Guidelines for Diagnosing and Managing Pediatric Concussion

First edition, June 2014

Recommendations for Schools and/or Community Sports Organizations/Centres
This document is intended to guide health care professionals in diagnosing and managing pediatric—not adult—concussion. It is not for self-diagnosis or treatment. Parents and/or caregivers may bring it to the attention of their child/adolescent’s health care professionals.

The best knowledge available at the time of publication has informed the recommendations in this document. However, health care professionals should also use their own judgment, the preferences of their patients, and factors such as the availability of resources in their decisions.

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The Ontario Neurotrauma Foundation (ONF) is a health research organization that focuses on the practical application of research to improve the lives of people with an acquired brain injury or spinal cord injury, and the prevention of neurotrauma injuries. Through strategic research funding activity and the building of relationships with numerous partners and stakeholders, the ONF fosters, gathers and applies research knowledge to increase the effectiveness and use of prevention, and to improve the systems of care, outcomes, and quality of life of those who have sustained a neurotrauma injury. The Foundation receives its funding from the Government of Ontario.

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Cover image: courtesy of Dr. Mike Evans
## Recommendations for Schools and/or Community Sports Organizations/Centres

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Chapter: Recommendations—Before Injury
Guidelines for Diagnosing and Managing Pediatric Concussion

Recommendations by Timeline

In Advance (before the first activity)

**O.1: Learn to recognize the symptoms of concussion.**

**When:** Before the child/adolescent engages in any physical activity.

**Who:** Anyone observing and caring for children/adolescents.

- Example: teachers, coaches, parents, peers.

**How:** Bring the following tools to sports sessions (practice or match), events and activities.

- **Tool 0.1:** Pocket Concussion Recognition Tool for children, adolescents and adults.
- **Tool 0.3:** Parachute Concussion Guidelines for Parents & Caregivers.

**Why:** So that you are ready and able to provide the best immediate support and appropriate action to any child, in case it is needed.

**Level of evidence:** B.

**O.2: Adopt a formal policy that prevents a child/adolescent who may have sustained a concussion from returning to play on the same day as the injury.**

**When:** As soon as possible, if not done already.

**Who:** School boards, community sports organizations/centres.

**How:**

- Incorporate information from the following tool in the policy:
  - **Tool 0.7:** Ontario Ministry of Education School Board Policies for Concussion.
- Publicize the policy widely among schools and their staff.

**Why:**

- Schools and their staff should be ready to act decisively if they suspect that a child/adolescent has sustained a concussion.
- Jurisdictions such as Ontario expect all school boards to have a policy on concussion by January 30, 2015.

**Level of evidence:** B.

**O.3: Ensure policies are in place to accommodate a child/adolescent who has sustained a concussion.**

**When:** As soon as possible, if not done already.

**Who:** School boards, community sports organizations/centres.

**How:**

- Incorporate information from the following tools into the school board’s policy. Note that there is evidence stating the need for physical and cognitive rest, but no clear answer as to the ideal duration. Therefore, we offer tools for two approaches: Tools
followed by “a” reflect a standard approach, those followed by “b” reflect a more conservative approach.

- **Tool 0.4a**: Parachute After a Concussion Guidelines for Return to Play.
- **Tool 0.4b**: CanChild Return to Activity Guidelines for Children and Youth.
- **Tool 0.5a**: ACE Post-Concussion Gradual Return to School.
- **Tool 0.5b**: CanChild Return to School Guidelines for Children and Youth.
- **Tool 0.6**: CanChild Activity Suggestions for Recovery Stages After Concussion.
- **Tool 0.7**: Ontario Ministry of Education School Board Policies for Concussion.

- Publicize these policies widely among schools and their staff.
- Allow the child/adolescent:
  - enough time away from school to begin cognitive recovery;
  - accommodations to support cognitive deficits, such as additional time for homework and/or exams during recovery;
  - exemptions from physical activities until cleared by his/her primary care professional.

Why:
- Schools and their staff should be ready to promote the child/adolescent’s recovery and effective return-to-school/play.
- Jurisdictions such as Ontario expect all school boards to have a policy on concussion by January 30, 2015.

**Level of evidence**: B.

**0.4: Consider baseline neuro-cognitive testing if the child/adolescent plays high-risk sports—not as a general rule.**

**When**: Before the child/adolescent plays a practice or match.

**Who**:
- Parents and/or caregivers.
- Health care professionals.
  - Example: family physicians, pediatricians, nurse-practitioners.
- School boards, community sports organizations/centres.

**How**: Contact a health care professional for referral to a qualified professional for a neuro-cognitive assessment.

Why:
- To provide baseline information on children/adolescents who play high-risk sports in case they sustain a concussion.
- To assist with return-to-play decisions.

**Level of evidence**: B.
On Injury (if I suspect the child/adolescent has a concussion)

1.1: Remove the child/adolescent from play immediately if you suspect a concussion.

When: On injury, on site.
Who: Anyone observing and caring for children/adolescents.
   - Example: teachers, coaches, parents, peers, health care professionals.
How: Do not let the child/adolescent return to play or practice that day. “If in doubt, sit them out.”
   - **Recommendation 0.1**: Learn to recognize symptoms of concussion.
   - Use the evidence in the following tools written by experts.
     - **Tool 0.1**: Pocket Concussion Recognition Tool for children, adolescents and adults.
     - **Tool 0.3**: Parachute Concussion Guidelines for Parents & Caregivers.

Why:
   - To assess the child/adolescent as soon as possible.
   - To avoid another blow that would:
     - complicate the injury further;
     - have a longer recovery time due to the higher risk of persistent symptoms;
     - potentially put the child/adolescent’s life at risk (second impact syndrome).

**Level of evidence**: B (ages 13+).

1.2: Assess the child/adolescent for symptoms related to concussion.

When: On injury, on site if possible.
Who: Onsite health care professional and/or responsible adult.
   - Example: Team physician, coach, trainer.
How:
   - Assess the injury (responsible adult).
     - **Tool 0.1**: Pocket Concussion Recognition Tool for children, adolescents and adults
   - Do not leave the child/adolescent alone.

Why:
   - Monitoring will help detect any worsening conditions and promote recovery.
   - Symptoms may only appear several hours after a concussion.
   - Concussion is an evolving injury; symptoms may change over time.

**Level of evidence**: B (ages 13+).

1.3: Watch for possible symptoms of concussion to evolve.

When: For (1-2) days after injury.
Who: Anyone observing and caring for children/adolescents.
   • Example: teachers, coaches, parents, peers.
How: Monitor for symptoms or changes in behaviour.
   • Tool 0.1: Pocket Concussion Recognition Tool for children, adolescents and adults.
Why:
   • Symptoms may only appear several hours after a concussion.
   • Concussion is an evolving injury; symptoms may change over time.
   • Awareness of the signs and symptoms that could indicate a concussion or more serious brain injury will help ensure that the child/adolescent receives the necessary diagnosis and treatment to promote recovery.
Level of evidence: B.

1.4: Take a child/adolescent who shows symptoms of concussion to a health care professional.

When: On injury or as soon as possible after symptoms appear.

Who: Anyone observing and caring for children/adolescents.
   • Example: Teachers, coaches, parents, peers.
How:
   • Take the child/adolescent to a family physician, primary care sport medicine physician, nurse practitioner or to the nearest Emergency Department.
   • Arrange an ambulance service for children/adolescents with any of the “red flag” symptoms in the following tool:
      ○ Tool 0.1: Pocket Concussion Recognition Tool for children, adolescents and adults.
Why: To confirm the diagnosis of concussion, and to rule out other potentially serious injuries that may require medical intervention.
Level of evidence: B.
On Discharge (what do we do next?)

3.1f: Advise on maintaining social networks and interactions.

When: On discharge, on interim evaluation, on re-evaluation.

Who:
- Health care professionals.
  - Example: Family physicians, pediatricians, nurse-practitioners, occupational and physical therapists, neuropsychologists.
- Qualified school-based professionals.
  - Example: teachers, guidance counsellors.

How: Encourage children/adolescents to participate in rewarding social activities; modified as needed.
- Identify these activities and suggest modifications, as appropriate.
- Note that children/adolescents who have persistent symptoms may be less able to participate in rewarding social activities.

Why:
- Reducing the risk of mental health issues and social isolation may promote recovery.
- Adolescents tend to have reduced social leisure activities one year after concussion.

Level of evidence: B.
On Return to School (what do we monitor in the longer term?)

4.2: Develop a return-to-learn program after acute symptoms have improved.

When: On interim evaluation, on re-evaluation.

Who:
- Health care professionals.
  - Example: Family physicians, pediatricians, nurse-practitioners, occupational and physical therapists, neuropsychologists.
- Qualified school-based professionals.
  - Example: teachers.
- Parents and/or caregivers.

How:
- Create a schedule (health care professionals, schools, and parents and/or caregivers together) to gradually reintroduce cognitive activities mixed with rest periods. Examples of activities include family engagement (lunch or dinner with family), general home activities (making a sandwich, walking the dog), 10-15 minutes of texting, 30 minutes TV show, 20 minutes of homework.
- Check to see if symptoms get worse when activity increases.
- Note that there is evidence stating the need for physical and cognitive rest, but no clear answer as to the ideal duration. Extreme prolonged rest may delay recovery. Therefore, we offer tools for two approaches. Tools followed by “a” reflect a standard approach, those followed by “b” reflect a more conservative approach. Use clinical judgment.
  - Tool 0.5a: ACE Post-Concussion Gradual Return to School.
  - Tool 0.5b: CanChild Return to School Guidelines for Children and Youth.
  - Tool 4.3: Academic Accommodations for Concussed Students.
  - Tool 4.2: Template Letter of Accommodation from School to Parents/Caregivers.
  - Tool 4.4: Returning to School-based Activities After Concussion Care Plan.
- Prioritize return-to-learn before return-to-work. For older teens who work, refer to the “Guidelines for Concussion/ Mild Traumatic Brain Injury and Persistent Symptoms Second Edition For Adults (18+ years of age).”

Why:
- Parents and/or caregivers need to know that most patients recover fully from concussion even though the recovery rate is variable and unpredictable.
- The key to the initial management of concussion is physical and cognitive rest, which allow symptoms to resolve.

Level of evidence: B for need for rest; C for ideal duration of rest.
4.3: Recommend additional assessment and accommodations if symptoms worsen or fail to improve.

When: On interim evaluation, on re-evaluation.

Who:
- Health care professionals.
  - Example: Family physicians, pediatricians, nurse-practitioners, neuropsychologists, occupational and physical therapists.
- Qualified school-based professionals.
  - Example: teachers.

How:
- Note that there is evidence stating the need for physical and cognitive rest, but no clear answer as to the ideal duration. Extreme prolonged rest may delay recovery. Therefore, we offer tools for two approaches. Tools followed by “a” reflect a standard approach, those followed by “b” reflect a more conservative approach. Use clinical judgment.
- Use the following tool to assess progress.
  - Tool 0.4a: Parachute After a Concussion Guidelines for Return to Play.
  - Tool 0.4b: CanChild Return to Activity Guidelines for Children and Youth.
- Develop an individual education plan (IEP) at school. Use the following tool.
- Repeat neuro-cognitive testing if the child/adolescent had a baseline done already.
- Consider referring to an appropriate specialist.

Why: To promote successful return to learn/play.

Level of evidence: B for need for rest; C for ideal duration of rest.

4.4: Develop a return-to-play program only after the child/adolescent has started his/her return-to-learn program.

When: On interim evaluation

Who:
- Health care professionals.
  - Example: Family physicians, pediatricians, nurse-practitioners, occupational and physical therapists, neuropsychologists.
- Qualified school-based professionals.
  - Example: teachers, coaches.

How:
- Note that there is evidence stating the need for physical and cognitive rest, but no clear answer as to the ideal duration. Extreme prolonged rest may delay recovery. Therefore, we offer tools for two approaches. Tools followed by “a” reflect a standard approach, those followed by “b” reflect a more conservative approach. Use clinical judgment.
  - Tool 0.4a: Parachute After a Concussion Guidelines for Return to Play.
  - Tool 0.4b: CanChild Return to Activity Guidelines for Children and Youth.
  - Tool 0.6: CanChild Activity Suggestions for Recovery Stages After Concussion.
Chapter: Recommendations—On Interim Evaluation
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- **Tool 4.1**: OPHEA Documentation for a Diagnosed Concussion – Return to Learn/Return to Physical Activity Plan.
- **Tool 4.2**: Template Letter of Accommodation from School to Parents/Caregivers.

- **Why**: Base decisions regarding return-to-play on clinical judgment, expertise and symptoms.
- **Why**: To promote an optimal recovery. A gradual return to play is the best way to make sure that the child/adolescent remains symptom-free when he/she fully engages in sport.
- **Level of evidence**: B for need for rest; C for ideal duration of rest.
On Re-assessment After One Month (what do we do next if the child/adolescent still has symptoms?)

5.4g(i): Assess for existing and new mental health symptoms and disorders.

When: On re-evaluation.

Who:
- Health care professionals.
  - Example: Family physicians, pediatricians, nurse-practitioners, neuropsychologists.
- Qualified school-based professionals.
  - Example: teachers.

How:
- Use the following tools, as appropriate.
  - Tool 5.8: Mood and Feelings Questionnaire, Child Self-Report.
  - Tool 5.9: Mood and Feelings Questionnaire, Parent Report on Child.
  - Tool 5.10: Screen for Child Anxiety Related Disorders (SCARED).
- Ask about
  - Somatoform disorders.
  - Family functioning.
- Refer to a mental health specialist, as appropriate (use clinical judgment).

Why: Identifying common mental health disorders early could:
- prevent/mitigate additional persistent symptoms such as learning and behaviour problems;
- treat the mental health disorder itself, and prevent it from becoming a long-term problem.

Level of evidence: B.

5.4g(ii): Ask the child/adolescent and parents and/or caregivers to report on mood and feelings.

When: On re-evaluation and on referral (repeatedly as needed).

Who:
- Health care professionals.
  - Example: Family physicians, pediatricians, nurse-practitioners, occupational and physical therapists, neuropsychologists.
- Qualified school-based professionals.
  - Example: teachers.

How: Ask the child/adolescent and parents and/or caregivers to complete the following, as appropriate.
- Tool 5.8: Mood and Feelings Questionnaire, Child Self-Report.
• **Tool 5.9**: Mood and Feelings Questionnaire, Parent Report on Child.

**Why**: Identifying common mental health disorders early could:
  • assess the association of physical symptoms and restrictions to activity on mental health.
  • treat the mental health disorder itself, and prevent it from becoming a long-term problem.

**Level of evidence**: B.

**5.8: Work with the child/adolescent’s primary care professional, school and/or employer regarding accommodations needed to tasks or schedules.**

**When**: At home, in between evaluations.

**Who**:
  • Parents and/or caregivers.
  • Health care professionals.
    • Example: Family physicians, pediatricians, nurse-practitioners, occupational and physical therapists, neuropsychologists.
  • Qualified school-based professionals.
    • Example: teachers, coaches.

**How**:
  • Discuss additional assessment and accommodations if symptoms fail to improve and managing cognitive impairments with your primary care professional.
  • Use the following tools, as appropriate.
    • **Tool 4.2**: Template Letter of Accommodation from School to Parents/Caregivers.
    • **Tool 4.3**: Academic Accommodations for Concussed Students.
    • **Tool 4.4**: Returning to School-based Activities After Concussion Care Plan.
    • **Tool 4.5**: Return-to-school Information and Strategies.

**Why**: To promote recovery and avoid the development of persistent symptoms.

**Level of evidence**: B.
# List of Tools

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Tool 01: Pocket Concussion Recognition Tool for children, adolescents and adults

**RECOMMENDATIONS / LIST OF TOOLS**

**Tool 0.1: Pocket Concussion Recognition Tool for children, adolescents and adults**

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**Pocket CONCUSSION RECOGNITION TOOL™**

To help identify concussion in children, youth and adults

**RECOGNIZE & REMOVE**

Concussion should be suspected if one or more of the following visible clues, signs, symptoms or errors in memory questions are present.

1. **Visible clues of suspected concussion**

   Any one or more of the following visible clues can indicate a possible concussion:
   - Loss of consciousness or responsiveness
   - Lying motionless on ground/Slow to get up
   - Unsteadiness on feet/Balance problems or falling over/Discoordination
   - Grabbing / Clutching of head
   - Dazed, slurred or vacant look
   - Confused / Not aware of plays or events

2. **Signs and symptoms of suspected concussion**

   Presence of any one or more of the following signs & symptoms may suggest a concussion:
   - Loss of consciousness
   - Seizure or convulsion
   - Balance problems
   - Nausea or vomiting
   - Drowsiness
   - More emotional
   - Irritability
   - Sickness
   - Fatigue or low energy
   - Nervous or anxious
   - “Don’t feel right”
   - Difficulty remembering
   - Headache
   - Dizziness
   - Confusion
   - Feeling slowed down
   - “Pressure in head”
   - Blurred vision
   - Sensitivity to light
   - Amnesia
   - Feeling like “in a fog”
   - Neck Pain
   - Sensitivity to noise
   - Difficulty concentrating

3. **Memory function**

   Failure to answer any of the above questions correctly may suggest a concussion:
   - “What venue are we at today?”
   - “Which half is it now?”
   - “Who scored last in this game?”
   - “What team did you play last week/game?”
   - “Did your team win the last game?”

Any athlete with a suspected concussion should be IMMEDIATELY REMOVED FROM PLAY, and should not be returned to activity until they are assessed medically. Athletes with a suspected concussion should not be left alone and should not drive a motor vehicle.

It is recommended that, in all cases of suspected concussion, the player is referred to a medical professional for diagnosis and guidance as well as return to play decisions, even if the symptoms resolve.

**RED FLAGS**

If ANY of the following are reported then the player should be safely and immediately removed from the field. If no qualified medical professional is available, consider transporting by ambulance for urgent medical assessment:

- Athlete complains of neck pain
- Increasing confusion or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness or tingling in arms or legs
- Vision changes
- Behavioural change
- Difficulty concentrating

**Remember:**

- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Do not attempt to move the player (other than required for airway support) unless trained to do so.
- Do not remove helmet (if present) unless trained to do so.

WHAT IS A CONCUSSION?
A concussion is a brain injury that cannot be seen on routine x-rays, CT scans, or MRIs. It affects the way a child may think and remember things, and can cause a variety of symptoms.

WHAT ARE THE SYMPTOMS AND SIGNS OF CONCUSSION?
A child does not need to be knocked out (lose consciousness) to have had a concussion.

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<td>Headache</td>
<td>Poor coordination or balance</td>
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<td>General confusion</td>
<td>Dizziness</td>
<td>Blank stare/glasy eyed</td>
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<tr>
<td>Cannot remember things that happened before and after the injury</td>
<td>Feels dazed</td>
<td>Vomiting</td>
</tr>
<tr>
<td>Knocked out</td>
<td>Feels “drugged” or stunned; “having my bell rung”</td>
<td>Slurred speech</td>
</tr>
<tr>
<td></td>
<td>Sees stars, flashing lights</td>
<td>Slow to answer questions or follow directions</td>
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<td></td>
<td>Ringing in the ears</td>
<td>Easily distracted</td>
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<td></td>
<td>Sleepiness</td>
<td>Poor concentration</td>
</tr>
<tr>
<td></td>
<td>Loss of vision</td>
<td>Strange or inappropriate emotions (i.e., laughing, crying, getting mad easily)</td>
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<tr>
<td></td>
<td>Sees double or blurry</td>
<td>Not playing as well</td>
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<tr>
<td></td>
<td>Stomach ache, stomach pain, nausea</td>
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</tr>
</tbody>
</table>

WHAT CAUSES A CONCUSSION?
Any blow to the head, face, or neck, or a blow to the body which causes a sudden jarring of the head may cause a concussion (i.e., a ball to the head, being checked into the boards in hockey).

WHAT SHOULD YOU DO IF YOUR CHILD GETS A CONCUSSION?
Your child should stop playing the sport right away. They should not be left alone and should be seen by a doctor as soon as possible that day. If your child is knocked out, call an ambulance to take him/her to the hospital immediately. Do not move your child or remove any equipment such as helmet, in case of a cervical spine injury. Wait for paramedics to arrive.

Parachute is bringing attention to preventable injury and helping Canadians reduce their risk of injury and enjoy long lives free of the failures.
CONCUSSION GUIDELINES FOR PARENTS & CAREGIVERS

HOW LONG WILL IT TAKE FOR MY CHILD TO GET BETTER?

The signs and symptoms of a concussion often last for 7-10 days but may last much longer. In some cases, children may take many weeks or months to heal. Having had previous concussions may increase the chance that a person may take longer to heal.

HOW IS A CONCUSSION TREATED?

THE MOST IMPORTANT TREATMENT FOR A CONCUSSION IS REST.
The child should not exercise, go to school or do any activities that may make them worse, like riding a bike, play wrestling, reading, working on the computer or playing video games. If your child goes back to activities before they are completely better, they are more likely to get worse, and to have symptoms longer. Even though it is very hard for an active child to rest, this is the most important step.

Once your child is completely better at rest (all symptoms have resolved), they can start a step-wise increase in activities. It is important that your child is seen by a doctor before he/she begins the steps needed to return to activity, to make sure he/she is completely better. If possible, your child should be seen by a doctor with experience in treating concussions.

WHEN CAN MY CHILD RETURN TO SCHOOL?

Sometimes children who have a concussion may find it hard to concentrate in school and may get a worse headache or feel sick to their stomach if they are in school. Children should stay home from school if their symptoms get worse while they are in class. Once they feel better, they can try going back to school part time to start (eg. for half days initially) and if they are okay with that, then they can go back full time.

WHEN CAN MY CHILD RETURN TO SPORT?

It is very important that your child not go back to sports if he/she has any concussion symptoms or signs. Return to sport and activity must follow a step-wise approach:

STEP 1) No activity; complete rest. Once back to normal and cleared by a doctor, go to step 2.
STEP 2) Light exercise such as walking or stationary cycling, for 10-15 minutes.
STEP 3) Sport specific aerobic activity (ie, skating in hockey, running in soccer), for 20-30 minutes. NO CONTACT.
STEP 4) “On field” practice such as ball drills, shooting drills, and other activities with NO CONTACT (ie. no checking, no heading the ball, etc.).
STEP 5) “On field” practice with body contact, once cleared by a doctor.
STEP 6) Game play.

Note: Each step must take a minimum of one day. If your child has any symptoms of a concussion (e.g. headache, feeling sick to his/her stomach) that come back either during activity, or later that day, your child should stop the activity immediately and rest until symptoms resolve, for a minimum of 24 hours. Your child should be seen by a doctor and cleared again before starting the step wise protocol again.

When should I take my child to the doctor?

Every child who gets a head injury should be seen by a doctor as soon as possible. Your child should go back to the doctor IMMEDIATELY if, after being told he/she has a concussion, he/she has worsening of symptoms such as:

1. being more confused
2. headache that is getting worse
3. vomiting more than twice
4. strange behaviour
5. not waking up
6. having any trouble walking
7. having a seizure

Problems caused by a head injury can get worse later that day or night. The child should not be left alone and should be checked throughout the night. If you have any concerns about the child’s breathing or how they are sleeping, wake them up. Otherwise, let them sleep. If they seem to be getting worse, you should see your doctor immediately. NO CHILD SHOULD GO BACK TO SPORT UNTIL THEY HAVE BEEN CLEARED TO DO SO BY A DOCTOR.

www.parachute canada.org

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Recommendations / List of Tools
A CONCUSSION is a serious event, but you can recover fully from such an injury if the brain is given enough time to rest and recuperate. Returning to normal activities, including sport participation, is a step-wise process that requires patience, attention, and caution.

Each step must take a minimum of one day but could last longer, depending on the player and his or her specific situation.

**STEP 1: No activity, only complete rest.**
Limit school, work and tasks requiring concentration. Refrain from physical activity until symptoms are gone. Once symptoms are gone, a physician, preferably one with experience managing concussions, should be consulted before beginning a step-wise return to play process.

**STEP 2: Light aerobic exercise.**
Activities such as walking or stationary cycling. The player should be supervised by someone who can help monitor for symptoms and signs.
No resistance training or weight lifting. The duration and intensity of the aerobic exercise can be gradually increased over time if no symptoms or signs return during the exercise or the next day.

**Symptoms?** Return to rest until symptoms have resolved. If symptoms persist, consult a physician.
**No symptoms?** Proceed to Step 3 the next day.

**STEP 3: Sport specific activities.**
Activities such as skating or throwing can begin at step 3. There should be no body contact or other jarring motions such as high speed stops or hitting a baseball with a bat.

**Symptoms?** Return to rest until symptoms have resolved. If symptoms persist, consult a physician.
**No symptoms?** Proceed to Step 4 the next day.

**STEP 4: Begin Drills without body contact.**

**Symptoms?** Return to rest until symptoms have resolved.
If symptoms persist, consult a physician.
**No symptoms?** The time needed to progress from non-contact exercise will vary with the severity of the concussion and with the player.
 Proceed to Step 5 only after medical clearance.

**STEP 5: Begin drills with body contact.**

**Symptoms?** Return to rest until symptoms have resolved.
If symptoms persist, consult a physician.
**No symptoms?** Proceed to Step 6 the next day.

**STEP 6: Game play.**
RETURN TO PLAY GUIDELINES

NEVER RETURN TO PLAY IF YOU STILL HAVE SYMPTOMS!

A player who returns to active play before full recovery from the first concussion is at high risk of sustaining another concussion, with symptoms that may be increased and prolonged.

HOW LONG DOES THIS PROCESS TAKE?

These steps do not correspond to days! It may take many days to progress through one step, especially if the concussion is severe. As soon as symptoms appear, the player should return to rest until symptoms have resolved and wait at least one more day before attempting any activity. The only way to heal a brain is to rest it.

HOW DO I FIND THE RIGHT DOCTOR?

When dealing with concussions, it is important to see a doctor who is knowledgeable in concussion management. This might include your physician or someone such as a sports medicine specialist. Your family doctor may be required to submit a referral to see a specialist. Contact the Canadian Academy of Sport and Exercise Medicine (CASEM) to find a sports medical physician in your area. Visit www.casm-acms.org for more information. You can also refer your doctor to parachute canada.org for more information.

WHO DO THESE GUIDELINES APPLY TO?

These guidelines were developed for children over the age of 10; those younger may require special guidelines, and more conservative treatment and care. Return to Play Guidelines should be at the discretion of the physician.

WHAT IF MY SYMPTOMS RETURN DURING THIS PROCESS?

Sometimes these steps can cause symptoms of a concussion to return. This means that the brain has not yet healed, and needs more rest. If any signs or symptoms return during the Return To Play process, they should stop the activity and rest until symptoms have resolved. The player must be re-evaluated by a physician before trying any activity again. Remember, symptoms may return later that day or the next, not necessarily during the activity!
Tool 0.4b: CanChild Return to Activity Guidelines for Children and Youth

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Concussion Facts

The biggest risk is going back to play before the brain heals and getting another concussion!

Higher risk of prolonged recovery with:

- Multiple concussions
- History of learning or behavior problems
- History of migraines
- Symptoms of amnesia, foggyness or dizziness

Percentage of children who are symptom free in:

- 15 days = 25%
- 26 days = 50%
- 40 days = 75%
- 92 days = 90%

When They're Okay Return To Play

Return to Activity Guidelines

These guidelines should be followed in discussion with a physician or brain injury clinician.

STEP 1: No Activity and Complete Rest

- No physical activity if symptomatic
- Which symptom group are you in? BLUE, PURPLE, or GREEN?

*Get clearance from a physician or brain injury clinician before beginning STEP 2

STEP 2: Light Exercise

- NO resistance training or weight lifting
- 10-15 minutes light aerobic activity, maximum twice a day, e.g., walking, stationary cycling, light jogging, frisbee or swimming

STEP 3: Individual Sport-Specific Activity

- NO body/head contact, spins, dives, jumps, high speed stops, hitting a baseball with a bat or other piercing motions
- 20-30 minutes general conditioning, maximum twice a day, e.g., skating, running, throwing

STEP 4: Sport-Specific Practice with Team, NO CONTACT

- NO checking, heading the ball, tackling, free scrimmages
- Begin activities with one other teammate and then by the end of the step progress to full team practice with NO contact, e.g., ball drills, shooting/shooting drills, or other non-contact activities
- Begin resistance training and ‘beginner level’ sport-specific skills increase skill level over time.

*Get clearance from a physician or brain injury clinician before beginning STEPS 5 and 6

STEP 6: Sport-Specific Practice with Team and CONTACT

- Participate in normal training activities if symptom free, you are ready to return to competition

Concussion

A concussion, also known as a mild traumatic brain injury (MTBI), changes the way the brain functions. An MTBI can be caused by a direct or indirect hit, blow or force to the head or body.

Symptoms of Concussion

- Sleep disturbances or drowsiness
- Headaches
- Nausea and vomiting
- Poor balance or coordination
- Dizziness
- Visual problems
- Sensitivity to light or noise
- Mentally foggy
- Difficulty concentrating/ remembering
- Irritability
- Fatigue
- Nervousness

Symptoms should be evaluated daily to show healing and recovery

Red Flag Symptoms

If any of the following symptoms develop, go to the emergency department/seek further investigation immediately:

- Increased drowsiness or cannot be awakened
- Headaches over or neck pain
- Persistent vomiting
- Pupils unequal in size
- Seizures
- Confusion or short-term memory loss
- Blurred/double vision, slurred speech or loss of motor function
- Change in behavior (irritability, agitation or aggression)

Return to Activity Guidelines

Which group are you in?

Choose your symptom group and follow the instructions below.

Symptom Free Within 1 Week

- Rest for 1 more week after symptom free
- Begin STEP 2
- Take at least 24 hours for each step as you complete the rest of the guidelines

Symptom Free Within 1 - 4 Weeks

- Rest for 1 more week after symptom free
- Begin STEP 2
- Take at least 1 week for each step as you complete the rest of the guidelines

Symptom Free For More Than 4 Weeks

- Do not progress to STEP 3 until symptom free and cleared by a physiatrist or brain injury clinician
- Take at least 1 week for each step as you complete the rest of the guidelines

Stop

If symptoms return, rest for at least 24 hours and then go back to the previous step

Overriding Recommendations for Return to Contact Sport

- If positive neurocognitive findings — Take at least 3 months off from contact sport
- If 2 concussions in 3 months — Take 6 months off from the time of the most recent injury
- If more concussions in 1 year — Take 1 year off from the time of the most recent injury
- Discuss return from sport with or more concussions, especially symptoms are prolonged and affecting performance

But continue to exercise!

Also see the McMaster Return to School Guidelines

Recommendations / List of Tools
### Tool 0.5a: ACE Post-Concussion Gradual Return to School

**Guidelines for Diagnosing and Managing Pediatric Concussion**

#### Recommendations / List of Tools

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Activity Level</th>
<th>Criteria to Move to Next Stage</th>
<th>Date Criteria Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No return, at home</td>
<td>Day 1 - Maintain low level cognitive and physical activity. No prolonged concentration. Cognitive Readiness Challenge: As symptoms improve, try reading or math challenge task for 10-30 minutes; assess for symptom increase.</td>
<td>To Move To Stage 1: (1) Student can sustain concentration for 30 minutes before significant symptom exacerbation, AND (2) Symptoms reduce or disappear with cognitive rest breaks* allowing return to activity.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Return to School, Partial Day (1-3 hours)</td>
<td>Attend 1-3 classes, intersperse rest breaks. No tests or homework. Minimal expectations for productivity.</td>
<td>To Move To Stage 2: Symptom status improving, tolerates 4-6 hours of activity; 2-3 cognitive rest breaks built into school day.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Full Day, Maximal Supports (required throughout day)</td>
<td>Attend most classes, with 2-3 rest breaks (20-30'), no tests. Minimal HW (&lt; 60%). Minimal-moderate expectations for productivity.</td>
<td>To Move To Stage 3: Symptom number &amp; severity improving, needs 1-2 cognitive rest breaks built into school day.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Return to Full Day, Moderate Supports (provided in response to symptoms during day)</td>
<td>Attend all classes with 1-2 rest breaks (20-30'), begin quizzes. Moderate HW (60-90') Moderate expectations for productivity. Design schedule for make-up work.</td>
<td>To Move To Stage 4: Continued symptom improvement, needs no more than 1 cognitive rest break per day</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Return to Full Day, Minimal Supports (Monitor final recovery)</td>
<td>Attend all classes with 0-1 rest breaks (20-30'); begin modified tests (breaks, extra time). HW (90'+) Moderate - maximum expectations for productivity.</td>
<td>To Move To Stage 5: No active symptoms, no exertional effects across the full school day.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Full Return, No Supports Needed</td>
<td>Full class schedule, no rest breaks. Max. expectations for productivity. Begin to address make-up work.</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

*Cognitive rest break: a period during which the student refrains from academic or other cognitively demanding activities, including schoolwork, reading, TV/games, conversation. May involve a short nap or relaxation with eyes closed in a quiet setting.

G. Gioia (v4.2014)

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Tool 0.5b: CanChild Return to School Guidelines for Children and Youth

Guidelines for Diagnosing and Managing Pediatric Concussion

Recommendations / List of Tools

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Return to School Guidelines

These stages are designed to strike a balance between the importance of returning to school and brain recovery. Work with your school to put these recommendations into place.

STAGE 1: Brain Rest - NO SCHOOL
- No school for at least one week
- Lots of cognitive rest (NO TV, video games, texting, reading)
- When symptoms free, move to STAGE 2
  *If symptoms return past 2 weeks, move to STAGE 2

STAGE 2: Getting Ready to Go Back
- Begin gentle activity guided by symptoms (walking, 15 minutes of screen time twice a day, begin reading)
- When symptoms free, move to STAGE 3
  *If symptoms persist, stay in this stage for a maximum of 3 weeks and discuss moving to STAGE 3 with your physician or brain injury specialist

STAGE 3: Back to School/Modified Academics
- This stage may last for days, weeks, months depending on rate of recovery
- Go to bed early and get lots of sleep. Have a quiet retreat space in school
- Academic Modications:
  - Time limit attendance: Start by going for one hour, half days or every other day
  - Curriculum: Alternate less stressful classes, no tests, homework in 15 minute blocks up to a maximum of 45 minutes daily
  - Environment: Preferential seating, world music class, gym class, cafeteria, taking the bus, earning heavy books
  - Activities: Limit screen time to 15 minutes blocks for up to 1 hour daily
- When symptoms free, move to STAGE 4
  *If symptoms persist past 4 weeks — A Recovery Individualized Education Plan (IEP) may be needed

STAGE 4: Nearly Normal Routines
- Back to full days of school, but can do less than 5 days a week if needed
- Completes as much homework as possible and a maximum of 1 test per week
- When symptoms free, move to STAGE 5

STAGE 5: Fully Back to School
- Gradual return to normal routines including attendance, homework, tests and extracurricular activities

Concussion Facts

The biggest risk is going back to play before the brain heals and getting another concussion!

Higher risk of prolonged recovery with:
- Mulltiple concussions
- History of learning or behaviour problems
- History of migraines
- Symptoms of amnesia, fogginess or dizziness

Percentage of children who are symptom free:

- 15 days: 25%
- 20 days: 50%
- 40 days: 75%
- 60 days: 90%

When They're Okay Return to Play

When in doubt sit them out

For more information, please visit www.canchild.ca

Recommendations / List of Tools
# Activity Suggestions for Recovery Stages After Concussion

## Toddler (0-4)

<table>
<thead>
<tr>
<th>Stage 1 – Rest</th>
<th>Stage 2 - Light Activity</th>
<th>Stage 3 – Sport-specific Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Crafts: colouring, drawing</td>
<td>- Bird watching</td>
<td>- iPad applications (no gaming)</td>
</tr>
<tr>
<td>- Nap in favourite spot</td>
<td>- Crafts: painting</td>
<td>- Word searches</td>
</tr>
<tr>
<td>- Parents can read stories</td>
<td>- Play in the sand</td>
<td>- Air hockey or foosball</td>
</tr>
<tr>
<td>- Watch fish in an aquarium</td>
<td>- Play blocks, dolls, cars or small toys</td>
<td>- Biking</td>
</tr>
<tr>
<td>- Supervised walking or crawling</td>
<td></td>
<td>- Dribbling, keep-ups and stickhandling</td>
</tr>
</tbody>
</table>

## Child (5-10)

<table>
<thead>
<tr>
<th>Stage 1 – Rest</th>
<th>Stage 2 - Light Activity</th>
<th>Stage 3 – Sport-specific Activity</th>
<th>Stage 4 – Non-contact Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Basic board games (i.e. not monopoly)</td>
<td>- Challenging board games</td>
<td>- Golf</td>
<td>- Baseball/Cricket</td>
</tr>
<tr>
<td>- Crafts: making bracelets, necklaces</td>
<td>- Helping cook and bake</td>
<td>- Light badminton</td>
<td>- Basketball</td>
</tr>
<tr>
<td>- Light gardening</td>
<td>- Listen to quiet music (no headphones)</td>
<td>- Ping pong</td>
<td>- Dance</td>
</tr>
<tr>
<td>- Singing</td>
<td>- Magazines</td>
<td>- Skating</td>
<td>- Field hockey</td>
</tr>
<tr>
<td>- Stargazing</td>
<td>- Puzzles</td>
<td>- Sprinklers and splash pads</td>
<td>- Freestyle swimming</td>
</tr>
<tr>
<td>- Talk on phone</td>
<td>- Billiards</td>
<td>- Tag</td>
<td>- Frisbee</td>
</tr>
<tr>
<td>- Talk to friends/family</td>
<td>- Bocce ball/Lawn bowling</td>
<td>- Tai chi/karate (non-contact)</td>
<td>- Helping cook and bake</td>
</tr>
</tbody>
</table>

### WARNING:
Perform activities ONLY if symptom free. If the symptoms appear during activity, STOP immediately.

Use suggestions in conjunction with CanChild concussion guidelines available at:
### Activity Suggestions for Recovery Stages After Concussion

**Teenager (11+)**

<table>
<thead>
<tr>
<th>Stage 1 – Rest</th>
<th>Stage 3 - Sport-specific Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellphone (no texting only calling)</td>
<td>Crosswords</td>
</tr>
<tr>
<td>Crafts: molding clay</td>
<td>iPad applications (no gaming)</td>
</tr>
<tr>
<td>Friends visit (one at a time)</td>
<td>Shopping at mall</td>
</tr>
<tr>
<td>Knitting and quilting</td>
<td>Sudoku</td>
</tr>
<tr>
<td>Listen to Audiobooks</td>
<td>Air hockey or foosball</td>
</tr>
<tr>
<td>Meditation</td>
<td>Biking</td>
</tr>
<tr>
<td>Nap</td>
<td>Calisthenics (stability exercises)</td>
</tr>
<tr>
<td>Photography</td>
<td>Curling</td>
</tr>
<tr>
<td>Scrapbooking</td>
<td>Dribbling, keep-ups and stickhandling</td>
</tr>
<tr>
<td></td>
<td>Golf</td>
</tr>
<tr>
<td></td>
<td>Hiking/orienteering</td>
</tr>
<tr>
<td></td>
<td>Light badminton</td>
</tr>
<tr>
<td></td>
<td>Ping Pong</td>
</tr>
<tr>
<td></td>
<td>Running</td>
</tr>
<tr>
<td></td>
<td>Skating</td>
</tr>
<tr>
<td></td>
<td>Snorkeling</td>
</tr>
<tr>
<td></td>
<td>Tai chi/Karate</td>
</tr>
<tr>
<td></td>
<td>Wii or Xbox Kinect games</td>
</tr>
<tr>
<td></td>
<td>Volleyball (keep ups)</td>
</tr>
<tr>
<td></td>
<td>Windsurfing</td>
</tr>
</tbody>
</table>

**Stage 2 – Light Activity**

- Cooking and baking
- Crafts: origami, sculpting
- Go to the beach
- Listen to quiet music (no headphones)
- Magazines
- Poetry
- Puzzles
- Re-read familiar books
- Archery
- Billiards
- Camping
- Croquette
- Darts
- Fishing
- Freestyle swimming
- Lawn bowling
- Light jogging
- Playing catch
- Stationary cycling
- Walking
- Yoga (no hot yoga)

**Stage 4 - Non-contact Practice**

- Aerobics and plyometrics
- Baseball/Cricket
- Basketball
- Canoeing/kayaking
- Dance and Cheer (no stunts)
- Figure skating (no jumping)
- Football drills
- Hockey drills
- Light weight training
- Mountain/rock climbing
- Non-Contact soccer (no heading)
- Pilates
- Scuba diving
- Shadow boxing
- Squash or Tennis
- Track and Field
- Volleyball (no diving)

**WARNING:** Perform activities ONLY if symptom free. If the symptoms appear during activity, STOP immediately.

Use suggestions in conjunction with CanChild concussion guidelines available at:

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INTRODUCTION

The Ministry of Education expects all school boards in Ontario to develop and maintain a policy on concussion. The purpose of this memorandum is to provide direction to school boards on the development and implementation of their policy. This memorandum outlines the ministry’s expectations regarding the components of a board’s policy on concussion. The components include strategies to develop awareness of the seriousness of concussions; strategies for the prevention and identification of concussions; management procedures for diagnosed concussions; and training for board and school staff.

This memorandum applies to all publicly funded elementary and secondary schools, including extended-day programs operated by school boards for full-day kindergarten. However, this memorandum does not apply to licensed child-care providers, including those operating on the premises of publicly funded schools.

CONTEXT

The Ministry of Education is committed to promoting awareness of safety in schools and recognizes that the health and safety of students are essential preconditions for effective learning. All partners in education, including the Ministry of Education, other Ontario ministries, school boards, administrators, educators, school staff, students, parents, school volunteers, and community-based organizations, have important roles to play in promoting student health and safety and in fostering and maintaining healthy and safe environments in which students can learn.

Research demonstrates that a concussion can have a significant impact on a student – cognitively, physically, emotionally, and socially. The implementation of a policy on concussion in each school board is therefore another important step in creating healthier schools in Ontario. It also reinforces the knowledge, skills, and attitudes regarding injury prevention that are developed through the various subjects and disciplines in the Ontario curriculum.

1. In this memorandum, school board(s) and board(s) refer to district school boards and school authorities.
It is very important to students’ long-term health and academic success that individuals in schools have information on appropriate strategies to minimize risk of concussion, steps to follow if they suspect that a student may have a concussion, and effective management procedures to guide students’ return to learning and physical activity after a diagnosed concussion.

In partnership with the Ministry of Education, the Ministry of Health and Long-Term Care, the Ministry of Tourism, Culture and Sport, medical professionals, sport and recreation organizations, health organizations, and educational organizations, the Ontario Physical and Health Education Association has released a concussion protocol as part of the Ontario Physical Education Safety Guidelines (available at http://safety.ophea.net). The protocol, which is based on current research evidence and knowledge, contains information on concussion prevention, symptoms and signs of a concussion, initial response procedures for a suspected concussion, and management procedures for a diagnosed concussion, including a plan to help a student return to learning and to physical activity.

The Ministry of Education considers the concussion protocol outlined in the Ontario Physical Education Safety Guidelines to be the minimum standard.

**DEFINITION AND DIAGNOSIS OF CONCUSSION**

*Concussion* is the term for a clinical diagnosis that is made by a medical doctor or a nurse practitioner. The definition of *concussion* given below is adapted from the definition provided in the concussion protocol in the Ontario Physical Education Safety Guidelines.

A concussion:
- is a brain injury that causes changes in the way in which the brain functions and that can lead to symptoms that can be physical (e.g., headache, dizziness), cognitive (e.g., difficulty in concentrating or remembering), emotional/behavioural (e.g., depression, irritability), and/or related to sleep (e.g., drowsiness, difficulty in falling asleep);
- may be caused either by a direct blow to the head, face, or neck or by a blow to the body that transmits a force to the head that causes the brain to move rapidly within the skull;
- can occur even if there has been no loss of consciousness (in fact most concussions occur without a loss of consciousness);
- cannot normally be seen by means of medical imaging tests, such as X-rays, standard computed tomography (CT) scans, or magnetic resonance imaging (MRI) scans.

It should also be noted that injuries that result from a concussion may lead to “second impact syndrome”, which is a rare condition that causes rapid and severe brain swelling and often catastrophic results, if an individual suffers a second concussion before he or she is free from symptoms sustained from the first concussion.

Since concussions can only be diagnosed by a medical doctor or a nurse practitioner, educators, school staff, or volunteers cannot make the diagnosis of concussion.
DEVELOPMENT OF THE SCHOOL BOARD POLICY ON CONCUSSION

When developing their policy on concussion, school boards are encouraged to consult with school staff, students, parents, teacher federations, education support staff unions, and other education partners, as appropriate.

The roles and responsibilities of administrators, educators, school staff, students, parents, and school volunteers should be clearly articulated throughout the policy.

Each school board’s policy on concussion is expected to contain, at a minimum, the following components:

**Development of Awareness.** The school board policy should include strategies for sharing information on the seriousness of concussions, and on concussion prevention, identification, and management, with students, parents, board employees, administrators, educators, school staff, volunteers, doctors and nurse practitioners, and community-based organizations. The policy should also contain provisions for making connections with the curriculum, where relevant. In addition, the policy should include strategies for sharing information with organizations that use the school facilities, such as community sports organizations and licensed child-care providers operating in schools of the board.

**Prevention.** The policy should include strategies for preventing and minimizing the risk of sustaining concussions (and other head injuries) in schools and at off-site school events.

**Identification.** The policy should include the following:
- information on the safe removal of an injured student from activity (for example, initial emergency response strategies following a blow to a student’s head, face, or neck, or a blow to a student’s body that transmits a force to the student’s head)
- initial concussion-assessment strategies (for example, use of common symptoms and signs of a concussion)
- steps to take following an initial assessment

**Management Procedures for a Diagnosed Concussion.** Information should be included on the development of an individualized and gradual “return to learning and/or return to physical activity” plan for every student with a diagnosed concussion. There is no preset formula for developing strategies to assist a student with a concussion to return to learning activities, since the recovery process will vary for each student. If a student who is recovering from a concussion is experiencing long-term difficulties that begin to affect his or her learning, the school board should follow established processes for identifying and documenting instructional approaches and resources that may be required for responding to the student’s ongoing learning needs (for example, individualized classroom accommodations).

**Training.** The policy should also include strategies for providing regular and ongoing training on concussion awareness, prevention, identification, and management to relevant school board employees and school volunteers. When developing these strategies, school boards should consider basing the timing and intensity of training on staff roles and responsibilities.
IMPLEMENTATION

School boards should fully implement their policy on concussion as soon as possible, but are expected to have their concussion policy fully implemented no later than January 30, 2015.

School boards should ensure that a process is in place to support ongoing implementation and compliance with the board policy at the school level.

SCHOOL BOARD REPORTING

In accordance with paragraph 27.1 of subsection 8(1) of the Education Act, school boards will be required to report to the Ministry of Education upon implementation and, upon request thereafter, on their activities to achieve the expectations outlined in this memorandum.

SUPPORT FOR BOARDS

The Ontario government has established a web portal with key partners, which is available at www.ontario.ca/concussions. This web portal has been developed to provide reliable, evidence-based information on preventing, identifying, and managing concussions to parents, children and youth, educators, coaches, athletes, and health care providers.

In accordance with Ontario Public Health Standards, boards of health are required to work with community partners on the development and implementation of healthy policies and programs and on the creation or enhancement of safe and supportive environments. School boards are encouraged to consult with their local board of health as they develop and implement their concussion policy.

Appendix C-4

Documentation for a Diagnosed Concussion - Return to Learn/Return to Physical Activity Plan

This form is to be used by parents/guardians to communicate their child’s/ward’s progress through the plan and is to be used with “Appendix C-1 - Concussion Management Procedures: Return to Learn and Return to Physical Activity”.

The Return to Learn/Return to Physical Activity Plan is a combined approach. Step 2a - Return to Learn must be completed prior to the student returning to physical activity. Each step must take a minimum of 24 hours. (Note: Step 2b - Return to Learn and Step 2 - Return to Physical Activity occur concurrently).

Step 1 - Return to Learn/Return to Physical Activity

- Completed at home.
- Cognitive Rest - includes limiting activities that require concentration and attention (e.g., reading, texting, television, computer, video/electronic games).
- Physical Rest - includes restricting recreational/leisure and competitive physical activities.

☐ My child/ward has completed Step 1 of the Return to Learn/Return to Physical Activity Plan (cognitive and physical rest at home) and his/her symptoms have shown improvement. My child/ward will proceed to Step 2a - Return to Learn.

☐ My child/ward has completed Step 1 of the Return to Learn/Return to Physical Activity Plan (cognitive and physical rest at home) and is symptom free. My child/ward will proceed directly to Step 2b - Return to Learn and Step 2 - Return to Physical Activity.

Parent/Guardian signature: ____________________________

Date: __________________

Comments: ____________________________________________

______________________________________________________

© Ophea 2013
Step 2a - Return to Learn
- Student returns to school.
- Requires individualized classroom strategies and/or approaches which gradually increase cognitive activity.
- Physical rest - includes restricting recreational/leisure and competitive physical activities.

☐ My child/ward has been receiving individualized classroom strategies and/or approaches and is symptom free. My child/ward will proceed to Step 2b - Return to Learn and Step 2 - Return to Physical Activity.

Parent/Guardian signature: ____________________________
Date: __________________
Comments: __________________________________________
________________________________________________________

Step 2b - Return to Learn
- Student returns to regular learning activities at school.

Step 2 - Return to Physical Activity
- Student can participate in individual light aerobic physical activity only.
- Student continues with regular learning activities.

☐ My child/ward is symptom free after participating in light aerobic physical activity. My child/ward will proceed to Step 3 - Return to Physical Activity.

☐ Appendix C-4 will be returned to the teacher to record progress through Steps 3 and 4.

Parent/Guardian signature: ____________________________
Date: __________________
Comments: __________________________________________
________________________________________________________
Step 3 - Return to Physical Activity
- Student may begin individual sport-specific physical activity only.

Step 4 - Return to Physical Activity
- Student may begin activities where there is no body contact (e.g., dance, badminton); light resistance/weight training; non-contact practice; and non-contact sport-specific drills.

☐ Student has successfully completed Steps 3 and 4 and is symptom free.
☐ Appendix C-4 will be returned to parent/guardian to obtain medical doctor/nurse practitioner diagnosis and signature.

Teacher signature: ________________________________

Medical Examination

☐ I, ________________________________ (medical doctor/nurse practitioner name) have examined ________________________________ (student name) and confirm he/she continues to be symptom free and is able to return to regular physical education class/intramural activities/interschool activities in non-contact sports and full training/practices for contact sports.

Medical Doctor/Nurse Practitioner Signature: ________________________________

Date: ____________________________

Comments:
________________________________________________________________________
________________________________________________________________________

Step 5 - Return to Physical Activity
- Student may resume regular physical education/intramural activities/interschool activities in non-contact sports and full training/practices for contact sports.

Step 6 - Return to Physical Activity
- Student may resume full participation in contact sports with no restrictions.
Tool 4.1: OPHEA Documentation for a Diagnosed Concussion – Return to Learn/Return to Physical Activity Plan

Guidelines for Diagnosing and Managing Pediatric Concussion

Ontario Physical Education Safety Guidelines
Elementary - Curricular September 2013
Appendix C-4 - Documentation for a Diagnosed Concussion - Return to Learn/Return to Physical Activity Plan

Return of Symptoms

☐ My child/ward has experienced a return of concussion signs and/or symptoms and has been examined by a medical doctor/nurse practitioner, who has advised a return to:
  - Step __________ of the Return to Learn/Return to Physical Activity Plan

Parent/Guardian signature: ________________________________
Date: _____________________
Comments: ____________________________________________________________

Reprinted with permission from OPHEA, [Ontario Physical Education Safety Guidelines, 2013].

Recommendations / List of Tools
Tool 4.2: Template Letter of Accommodation from School to Parents/Caregivers

Dear (parents’ names)

We are happy to hear that your child is feeling well enough to start to the return-to-learn process after his/her concussion. To make sure teachers and staff are prepared, we would like your insight on the following symptoms. Please check the answers that best fit your child.

Fatigue
My child □ tires easily □ has the normal amount of energy.
My child has the most energy in the □ morning □ afternoon □ evening.

Behaviour
My child □ is easily frustrated □ isn’t easily frustrated.
My child has been acting □ the same □ different compared to before concussion.

Memory
My child’s memory seems □ fine □ impaired.

Cognition
My child seems to be able to understand complex thoughts and ideas. □ Yes □ No
My child is able to read for □ less than ½ hour □ ½ to 1 hour □ more than 1 hour.
My child can handle different technologies (example: TV, computers). □ Yes □ No
My child can complete some homework. □ Yes □ No

Stamina
My child makes it through a day without a period of rest. □ Yes □ No

Social
My child is becoming isolated or has different friends than before the concussion. □ Yes □ No
My child can handle noisy/busy environments. □ Yes □ No

Awareness
My child feels like there is nothing wrong with him/her after the concussion. □ Yes □ No
My child understands that there have been changes and would like help. □ Yes □ No

Please elaborate on any other changes you’ve noticed in your child. We want to be ready to support your child’s return-to-learn process and make accommodations to ensure success.

Sincerely,
(school contact person’s name)
Telephone/email _________________________________

Reproduced with permission from Vermont’s Student Athletes and Concussion: Return to Learn and Return to Play Toolkit, www.biavt.org.
### Tool 4.3: Academic Accommodations for Concussed Students

**Guidelines for Diagnosing and Managing Pediatric Concussion**

#### Tool 4.3: Academic Accommodations for Concussed Students

<table>
<thead>
<tr>
<th>Persistent Symptom</th>
<th>Effect of attending school</th>
<th>Accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>Difficulty concentrating</td>
<td>Frequent breaks, quiet area, hydration</td>
</tr>
<tr>
<td>Fatigue</td>
<td>Decreased attention, concentration</td>
<td>Frequent breaks, shortened day, only certain classes</td>
</tr>
<tr>
<td>Photophobia/phonophobia</td>
<td>Worsening symptoms (headache)</td>
<td>Sunglasses, ear plugs or headphones, avoid noisy areas (cafeterias, assemblies, sport events, music class), limit computer work</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Decreased attention or concentration, overexertion to avoid falling behind</td>
<td>Reassurance and support from teachers about accommodations, reduced workload</td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td>Limited focus on school work</td>
<td>Shorter assignments, decreased workload, frequent breaks, having someone read aloud, more time to complete assignments and tests, quiet area to complete work</td>
</tr>
<tr>
<td>Difficulty remembering</td>
<td>Difficulty retaining new information, remembering instructions, accessing learned information</td>
<td>Written instructions, smaller amounts to learn, repetition</td>
</tr>
</tbody>
</table>

Tool 4.4: Returning to School-based Activities After Concussion Care Plan

General Care Plan:

- **Orange**: Preparing to return to school – gentle activity at home (e.g., light walking, begin reading, minimal screen time of 15 minutes twice per day etc.)
- **Yellow**: Back to school with modified schedule – gradual progression of time spent at school (e.g., 1 hour of class time to start and progress to half day/every other day; attend less stressful classes etc.)
- **Green**: Back to school with full schedule – attend all classes every day

Additional School Support Recommendations:

- Contact person at school who can be responsible for relaying information between student/student’s family and teachers, and who can assist in scaling back/modifying school supports as needed
- Extra check-in meetings provided with teachers/guidance counselors in order to monitor progress and determine the need for more/less supports and modifications
- No homework
- Overall class work/homework load reduced with gradual resumption as per the student’s ability to handle increased demands and extra time provided (homework and class work load be prioritized collaboratively between the student and school personnel)
- No testing
- Testing completed in a quiet, distraction free environment with extra time provided in order to allow for cognitive rest breaks; no more than one test per day
- Student not asked to do all missed work, and extra help given to get student caught back up
- Excused from class for ‘rest breaks’ in a quiet room to avoid physical and cognitive exertion and to manage increased symptoms (regularly scheduled and/or when symptoms increase)
- Preferential seating provided to allow for decreased distractions and closer teacher monitoring (e.g. closer to teacher/board, away from window, away from door, away from disruptive classmates etc.)
- Access to a model peer’s or teacher’s notes allowed and/or access to pre-printed class notes to help with planning and attention
- Avoid attending and participating in physical education and band/music activities (these classes can be used as rest breaks)
- Eat lunch in a quiet, distraction free area with 2-3 friends
- Avoid carrying heavy textbooks. To avoid extraneous physical exertion, have an extra copy of class textbooks in classes to limit need to carry books to and from school/classes

**All recommended supports/accommodations are to be used on an as needed basis and can be modified as per the student’s ability to better handle the cognitive and physical demands of the school environment (improved post-concussion symptoms). Continued communication between the school, the student and the student’s family is encouraged to best meet the needs of the student and to develop a plan for successful return to school-based activities.

Other comments: __________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Completed by: ___________________________ Date: ___________________________

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Recommendations / List of Tools
Tool 4.5: Return-to-school Information and Strategies

Guidelines for Diagnosing and Managing Pediatric Concussion

Tool 4.5: Return-to-school Information and Strategies

- Concussion (also known as mild traumatic brain injury) and related symptoms can result in difficulties returning to school for many students.
- Trying to complete school work and learn before the brain has recovered from a concussion “overuses” the brain at a time when it needs all its energy to recover. The brain needs proper rest to recover from a concussion.
- Limiting exertion (physical and mental) until post-concussive symptoms have resolved and then gradually increasing activity as tolerated (no symptoms reappear) is highly recommended.
- Most students will have difficulty with concentration, memory and processing speed – all can negatively affect how one learns and perform at school.
- When returning to school, modifications can be made in order to limit physical and mental exertion and allow the student to best return to full school activities and performance.

Common Post-concussive Symptoms

<table>
<thead>
<tr>
<th>Physical</th>
<th>Thinking (Cognitive)</th>
<th>Behavioural or Emotional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td>Slowed thinking</td>
<td>Irritability or grouchiness</td>
</tr>
<tr>
<td>Sick to stomach or vomiting</td>
<td>Trouble paying attention</td>
<td>Easily upset or frustrated</td>
</tr>
<tr>
<td>Dizziness or balance problems</td>
<td>Difficulty remembering</td>
<td>Nervousness</td>
</tr>
<tr>
<td>Low energy or being run down</td>
<td>Acting like &quot;in a fog&quot;</td>
<td>Sadness</td>
</tr>
<tr>
<td>Trouble with vision/seeing</td>
<td>Easily confused</td>
<td>Acting without thinking</td>
</tr>
<tr>
<td>Bothered by light or noise</td>
<td>School performance worsens</td>
<td>Any other personality change</td>
</tr>
<tr>
<td>Sleeping problems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Modified from: [http://www.thechildrenshospital.org/conditions/rehab/concussion/school_staff.aspx](http://www.thechildrenshospital.org/conditions/rehab/concussion/school_staff.aspx)

What can be done to help with the return-to-school process?

Before returning to school

- The student should not return to school until post-concussive symptoms have cleared (e.g. headaches, nausea etc.) or they begin to tolerate extended periods of thinking and activity.
- Students should limit reading, using computers, playing video games and texting, if these activities worsen symptoms.
- Students should not exercise or take part in sports or gym class until a health care professional has evaluated and cleared them.
- Walking or taking the bus to school (avoid noise, busy environments and exercise)—have parents drive the student to school if possible.
- Once symptoms have cleared/improved, students can begin brief periods of reading or studying. If symptoms return, they should stop the activity and rest. They can return to school for gradually increasing periods of time when they can tolerate a couple of hours of thinking.

Recommendations / List of Tools
On returning to school

- It is important that the student has a contact person at the school who can relay information from the student, student’s family and the student’s health care team related to the student’s injury (e.g. severity, necessary accommodations etc.) to the student’s course teachers. This can be a school guidance counsellor or nurse (if available). Students should check in with this contact person at the school daily in order to scale back or change school modifications as required.
- If students experience post-concussive symptoms (e.g. headache, nausea, dizziness etc.) while in the classroom, they should go to the nurses office to rest and skip the next period of class. If symptoms occur again in the next period, after resting, they should return home.
- If a student can only handle attending classes part-time, an effort should be made to attend core classes over non-core classes and to avoid missing the same classes repeatedly.

Test Taking

- If a student attempts to write a test while suffering from post-concussive symptoms, there symptoms may worsen, recovery may be extended and their performance on the test will not be a true measure of what they know.
- Strategies:
  - If possible, tests may be delayed until the student is no longer experiencing post-concussive symptoms
  - Test taking should be spaced out and limited to no more than one test per day to avoid over exertion of the brain and reduce cognitively demanding tasks
  - Students can be provided extra time to complete the test
  - Tests can be written in a separate room free of distraction

Assignments and Homework

- If possible, due dates for assignments and homework can be flexible, where extra time to complete tasks may be provided
- Pre-printed copies of class notes can help the student who has difficulty planning or paying attention after their concussion
- Access to a model peer’s notes or teacher’s note can be helpful
- Some students may benefit from peer support, tutoring or private meetings with the classroom teacher for help with school work, organization and test preparation

Physical Activity/Gym Class

- All physical activity should be avoided initially
- Student are to complete a medically supervised gradual return-to-play protocol and obtain medical clearance from their primary provider prior to returning to physical activity

Summary of General and Specific Return-to-School Supports

<table>
<thead>
<tr>
<th>Possible General Support</th>
<th>Possible Specific Classroom-based Supports</th>
</tr>
</thead>
</table>

40

Recommendations / List of Tools
### Tool 4.5: Return-to-school Information and Strategies

**Guidelines for Diagnosing and Managing Pediatric Concussion**

<table>
<thead>
<tr>
<th>Recommendations / List of Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Re-integration into school occurs gradually (e.g., student returns part-time before building up to a full schedule)</td>
</tr>
<tr>
<td>• Student not asked to do all missed work, and extra help given to get student caught back up</td>
</tr>
<tr>
<td>• Extra check-in meetings provided with teacher</td>
</tr>
<tr>
<td>• Rest time or breaks provided during the day</td>
</tr>
<tr>
<td>• Overall homework and class work load reduced</td>
</tr>
<tr>
<td>• Cognitively demanding in-school tasks reduced (e.g., no more than one test each day)</td>
</tr>
<tr>
<td>• Tests put off until recovery complete</td>
</tr>
<tr>
<td>• Extra time given to complete tests</td>
</tr>
<tr>
<td>• Flexibility allowed for assignment due dates</td>
</tr>
<tr>
<td>• Preferential seating provided to allow for closer teacher monitoring and decreased distractions</td>
</tr>
<tr>
<td>• Access to a model peer’s or teacher’s notes allowed</td>
</tr>
</tbody>
</table>

Modified from: [http://www.thechildrenshospital.org/conditions/rehab/concussion/school_staff.aspx](http://www.thechildrenshospital.org/conditions/rehab/concussion/school_staff.aspx)

### References:


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**Tool 5.8: Mood and Feelings Questionnaire, Child Self-Report**

Child Self-Report

**MOOD AND FEELINGS QUESTIONNAIRE: Short Version**

This form is about how you might have been feeling or acting recently.

For each question, please check (✓) how you have been feeling or acting *in the past two weeks.*

If a sentence was not true about you, check NOT TRUE.
If a sentence was only sometimes true, check SOMETIMES.
If a sentence was true about you most of the time, check TRUE.

**Score the MFQ as follows:**
- NOT TRUE = 0
- SOMETIMES = 1
- TRUE = 2

<table>
<thead>
<tr>
<th>To code, please use a checkmark (✓) for each statement.</th>
<th>NOT TRUE</th>
<th>SOMETIMES</th>
<th>TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I felt miserable or unhappy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I didn’t enjoy anything at all.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I felt so tired I just sat around and did nothing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I was very restless.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I felt I was no good anymore.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I cried a lot.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I found it hard to think properly or concentrate.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I hated myself.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I was a bad person.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I felt lonely.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I thought nobody really loved me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I thought I could never be as good as other kids.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. I did everything wrong.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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*Reproduced with permission from Sharp, Carla; Goodyer, Ian M; Croudace, Tim J.*
**MOOD AND FEELINGS QUESTIONNAIRE: Short Version**

This form is about how your child might have been feeling or acting recently.

For each question, please check (✓) how s/he has been feeling or acting in the past two weeks.

If a sentence was not true about your child, check NOT TRUE.
If a sentence was only sometimes true, check SOMETIMES.
If a sentence was true about your child most of the time, check TRUE.

**Score the MFQ as follows:**
NOT TRUE = 0
SOMETIMES = 1
TRUE = 2

<table>
<thead>
<tr>
<th>To code, please use a checkmark (✓) for each statement.</th>
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<th>SOMETIMES</th>
<th>TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. S/he felt miserable or unhappy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. S/he didn’t enjoy anything at all.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. S/he felt so tired that s/he just sat around and did nothing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. S/he was very restless.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. S/he felt s/he was no good anymore.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. S/he cried a lot.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. S/he found it hard to think properly or concentrate.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. S/he hated him/herself.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. S/he felt s/he was a bad person.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10. S/he felt lonely.</td>
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<td></td>
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<tr>
<td>11. S/he thought nobody really loved him/her.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. S/he thought s/he could never be as good as other kids.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. S/he felt s/he did everything wrong.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Tool 5.10: Screen for Child Anxiety Related Disorders (SCARED)**

Screen for Child Anxiety Related Disorders (SCARED)  
CHILD Version—Page 1 of 2 (to be filled out by the CHILD)

Developed by Boris Birmaher, M.D., Suneeta Khetarpal, M.D., Madhale Cally, M.Ed., David Brent, M.D., and Sandra McKenzie, Ph.D., Western Psychiatric Institute and Clinic, University of Pittsburgh (October, 1995). E-mail: birmaherb@apmc.edu


Name: __________________________ Date: __________________________

**Directions:**
Below is a list of sentences that describe how you feel. Read each phrase and decide if it is “Not True or Hardly Ever True” or “Somewhat True or Sometimes True” or “Very True or Often True” for you. Then, for each sentence, fill in one circle that corresponds to the response that seems to describe you for the last 3 months.

<table>
<thead>
<tr>
<th></th>
<th>0 Not True or Hardly Ever True</th>
<th>1 Somewhat True or Sometimes True</th>
<th>2 Very True or Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I feel frightened, it is hard to breathe</td>
<td></td>
<td></td>
<td>PN</td>
</tr>
<tr>
<td>2. I get headaches when I am at school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I don’t like to be with people I don’t know well.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I get scared if I sleep away from home.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I worry about other people liking me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. When I get frightened, I feel like passing out.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I am nervous.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I follow my mother or father wherever they go.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. People tell me that I look nervous.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I feel nervous with people I don’t know well.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I get stomachaches at school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. When I get frightened, I feel like I am going crazy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. I worry about sleeping alone.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. I worry about being as good as other kids.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. When I get frightened, I feel like things are not real.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. I have nightmares about something bad happening to my parents.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I worry about going to school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. When I get frightened, my heart beats fast.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. I get shaky.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I have nightmares about something bad happening to me.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Screen for Child Anxiety Related Disorders (SCARED)

**CHILD Version**—Page 2 of 2 (to be filled out by the CHILD)

<table>
<thead>
<tr>
<th></th>
<th>0 Not True or Hardly Ever True</th>
<th>1 Somewhat True or Sometimes True</th>
<th>2 Very True or Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>I worry about things working out for me.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>22.</td>
<td>When I get frightened, I sweat a lot.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>23.</td>
<td>I am a worrier.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>24.</td>
<td>I get really frightened for no reason at all.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>25.</td>
<td>I am afraid to be alone in the house.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>26.</td>
<td>It is hard for me to talk with people I don’t know well.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>27.</td>
<td>When I get frightened, I feel like I am choking.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>28.</td>
<td>People tell me that I worry too much.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>29.</td>
<td>I don’t like to be away from my family.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>30.</td>
<td>I am afraid of having anxiety (or panic) attacks.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>31.</td>
<td>I worry that something bad might happen to my parents.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>32.</td>
<td>I feel shy with people I don’t know well.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>33.</td>
<td>I worry about what is going to happen in the future.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>34.</td>
<td>When I get frightened, I feel like throwing up.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>35.</td>
<td>I worry about how well I do things.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>36.</td>
<td>I am scared to go to school.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>37.</td>
<td>I worry about things that have already happened.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>38.</td>
<td>When I get frightened, I feel dizzy.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>39.</td>
<td>I feel nervous when I am with other children or adults and I have to do something while they watch me (for example: read aloud, speak, play a game, play a sport).</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>40.</td>
<td>I feel nervous when I am going to parties, dances, or any place where there will be people that I don’t know well.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>41.</td>
<td>I am shy.</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**SCORING:**

A total score of **≥ 25** may indicate the presence of an **Anxiety Disorder**. Scores higher than 30 are more specific. **TOTAL =**

A score of 7 for items 1, 6, 9, 12, 15, 18, 19, 22, 24, 27, 30, 34, 38 may indicate **Panic Disorder** or **Significant Somatic Symptoms [PN]**

A score of 9 for items 5, 7, 14, 21, 23, 28, 33, 35, 37 may indicate **Generalized Anxiety Disorder [GD]**

A score of 5 for items 4, 8, 13, 16, 20, 25, 29, 31 may indicate **Separation Anxiety SOC. [SP]**

A score of 8 for items 3, 10, 26, 32, 39, 40, 41 may indicate **Social Anxiety Disorder [SC]**

A score of 3 for items 2, 11, 17, 36 may indicate **Significant School Avoidance [SH]**

For children ages 8 to 11, it is recommended that the clinician explain all questions, or have the child answer the questionnaire sitting with an adult in case they have any questions.

*The SCARED is available at no cost at www.wpic.pitt.edu/research under tools and assessments, or at www.pediatric.bipolar.pitt.edu under instruments.*

March 27, 2012

*Adapted with permission from Boris Birmaher, M.D., Suneeta Khetarpal, M.D., Marlane Cully, M.Ed., David Brent, M.D., and Sandra McKenzie, Ph.D., Western Psychiatric Institute and Clinic, University of Pittsburgh (October, 1995). E-mail: birmaherb@upmc.edu.*
**Tool 5.11: Screening Questions for Persistent Cognitive Problems**

**Instructions:** We would like to know if you (your child) is/are having any of these problems since their injury. Next, we would like to know if these problems were present before the injury. Then, if there is a problem, tell us how much of a problem this has been.

<table>
<thead>
<tr>
<th>Problem Area: Is the child/adolescent having problems___?</th>
<th>Is this a problem for the child/adolescent now? If yes, how much?</th>
<th>Was this a problem before the concussion? If yes, how much?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paying attention/concentrating</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>2. Short-term memory (example: forgetting what you were just told)</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>3. Learning new information (example: school material)</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>4. Recalling learned information from memory</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>5. Organizing work or materials</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>6. School performance</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>7. Reading</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>8. Math</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>9. Writing</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td>9. Declining grades</td>
<td>No/Yes</td>
<td>No/Yes</td>
</tr>
<tr>
<td></td>
<td>Mild/Moderate/Severe</td>
<td>Mild/Moderate/Severe</td>
</tr>
</tbody>
</table>

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Tool 5.12: General Considerations Regarding Pharmacotherapy

Guidelines for Diagnosing and Managing Pediatric Concussion

Tool 5.12: General Considerations Regarding Pharmacotherapy

- Address significant psycho-social difficulties (for example, major family/caregiver conflict, other environmental issues) before starting treatment.
- Review current medications, including over-the-counter medicines and supplements, before starting treatment. If possible, minimize or withdraw agents that may exacerbate or maintain symptoms.
- Change only one medication at a time.
- Target drug therapy to specific symptoms (example: dysphoria, anxiety, mood swings, irritability, fatigue, sleep, headache and pain), and monitor during the course of treatment.
- Choose therapies that minimize the impact of adverse effects on awakening, cognition, sleep and motor coordination, as well as on seizure threshold-domains in which children/adolescents with concussion may already be compromised.
- Start at the lowest effective dose and titrate slowly upwards, monitoring tolerability and clinical response, and also aiming for adequate dose and duration. Treatment often fails because either are insufficient. At times, you may have to prescribe the maximum tolerated doses.
- Aim to use a single agent to alleviate several symptoms. However, as individual symptoms may not show a coupled response to treatment, you may have to try a combination of strategies.
- Offer limited quantities of medications to those at a higher risk of suicide.
- Continue successful pharmacotherapy for at least six months, preferably 9 to 12 months for SSRIs, before tapering off on a trial basis.
- Use a specific SSRI as first-line treatment for mood and anxiety syndromes. Avoid using benzodiazepines as first-line therapy for anxiety.
- Follow up regularly.

Adapted from Silver JM, Arciniegas DB, Yudovsky SC. Psychopharmacology. In: Silver JM, Arciniegas DB, Yudovsky SC, eds. Adapted with permission from the Textbook of Traumatic Brain Injury, (Copyright ©2005). American Psychiatric Association. All Rights Reserved.
**Tool 5.13: Post-concussion Symptom Inventory for Children aged 5-7**

*Guidelines for Diagnosing and Managing Pediatric Concussion*

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### Post-Concussion Assessment 1 2 3 4 5 6

**Post-Concussion Symptom Inventory for Children (PCS-C)**

**Version 5-7 Years Pre and Post-Injury (Interview Form)**

**Name:** __________________________

**Today's date:** __________

**Birthday:** __________________________

**Age:** ______ Grade: ______

**Instructions:** We would like to know if you have had any of these symptoms before your injury. Next, we would like to know if these symptoms have changed after your injury.

I am going to ask you to tell me about your symptom at two points in time - Before the Injury and Yesterday / Today. Interviewer: Please circle only one answer.

<table>
<thead>
<tr>
<th><strong>0 = No</strong></th>
<th><strong>1 = A little</strong></th>
<th><strong>2 = A lot</strong></th>
<th><strong>Before the Injury/ Pre-Injury</strong></th>
<th><strong>Current Symptoms / Yesterday and Today</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Have you had headaches? Has your head hurt?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Have you felt sick to your stomach or like you were going to throw up?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Have you felt like you might fall when you walk, run or stand?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Have you felt dizzy? (like things around you were spinning or moving)</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Have you felt more tired than usual?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Have bright lights bothered you more than usual? (like when you were in the sunlight, when you looked at lights, or watched TV)</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Have loud noises bothered you more than usual? (like when people were talking, when you heard sounds, watched TV, or listened to loud music)</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Have you felt grumpy? (like you were in a bad mood)</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Have you felt sad?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Have you felt nervous or worried?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Has it been hard for you to pay attention to what you are doing? (like homework or chores, listening to someone, or playing a game)</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Has it been hard for you to remember things? (like things you heard or saw or places you have gone)</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Have things looked fuzzy or blurry?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Do you feel &quot;different&quot; than usual?</td>
<td>0 1 2</td>
<td>0 1 2</td>
<td></td>
</tr>
</tbody>
</table>

*Authored / Developed by: Gioia, Janusz, Sady, Vaughan, Schneider, & Natale. 2012.*

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**Recommendations / List of Tools**
# Tool 5.14: Post-concussion Symptom Inventory for Children aged 8-12

*Guidelines for Diagnosing and Managing Pediatric Concussion*

## Post-Concussion Symptom Inventory for Children (PCSI-C)

**Version 8 to 12**

*Post-Concussion Assessment 1 2 3 4 5 6*

### Instructions

We would like to know if you have had any of these symptoms before your injury. Next, we would like to know if these symptoms have changed after your injury. Please rate the symptom at two points in time—Before the Injury/Pre-Injury and Current Symptoms/Yesterday and Today.

Please answer all the items the best that you can. Do not skip any items. Circle the number to tell us how much of a problem this symptom has been for you.

<table>
<thead>
<tr>
<th>Item</th>
<th>Before the Injury/Pre-Injury</th>
<th>Current Symptoms/Yesterday and Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Have you had headaches? Has your head hurt?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>2</td>
<td>Have you felt sick to your stomach or nauseous?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>3</td>
<td>Have you had any balance problems or have you felt like you might fall when you walk, run or stand?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>4</td>
<td>Have you felt dizzy? (like things around you were spinning or moving)</td>
<td>0 1 2</td>
</tr>
<tr>
<td>5</td>
<td>Have you felt more tired than usual?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>6</td>
<td>Have you felt more drowsy or sleepy than usual?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>7</td>
<td>Have bright lights bothered you more than usual? (like when you were in the sunlight, when you looked at lights, or watched TV)</td>
<td>0 1 2</td>
</tr>
<tr>
<td>8</td>
<td>Have loud noises bothered you more than usual? (like when people were taking, when you heard sounds, watched TV, or listened to loud music)</td>
<td>0 1 2</td>
</tr>
<tr>
<td>9</td>
<td>Have you felt grumpy or irritable? (like you were in a bad mood)</td>
<td>0 1 2</td>
</tr>
<tr>
<td>10</td>
<td>Have you felt sad?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>11</td>
<td>Have you felt nervous or worried?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>12</td>
<td>Have you felt like you are moving more slowly?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>13</td>
<td>Have you felt like you are thinking more slowly?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>14</td>
<td>Has it been hard to think clearly?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>15</td>
<td>Has it been hard for you to pay attention to what you are doing? (like homework or chores, listening to someone, or playing a game)</td>
<td>0 1 2</td>
</tr>
<tr>
<td>16</td>
<td>Has it been hard for you to remember things? (like things you heard or saw, or places you have gone)</td>
<td>0 1 2</td>
</tr>
<tr>
<td>17</td>
<td>Have things looked blurry?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>18</td>
<td>Do you feel “different” than usual?</td>
<td>0 1 2</td>
</tr>
</tbody>
</table>


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**Recommendations / List of Tools**
Tool 5.15: Post-concussion Symptom Inventory Self-assessment, ages 13-18

(Guidelines for Diagnosing and Managing Pediatric Concussion)

Tool 5.15: Post-concussion Symptom Inventory Self-assessment, ages 13–18

Post-Concussion Symptom Inventory (PCSII)
Self-Report Assessment Form
Pre and Post-Injury Report
Ages 13-18

Patient Name: ____________________________  Today’s date: ____________
Birthdate: ________________________  Age: ____________

Instructions: We would like to know if you have had any of these symptoms before your injury. Next, we would like to know if these symptoms have changed after your injury. Please rate the symptom at two points in time: Before the Injury/Pre-Injury and Currently.

Please answer all the items the best that you can. Do not skip any items. Circle the number to tell us how much of a problem this symptom has been for you.

0 = Not a problem  3 = Moderate problem  6 = Severe problem

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Before the Injury/Pre-Injury</th>
<th>Current Symptoms/Yesterday and Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Headache</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>2. Nausea</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>3. Balance problems</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. Dizziness</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>5. Fatigue</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>6. Drowsiness</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>7. Sensitivity to light</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>8. Sensitivity to noise</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>9. Irritability</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>10. Sadness</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>11. Nervousness</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>12. Feeling more emotional</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>13. Feeling slowed down</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>14. Feeling mentally “foggy”</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>15. Difficulty concentrating</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>16. Difficulty remembering</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>17. Visual problems (double vision, blurring)</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>18. Get confused with directions or tasks</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>19. Move in a clumsy manner</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>20. Answer questions more slowly than usual</td>
<td>0 1 2 3 4 5 6</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>21. In general, to what degree do you feel “differently” than before the injury (not feeling like yourself)?</td>
<td>No Difference 0 1 2 3 4 Major Difference</td>
<td>No Difference 0 1 2 3 4 Major Difference</td>
</tr>
</tbody>
</table>

(Circle your rating with 0” indicating “Normal” (No Difference) and “4” indicating “Very Different” (Major Difference))

Author(s): Gioia, Janusz, Sady, Vaughan, Schneider, Collins & Lowell. 2012.
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Recommendations / List of Tools

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