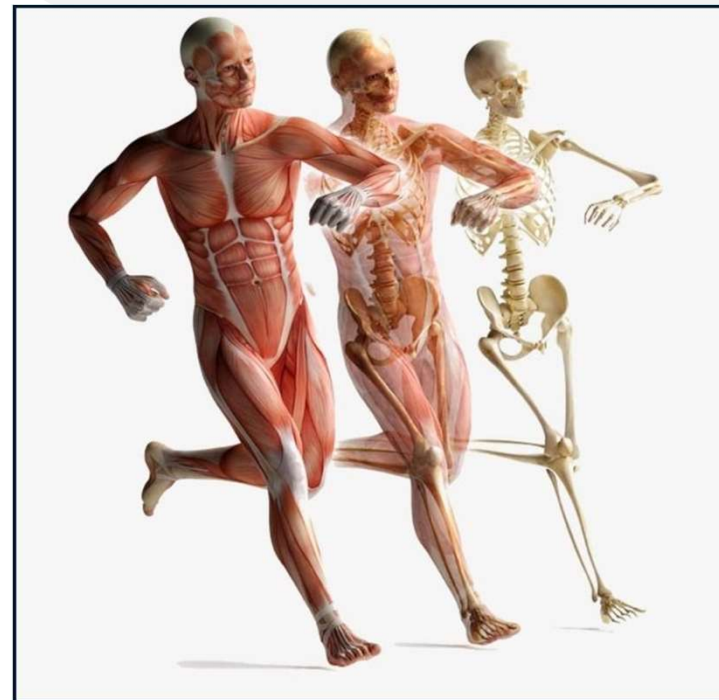
- unpredictable movements they may encounter
- repetitive movements
- demands of the job
- health history



Full Body Assessment

- biomechanical analysis (passive & active ROM, muscle testing)
- Gait and coordination
- functional neurology testing

only evaluating an area of injury or complaint is where most treatment protocols go wrong



Full Body Assessment

Why it is important?

Shoulder injury and/or surgery

- can cause issues with:
 - neck
 - upper back
 - entire kinetic chain of the involved limb (elbow, wrist, hand)
 - reciprocal limb in the lower extremity



**What type of treatment would
the patient receive at a sports
chiropractor?**



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A one-on-one personalized treatment plan

A one-on-one personalized treatment plan

Chiropractic adjustments/joint manipulation

- spinal
- extremities
- corresponding with cerebellar findings

Soft tissue manipulation

- Active Release technique (ART)
- Muscle Activation Technique (MAT)
- Instrument Assisted Soft Tissue Mobilization (IASTM/Graston)
- Dry needling
- Cupping

A one-on-one personalized treatment plan

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Neuromuscular re-education

- restore proper neuromuscular control
 - Contract the proper muscle, in the proper amount, at the proper time
 - eliminate compensation patterns
- need repetition and strength of stimulus to make lasting change

Therapeutic Exercise

- increase strength
 - Start with isometrics
- increase speed and reaction time
- increase endurance and stamina
- add unpredictable movements and work specific motions or activities



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Q & A

Jessica Camplese, DC, MS