

Secondary School (Grade 9-12) Concussion Modules Instructor’s Script with Answers, Discussion Points, and Reference Guide

Instructor’s Information:

The following instructor’s script includes the scenarios, questions, and answers for Secondary School (Grade 9-12) Concussion Modules. Discussion points are provided for each module as a teaching tool to consolidate the concepts presented.

Instructors are encouraged to preview the presentation, and to take into consideration age and cognitive appropriate messaging (e.g., vocabulary) when presenting scenarios or providing information and instruction on concussions to their students. The instructor should review all videos or extra information material to ensure that they are relevant to the age and academic level of their audience.

From Ontario Ministry of Education: Policy/Program Memorandum 158
SCHOOL BOARD POLICIES ON CONCUSSION, September 25, 2019.

‘The Ministry of Education considers the concussion protocol outlined in the Ontario Physical Activity Safety Standards in Education to be the minimum standard available at (<https://safety-beta.ophea.net/concussions>)

‘The Ministry of Education expects all school boards in Ontario to develop and maintain a policy on concussion.’

‘School Administrators, teachers, coaches, trainers, therapists and first responders are to refer to their school board/school/athletic organization concussion protocol, policy and procedures.’

Additional information concerning concussions can be found at
www.sportconcussionlibrary.com.

Prior to using any additional information the instructor should review all videos or extra information material to ensure that they are relevant to the age and academic level of their audience.

This program is meant to be a learning tool based on current literature, and is not meant as a certification course or as a basis of diagnosis or decision-making.

Signs and symptoms of a suspected concussion can be identified by a designated and specifically-trained first responder. Specifically designated and trained first responders may include teachers, students, and parents, as well as professional first responders such as trainers, therapists, paramedics, nurse practitioners, and medical doctors.

The designated and specifically trained first responder may reference the Ontario Physical Activity Safety Standards in Education Tool to Identify a Suspected Concussion (available at <http://safety-beta.ophea.net>). OR Concussion Recognition Tool 5 (available at <http://bjsm.bmj.com/content/bjsports/51/11/872.full.pdf>)

The minimum standard for the diagnosis of a concussion is from a medical doctor or nurse practitioner, who would follow-up with informed medical management. Due to the complexity of this serious brain injury, a consult with a medical concussion specialist (e.g., neurosurgeon, neurologist, primary care sports medicine doctor with added qualification) should be sought whenever possible.

Secondary School (Grade 9-12) Concussion Modules

Script Introduction:

Concussions are serious brain injuries.

You and your friends can keep each other safe by knowing what a concussion is and by learning to identify the signs and symptoms of a suspected concussion.

A concussion:

- is a brain injury that causes changes in how the brain functions, leading to symptoms that can be physical (e.g., headache, dizziness), cognitive (e.g., difficulty concentrating or remembering), emotional/behavioural (e.g., depression, irritability), and/or related to sleep (e.g., drowsiness, difficulty falling asleep);
- may be caused either by a jarring impact to the head, face, or neck, or by a hit to the body that transmits such force to the head that it causes the brain to move rapidly within the skull.
- often occurs without a reported loss of consciousness;
- is a traumatic brain injury that causes changes in how the brain functions, leading to signs and symptoms that can emerge immediately or in the hours or days after the injury. It is possible for symptoms to take up to 7 days to appear;
- signs and symptoms can be physical (e.g., headache, dizziness), cognitive (e.g., difficulty concentrating or remembering), emotional/behavioural (e.g., depression, irritability) and/or related to sleep (e.g., drowsiness, difficulty falling asleep);
- may be caused by a jarring impact to the head, face, neck or body, with an impulsive force transmitted 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 on X-rays, standard CT scans or MRIs; and is typically expected to result in symptoms lasting 1-4 weeks in children and youth (18 years or under), but in some cases symptoms may be prolonged.

Signs and symptoms of a suspected concussion can be identified by a designated and specifically-trained first responder.

It is important for your immediate and long-term health to self-report any signs or symptoms of a concussion to your teacher/coach/trainer/parents. It is also important for you to report any signs or symptoms of a concussion that you observe from a friend/teammate to your teacher/coach/trainer/parent. Your friend/teammate may not be in a position to recognize the signs and symptoms at the time.

Signs and/or symptoms can appear immediately or take hours or even days to exhibit.

There may be an incident when after a blow to the body or head where signs or symptoms are not reported by the student or identified by the teacher/coach, after referring to the Tool to Identify a Suspected Concussion, the teacher/coach suspects a concussion either because of the significance of the hit or knowing that signs and symptoms can take hours or even days to exhibit themselves.

In this situation the teacher/coach will:

- Remove the student from physical activity for 24 hours
- Have student continue with school and monitor student while at school
- Contact parent/guardian and provide information on:
 1. the incident
 2. importance of no physical activity for 24 hours
 3. monitoring student while at home.
- Provide parents with Sample Tool to Identify a Suspected Concussion to assist with monitoring and Sample Medical Concussion Assessment Form in case signs/symptoms appear and urgent medical assessment is needed
- Inform principal of incident

Parent/guardian and school will:

- Monitor the student for 24 hours for delayed sign(s) or symptom(s)

If NO for signs or symptoms:

- Parent reports to principal and student permitted to resume physical activity.

If YES for signs or symptoms:

- If at school – school informs parent/guardian that child needs urgent medical assessment.
- If at home – parent/guardian takes child for urgent medical assessment along with Sample Tool to Identify a Suspected Concussion and Sample Medical Concussion Assessment Form.

The minimum standard for the diagnosis of a concussion is from a medical doctor or nurse practitioner, who would follow-up with informed medical management. Due to the complexity of this serious brain injury, a consult with a medical concussion specialist (e.g., neurosurgeon, neurologist, primary care sports medicine doctor with added qualification) should be sought whenever possible.

Student Module Instructions

You will be presented with series of activity and sport scenarios to watch.

You will be asked to select the best answer from a list of options presented.

The correct answer will follow to assist you in learning about concussions.

What you learn today may keep you and your friends safe and might even save a life!

Module 1:

SKATEBOARDER

Brent fell and **hit his head** on the ground while attempting a skateboarding trick. He wants to resume practicing despite a persistent **headache**. Brent's family thinks that he may have a **concussion**.

What is a concussion?

Answer Choices:

1. A concussion is a serious brain injury.
2. A concussion can cause a short-term or permanent change in the way the brain works.
3. A concussion is caused when the brain moves rapidly in the head.
4. A concussion may affect your memory, balance, energy, and emotions.
5. All of the above.

Module 1: The answer is 5. All of the above.

Concussions are serious brain injuries.

A concussion is caused either by a **jarring impact to the head, face or neck** or by a **jarring impact to the body** that **transmits a force to the head** that causes the **brain to move rapidly within the skull**.

Concussions can cause a **short-term or permanent change** in the way the **brain** works. **Concussions** may **affect** your **memory, balance, decision-making, and feelings/emotions**.

The **minimum standard** for **diagnosis of** a concussion is from a **medical doctor, nurse practitioner, or (whenever available) medical concussion specialist**, who would follow-up with **informed medical management**.

Module 1 Discussion Points

Scenario: A student athlete experienced a hit to the head, resulting in persisting headaches, and expresses a common desire to return to activity.

- Describe that a concussion, resulting from the rapid movement of the brain within the skull, can happen from a hit to the head or body.
- It is important to state that a concussion is a serious brain injury; there is no such thing as a “mild” or “moderate” concussion.

Signs and Symptoms of a Concussion:

Resources: Ontario Physical Activity Safety Standards in Education (available at <http://safety-beta.ophea.net>) Sample Tool to Identify a Suspected Concussion. Parachute - Concussion Recognition Tool 5 (available <http://bjism.bmj.com/content/bjsports/51/11/872.full.pdf>)

- *Symptoms* of a concussion are what the student experiences, and what the student is saying, such as ringing in the ears or saying “I feel sick and dizzy.”
- *Signs* of a concussion are what a student is observed to exhibit, such as being excessively emotional, stumbling, or demonstrating poor concentration/memory.
- It is important that signs and/or symptoms of a suspected concussion are recognized, diagnosed, and treated properly. If the signs and symptoms of an initial concussion are not recognized the student may suffer long-lasting or permanent impairment, known commonly as Post-Concussion Syndrome (PCS). If an individual receives a second hit before the symptoms of the first concussion have subsided, they may experience rapid brain swelling known as Second Impact Syndrome (SIS), which can lead to death.
- Stress the importance for the student’s immediate and long-term health to self-report any signs or symptoms of a concussion to their teacher/coach/parents. It is also important for the student to report any signs or symptoms of a concussion that they observe from a friend/teammate to their teacher/coach. Your friend/teammate may not be in a position to recognize the signs and symptoms at the time.
- Signs and symptoms of a suspected concussion can be identified by a designated and specifically-trained first responder.
- The minimum standard for the diagnosis of a concussion is from a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist, who would follow-up with informed medical management.

Module 2:

BASKETBALL PLAYER

Sue's **head was hit** hard by an **opponent's elbow** while battling for a rebound during her basketball game. Immediately after the injury, she **fell to the floor** and **lost consciousness** for several minutes. Sue slowly regained consciousness and was taken to the bench by the trainer. She said she felt **disoriented and fatigued**, admitted to a **severe headache and neck pain**, and was experiencing **nausea**. Sue was **not allowed to return** to the game, and was left alone in the locker room. After the game, one of Sue's teammates offered her a painkiller.

What should occur when an individual is observed to black out or lose consciousness?

Answer Choices:

1. Tell them that they should be able to return to the game once they feel better. **Incorrect**

Return to physical activity should NOT occur if there has been a loss of consciousness for any length of time, or if a concussion is suspected. Immediately inform a teacher/adult of what you saw and what your teammate told you about how they felt.

2. Follow board procedures by calling 911 for a loss of consciousness and to closely monitor the student for changes of symptoms until EMS arrives. **Correct**

The teacher/coach/adult is to **call 911** for **emergency medical assistance** and follow the Board of Education's **Emergency Action Plans and Concussion Protocol**. Do not allow anyone to move the injured student and ensure the neck is protected. Allow an individual with **first responder** training to **assist** and **direct care to the injured person**. Do not administer medication (unless the student requires medication for other conditions – e.g., insulin for a student with diabetes, inhaler for asthma).

3. Stay with your teammate in the change room, and suggest that they take a painkiller for their headache. **Incorrect**

The student should not be left alone after the injury. It is important to alert a teacher or adult about the observed injury as the student may not be able to report it themselves. The adult should call 911 for emergency medical assistance, based on Board of Education's Emergency Action Plans and Concussion Protocol. The student's family should also be contacted. Do not allow anyone to move the injured student and ensure the neck is protected. Allow an individual with first responder training to assist and direct care to the injured person. No medication should be given to the injured party before being evaluated by a doctor or nurse practitioner as the administration of medication before a medical evaluation could alter the diagnosis. Whenever possible, consult a **medical concussion specialist**.

Module 2 Discussion Points

Scenario: A female basketball player was hit in the head and then fell to the floor. The player experienced a loss of consciousness and sustained a possible concussion.

- After a witnessed or reported student loss of consciousness an adult is to call 911 for emergency medical assistance and follow the Board of Education's Emergency Action Plans and Concussion Protocol. Do not allow anyone to move the injured student and ensure the neck is protected. Allow an individual with first responder training to assist and direct care to the injured person. Do not administer medication (unless the student requires medication for other conditions – e.g., insulin for a student with diabetes, inhaler for asthma).
- Signs and symptoms of a suspected concussion should be identified by a designated and specifically-trained first responder.
- The minimum standard for the diagnosis of a concussion is from a medical doctor or nurse practitioner, who would follow-up with informed medical management. Due to the complexity of this serious brain injury, a consult with a medical concussion specialist (e.g., neurosurgeon, neurologist, primary care sports medicine doctor with added qualification) should be sought whenever possible.
- Only a small percentage of concussions involve a recalled black out/loss of consciousness.
- The loss of consciousness can be for any length of time.
- Discussion of other Red Flag signs and symptoms where the immediate action is to call 911 for emergency medical assistance. Reference the revised OPESG Sample Tool to Identify a Suspected Concussion – Red Flags.
- Allowing a student to return to physical activity too soon after a suspected concussion may risk the occurrence of a second concussion in close proximity to the initial event. This is also known as Second Impact Syndrome (SIS), which is the uncontrollable swelling of the brain leading to possible death.

Module 3:

FOOTBALL PLAYER

Omar has **ringing in his ears** after a hard **hit from behind**. He says he was not hit on the head. Omar has no other **signs** or **symptoms**, but gets **excessively angry** when he insists that he did not hit his head. Omar also says that the **ringing in his ears** is lasting longer than the **previous** times he experienced a **hit to the head**.

Which of the following signs or symptoms may indicate a concussion?

Answer Choices:

1. Headache, dizziness, feeling foggy, or seeing spots of light.
2. Being bothered by bright lights and loud sounds, experiencing ringing in the ears, and feeling tired or nauseous.
3. Being unaware of your surroundings, or feeling very angry/sad.
4. All of the above.

Module 3: The answer is 4. All of the above.

A **sign** is something that is **observed by another person**. A **symptom** is something **the student will feel and report**.

Signs and symptoms of a brain injury can occur **immediately**, or can present **hours to days later**.

A student who has suffered a concussion may admit to symptoms that include: a **headache, feeling dizzy or dazed, seeing spots of light** or being bothered by **bright lights, hearing ringing in the ears, feeling tired, getting sick to their stomach, getting angry easily**, has thoughts that are **foggy or fuzzy**, and is **not sure where they are**.

You may observe (**signs**) that the person who has suffered a **concussion** has **poor balance and coordination, slow and slurred speech, poor ability to focus or concentrate, difficulty answering questions, stares into space or does not look at you** when you talk to them, **decreased ability to play games or sports**, and unusual **changes** in the way the **person feels or acts** toward others.

Delayed concussion symptoms and signs can occur hours or days **after the original injury**. If you have already had a **concussion**, you may be at **risk** for **second concussion**. Signs and symptoms of a suspected concussion can be **identified** by a **designated and specifically-trained first responder**.

The **minimum standard** for diagnosis of a concussion is from a **medical doctor, nurse practitioner**, or (whenever available) **medical concussion specialist**, who would follow-up with **informed medical management**.

Concussions can occur:

- From any **jarring impact to the head, face, or jaw**;
- From a **jarring impact to the body (from behind or any other angle)**;
- From a **sideways jarring impact to the head**.

Module 3 Discussion Points

Scenario: A student athlete suffers a hard hit to the body, which results in hearing ringing in the ears that is similar to a previous experience. Excessive anger or other emotions are also mentioned, which can result from either frustration or the brain injury itself.

- *Symptoms* of a concussion are what the student experiences, such as ringing in the ears or saying “I feel sick and dizzy.”
- *Signs* of a concussion are what a student is observed to exhibit, such as being excessively emotional, stumbling, or demonstrating poor concentration/memory.
- Stress the importance for the student’s immediate and long-term health to self-report any signs or symptoms of a concussion to their teacher/coach/parents. It is also important for the student to report any signs or symptoms of a concussion that they observe from a friend/teammate to their teacher/coach. Your friend/teammate may not be in a position to recognize the signs and symptoms at the time.
- The question in this module lists possible signs and symptoms of a concussion; any ONE can indicate a concussion has occurred. The instructor can refer to the signs and symptoms inventory in the Concussion Recognition Tool 5 (available <http://bjsm.bmj.com/content/bjsports/51/11/872.full.pdf>) refer to the Ontario Physical Activity Safety Standards in Education_(Sample Tool to Identify a Suspected Concussion). These tools are educational references only meant for the development of instructor’s knowledge. These tools should not be used for diagnostic purposes, but to assist with the initial identification of a possible concussion.
- Review that concussions can occur from any jarring impact to the head, face, neck or body.
- Stress the importance of keeping a history of previous concussions, which are thought to be cumulative in nature.
- Make students aware that the signs and symptoms of a concussion can have a delayed appearance.
- Concussion symptoms or signs can reoccur when training is restarted, despite completing medically-supervised Return to School and Return to Physical Activity protocols. (See Module 5.) Ontario Physical Activity Safety Standards in Education concussion protocol may be accessed [here](#).
- Signs and symptoms of a suspected concussion can be identified by a designated and specifically-trained first responder.

Signs and/or symptoms can appear immediately or take hours or even days to exhibit.

There may be an incident when after a blow to the body or head where signs or symptoms are not reported by the student or identified by the teacher/coach, after referring to the tool to identify a suspected concussion, the teacher/coach suspects a concussion either because of the significance of the hit or knowing that signs and symptoms can take hours or even days to exhibit themselves.

In this situation the teacher/coach will:

- Remove the student from physical activity for 24 hours
- Have student continue with school and monitor student while at school
- Contact parent/guardian and provide information on:
 - the incident
 - importance of no physical activity for 24 hours
 - monitoring student while at home for 24 hours.
- Provide parents with Sample Tool to Identify a Suspected Concussion to assist with monitoring and Sample Medical Concussion Assessment Form in case signs/symptoms appear and urgent medical assessment is needed
- Inform principal of incident

Parent/guardian and school will:

- Monitor the student for 24 hours for delayed sign(s) or symptom(s)

If NO for signs or symptoms:

- Parent reports to principal and student permitted to resume physical activity.

If YES for signs or symptoms:

- If at school – school informs parent/guardian that child needs urgent medical assessment.
- If at home – parent/guardian takes child for urgent medical assessment along with Sample Tool to Identify a Suspected Concussion and Sample Medical Concussion Assessment Form.

The minimum standard for the diagnosis of a concussion is from a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist, who would follow-up with informed medical management.

Module 4:

BASEBALL PLAYER

Jamal was riding his mountain bike and accidentally caught his front wheel in a rut. He was thrown off the bike and **struck his head** on the ground. He suffered a **medically diagnosed concussion**. Several weeks later Jamal was **medically cleared** by his **doctor** after completing the **Return to School Plan that addresses the Return to Learn and Return to Physical Activity stages**. Twenty minutes into his baseball practice, Jamal started feeling **lightheaded** and **dizzy** while fielding ground balls. He assumed that he was simply out of shape, but friends and teammates have noticed that Jamal is **slurring his words** and having **difficulty concentrating**. Jamal is unusually **irritated** with suggestions that he may **not** be **ready** for **physical activity**.

What should happen next?

Answer Choices:

1. Jamal's friends and teammates should try and talk to him, and explain why they are worried.

Incorrect: Talking to the student exhibiting signs of a concussion and expressing your concerns is good. However, your friend may not realize that they are acting strangely and so may not self-report a possible concussion.

2. His friends and teammates should try to convince Jamal to inform his teacher/coach about how he feels. They should also inform Jamal's teacher/coach of their observed concerns, as Jamal may not be able to recognize or report the injury.

Correct! The answer is 2.

His friends and teammates should try to convince Jamal to inform his teacher/coach about how he feels. They should also inform Jamal's teacher/coach of their observed concerns, as Jamal may not be able to recognize or report the injury.

Jamal needs to be **diagnosed** by a **medical doctor, nurse practitioner**, or (whenever available) **medical concussion specialist**.

The **signs** and **symptoms** of a **concussion** may **return** after a person has completed the **Return to School Plan that addresses the student's Return to Learn (RTL) and Return to Physical Activity (RTPA) stages**., even if **supervised** by a **medical doctor, nurse practitioner**, or (whenever possible) **medical concussion specialist**.

Anger and acting differently toward others are common signs of a concussion.

It is important to watch a student after a concussion, as the signs and symptoms may occur later. It is dangerous to return to physical activity too soon after a concussion.

A concussion may be short-term or permanent. Memory loss, poor balance, and changes in the way a person acts can also occur.

3. Leave Jamal alone.

Incorrect: Everyone has a responsibility to report a suspected concussions to the teacher, coach, or responsible adult.

Module 4 Discussion Points

Scenario: A student suffered a concussion, took the proper steps for recovery, and was cleared to Return to Physical Activity by a doctor. However, the student still exhibits signs and symptoms of concussion when they return to sport activities.

- Review that concussion signs or symptoms can reoccur when training is restarted, despite completing medically-supervised Return to School Plan that addresses the student's Return to Learn (RTL) and Return to Physical Activity (RTPA) stages. (See Module 8.) Ontario Physical Activity Safety Standards in Education concussion protocol may be accessed [here](#).
- Stress the importance for those around the affected student to remain aware of the signs and symptoms of a concussion. This can help prevent additional concussions while the injured party is recovering from a pre-existing injury.
- Stress the importance for the student's immediate and long-term health to self-report any signs or symptoms of a concussion to their teacher/coach/parents. It is also important for the student to report any signs or symptoms of a concussion that they observe from a friend/teammate to their teacher/coach. Your friend/teammate may not be in a position to recognize the signs and symptoms at the time.
- Prolonged signs or symptoms may indicate Post-Concussion Syndrome (PCS) or Second Impact Syndrome (SIS), which result from recurrent concussions occurring close together. PCS involves a prolonged period of concussion symptoms that persist for days, weeks, months, and sometimes even permanently. Examples of PCS symptoms are: headaches, dizziness, fatigue, irritability, sensitivity to sound and light, and memory and concentration impairment. Allowing a player to return too soon after a concussion may also put them at risk for SIS, which commonly occurs as a result of a second concussion in close proximity to the initial event. SIS is the uncontrollable swelling of the brain, which may lead to death.
- Strategies to address emotional reactions (e.g., depression, changes in self-worth) related to prolonged PCS may include: providing coping skills, offering support, keeping an optimistic outlook, avoiding isolation, and accessing professional help to assist with recovery.

Module 5:

SOCCER PLAYER

Kenesha suffered a **hit to the body** in her soccer game. She does not think that she blacked out or lost consciousness as she slowly got up by herself and went to the bench. Kenesha felt like she was in a **daze**, and had a **headache** and **blurred vision**. Her coach believes that she may have suffered a **concussion**, and suggests that Kenesha rests on the bench.

How should Kenesha be cared for following her possible concussion?

Answer Choices:

1. Kenesha should be given a painkiller. **Incorrect**

Painkillers or other medications should not be given to any student with a suspected concussion before they are seen by a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist, as it may alter the initial diagnosis.

2. Kenesha is to be immediately removed from the game and examined by the teacher/coach for signs and symptoms of a concussion using a school approved Tool to Identify a Suspected Concussion. **Correct!**

The injured student must immediately stop the activity and be examined by the teacher/coach for signs and symptoms of a concussion using the OPASSE Sample Tool to Identify a Suspected concussion.

Step 1: Initial check for Red Flag signs and/or symptoms. If any Red Flag sign or symptom is present:

- Call 911
- Stay with student until emergency medical services arrive
- Contact the student's parents/guardians

If there are no Red Flags signs or symptoms move to next step.

Step 2: Step 2 – Other signs and/or symptoms observed and/or reported:

- If any one or more sign(s) or symptom(s) are present a concussion should be suspected but full check should be completed (including the Quick Memory Function Check)
- If any sign(s) or symptoms worsen or red flags emerge, call 911 and follow red flag procedures

Teacher/Coach response:

- Contact the student's parent/guardian to inform them:
 - Of the incident
 - That they need to come and pick up the student
 - Student needs urgent medical assessment (as soon as possible that day) by a medical doctor or nurse practitioner or whenever available medical concussion specialist.

- The student must not be left alone until a parent/guardian arrives.
- Do not allow the student to return to physical activity/practice/competition that day even if the student states they are feeling better.

Painkillers or other medications should not be given to an injured student with a suspected **concussion** before they are seen by a **medical doctor, nurse practitioner, or medical concussion specialist** as it may interfere with the initial diagnosis.

3. Kenesha should try to re-enter the game later if she feels better. **Incorrect**

A student suspected of sustaining a concussion should not return to physical activity. The injured student should be monitored on the bench for the remainder of the game for increasing signs or symptoms, such as headache, weakness, or nausea. The teacher, coach, or responsible adult should call her parents/guardians who should then take her to be evaluated by a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist. If Kenesha's symptoms worsen rapidly, the responsible adult should call 911 and activate the Board of Education's Emergency Action Plans and Concussion Protocol.

4. All of the above. **Incorrect**

Module 5 Discussion Points

Scenario: The student suffers a suspected concussion from a hard hit to the body, but does not report a loss of consciousness.

- Review that concussions can occur from any jarring impact to the head, face, neck or body.
- Remind students that the majority of concussions do not involve blacking out/loss of consciousness.
- If it is suspected that a student may have suffered a concussion the injured student must immediately stop the activity and be examined by the teacher/coach for signs and symptoms of a concussion using the OPASSE Sample Tool to Identify a Suspected Concussion. Teacher/coach is to follow procedures outlined for Red Flag signs or symptoms and/ or Other signs and symptoms.
- In the case that the student's symptoms do worsen, the responsible adult should call 911 and activate the Board of Education's Emergency Action Plans and Concussion Protocol.
- Signs and symptoms of a suspected concussion can be identified by a designated and specifically-trained first responder.
- Diagnosis of concussion should be provided by a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist, who would follow-up with informed medical management.
- Concussion patients should not be woken every hour, but instead observed by a responsible adult for increasing symptoms such as fatigue or a significant change in behaviour. If increasing signs or symptoms are observed, the responsible adult should call 911 and the student should be taken to the hospital for emergency medical evaluation.

Module 6:

FOOTBALL PLAYER

Jerome has experienced **headaches**, **dizziness**, and **tiredness** for **two months** following a **concussion**. He is **sad** and **frustrated** that he can't exercise or go to team meetings without **feeling worse**. Jerome says that he is **worried** he may never fully recover.

As a teammate, what should you tell Jerome?

Answer Choices:

1. Tell Jerome that it is important for him to express how he feels to his parents and teachers, so he may get proper treatment and support.
2. Tell an adult (e.g., teacher, coach) how Jerome is feeling.
3. Tell Jerome that he should NOT try to tough it out by continuing to train, as his symptoms are persisting.
4. Tell Jerome that his feelings are normal and the team fully supports him.
5. Tell Jerome his long-term health is most important.
6. All of the above.

Module 6: The answer is 6. All of the above.

A concussed player sometimes ignores **concussion symptoms** and resists being seen by a **medical doctor, nurse practitioner**, or (whenever possible) **medical concussion specialist**. The student may **return to physical activity** without **medical clearance** while suffering from **concussion symptoms**. As a result, this student can sustain a **second concussion** and be at risk for **Second Impact Syndrome (SIS)**.

Concussion symptoms can last for **days, weeks**, or **months**, and may sometimes be **permanent**. These long-lasting symptoms are referred to as **Post-Concussion Syndrome (PCS)**. Examples of these symptoms include **headaches, dizziness, fatigue, anger, experiencing pain from loud sounds and bright lights**, or difficulties with **memory** and **concentration**.

Many athletes may not want to **admit to the injury**, pretending rather that it does not exist. This may cause them to become **angry**. It is important for athletes to **accept the injury** and to take an **active role** in their **recovery**.

Students with concussion symptoms may also **blame others** for their injury. They may **feel sad or sorry for themselves, cry often**, and may experience **trouble sleeping**. Athletes may **worry** that if they are injured another teammate will take their spot.

To help an injured student manage feelings of **anxiety and depression** it is important for them to **express themselves** to their **parents, teachers, or coaches** so they can get **proper diagnosis, management, and support**.

Students who suffer from a **concussion** should **accept help** from **family and friends**. It is important to follow the **medical doctor's, nurse practitioner's**, or (whenever possible) **medical concussion specialist's** advice, as well as to try and remain **patient and positive**. Athletes should **not feel rushed or pressured** to **return to physical activity** if they are still experiencing **concussion symptoms**.

Module 6 Discussion Points

Scenario: A student athlete suffers a concussion and the resulting symptoms are prolonged. This affects many parts of their life, including fluctuating emotions or troubles in school and relationships.

- Post-Concussion Syndrome (PCS) refers to prolonged symptoms or signs of a concussion. PCS may be a result from the cumulative effect of multiple diagnosed or non-diagnosed concussions, although it may also result from a single concussion.
- Strategies to address emotional reactions (e.g., depression, changes in self-worth) related to prolonged PCS may include: providing coping skills, offering support, keeping an optimistic outlook, avoiding isolation, and accessing professional help to assist with recovery.

Module 7:

HOCKEY PLAYER

Dylan suffered a big hit in his hockey game. He reported **seeing spots of light**, as well as feeling **dizzy** and **disoriented**. He doesn't believe he has a **concussion**, because he didn't get knocked out. Dylan trusts that his helmet and custom-fitted mouth guard protect him against concussions. However, **something is clearly wrong** with Dylan.

Can a good helmet or mouth guard prevent a concussion?

Answer Choices:

1. Yes.

Incorrect: There is no independent peer-reviewed scientific evidence that demonstrates that either helmets or mouth guards prevent concussions. Only a small percentage of concussions are associated with a reported loss of consciousness

2. No.

Correct!

Module 7: The answer is 2. No.

Helmets and mouth guards **do not prevent concussions**. Helmets only serve to **decrease skull fracture** and **brain bleeds**, while **mouth guards** only **lessen dental and gum injuries**, as well as **jaw** and **facial fractures**.

Most students who suffer a **medically-diagnosed concussion** do not **report** experiencing a blackout/loss of consciousness.

Module 7 Discussion Points

Scenario: A student athlete receives a hit in a hockey game and experiences symptoms of a concussion. They do not feel it is important to report, as they did not lose consciousness. The athlete feels that their equipment (e.g., helmet and mouth guard) protects them against concussions.

- Review with students the importance of knowing and recognizing some of the common signs and symptoms of a suspected concussion.
- Stress the importance for the student's immediate and long-term health to self-report any signs or symptoms of a concussion to their teacher/coach/parents. It is also important for the student to report any signs or symptoms of a concussion that they observe from a friend/teammate to their teacher/coach. Your friend/teammate may not be in a position to recognize the signs and symptoms at the time.
- Stress that there is no scientific information that either mouth guards or helmets prevent concussions. Rather, they are designed to prevent skull fractures or brain bleeds, as well as jaw and dental fractures.

Module 8:

FOOTBALL PLAYER

Zach suffered a **concussion** after being **hit hard** in the **head** during a recent football game. Zach likes to train hard to stay on top of his game, but he was told to **rest** until he was **medically cleared** for **physical activity**. He wonders if she can do some light exercise 24 hours after the concussion.

There are **many steps** that the **medical doctor** or **nurse practitioner**, and or whenever available a **medical concussion specialist** will have Zach complete to **recover** from a **concussion**, beginning with the Return to School Plan that addresses the student's Return to Learn (RTL) and Return to Physical Activity (RTPA) stages.

1. True.

Or

2. False.

Module 8: The answer is 1. True.

A student with a diagnosed concussion needs to follow an individualized and gradual **Return to School Plan that addresses the student's Return to Learn (RTL) and Return to Physical Activity (RTPA) stages**. In developing the Plan, the RTL process is individualized to meet the particular needs of the student, as there is not a pre-set plan of strategies and/approaches to assist a student return to their learning activities. In contrast the RTPA Plan follows an internationally recognized graduated approach.

The management of a student concussion is a shared responsibility, requiring regular communication, between the home, school (Collaborative Team) and outside sports team (where appropriate) with consultation from the student's medical doctor or nurse practitioner or (whenever available) medical concussion specialist and/or other licensed healthcare providers (e.g., nurses, physiotherapists, chiropractors and athletic therapists).

There are two parts to a student's Return to School Plan that address the Return to Learn and Return to Physical Activity stages. This first part occurs at home and prepares the student for the second part which occurs at school.

Home resource: OPASSE (<https://safety-beta.ophea.net/concussions>) Sample Home Concussion Management Form (RTL and RTPA)

School resource: OPASSE (<https://safety-beta.ophea.net/concussions>) Sample School Concussion Management Form (RTL and RTPA)

While the RTL and RTPA stages are inter-related they are not interdependent. A student's progress through the stages of RTL as independent from their progression through the RTPA

stages. However, students must have completed Stage 4a and 4b of RTL and Stage 4 of RTPA and have obtained Medical Clearance prior to beginning Stage 5 of RTPA.

Until a student has successfully completed all stages in the Return to Learn (4a and 4b) and stage 4 in Return to Physical Activity with medical clearance they must not participate in the following physical activities where the risk of re-injury is possible:

- full participation in the physical education curricular program;
- intramural activities;
- full participation in non-contact interschool activities; or
- participation in practice for a contact sport.

The Return to Physical Activity stages are as follows:

At home:

An initial period of 24-48 hours of both relative physical rest and cognitive rest before beginning the Return to Physical Activity progression.

Stage 1- Light physical activities that do not provoke symptoms. e.g. daily household tasks (e.g. bed making, dishes) slow walking for short time.

Stage 2a – Daily activities that do not provoke symptoms e.g. light physical activities e.g. use of stairs; 10-15 minutes slow walking

Stage 2b – Light aerobic activity e.g. 20-30 min. walking/stationary cycling at slow to medium pace, No resistance training

At school:

Stage 3 – Simple locomotor activities/sport-specific exercise to add movement e.g running or skating drills/ throwing drills, shooting drills. No head impact activities. Restricted recess activities e.g. walking.

Stage 4 – Progressively increased physical activity. Non contact training drills to add coordination and increase thinking. e.g. more complex training drills e.g passing drills in soccer; physical activity with no body contact (dance, badminton); participation in practices for non contact sports; DPA elementary; Recess – physical activity running/games with no body contact.

Stage 5 – Following medical clearance from medical doctor/nurse practitioner. Full participation in all non contact physical activities (i.e. non intentional body contact) and full contact training/practice in contact sports.

Stage 6 – Full participation in contact sports games/competitions.

If symptoms return or new symptoms appear:

- During all stages of RTL and in Stages of 1-4 of RTPA the student returns to previous stage for a minimum of 24 hours and only participates in activities that can be tolerated.

- During stages 5 and 6 of RTPA: the student must return to medical doctor/nurse practitioner or (whenever available) medical concussion specialist to have the medical clearance re-assessed.

If symptoms worsen:

During all stages of RTL and RTPA, follow school (collaborative team procedures) for contacting parents/guardians to inform them that the student needs a follow-up medical assessment by a medical doctor/nurse practitioner or (whenever available) medical concussion specialist

Module 8 Discussion Points

Scenario: A student has suffered a concussion. How should this student attempt to return to physical activity?

The minimum standard for the diagnosis of a concussion is from a medical doctor or nurse practitioner, who would follow-up with informed medical management. Due to the complexity of this serious brain injury, a consult with a medical concussion specialist (e.g., neurosurgeon, neurologist, primary care sports medicine doctor with added qualification) should be sought whenever possible.

Select key principles and phrases from OPASSE (<https://safety-beta.ophea.net/concussions>) Sample Home Concussion Management Form (RTL and RTPA). And Sample School Concussion Management Form (RTL and RTPA) to add to how students should attempt to return to physical activity.

- Discuss OPASSE Return to School Plan Home Concussion Management and School Concussion Management, which may be accessed here (<https://safety-beta.ophea.net/concussions>)
- Discuss that RTPA stages can occur at the same time as RTL stages. However, regular physical activity cannot take place until RTL stages 4a and 4b have been completed.
- An individual's Return to School Plan that addresses the student's Return to Learn and Return to Physical Activity stages. must occur under medical supervision.
- Discuss the social, economic, and educational consequences of a concussion.
- Review the importance of support from close friends and family, as well as informed medical support from a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist.

Module 9:

FIELD LACROSSE PLAYER

Jessica is **frustrated, anxious,** and **feels sad** about her **difficulty to recover quickly** from a concussion she suffered after accidentally falling down a set of stairs. Despite still experiencing **concussion symptoms,** Jessica feels she should be ready to play an upcoming and important lacrosse game. Her doctor says she is not ready. Jessica wonders **what might happen** if she plays despite her **concussion symptoms.**

Jessica asks for your opinion. What should you tell your friend?

Answer Choices:

1. Advise Jessica to go back to her doctor.
2. Tell Jessica she should wait to return to physical activity as she could get another concussion.
3. Tell Jessica that feeling sad is common after a concussion. Tell her she can talk it over with her parents and friends, and is not alone.
4. All of the above.

Module 9: The answer is 4. All of the above.

Individual students **recover** from **concussions** over **different** timelines.

Post-Concussion Syndrome (PCS) involves a **prolonged period of concussion symptoms** that **persist for days, weeks, months** and **sometimes permanently.** Examples of these symptoms are **headaches, dizziness, fatigue, irritability, sensitivity to sound and light,** as well as **memory and concentration impairment.** Allowing a player to return after a concussion may risk **Second Impact Syndrome (SIS).** SIS is the uncontrollable **swelling of the brain,** leading to a possible **permanent brain injury or death.** This condition is caused by a **second concussion** occurring too **soon after the initial injury** and **without sufficient time for recovery.** This can happen in matter of minutes or over a span of a few weeks.

It is common for the **injured student** to feel a **variety of emotions,** including **anxiety, sadness,** and **anger.** The first part of the healing process is to know that these **feelings are common.**

Strategies to address emotional reactions (e.g., depression, changes in self-worth) related to **Post-Concussion Syndrome (PCS)** may include: providing **copng skills,** offering **support,** keeping an **optimistic outlook, avoiding isolation,** and accessing **professional help** to assist with **recovery.**

Injured students must receive a **medical diagnosis from a medical doctor, nurse practitioner,** or (whenever available) **medical concussion specialist,** who would follow-up with **informed medical management.**

Support and understanding of the injury by the student's classmates/teammates/teachers/coaches/parents is helpful in the care of a concussion.

Module 9 Discussion Points

Scenario: A student who is recovering from a concussion considers returning to physical activity before she has been medically cleared to do so.

- Review the effects of Post-Concussion Syndrome (PCS) on a student's emotional and mental health.
- Second Impact Syndrome (SIS) is the uncontrollable swelling of the brain, leading to possible death.
- Stress the risks involved with returning to physical activity before recovering from their initial concussion.
- Discuss with students the importance of support from close friends and family to the student, as well as receiving informed medical support from a medical doctor, nurse practitioner, or (whenever available) a medical concussion specialist.

Module 10:

EX-FOOTBALL PLAYER

Rob is 42. He is a **former football player** and has enrolled in an adult education course to upgrade his skills. Rob is frustrated by his **inability to concentrate, poor memory, and disappointing test results**. He believes this may be the result of **repeated concussions** suffered while playing football **many years ago**.

Could there be a connection between Rob's repeated concussions and his inability to concentrate?

Answer Choices:

1. Yes.

Correct!

2. No.

Incorrect: There may be a connection between an individual's history of repetitive concussions in the remote past, and their cognitive function late in life. In some cases Chronic Traumatic Encephalopathy (CTE- see accompanying references) has been correlated with an early decline in cognitive function and progressive early onset dementia.

Module 10: The answer is 1. Yes.

Concussions can lead to **serious memory loss** and **cognitive disability later in life**. Rob should undergo a thorough **physical and psychological examination** by a **medical doctor, nurse practitioner**, or (whenever possible) **medical concussion specialist** to evaluate for other causes of his poor concentration.

Module 10 Discussion Points

Scenario: A retired football player is having problems with memory and concentration, and wonders if their previous injuries may be responsible.

- Review the long-term effects of concussions, as well as the need for proper medical assessment immediately after the original injury.
- Stress the importance of preventing repetitive or accumulative concussions as it that may lead to long-term cognitive impairment.
- Discuss Chronic Traumatic Encephalopathy (CTE). (See the reference guide and documentaries in the [Sport Concussion Library](#).)

Module 11:

HOCKEY PLAYER

Leon and his teammates were involved in a brawl. Leon was **punched on the head**, and then sustained a **second head injury** when he was **thrown down to the ice**. He shook off the help of his teammates and **insisted he was fine**, despite a **stumbling slightly** as he headed off the ice. Leon felt very **angry**. He did not want to seem weak and **wanted to get back** on the ice as soon as possible.

Why did Leon's coach, trainer, and physician advise him against returning to any physical activity?

Answer Choices:

1. His coach and medical staff were worried that Leon might have suffered a concussion.
2. Leon's coach and medical staff knew that in the heat of the moment, when adrenaline is high, he might not recognize the signs of a concussion.
3. The coach and medical staff wanted Leon to cool down before being assessed for a concussion.
4. All of the above.

Correct!

Module 11: The answer is 4. All of the above.

Leon's coach realizes that:

- Individuals who have been involved in a fight **may not recognize** how they are feeling physically, as there may be **too much adrenaline** in their system.
- Allowing Leon to **cool down** will help him become **aware** of a potential **concussion** and the need to wait for a **medical evaluation**.
- Allowing a student with a possible concussion to **Return to Physical Activity** without completing a medically-supervised **Return to School Plan** which addresses **Return to Learn and Return to Physical Activity stages** places the student at **increased risk** for **serious brain injuries**, both **short-term** and/or **permanent**.

Module 11 Discussion Points

Scenario: A student athlete has been involved in a fight during a game. They wonder if they are being unnecessarily restricted from returning to physical activity.

- Review with students the importance of knowing and recognizing some of the common signs and symptoms of a suspected concussion.
- Stress the importance for the student's immediate and long-term health to self-report any signs or symptoms of a concussion to their teacher/coach/parents. It is also important for the student to report any signs or symptoms of a concussion that they observe from a friend/teammate to their teacher/coach. Your friend/teammate may not be in a position to recognize the signs and symptoms at the time.
- Discuss that violence or loss of control can be both a cause of and result of brain injuries.
- Review the effects head injuries can have on emotions and personal behaviour.
- The potential for second concussion rises if the first is not properly identified, and could lead to prolonged Post-Concussion Syndrome (PCS) or Second Impact Syndrome (SIS). PCS involves a prolonged period of concussion symptoms that persist for days, weeks, months, and sometimes permanently. Examples of these symptoms include headaches, dizziness, fatigue, anger, sensitivity to light and sound, and memory and concentration impairment. Allowing a player to return to physical activity after a concussion may risk SIS. This condition is the uncontrollable swelling of the brain caused by a second concussion occurring too soon after the initial injury and without sufficient time for recovery. This can happen in a couple of minutes or over a span of a few weeks. SIS can result in permanent brain injury or death.

Module 12:

ICE HOCKEY PLAYER

Li has taken a few days off from ice hockey practice because she has **headaches** that won't go away. She is also **bothered by bright lights** and **loud sounds**. **These concussion signs and symptoms started one week ago**, after tripping and hitting her head on the ice. She **did not report** the symptoms to her parents, friends, or coach and feels well enough to play in the big game. Li believes that she may have **a concussion** but also thinks that it couldn't have done much damage. She fears that she **won't be allowed to play** if she **reports her symptoms**.

Li asks you for an opinion. What would you suggest?

Answer choices:

1. Li should go ahead and play if she is able.

Incorrect: A student should self-report their suspected concussion symptoms to a responsible adult. The injured student may not be capable of determining whether or not they have suffered a concussion. Other students or teammates should also feel a responsibility to report a possible concussion, so that the injured student can obtain a diagnosis from a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist, who would follow-up with in-formed medical management. The coach should always encourage their team to report suspected concussions.

A student should not be allowed to return to physical activity until they have been cleared by a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist. They should also successfully complete the school's Return to School Plan that addresses the student's Return to Learn and Return to Physical Activity stages, as outlined by the school's collaborative team. If the student returns to physical activity before medical clearance, they risk a second concussion and a possible prolonged period of recovery. In some cases they could even experience Second Impact Syndrome (SIS), which may lead to death.

2. Li should take a couple of extra days off to decide, because the team needs

her. **Incorrect:** See the above answer.

3. Tell Li to report her symptoms to her parents and her coach. As her friend and teammate, you should also report your concerns about Li's probable concussion to a teacher, coach, or trainer.

Correct!

Module 12: The answer is 3.

Students should feel free to **self-report** concussions or **report concussions** that may have been suffered by a friend to a **responsible adult**. The **early identification** of a concussion is important for the **safety of the student**.

Individual **recovery times** from a concussion are **different**. It may take **hours, days, weeks, or months**, and sometimes a player may take a **longer time to get better**.

A student is not to return to regular physical activity (i.e. full participation in the physical education program, intramural activities, interschool practices for non contact sports. In order to participate in competition for contact sports the student must successfully participate in a contact practice first which takes place in stage 5) until they have completed Return to Learn and stage 4 of RTPA and cleared by a medical doctor, nurse practitioner or (whenever available) medical concussion specialist.

Following the Return to Physical Activity (RTPA) internationally recognized graduated approach the student is allowed to participate in low intensity physical activity in controlled and predictable environments.

If the injured student returns to regular, vigorous organized physical activity where the risk of injury is possible before medical clearance they risk a second concussion, a prolonged period of recovery, or possible Second Impact Syndrome (SIS) which could lead to death.

Module 12 Discussion Points

Scenario: A student suffers a hit during a game that produces concussion symptoms and chooses not to report them, fearing they will be restricted from playing. The student also thinks that, as it is their first concussion, it could not have done much damage.

- Review that self- and peer-reporting of suspected concussions are important to help identify if a concussion has occurred.
- Remind students that those suspected of sustaining a concussion may not be capable of determining so themselves, and the student's peers should also feel a responsibility to report this injury.
- Signs and symptoms of a suspected concussion can be identified by a designated and specifically-trained first responder.
- The minimum standard for diagnosis of a concussion is from a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist, who would follow-up with informed medical management.
- A student is not to return to regular physical activity (i.e. full participation in the physical education program, intramural activities, interschool practices for non contact sports. In order to participate in competition for contact sports the student must successfully participate in a contact practice first which takes place in stage 5) until they have completed Return to Learn stages 4a and 4b and stage 4 of Return to Physical Activity and cleared by a medical doctor, nurse practitioner or (whenever available) medical concussion specialist.
- If the injured student returns to regular, vigorous organized physical activity where the risk of injury is possible before medical clearance they risk a second concussion, a prolonged period of recovery, or possible Second Impact Syndrome (SIS) which could lead to death.
- Review that the "win at all costs" approach is wrong. A pressure-free environment created by the teacher or coach encourages concussion self-reporting, or reporting by a peer. This is very important to concussion identification and treatment.
- Discuss that individual recovery times from a concussion are dependent on factors such as the number of previous concussions, as well as the age of student. Those with a history of previous concussions, or a younger individual, usually take longer to recover.

Secondary School E-Module Program Reference Guide

The OPASSE Concussion Protocol Return to School Plan that addresses the students Return to Learn (RTL) and Return to Physical Activity may be accessed at <https://safety-beta.ophea.net/concussions>

A primary reference tool for the e-module based program is the www.sportconcussionlibrary.com site. This site was originally designed to house over 5000+ peer-reviewed articles concerning sport concussions, and now has a significant amount of additional information, as well as links to other important sites.

The Sports Concussion Library articles can be accessed by registering freely on the site. Please click on the Library tab on the left of the toolbar. The site will ask you to create a personal user-name and password that will allow unlimited use of the articles housed in the library.

The Sport Concussion Library also contains many other helpful reference and educational tools which include:

- a copy of the recent and internationally-agreed upon Consensus statement on concussion in sport – the 5th international conference on concussion in sport held in Berlin, October 2016.
- a General Information tab that includes information references for Parents, Athletes, Coaches and First Responders, Educational Institutions, and Physicians;
- a Documentaries tab allowing free access to 22 sport concussion documentaries;
- information concerning Chronic Traumatic Encephalopathy (CTE): League of Denial feature by Frontline (on main page); CBC Hits and Head Injuries with Peter Mans-bridge (on documentary section).

The instructor is invited to review all relevant videos and extra material to ensure that the information is age and academic appropriate to their students.

Researcher Tool/Library Access: Once you are logged in, please click the Library tab on the left of the toolbar. Click on the Library tab for a drop down list of the various subsections. Double-click the Library tab to access the main Library section as well as search engine.

A Testimonial tab allows access to the testimonials of athletes, and parents of athletes, who have suffered a concussion or experienced Post-Concussion Syndrome (PCS).

A Legislation tab allows access to all current North American legislative efforts concerning sport concussion.

A SCAT2/SCAT3 tab allows the user to utilize an online concussion evaluation tool, which should be reviewed under the supervision of a physician. The SCAT2 and SCAT3 components will require the user to create new passwords, as they are separate systems. See also Ontario Physical Activity Safety Standards in Education Sample Tool to Identify a Suspected Concussion for an inventory of signs and symptoms. These tools are educational references only meant for the development of instructor's knowledge. These tools should not be used for diagnostic purposes, but to assist with the initial identification of a possible concussion.

Further links found within the site include:

- selected media publications and audio recordings;
- a link to the Center for Disease Control and Prevention;
- information from the Montreal Children's Hospital;
- access to ThinkFirst/Parachute for young kids;
- and additional concussion information from the National College Athletic Association (NCAA).