**PRIMARY CARE EDU:**

**Concussion: How to Care for Yourself**

A concussion is a type of mild traumatic brain injury (or mild TBI). It happens when a blow to the head or an injury makes the head move back and forth with a lot of force. This causes chemical changes in the brain and, sometimes, damage to the brain cells.

Symptoms of a concussion can happen right away or show up hours or days after an injury. Symptoms can include:

1. feeling dizzy, clumsy, tired or sensitive to noise or light
2. feeling sick to your stomach or throwing up
3. headaches
4. vision changes
5. problems with concentration, memory or thinking clearly
6. feeling sad, easily upset or angered, or nervous
7. sleep problems

Work with your health care provider and follow these guidelines to return to your regular activities. Most people feel better within a few weeks of a concussion. It may take you longer to heal if the injury was severe, if you have other medical or learning problems, or if this is not your first concussion.

Each person with a concussion heals at their own pace. It's important to find a balance between doing too much and doing too little.

At first, you need to cut back on physical activities and those that require a lot of concentration. Then, you can start trying these activities again. Your symptoms don't have to be completely gone for you to add activities. But if symptoms interfere with an activity, take a break from it. You can try it again after a few minutes, or you can try a less strenuous version of the activity.

Follow these steps:

1. **Rest (for 1–2 days after the concussion)**
2. Relax at home. You can do calm activities, such as talking to family and friends, reading, drawing or playing a quiet game. If symptoms interfere with an activity, take a break from it. You can try it again after a few minutes or longer, or you can try a less strenuous version of the activity.
3. Avoid or cut down on screen time. Video games, texting, watching TV and using social media are likely to cause symptoms or make them worse.
4. Don't drive.
5. Avoid all sports and any activities (such as roughhousing with friends, or riding a bike or skateboard) that could lead to another head injury.
6. Sleep:
7. Get plenty of sleep (at least 8–10 hours in a 24-hour period).
8. Keep regular sleep and wake times.
9. No screen time or listening to loud music before bed.
10. Avoid caffeine.
11. Nap during the day, as needed.
12. For the first few days after the injury, if you have a headache and your health care provider says it's OK, you can take acetaminophen (Tylenol® or a store brand) or ibuprofen (Advil®, Motrin® or a store brand).
13. **Light Activity (usually within a few days to a week after the concussion)**
14. Slowly try more activities, such as going for a walk or watching TV. If symptoms interfere with an activity, take a break from it. You can try it again after a few minutes or longer, or you can try a less strenuous version of the activity.
15. After a few days, you should feel well enough to return to school. Work with your health care provider and a school team to create a plan for returning to school. You may need to start with a shorter day or a lighter workload. If you are not back in school by 5 days after the concussion, call your health care provider.
16. Ask your health care provider when you can drive again.
17. Keep avoiding all sports and any activities that could lead to another head injury.
18. Keep getting plenty of sleep. If you don't feel tired during the day, you don't need to nap.
19. If you still need medicine for headaches, talk to your health care provider.
20. **Moderate Activity (usually about a week after the concussion)**
21. If your symptoms are nearly gone, you can go back to most activities, including regular schedules for school and work.
22. Keep avoiding all sports and any activities that could lead to another head injury.
23. If symptoms interfere with an activity, take a break from it. You can try it again after a few minutes or longer, or you can try a less strenuous version of the activity.
24. **Regular Activity (usually within a month of the concussion)**
25. If all concussion symptoms are gone, you can go back to all other activities, **except sports**.
26. For sports, your health care provider will work with your coach and athletic trainer (if available) to create a clear, written plan for a gradual return to play. Don't go back to playing sports until your health care provider says it's OK.

1. Your symptoms get worse.
2. You can't go to school within 5 days of getting the concussion.
3. You feel completely better, but then start to have symptoms again.
4. Your symptoms last more than 3 weeks.
5. You feel very sad, anxious or grumpy.
6. You are having trouble at school.
7. You can't sleep.

Call 911 or have someone take you to the ER if you:

1. have a severe headache
2. pass out
3. are very confused or sleepy, or have slurred speech
4. have weakness, numbness or clumsiness
5. throw up more than once within a week of the concussion
6. hit your head again
7. have a seizure

**What can happen if I go back to sports too soon after my concussion?** Going back to sports too soon can make your concussion take longer to heal. It also puts you at risk for another concussion. Getting more than one concussion in a short time can cause serious, permanent brain damage.

**How can I prevent another concussion?** Because most concussions in teens are from sports injuries:

1. Be sure that any teams you are on have rules to reduce the risk of concussions, such as limits on tackling (football) or heading the ball (soccer).
2. Be sure to wear a helmet when skiing, snowboarding, biking, riding a scooter, skateboarding or rollerblading. A concussion still can happen while you wear a helmet, but the helmet can protect you from a skull fracture and serious brain injury.

If you do get another head injury, **never** ignore symptoms or try to "tough it out." Stop the sport or activity that you are doing and get medical care right away.

**Where can I get more information?** You can get more information on concussions, return to school, and return to play at [cdc.gov/headsup](https://www.cdc.gov/headsup/).

EMERGENCY DEPARTMENT EDUCATION:

Patient Instructions

Your child has been seen in the Emergency Department for a head injury. The healthcare providers in the Emergency Department have diagnosed your child with a concussion. A concussion is an injury to the brain. Concussions happen when there is a hit to the head or another part of the body that causes a jolt to the brain. The brain does not work as well for a short time after this.

People with concussions get better but the time to recovery is different for each person. The doctors in the Emergency Department cannot tell you when your child will feel better or when it will be okay to go back to regular activities. If your child’s symptoms seem to be getting worse, it is important that you call your child’s doctor or return to the Emergency Department.

Returning to School

Step 1: Immediately after a concussion, complete cognitive (thinking, processing) rest for up to few days is beneficial. This may mean no school, no homework, no computer, no texting, and no video games and maybe even no television if it makes symptoms worse. In general, it is beneficial to minimize screen time. As symptoms improve, slowly reintroduce light cognitive activity. Initial appropriate activities may include watching television, listening to audio books, drawing, and cooking as long as they do not increase symptoms.

Step 2: Light cognitive activity is resumed once your child has had a significant improvement in symptoms at rest. Your child may do activities that do not cause symptoms to get worse. Initially, your child may only tolerate 5 to 15 minutes of work at a time. Stop the activity when moderate symptoms develop. Your child may increase the length of cognitive activity as long as symptoms do not worsen significantly or as long as symptoms improve with less than a 30-minute break.

Step 3: School-specific activity should be increased gradually. When feeling better, your child should try to do some schoolwork at home and increase the duration as tolerated. Your child should continue to participate in this activity in short bursts of time (up to 30 minutes) as tolerated and then work up to longer time periods.

Step 4: Follow these guidelines to determine when your child is ready to return to school: When your child can do 1 to 2 hours of homework at home for 1 to 2 days, they may try to return for a half day of school. Alternately, if your child can do 3 to 4 hours of homework at home for 1 to 2 days, they may try to return to school for a full day. If symptoms develop while your child is at school, they should take a break in a quiet, supervised area until symptoms resolve. When symptoms resolve, they may return to class. If symptoms do not resolve, your child should go home. Your child may increase their time in school as tolerated.

**Returning to Activity**

Important Information:

It is important to follow these instructions, as light exercise following concussion can help the brain heal.

Follow the instructions below for several different types of exercise that can be performed.

The goal of aerobic activity after concussion is to work up to 30 minutes per day, getting your heart rate up, working up a sweat and being a little out of breath.

There are many ways to get in your aerobic activity daily. Your healthcare provider will tell you what activities you are allowed to do.

Some examples of good aerobic activity include running, treadmill, stationary bike, ergometer, elliptical.

Use the “2 point rule” as a guideline for returning to activity:

* Before any activity: Imagine concussion symptoms on a 10-point scale, where 0 means you feel great (no symptoms) and 10 is the worst symptom you have ever experienced.
* It is ok for your symptoms to go 2 points above your starting number when you do any activity.
* This can be used for any activity: Schoolwork, reading, watching TV, using a phone or tablet, exercising.
* If your symptoms reach more than 2 points higher than your starting number, take a break to let your concussion symptoms come back down. You may then return to the activity. An example:
  + If your headache starts at a 2 out of 10, you can do any activity until it gets to a 4 out of 10 before taking a break.
  + Try to avoid going from a 2 out of 10 to a 7 out of 10. If you do, it may take longer for concussion symptoms to come back down.

Return to the Emergency Department if your child:

* Has severe headaches that do not improve with rest
* Is hard to wake up
* Has a seizure
* Vomits more than once or twice
* Becomes confused
* Is not speaking clearly or is slurring speech
* Has neck pain that is not improving with pain medication
* Complains of weakness/ numbness in arms/legs

Work/School Excuse – Concussion

Date: \*\*/\*\*/\*\*\*\*

Patient: \*\*\*

The student named above was seen in our Emergency Department and has been diagnosed with a concussion.

Return to School: The academic accommodations in this letter will help to transition the student back to school after their concussion. The student may not require all of these accommodations, and they may be lifted as symptoms improve.

1. They student may return to school prior to full symptom resolution – we want them to return for some activity within 2-3 days of injury at the latest

2. The student may not be able to tolerate a full academic workload initially, and may need to restart school as “listening only" days to start, and advance eye-tracking activities (reading, note-taking, etc.) as symptoms improve.

3. When the student returns to school, they should work to the threshold of provoking symptoms. If the student develops symptoms, he or she should go a quiet area (nurse’s office or library), rest, and then return to class when feeling better.

Additional accommodations:

Reduce non-essential schoolwork: We recommend starting at 50% workload, and advancing as the student recovers. Once recovered, the student may be able to make this up, depending on the length of time missed.

Exams: No tests the first week back, and no more than one make-up test per day. The student may take quizzes and tests when he is feeling ready and has had adequate time to learn and study the material.

Reduce eye-tracking activities where possible: This includes getting pre-printed class notes, avoiding prolonged reading, and postponing and/or reducing longer reading assignments.

Physical Activity: No contact sports, gym or recess until cleared by an appropriate health care provider. The student should not be writing papers in substitute for gym class.

Note to Employer / School Official:

The patient named above was seen in our Emergency Department today. Any recommended restrictions on activity are listed above. In follow-up visits, the patient's physician may decide that other restrictions are necessary.

Clinician Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SPECIALTY CARE EDUCATION:

Patient Education for Virtual Follow-Up Visit:

Managing Your Concussion

**The First Few Days**

* Rest is best the first few days after your concussion. It is ok to sleep as much as your body needs; you do not need to be woken up in the middle of the night.
* Make sure you are getting enough nutrients and drinking plenty of fluids.
* Do not “fight through” activities if they are causing worsening symptoms, this could prolong your concussion recovery.
* After a few days you will likely start feeling better and can start adding in some activities that do not cause symptoms. TV for short periods of time or a movie if you can tolerate it.
* Phone/tablet use: both are fine to use for short amounts of time only in the first few days as long as symptoms do not worsen. You can enlarge the font and turn down the brightness to help prevent spikes in headaches. You can set a timer to “check in” with yourself so that you do not get lost on social media. If you are having increased symptoms, stop and take a break. After the first few days you can work up to "house rules" in regard to use.
* Over the Counter medications (Tylenol/Acetaminophen, Motrin/Ibuprofen, Aleve, Excedrin etc.) do not typically help with concussion headaches and can in fact cause rebound headaches if taken more than 3x/week. The best thing to do is take a break from the activity causing symptoms. You can rest, let symptoms improve, then you can return to the activity. If your headache is so bad that you need something to “take the edge off,” it is ok to try one of the over-the-counter medications listed above.
* Movement is medicine after a concussion! It is important to move your body daily starting with a light walk and advancing as outlined below.

**Managing Symptoms**

* As you start to feel better you are going to be adding in more activities, but keep in mind your brain energy bank is not running with a full battery!
* It is ok to go to events with friends and family, but you may not be able to stay the entire time. It is wise to have an “exit plan” should the need arise.

**Patient Instructions: The 2-Point Rule for Managing Symptoms Following Concussion**

Important Information: These instructions are for patients who have sustained a concussion and have begun some activity (physical or cognitive/”brain activity”)

It is important to follow these instructions, as finding the right balance between activity and feeling symptoms is important for the brain to heal

Follow the instructions below to guide you on how to increase activity following your concussion – they will help you resume your regular activities as soon as possible!

General Instructions

Imagine your symptoms on a 10-point scale, where 0 means you feel great (no symptoms) and 10 is the worst symptom you've ever experienced.

These can be used for ANY activity: Schoolwork, reading, watching TV, using a phone or tablet, exercising

If your symptoms reach more than 2 points higher from where you started, you should rest and recover, and then return to the activity if you are able.

An example: If your headache starts at a 2 out of a 10, you can do any activity until it gets to a 4 out of a 10

Don't go from a 2 out of a 10 to a 7/10; then it will take too long to recover

Recovery: It should take no longer than 20-30 minutes, 1 hour maximum, to recover from any activity

This can be used for ANY activity: Schoolwork, reading, watching TV, using a phone or tablet, exercising

If it takes hours to recover, you probably did too much before you took a break

Keep in mind that any pre-existing conditions you had prior to your concussion (migraines, ADHD, mood disorders, etc.) can temporarily worsen during your concussion recovery. The hope is when you are recovered from your concussion your pre-existing condition returns to your “baseline.”

**Returning to Learn**

School is important and we'd like you to be back in school as soon as possible.

You will not be expected to do all your schoolwork immediately when you return, but it is important to be in the school setting to help integrate back into your normal routine as well as being able to see your friends.

In general, you are likely ready for school when you can do some schoolwork at home without a significant spike in symptoms.

We will ask your teachers to use your first day at school as a “sponge day.” This means that you really are just there to figure out how to pace yourself throughout the day as well as to acclimate to the lighting and noise of the classroom. Remember the 2-point rule!

As you start to do more cognitive work you may notice an increase in symptoms. This is ok, it just means your brain is starting to get the exercise it needs!

You can also follow the Green/Yellow/Red Zone method for managing symptoms in class:

Green Zone = Headaches are small and improve with short rests at your desk (looking away from the board or your notes and then going back in a short amount of time)

Yellow Zone = Headaches are increasing and may require you putting your head down at your desk or whatever way you have agreed upon with your teacher to notify them you're taking a break (some kids have found a notecard works well). Sometimes leaving to go get a drink of water or going to the nurse for a bit helps as well.

Red Zone = Headaches have gotten to the point where leaving the classroom is the best option and may need the nurse's office. Try to avoid these headaches because it is hard to return to class once they get too high.

* You may need to start with a half day of school for the first day or two to make sure you can tolerate it.
* Try to avoid bouncing in and out of school which is usually seen when you are not pacing yourself and taking breaks during the day.
* After school it is ok to take a rest and then start some homework. If you need a nap, try to limit to no more than 20 minutes to avoid interrupting your sleep cycle at night.
* Regarding homework, try and do what you can but if you cannot get it done it's ok! Focus on current work before advancing to makeup work.
* Tests and quizzes are when you are ready – start with a quiz then advance as you are able.

Tips/Tricks for Visual Complaints (eye pain/strain):

* Palming: In a seated position with feet firmly planted on the ground, lean your elbows on your knees or on the table in front of you.
  + Keep your eyes OPEN and place the palms of your hands over your eyes.
  + Do not let any light in, keep your eyes open so you are looking into darkness.
  + Take 5 deep breaths in through your nose and out through your mouth.
* 20:20:20 Rule: For every 20 minutes you spend looking at a screen, look into the distance 20 feet for at least 20 seconds.
  + Repeat this throughout the day every 20 minutes you're using a screen.

**Return to Learn Plan**

Step 1: Immediately after a concussion, complete cognitive (thinking, processing) rest for up to few days is beneficial. This may mean no school, no homework, no computer, no texting, and no video games and maybe even no television if it makes symptoms worse. In general, it is beneficial to minimize screen time. As symptoms improve, slowly reintroduce light cognitive activity. Initial appropriate activities may include watching television, listening to audio books, drawing, and cooking if they do not increase symptoms.

Step 2: Light cognitive activity is resumed once your child has had a significant improvement in symptoms at rest. Your child may do activities that do not cause symptoms to get worse. Initially, your child may only tolerate 5 to 15 minutes of work at a time. Stop the activity when moderate symptoms develop. Your child may increase the length of cognitive activity as long as symptoms do not worsen significantly or as long as symptoms improve with less than a 30-minute break.

Step 3: School-specific activity should be increased gradually. When feeling better, your child should try to do some schoolwork at home and increase the duration as tolerated. Your child should continue to participate in this activity in short bursts of time (up to 30 minutes) as tolerated and then work up to longer time periods.

Step 4: Follow these guidelines to determine when your child is ready to return to school: When your child can do 1 to 2 hours of homework at home for 1 to 2 days, they may try to return for a half day of school. Alternately, if your child can do 3 to 4 hours of homework at home for 1 to 2 days, they may try to return to school for a full day. If symptoms develop while your child is at school, they should take a break in a quiet, supervised area until symptoms resolve. When symptoms resolve, they may return to class. If symptoms do not resolve, your child should go home. Your child may increase their time in school as tolerated.

**Patient Instructions: Aerobic Activity Following Concussion**

Important Information: It is important to follow these instructions, as light exercise following concussion can help the brain heal

Follow the instructions below for several different types of exercise that can be performed

Goals

The goal of aerobic activity after concussion is to work up to 30 minutes per day, getting your heart rate up, working up a sweat and being a little out of breath.

There are many ways to get in your aerobic activity daily. Your healthcare provider will tell you what activities you are allowed to do.

Some examples of good aerobic activity include: Running, treadmill, stationary bike, ergometer, elliptical

Good nutrition and hydration are important in concussion recovery!

Make sure that you are "fueling" your recovery by including a variety of fruits/vegetables/protein in your diet.

If suffering from decreased appetite, small frequent meals that are nutrient dense is a great option.

Try to drink about half your weight in ounces daily. Add natural flavor to your water with fruits or can also dilute sports drinks in water. Can also try Nuun Tablets or Liquid IV in your water.

**Sleep Hygiene**

Sleep is always important, but it is especially important after a concussion. This is the time where the brain and body can recharge from the day and be prepared for the next day by forming new pathways to help you learn and retain information.

Studies show that getting a restful night's sleep helps improve learning, whether it be in school or learning a new skill. Sleep also helps you with attention, decision making and creativity!

Poor sleep hygiene can lead to increased risk of irritability, mood swings, difficulty getting along with others, and even depression.

Below are some tips to help ensure a restful night's sleep:

* Maintain a consistent sleep schedule: Try to go to bed around the same time every night, including when on vacation and on the weekends. It is also important to wake up around the same time each morning.
* Napping: If you must nap, limit to one 20-minute nap per day to prevent disruption in your nighttime sleep.
* Exercise: Getting as little as 10-15 minutes of exercise per day can dramatically improve your sleep.
* Avoid Caffeine: Try to avoid caffeine such as soda, coffee, or tea at least 6-8 hours before bed. While alcohol has been known to help people fall asleep, it can disrupt your sleep during the second part of the night when the body begins to process the alcohol.
* Natural Light: Make sure that during the day you are getting exposure to natural sunlight to prevent problems with your sleep/wake cycle.
* Create a Relaxing Sleep Environment: Your bed is meant for sleep, try to avoid doing your homework or hanging out on your bed. It is best to keep your bedroom on the cooler side and keep the room pitch black at night. Avoid having a clock in your line of vision because you can become anxious/frustrated if you wake up and are unable to fall back to sleep. White noise machines can help with sleep as well. If you can't fall asleep within 20 minutes of getting into bed, get up and walk into another room. You should only get into bed when you're tired.
* Avoid Electronics: Try to avoid phones, TV, and tablets at least 30 minutes before bed. You can read a book, listen to music, or meditate instead!
* Avoid Large Meals: Large meals 1-2 hours before bed can cause indigestion and subsequently an unpleasant night's sleep.
* Create a Bedtime Routine: There are many things you can do to create a consistent bedtime routine: take a warm bath, listen to soothing music, drink an herbal tea (decaf), or even listening to guided meditation on an app such as "Calm" or "Headspace."

PT/REHAB PATIENT CARE INSTRUCTIONS:

Concussion/Vestibular Rehabilitation: Concussion Rehabilitation Recommendations

These instructions about sleep and exercise are for Children's Hospital of Philadelphia (CHOP) patients recovering from a concussion.

Patient instructions: AEROBIC EXERCISE

* Complete 30 minutes of activity daily including any of the following: elliptical, stationary bike, jogging, running, swimming.
* Always start with a 5-minute warm-up and finish with a 5- minute cool down such as walking. Specific recommendations for exercise will be provided by your healthcare provider.
* The activity should be challenging enough that you are able to increase your heart rate and work up a sweat during the activity.
* Your symptoms should not increase more than 2-3 levels once you have started exercising. If you are getting symptoms above this level, decrease the intensity of your exercise and continue.
* Do not participate in contact or ball sports until approved by your healthcare provider.

Patient instructions: SLEEP

* Keep a consistent sleep schedule: Try to go to bed around the same time every night and wake up around the same time every morning. On weekends, don't go to bed more than one hour later than your usual bedtime on school nights. Although you do not need to get up as early on weekends, be sure to get up by 9:00 or 9:30 so you don't shift your sleep schedule too much.
* Get enough sleep at night: School-aged children, those 6-12 years, need between 10 and 11 hours of sleep a night. Teens require between 9 and 9 ½ hours of sleep a night.
* Create a consistent bedtime routine helps you relax each night before bed: This can include such things as taking a bath or shower before bedtime followed by a few minutes of reading.
* Don't go to bed unless you are sleepy: If you are not sleepy at bedtime, try reading a book, listening to soft music or doing something else that is relaxing.
* If you are not asleep after 20 minutes, then get out of bed. Find something else to do that will make you feel relaxed. If you can, do this in another room. Don't text your friends, check email, or play a video game.
* Once you feel sleepy again, go back to bed.
* Avoid taking naps: If you must take a nap, try to keep it short, less than one hour. Try not to take a nap after 3 p.m. so that you can fall asleep at bedtime.
* Keep a regular schedule: Regular times for meals, chores and other activities help keep the inner body clock running smoothly.
* Avoid caffeine: Most children and teens should avoid all caffeine. If you do have caffeine, be sure to not have any after lunchtime as it may cause you to have problems sleeping that night.
* Keep all electronics out of the bedroom: Your bedroom should be for sleeping. Studies show that electronics, including televisions, cell phones, computers, and video games all interfere with sleep.
* Keep your bedroom quiet, dark, and cool