



# Concussion Parent Packet

You will find in this packet supporting material about Concussions:

- Post-Concussion Symptom Scale
- PCS Return to Play Protocol (Following VHSL & PCS Policies)
- Virginia Board of Education Guidelines for Return to Learn
- Nutritional Tips & Guidelines for Concussion Injuries
- Sleep Hygiene to Improve Concussion Recovery



# Post-Concussion Symptom Scale (PCSS)

Name: \_\_\_\_\_ DOB: \_\_\_\_\_ Date: \_\_\_\_\_

Instructions: For each item, indicate how much the symptom has bothered you over the past 2 days.

	Symptoms	None	Mild		Moderate		Severe	
Physical	1 Headache	0	1	2	3	4	5	6
	2 Nausea	0	1	2	3	4	5	6
	3 Vomiting	0	1	2	3	4	5	6
	4 Balance problems	0	1	2	3	4	5	6
	5 Dizziness	0	1	2	3	4	5	6
	6 Fatigue	0	1	2	3	4	5	6
	7 Sensitivity to light	0	1	2	3	4	5	6
	8 Sensitivity to noise	0	1	2	3	4	5	6
	9 Numbness/Tingling	0	1	2	3	4	5	6
Thinking	10 Feeling mentally foggy	0	1	2	3	4	5	6
	11 Feeling slowed down	0	1	2	3	4	5	6
	12 Difficulty concentrating	0	1	2	3	4	5	6
	13 Difficulty remembering	0	1	2	3	4	5	6
Sleep	14 Drowsiness	0	1	2	3	4	5	6
	15 Sleeping less than usual	0	1	2	3	4	5	6
	16 Sleeping more than usual	0	1	2	3	4	5	6
	17 Trouble falling asleep	0	1	2	3	4	5	6
Emotional	18 Irritability	0	1	2	3	4	5	6
	19 Sadness	0	1	2	3	4	5	6
	20 Nervousness	0	1	2	3	4	5	6
	21 Feeling more emotional	0	1	2	3	4	5	6
	TOTAL ____/126							

Do you have any visual problems?      Yes      No

Do these symptoms worsen with:

- Physical Activity      Yes      No      Not applicable
- Thinking/Cognitive Activity      Yes      No      Not applicable



## PITTSYLVANIA COUNTY SCHOOLS RETURN TO PLAY PROTOCOL



After a concussion, an athlete should only return to sports practices with the approval and under the supervision of their healthcare provider. The healthcare provider must be an approved Medical Doctor, Physician Assistant, Nurse Practitioner, or certified athletic trainer that is trained in management of traumatic head injuries. Each step typically takes a minimum of 24 hours. It is important for an athlete's parent(s), coach(es), and school nurse(s) to watch for concussion symptoms after each day's return to sports progression activity.

The athlete can start the stepped progression when they become asymptomatic. An athlete should only move to the next step if they do not have any new symptoms at the current step. If an athlete's symptoms come back or if he or she gets new symptoms, this is a sign that the athlete is pushing too hard. The athlete should stop these activities and the athlete's medical provider should be contacted. After more rest and no concussion symptoms, the athlete can start at the previous step.

In Pittsylvania County, the Certified Athletic Trainers will have the athlete perform retesting with the same software that they have a baselined periodically. This will assist the medical professionals with appropriate return to participation for their sports.

### **STEP 1: BACK TO REGULAR ACTIVITIES**

The athlete is back to their regular activities (such as school) and has the green-light from their healthcare provider to begin the return to sports progression. Must be asymptomatic for 24 hours.

### **STEP 2: LIGHT AEROBIC ACTIVITY**

Begin with light aerobic exercise only to increase an athlete's heart rate. This means about 15-30 minutes on an exercise bike, walking, or light jogging. No weight lifting at this point. Typically, most athletes will perform 2 sets of 15 minutes of a medium paced walk with a 5-minute break in the middle.

### **STEP 3: MODERATE, NON-CONTACT ACTIVITY**

Continue with activities to increase an athlete's heart rate with body or head movement. This includes moderate jogging, brief running, moderate-intensity stationary biking, moderate-intensity weightlifting (less time and/or less weight from their typical routine). Activities can be individualized sport related movements with no contact. Football athletes can participate in helmets only.

### **STEP 4: HEAVY, NON-CONTACT ACTIVITY**

Add heavy non-contact physical activity, such as sprinting/running, high-intensity stationary biking, regular weightlifting routine, non-contact sport-specific drills (in 3 planes of movement). Football athletes can participate in helmets and shoulder pads with no contact.

### **STEP 5: PRACTICE & FULL CONTACT**

Athlete may return to practice and full contact (if appropriate for the sport) in controlled practice.

### **STEP 6: COMPETITION**

Athlete may return to competition.

If you have any questions or concerns regarding the protocol, please feel free to contact:

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## GUIDELINES FOR RETURN TO LEARN

### What is a concussion?

A concussion is a type of brain injury resulting from a bump, blow, or jolt to the head that causes the head and brain to move rapidly back and forth. A direct blow to the head is not required to cause a concussion; this type of injury can result from a hit to the body that transmits force to the head. The sudden, forceful movement can cause the brain to bounce around or twist in the skull, stretching or damaging the brain cells and causing chemical changes in the brain. Concussions affect people differently. Most students experience symptoms lasting for a few days or weeks. With a more serious concussion, symptoms may last months or even longer. Additionally, research has suggested age plays a role in recovery. Younger students tend to experience more prolonged symptoms than older students. Thus, it is important not just for high schools but also for elementary and middle schools to have return-to-learn protocols that provide academic staff with guidance about how to provide appropriate classroom and learning plan accommodations for students with concussions

### CONCUSSION SYMPTOMS

Physical	Cognitive	Emotional	Sleep
Headache	Feeling mentally foggy	Irritability	Trouble falling asleep
Dizziness	Feeling slowed down	Sadness	Sleeping more than usual
Balance difficulties	Difficulty concentrating	Nervousness	Sleeping less than usual
Nausea/vomiting	Difficulty remembering	More emotional than usual	Drowsy
Fatigue	Difficulty focusing		Altered sleep schedule
Sensitivity to light			
Sensitivity to noise			
Visual Changes			

### How can a concussion affect school performance?

- Slower processing speed
- Lapses in short term memory
- Reduced/impaired concentration
- Slower to learn new concepts
- Shorter attention span
- More difficulty planning, organizing and completing assignments
- Slower reading
- Difficulty with reading comprehension

### Elementary School

Compared to older students, elementary aged children are more likely to complain of physical problems or misbehave in response to cognitive overload, fatigue and other concussion symptoms.

### Middle School

Peer relations are very important to middle school students. They can be extremely sensitive to being different. Middle school students may try to minimize symptoms so as not to stand out. At this level, executive functioning such as goal setting and planning ahead is in greater demand. Therefore, organizational problems may have a greater impact on academic performance.

### High School

High school students are often very busy. Many students are enrolled in advanced classes and have one or more extra-curricular activities. Therefore, prioritizing activities and reducing overall demands becomes especially important with the high school student in order to reduce concussion symptoms.

## GUIDELINES FOR RETURN TO LEARN

A student recovering from a concussion shall gradually increase cognitive activities, progressing through some or all of the following phases. Students may begin at any phase based on the symptoms they report. The decision to progress from one phase to another should reflect the absence of any relevant signs or symptoms and should be based on the recommendation of the student's appropriate licensed health-care provider in collaboration with school staff, including teachers, school counselors, school administrators, psychologists, nurses, clinic aides, or others as determined by local school division concussion policy.

### PHASE GUIDANCE FOR RETURN TO LEARN.

**Phase 1:** Cognitive and physical rest may include, but not limited to:

- Minimal cognitive activities—limit reading, computer use, texting, television, and/or video games;
- No homework;
- No driving; and
- Minimal physical activity.

**Phase 2:** Minimal cognitive and physical activity may include:

- up to 30 minutes of sustained cognitive engagement;
- limit prolonged concentration;
- if the 30-minute period does not exacerbate symptoms, students may increase the amount of time in sustained academic engagement;
- no driving; and
- limited physical activity.

**Phase 3:** Maximum instructional supports including, but not limited to

- shortened or modified individual classes and/or school days with built-in out of classroom breaks;
- modified environment (e.g., limiting time in hallway, identifying quiet and/or dark spaces);
- established learning priorities;
- exclusion from standardized and classroom testing;
- extra time, extra assistance, and/or modified assignments;
- rest and recovery once out of school; and
- elimination or reduction of homework.

*Student will progress to Phase 4 when able to tolerate part-time return without exacerbation of symptoms or re-emergence of previously resolved symptoms.*

**Phase 4:** Moderate cognitive and physical activity with moderate instructional supports including, but not limited to:

- established priorities for learning;
- limited homework;
- alternative grading strategies;
- built-in breaks;
- modified and/or limited classroom testing, exclusion from standardized testing; and
- reduction of extra time, assistance, and/or modification of assignments as needed.

*Students will progress to Phase 5 when full-time school attendance does not exacerbate symptoms or result in the re-emergence of previously resolved symptoms.*

## GUIDELINES FOR RETURN TO LEARN

**Phase 5:** Minimal instructional supports—instructional strategies may include, but are not limited to:

- built-in breaks;
- limited formative and summative testing, exclusion from standardized testing;
- reduction of extra time, assistance, and modification of assignments; and
- continuation of instructional modification and supports in academically challenging subjects that require cognitive overexertion and stress.

*Students will progress to Phase 6 when able to handle sustained cognitive exertion without exacerbation of symptoms or re-emergence of previously resolved symptoms.*

**Phase 6:** Unmodified participation in academic activities—instructional strategies may include, but are not limited to:

- maintains full academic load/homework.
- requires no instructional supports; or
- returns to the individualized education program prior to the concussion.

# Concussion Nutrition Tips & Guidelines

## **NUTRITION PLAYS A CRUCIAL PART IN THIS RECOVERY PROCESS.**

Certain nutritional recommendations can really make a profound difference in how quickly the brain recovers from the injury. “Concussion nutrition” is an effective new addition to modern brain injury treatments that can help your brain recover in better time.

### **PLENTY OF WATER**

If you’ve recently suffered a concussion, you should be drinking plenty of water. Keeping your brain properly hydrated will facilitate and speed up its recovery. This also means that you should be avoiding beverages with an opposite impact on your body. Treat your brain to a lot of water, squeezed fruit, and smoothies instead.

### **REDUCING SUGAR, SALT, AND CAFFEINE INTAKE**

Processed sugar, salt, and caffeine will further dehydrate your body, irritating your central nervous system and negatively impacting recovery. Not only do they not offer any real nutritional value or health benefits, they can also lead to a number of health complaints.

It may be challenging at first, but it’s best to start avoiding candy bars, fried food and coffee ASAP.

### **A DIET RICH WITH FRUITS & VEGETABLES**

Concussion or not, natural nutrition is always the best for your health. Packed with vitamins, minerals, and other nutrients, fruits and vegetables will ensure that your brain recovery goes as smoothly as butter (which you should avoid as well). Have at least five portions of fruits and vegetables every day and increase your avocado intake.

In fact, you should pay special attention to all food’s rich with Vitamin C and E. In addition to avocado, this nutritional group includes all tropical fruits, citrus fruits, berries, and bell peppers for Vitamin C and dark leafy vegetables for Vitamin E. As antioxidants, both of these vitamins are brilliant for improving concussion symptoms and hastening recovery.

### **FISH AND LEAN MEATS FOR THE MAIN COURSE**

Unprocessed meats, namely chicken and turkey, will provide your brain with enough protein and amino acids to heal quickly and properly. In addition to this, you should be eating a lot of fish. Fish is a high-protein that is also rich with Vitamin E and good fats – omega-3 fatty acids.

These fats support both brain development and cognitive function.

### **NUTS AND SEEDS FOR POWER SNACKS**

Similarly, to fish, nuts and seeds are an ample source of Vitamin E and omega-3 fatty acids. They are also a great replacement for the usual power snacks such as candy bars, rice cakes, and pretzels. Doctors recommend that you should always have a bag of nuts and seeds on you.

The healthiest nuts for the brain are walnuts, almonds, hazelnuts, and peanuts.

# Concussion Nutrition Tips & Guidelines

## NUTRITIONAL CONSIDERATIONS FOR CONCUSSION RECOVERY

Training & Conditioning: Matthew Wade, MS, RD, CD, CSCS: AUG 13, 2024

Many injuries can sideline athletes. Proper rest, rehabilitation, and nutrition all play a factor in recovery no matter the injury. And for concussions, nutrition may have a bigger role than meets the eye. Understanding both food and supplementation's role in this recovery process is of the utmost importance in optimizing an athlete's recovery time.

Aside from following the tips below, referring your athlete to meet with a registered dietitian post-injury will help ensure every box is checked when it comes to their nutrition.

Given the metabolic stress observed after a concussion, the best nutrition treatment is a general healthful diet that meets the athlete's energy needs and is high in antioxidant-rich foods. Supplements, mainly creatine monohydrate and omega-3 fatty acids, have their role but do not work in isolation. Dietary measures should remain the focus of the nutrition treatment.

## DIETARY CONSIDERATIONS

Consuming a diet rich in complex carbohydrates (brown rice, oats, whole-grain bread/pasta, quinoa), protein, low-fat dairy, fruits, vegetables, and healthy fats (avocado, olive oil, and nuts/seeds) should make up the majority of an athlete's diet during the recovery process. The most important aspect of concussion recovery is simply consuming enough calories per day to meet one's energy needs. Daily energy needs vary based on many factors including activity level, muscle mass, height/weight, and genetics.

Weight maintenance or a slight weight gain is recommended during the healing process to ensure the athlete is consuming enough energy to facilitate the healing process. It has been shown that brain injuries, dependent on the severity, can increase whole-body energy expenditure (*Factors Associated With Energy Expenditure and Energy Balance in Acute Sport-Related Concussion*, 2021). Depending on the severity of the concussion, an athlete may need to consume more calories per day to maintain their weight. If an athlete is comfortable seeing their weight, asking them to weigh themselves first thing in the morning, after using the bathroom, one time per week is a simple strategy to evaluate this.

## ANTIOXIDANT-RICH FOODS

Foods high in antioxidants can help reduce the burden of added inflammation that occurs because of a concussion. Fruits that are high in antioxidants include, but are not limited to, blueberries, strawberries, raspberries, blackberries, oranges, and grapes. Vegetables high in antioxidants include, but are not limited to, spinach, asparagus, broccoli, beets, carrots, bell peppers, and kale. An athlete should aim for a minimum of two servings of fruit and 3-4 servings of vegetables per day (*Dietary Guidelines for Americans*, 2020). Eight ounces of tart cherry juice 1-2 hours before bed may also contribute positively to concussion recovery due to its high level of antioxidants and can be practical if appetite is a challenge.

## OMEGA-3 FATS

Omega-3 fatty acids are essential fatty acids prominent in fatty fish, nuts/seeds, and plant oils. The three types of omega-3 fatty acids are alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA). In the area of brain health, DHA and EPA are omega-3 fatty acids of importance due to their anti-inflammatory properties (*Neuroprotection by Docosahexaenoic Acid in Brain Injury*, 2014). On average, most people, including athletes, do not consume enough omega-3 fatty acids (*Dietary and Biological Assessment of the Omega-3 Status of Collegiate Athletes: A Cross-Sectional Analysis*, 2020). Because of its role in reducing brain inflammation and physical nerve cell damage post-concussion, choosing foods that are rich in DHA and EPA is a great strategy for optimizing recovery. Salmon, canned tuna, mackerel, and sardines are excellent options. Due to its low prevalence in food, an omega-3 supplement (with EPA and DHA12) is also warranted until an athlete is cleared to fully participate in the competition. For NCAA Division 1 athletes, NSF Certified for Sport or Informed Sport-Certified supplements are recommended. Generally recognized as safe amounts of omega-3s (up to 5000 mg/day) should be considered following a concussion (*U.S. Department of Health and Human Services*, 2023).

## How Can Sleep Hygiene Improve Concussion Recovery?

Sleep hygiene and concussion recovery are two essential aspects of a healthy lifestyle. While sleep is critical for overall health, it is especially important for individuals recovering from a concussion. In this blog post, we will explore the relationship between sleep hygiene and concussion recovery and discuss some tips for improving sleep hygiene during the recovery process.

### What is a concussion?

A concussion is a form of mild traumatic brain injury (TBI) that occurs when the brain is shaken or jolted inside the skull. This can happen due to a blow to the head, a fall, a sports injury, or other types of accidents. Concussions can result in a wide range of symptoms, including headaches, dizziness, confusion, memory problems, sensitivity to light and noise, and sleep disturbances.

### Why is sleep important for concussion recovery?

Sleep is essential for the brain's overall health and function. It helps the brain repair and regenerate itself, consolidates memories, and enhances learning and cognitive function. For individuals recovering from a concussion, sleep is even more critical, as the brain needs more time to heal and recover from the injury.

Sleep disturbances are common after a concussion, and they can have a significant impact on recovery. Studies have shown that sleep disturbances can exacerbate concussion symptoms, delay recovery, and increase the risk of developing persistent concussion symptoms which are characterized by symptoms that persist more than four weeks from the date of the injury.

### TIPS FOR IMPROVING SLEEP HYGIENE DURING CONCUSSION RECOVERY.

Improving sleep hygiene can help individuals recovering from a concussion get the restful sleep they need to support their recovery. Here are some tips for improving sleep hygiene during concussion recovery:

- 1. Stick to a regular sleep schedule:** Try to go to bed and wake up at the same time every day, even on weekends. This will help regulate your body's circadian rhythm and make it easier to fall asleep and wake up.
- 2. Create a sleep-conducive environment:** Make sure your bedroom is quiet, dark, and cool. Use earplugs, blackout curtains, or a white noise machine to block out any noise or light that could disrupt your sleep.
- 3. Avoid stimulating activities before bedtime:** Avoid using electronic devices, watching TV, or engaging in stimulating activities for at least an hour before bedtime. These activities can interfere with your body's ability to wind down and fall asleep.
- 4. Limit caffeine intake:** Avoid consuming caffeine, especially in the afternoon and evening. These substances can interfere with your sleep and make it harder to fall asleep and stay asleep.
- 5. Practice relaxation techniques:** Try relaxation techniques such as deep breathing, meditation, or yoga to help calm your mind and body before bedtime.
- 6. Seek professional help if necessary:** If you are still experiencing sleep disturbances despite these tips, consider seeking professional help from a sleep specialist or a healthcare provider.
- 7. If you need to nap during the day, keep it short (20-30 minutes) and avoid napping late in the afternoon.**