

MARCH 2021

Issue 12

# THE PT POST

by

ROSE CITY  
PHYSICAL THERAPY



## RECOGNIZING 'BRAIN INJURY AWARENESS MONTH' THROUGH CONCUSSION AWARENESS

Annually, March is Brain Injury Awareness Month. At Rose City Physical Therapy, as a Complete Concussion Management certified clinic, bringing awareness of concussion in the sports and military arenas is this month's newsletter feature. A concussion is one of the least understood forms of brain injury. But not uncommon and often goes undiagnosed.

Sasha dives into some detail on sports and military-related concussion; the former not uncommon and if you have ESPN on watching a collegiate or NFL football game you're almost certain to witness a concussed event. The latter is less commonly recognized or heard up, yet not infrequent either.

Our word search features common signs and symptoms of a concussion to provide insight as to what a loved one, or perhaps yourself, may be experiencing if you've had a concussion.

A concussion is not always a one-time traumatic episode and can occur from cumulative micro-events. Awareness and proper medical management are key.

We hope you find this content informative and please share this print copy or direct someone you know who has experienced sports or military-related concussion, which Rose City Physical Therapy is educated on managing, to our website ([rosecitypt.com](http://rosecitypt.com)) > RESOURCES tab > NEWSLETTER tab for access to the electronic version.

As always, we appreciate your support and trust in our care.



**KARL KOLBECK, PT, FAAOMPT  
CO-OWNER**

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# SPORTS & MILITARY CONCUSSIONS

by *Sasha Kolbeck, MPT, DPT, OCS, COMT*

There are an estimated 3.8 million concussions or mild traumatic brain injuries (mTBI) in the USA per year. The media has extensively reported on sports concussions, primarily within the National Football League. There is less public information on concussions that occur in the military. Sports account for 300,000 concussions annually, and those with the highest incidence are rugby, ice hockey, American football, lacrosse, soccer, and wrestling. American military personnel experience a 15 to 22% rate of concussion. Spooner and colleagues researched data from Camp Leatherneck, a military medical facility in Afghanistan, over a nearly three-year period and reported that medical providers treated 1,241 personnel for a concussion during that period.

Camp Leatherneck uses a sports medicine model to treat both concussion and musculoskeletal injuries. During the study period, 88% of concussions were due to blast injury, 4.8% were vehicle accidents, and 5.2% were other work-related. Treatment was multidisciplinary and continued as appropriate until the service member was asymptomatic at rest and during physical activity. The subjects missed approximately ten days of work, with 97.9% returning to duty, showing excellent success.

Concerning sports, a 2019 article in The Journal of Pediatrics by Chrisman and colleagues reported that for athletes five to 14 years of age, 50% returned to school in three days, 50% returned to their sport in 13 days, and 50% returned to baseline in three weeks. Research in 2007 by Gessel et al. in the Journal of Athletic Training stated that more than 50% of high school and collegiate athletes returned to their sport in nine days or less.

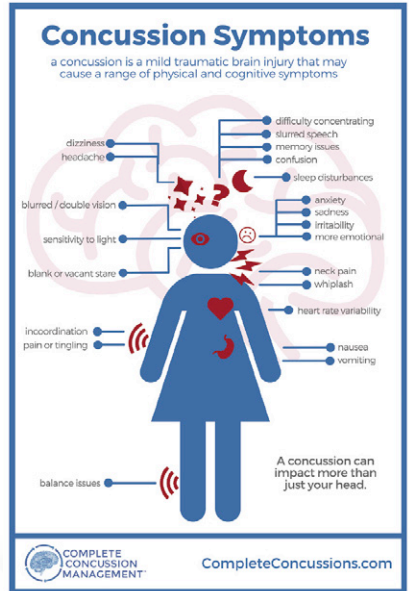
Research shows 80-90% of concussion symptoms resolve within seven to 10 days; however, cerebral blood flow regulation during blood pressure changes may take 14 days to recover, and brain energy deprivation typically takes 22-30 days

to restore. Risk factors for delayed recovery include the severity of initial symptoms, delayed treatment, youth, female, prior concussion, depression, anxiety, and ADHD. Surprisingly, loss of consciousness has no bearing on recovery.

Whether sports or military, the concussed individual must be evaluated, educated, and treated appropriately to decrease the risk of Post Concussion Syndrome (PCS), which is ongoing chronic concussion-based symptoms. The criteria for PCS are continued symptoms 10-14 days after the injury.

Treatment recommendations and education after experiencing a concussion have changed over the years. Experts advise that treatment should begin within five days of onset. They include initial rest as needed for 24-48 hours, a progression of early graded physical activity, education on sleep hygiene, focusing on anti-inflammatory and antioxidant-based nutrition, and pacing oneself. Additionally, educating the patient on signs and symptoms to look out for that would require them to follow-up with their healthcare practitioner and testing for timing about when to return to work, sports, or school are part of the concussed individual's management.

A thorough evaluation by an experienced practitioner in concussion management reveals what treatment is needed and by what practitioners. Red flags indicate the need to refer to a physician specialist, including worsening headaches, repeated vomiting, and cervical spine ligamentous instability. The cervical spine is often overlooked, untreated, and can be the cause of Post Concussive Syndrome. Cervical (Whiplash-Associated Disorder) symptoms overlap with concussion



symptoms, so even after the brain has healed, it may be assumed the complaints stem from the concussion when in actuality, they can be from the cervical spine. Rebeck and colleagues in a 2019 Journal of Orthopedic and Sports Physical Therapy article report that the shared symptoms of neck pain, headache, dizziness, fatigue, and cognitive impairment may persist for five years. Imaging is not able to differentiate between whiplash-associated disorder (WAD) and concussion. One distinguishing feature for PCS is the loss of consciousness or post-traumatic amnesia. Treatment beyond the cervical spine may include visual, vestibular, balance and motor, aerobic, cognitive, and psychological care, and referral as needed for specialists for nutrition, vision, vestibular, and cognitive.

Return to sport and work requires graduated phases and comprehensive and multimodal assessment. Research shows the importance of waiting to return to work or sports during the brain's healing period to avoid Second-

Impact Syndrome, a rare but possible complication when a person sustains a second concussion during the healing phase. The Second-Impact can result in death.

The brain is only 2% of our body weight but uses 20% of the blood supply, which requires time to heal. Basing return to sport or work on symptom resolution does not factor in the brain's healing time. Brain changes with neuroimaging persist beyond the resolution of symptoms. The decision needs to be comprehensive with testing that considers the various symptoms the patient may be experiencing.

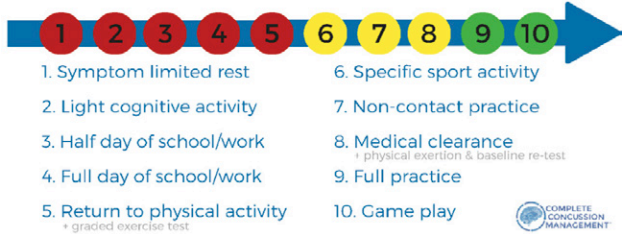
Specialists advise an athlete to retire from the sport for repeated low-force concussions, protracted recovery from a concussion, or when they have experienced intracranial hemorrhage. Also, retirement is advised for the athlete that has experienced three or more concussions, which have taken more than 30 days to recover, structural injury on MRI or CT scan, and development of chronic traumatic encephalopathy (CTE) symptoms.

Streifer, Brown, and colleagues in the Journal of Orthopedic and Sports Physical Therapy in 2019 reported about reducing the risk of sports-related concussions. Increasing neck strength and girth are modifiable factors. For every one pound increase in neck strength, concussion risk decreases by 5%. Neck strength is vital in reducing head acceleration. The aim is to have equal 1:1 strength between the muscles that flex and extend the neck. The sternocleidomastoid muscle is essential. Poor posture can also deactivate the deep neck stabilizers and decrease the strength ratio.

Rose City Physical Therapy is a Complete Concussion Management certified clinic. If you or someone you know has sustained a concussion and are interested in information, please contact our clinic at 503.228.1306.

# Recovery Stages of Concussion

Each stage must be separated by at least 24 hours. If symptoms occur at any one stage, athlete must return to previous stage.



A mild brain injury that causes a temporary disturbance in cells due to acceleration or deceleration of the brain in the skull

Reported Symptoms	Visible Signs
Headache	Loss of consciousness
Difficulty concentrating	Balance problems
Dizziness or vertigo	Blank or vacant stare
Blurred vision	Clutching head
Neck pain	Slow to get up after a hit

**When in Doubt Sit them OUT!**

Athletes suspected of suffering a concussion should be removed from play immediately and should not be allowed to return until cleared by a licensed healthcare professional

## Recovery Stages of Concussion for Athletes

- 1 Symptom-limited activity
- 2 Light cognitive activity
- 3 Half day of school/work
- 4 Full day of school/work
- 5 Return to physical activity
- 6 Specific sport activity
- 7 Non-contact practice
- 8 Medical clearance
- 9 Full practice
- 10 Game play

Concussion recovery should be managed by a licensed healthcare practitioner with training in concussion

## Concussion Treatment & Rehabilitation

Whiplash Therapy    Vestibular Rehab    Visual Rehab    Nutritional Intervention    Exercise Therapy    Education & Reassurance

Early intervention of various therapies can improve concussion recovery



This month, in support of March 'Brain Injury Awareness' month, we are skipping our common theme of a recipe from our Portland 'locally sourced' connections and providing a reference for anti-inflammatory foods beneficial for the concussed person, as well as those with chronic pain, prolonged swelling and inflammation after surgery, and interested in a well balanced healthy diet. Dr. Paul Hrkal, ND, provides these guidelines. He is a naturopathic physician who specializes in neurological health, chronic pain, and brain injury. He is an internationally recognized leader in brain injury management and consultant for Complete Concussion Management.

## Anti-Inflammatory Brain Foods

- Avoid all refined sugars and carbs - refined carbs promote inflammation which impairs nerve cell healing.
  - Avoid white bread, pasta, white rice, cookies, candy, milk chocolate.
  - Reduce high starch foods such as potatoes and corn. Replace with sweet potato, quinoa, or brown rice.
  - Limit to 2 servings of white grains/starches daily.
- Each meal should include protein, vegetables, good fats, and whole grains.
  - Good protein sources: wild fish, free-range chicken/turkey breasts, organic tofu.
  - 50% of your plate should be plants/vegetables.
- Make a 2-week trial of being 100% gluten-free. Gluten promotes inflammation and causes digestive lining impairment.
- When possible, eat local, organic grass-fed, antibiotic-free, free-range meats: lamb, chicken, wild game.
- Avoid processed and charred meats.
- Eat more fruits and vegetables. They are full of antioxidants that reduce nerve damage.
  - The goal is 8 servings per day between fruits and vegetables. Lean toward vegetables more than fruits as a fruit is high in sugar.
  - One serving = ½ cup of vegetables, 1 cup of salad, or two pieces of fruit.
  - Eat the rainbow...consume at least eight different colors of fruits and vegetables daily.
- Eat good fats:
  - Salmon, sardines, herring, mackerel, anchovies. It must be wild. Limit to 2 servings per week.
  - Flaxseed, walnuts, almonds, chia, cashews.
- Use healthy spices, a powerful way to reduce inflammation.
  - Tumeric - add to stir-fry.
  - Ginger - add to stir-fry and use fresh root to make tea.
- Drink green tea...goal is 3-5 cups of sencha or matcha green tea per day.
- No alcohol...impairs brain repair and increases inflammation.

# COVID-19 VACCINATED!

## Our Physical Therapists are vaccinated!

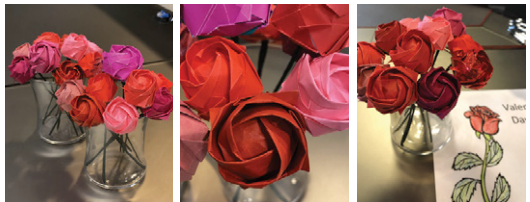
Happy to share that all of our physical therapists are fully vaccinated against Covid-19! This doesn't mean we will be lax in our safe practices. Our hypervigilance to keep a clean and healthy environment as recommended by the CDC and Oregon Health Authority will remain in place to keep each and every one of you safe and comfortable.



# CLINIC HOLIDAY FUN!

## Valentine's Day roses...thank you, Josh!

Shout out to our rock star Patient Care Coordinator Joshua Hohensee for the awesome Origami roses he made for Valentine's Day. And thank you to those who purchased any through donations. Oh so beautiful and creative.



## Who do you know that needs our help?

# REFER A FRIEND

**Do You Have Friends or Family Unable to Do The Following?**

- Move without pain
- Bend and move freely
- Balance confidently and securely
- Sit for long periods comfortably
- Walk for long distances
- Live an active and healthy lifestyle



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# Exercise For Your Mind

## SIGNS AND SYMPTOMS OF A CONCUSSION

- ANXIETY
- DELAYED THINKING
- POOR CONCENTRATION
- FRUSTRATED
- DEPRESSED
- SLEEP DISTURBANCE
- DROWSINESS
- HEADACHE
- MEMORY LOSS
- DIZZINESS
- VOMITING
- SLOWED REACTION TIME
- NAUSEA
- CONFUSION
- FATIGUE
- SOUND SENSITIVITY
- LIGHT SENSITIVITY
- BLURRY VISION

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