

Family Education Sheet

Caring for your child after a head injury



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This sheet explains how to care for your child after a head injury.

- Watch your child closely over the next 2-3 days.
- Call your child's pediatrician or go to the ED if you are worried about your child.
- Your child must avoid any activity that may increase their risk for another head injury.

What is a head injury?

A head injury is caused by a blow or jolt to the head or body that disrupts the normal function of the brain. They are common in children.

Mild injuries cause a brief change in mental status or consciousness.

Moderate to severe injuries cause unconsciousness ("blackouts") for a longer time or bleeding in the brain.

What is a concussion?

A concussion is a type of mild injury that disrupts the way the brain functions. Some children may lose consciousness (or blackout), or they may not remember what happened right before or after the injury. But this may not happen, and your child could still have a concussion.

What are common causes of a head injury?

- Falls
- Motor vehicle (car) collisions and whiplash
- Being hit by or against something, like by being hit in the head by a baseball
- Sports
- Bicycle crashes

What are the symptoms of a head injury?

It can affect your child's:

- Thinking, memory, concentration, reasoning
- Senses of touch, taste, hearing, sight, and smell
- Language, including communication, expression, and understanding
- Emotions and behavior, including (depression, anxiety, personality changes, aggression, acting out and social inappropriateness)

Signs often are:

Physical Headaches, nausea, tired, problems with vision or balance, sensitivity to light/noise, numbness/tingling, vomiting, dizziness	Thinking Feeling mentally foggy, problems concentrating, problems remembering, feeling slowed down
Emotional Irritability, sadness, feeling emotional, nervousness	Sleep Drowsiness, sleeping changes

How can I help with symptoms?

- Minimize screen time (TV, computers, tablets, and phones) as your child recovers. They can use a computer if necessary when they go back to school, but only for 15 minutes at a time.
- They should not play video games.
- Keep your child away from very noisy and very bright places, like movie theaters.
- Avoid places with large crowds.
- Try not to do too many activities.

What physical activities should my child do?

The best way to help your child recover is to make sure they rest. Every child is different and needs different amounts of rest. Your child's doctor will talk with you about how the guidelines below apply to your child.

- When your child is ready to go back to full days of school (see next page), they can do light activity, like walking, stretching and balance. Try 10-15 minutes of exercise at a time and watch for symptoms.
- Until the doctor says it's OK, your child should not play contact sports.
- Always lower your child's activity level if you notice an increase in symptoms. They may need a rest break.

Your child must avoid any activity that may increase their risk for another head injury. Ask the doctor when your child can go to the gym and play sports.

When should my child return to school?

- They need to take a few (2-3) days off from school right after the injury.
- After 2-3 days of cognitive rest, your child can probably go back to school with a modified schedule as symptoms don't get worse. If symptoms are gone, it's OK to skip these next steps and go back to doing full days and usual academic work.
- Work with the school to make a plan for completing missed and upcoming assignments, and for allowing extra time to complete schoolwork.
- Your child should take rest breaks throughout the day if symptoms get worse.
- They should sit out of classes that might make symptoms worse (like band).
- The goal is to avoid the return of severe symptoms. But keep in mind that "brain work" is not dangerous. Symptoms that get worse by reading will not harm your child's brain.

Will my child's injury impact their performance at school?

Returning to school can be stressful because:

- Your child may have anxiety and worry about schoolwork.
- Teachers, students, and school staff may not understand how a head injury can make learning difficult.
- Your child may have trouble with memory, reading, note-taking, paying attention, and concentrating.

It's important for your child to go to school even if it's only a few hours. This will help them keep a schedule, interact with friends, and avoid isolation.

You should meet with teachers, the school nurse, and guidance counselor to go over your child's plan.

How can I help my child stay healthy while they recover?

Here are some guidelines:

Eating and drinking

Your child should:

- Not skip meals
- Have a small, healthy snack in between meals
- Drink at least 6 to 8, 8-oz glasses of water a day
- Have some drinks with electrolytes—but just a little because of the added sugar
- Eat a little bit of salt from salty snacks, like pretzels or crackers
- Limit caffeinated drinks, like coffee, tea, soda, sugary drinks and those with artificial (not real) sweeteners
- Not have caffeine after lunchtime (including chocolate)

Sleep

Your child should:

- Stick to a bedtime routine, like turning down the lights, doing a quiet activity (reading) and lowering the temperature in the room
- Avoid TV, phones, computer and screen time 1–2 hours before bedtime
- Go to bed and wake up at the same time every day, including weekends
- Not be very active within 3 hours of going to bed

Stress and relaxation

- Work with your child's school to help with stress. This could mean cutting back on homework or allowing extra time for assignments.
- Practice relaxation at home by doing calming activities like reading, taking a warm bath, or listening to soft music.
- Complementary and alternative therapies may help your child relax mentally and physically. These include massage, Reiki, acupuncture, yoga, biofeedback, and seeing a chiropractor.
- Try meditating with your child, using visualization and guided imagery. A therapist or cognitive behavioral therapist can help you with this.

Medications

- Follow the recommendations from your child's health care provider about using an over-the-counter medicine to manage symptoms.
- If your doctor recommended acetaminophen, ibuprofen, or naproxen for headaches, **do not give them more than 3 times in a week.** They can cause headaches if your child takes them too much.

When should I call the doctor?

Contact your child's pediatrician if your child:

- Has a seizure
- Looks very drowsy or has trouble being woken up
- Throws up or is nauseous a lot
- Has weakness, numbness, decreased coordination or unsteadiness when walking
- Has a headache that gets worse and does not go away
- Slurs their speech or has trouble speaking
- Has trouble recognizing people or places
- Experiences double vision
- Acts confused, restless, agitated or other unusual behavior
- Loses consciousness (blacks out)
- Is getting worse even after resting
- Starts struggling in school

You may also contact the Brain Injury Center at (617) 355-6015 with concerns.

ACADEMIC RECOVERY GUIDELINES AFTER CONCUSSION

Each course of action will have to be adjusted to the student's individual needs.

REHABILITATION STAGE	STAGE LENGTH	GOALS	RECOMMENDED ACTIVITIES
REST	2 – 4 day	Minimal cognitive activity (brain work) and academics. <ul style="list-style-type: none"> If symptoms are severe, consider staying home from school for a few days. Minimize electronics use. 	<p>Inform school of the child's concussion. Ask for a team leader at school to be the point person for the return to learn process (such as a guidance counselor, school nurse or athletic trainer)</p> <p>Minimize screen time. Use computer if necessary for school, but in short intervals (15 minutes with breaks). Avoid video games and movie theaters back at school full time with no symptoms.</p> <p>Child may sit out of school for two to four days, but if symptoms are mild can attend for half days or full days as long as symptoms don't worsen. If symptoms are gone and child can tolerate school, it's okay to skip steps and proceed to full academic work.</p>
	2 – 10 days	Light to moderate cognitive activity. Try not to get too far behind in school but avoid making symptoms worse. <ul style="list-style-type: none"> Attend school half or full days when able to listen, do light reading and can tolerate light exposure for 30 minutes (don't have to be completely symptom free). Take rest breaks throughout the day if symptoms worsen. Sit out of classes that might make symptoms worse (such as band). 	<p>Work with school to:</p> <ul style="list-style-type: none"> Determine if work is excused (not to be made up), modified (must complete modified version of original assignment) or responsible (must be completed in full by student). Prioritize work in each class (what needs to be done first and what can wait to be completed at a later date). Create a schedule for completing missed and upcoming assignments over the course of a few weeks. Then spread out make-up work in a calendar. <p>Your doctor may send a note requesting temporary academic adjustments including:</p> <ul style="list-style-type: none"> extra time to complete modified tests or quizzes reduce essay length and homework delay or reschedule high-stakes tests or standardized tests <p>If symptoms worsen, the child may rest at their desk or go to nurse's office.</p> <p>Consider scheduled breaks spread out during day.</p> <p>Do homework in 15- to 30-minute blocks. Increase time as symptoms decrease.</p>
REINTEGRATION	10 – 14 days	Moderate to high cognitive activity. Avoid making symptoms worse. <ul style="list-style-type: none"> Attend school full days. Begin to complete make-up work. 	<p>Continue to check in with teachers to assess what remaining work needs to be done.</p> <p>Consider untimed tests and continue to increase the amount of homework completed.</p> <p>The goal at this stage is to avoid the return of severe symptoms, but keep in mind that "brain work" is not dangerous and symptoms worsened by reading will not injure the brain.</p> <p>As symptoms improve, your doctor may also begin prescribing light, noncontact exercise.</p>
	When symptoms are gone	Full cognitive activity <ul style="list-style-type: none"> Attend full school days. Complete any make-up work. 	<p>Attend all classes and full days of school without breaks. Fully resume classwork, homework and major assignments.</p> <p>Finish make-up work and testing.</p>

EXERCISE PROGRESSION AFTER CONCUSSION

Each course of action will have to be adjusted to the student's individual needs.

STAGE OF REHABILITATION		GOALS	RECOMMENDED EXERCISES
STAGE 1 Target Heart Rate: 30-40% of maximum exertion Recommendations: Exercise in a quiet and safe area; no impact activities; may try very limited balance exercises if tolerated. 10-15 minutes of light cardio exercise trials. Multiple trials can be done if symptoms are not worsened.		Prevent deconditioning (prevent "sluggish, couch potato effect" from too much rest) <ul style="list-style-type: none"> Stretch and walk at least twice per day No running, no contact; exercise with movement in neutral planes (avoid fast head movements or bending over) Level of exercise: you can still breathe through your nose comfortably	Walking, stretching, slow bodyweight squats (10-15 minute trials) Upper extremity (UE) very light hand weights; resistive band rowing; lower extremity (LE) straight leg raises Gentle neck range of motion; shoulder, pectoralis, hamstring, hip flexor, quadriceps, calf stretching ("top to bottom stretching" of all large muscle groups) Proceed to Stage 2 when you can attend full days at school (with academic adjustments if necessary) and symptoms are minimal
STAGE 2 Target Heart Rate: 40-60% of maximum exertion Recommendations: May use various exercise equipment. Some mild positional changes and head movement introduced 10-15 minutes of cardio exercise trials.		Light to moderate aerobic conditioning, resistance training, stretching and balance <ul style="list-style-type: none"> Moderate balance activities; perform with minimal head position changes Light/moderate work with resistance bands and light dumbbells Level of exercise: you have to breathe through your mouth but can talk without pausing to catch your breath	Stationary bike; light swimming; resistive band exercises (UE/LE); wall squats; lunges; step-up/down Any Stage 1 stretching, active stretching as tolerated (lunge walks; side-to-side groin stretch; walking hamstring stretch) If muscular neck pain persists, continue to treat with massage, shoulder exercises, and gentle stretch Proceed to Stage 3 when school is tolerated and you are symptom free
STAGE 3 Target Heart Rate: 60-80% of maximum exertion Recommendations: Any environment ok for exercise (indoor/outdoor); integrate strength, conditioning & balance exercises; can incorporate concentration challenges (counting exercises, visual games) Moderately aggressive aerobic and strength exercises. 20-30 minutes of cardio and strength training exercise trials.		Running, jumping, plyometrics (no contact) <ul style="list-style-type: none"> Exercise with head movements in all planes, including quickly bending forward if tolerated Challenging balance exercises, challenging positional changes Level of exercise: you have to breathe through your mouth and catching your breath impedes ability to talk continuously (exercise is not at the level of maximal exercise intensity)	Treadmill (jogging); stationary or outside bike; elliptical; resistive weight training including free weights; dynamic strength activities Half speed agility drills (zig-zag runs, side shuffle, ball toss, balance disc; squats & lunges on BOSU ball); OK for noncontact ice skating, stick handling, light ball kicking, batting cage Proceed to Stage 4 after several days of Stage 3 success and when academic adjustments are not needed (full academic success)
STAGE 4 Target Heart Rate: 80% of maximum exertion Recommendations: Continue to avoid contact activity, but resume aggressive training in all environments if symptoms are gone.		Full intensity NON-CONTACT physical training <ul style="list-style-type: none"> Sport-specific activities and drills Full aerobic and strength exercises Level of exercise: At the level of maximal intensity	Graded treadmill; sprint conditioning and interval training; sport-specific drills/training 35- to 45-minute trials Proceed to Stage 5 (contact activities) ONLY after evaluation and full clearance by your treating clinician
STAGE 5 Target Heart Rate: Full exertion Recommendations: Initiate contact activities as appropriate to sport activity, full exertion for return to competition. DO NOT PROCEED TO CONTACT ACTIVITIES UNTIL CLEARANCE		Continue aggressive strength/conditioning exercises <ul style="list-style-type: none"> Sport-specific activities and drills Consider isometric neck/periscapular strengthening and proprioception training to prevent future injuries Full contact activities only if symptoms do not return 	Programs typically led by team athletic trainers or coaches Practice & game intensity training Typically, at least two practices are completed before game play Immediately report any return of symptoms

*Max HR is (220-your age); Target Heart Rates calculated by Karvonen's equation: ((Max HR – Resting HR) X Target Percentage) + Resting HR