

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.

Please utilize the ‘extra information’ button in each module’s answer page to access additional video-based information (e.g., documentaries, educational videos).

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

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.

Teachers, coaches, administrators, or trainers, therapists, and first responders should also refer to their school, board, or sport organization’s concussion protocol, policy, or procedure.

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 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 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/behavioral (e.g., depression, irritability), and/or related to sleep (e.g., drowsiness, difficulty falling asleep);
- may be caused either by a direct blow 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;
- cannot normally be seen on X-rays, or standard CT and MRI scans.

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.

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, decision-making, 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 **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**.

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.
- *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.
- 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.
- Describe the effects a concussion can have on cognitive and physical function: memory, judgment, social conduct, reflexes, speech, balance, and coordination.
- 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

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.

Module 2: The answer is 2.

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**. **No medication** should be given to the injured party before being **diagnosed** by a **doctor** or **nurse practitioner** as the administration of **medication**

before a medical evaluation could **alter the initial 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 sustained a possible observed concussion and loss of consciousness.

- 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. No medication should be given to the person before being evaluated by a doctor or nurse practitioner as the administration of medication before a medical evaluation could alter the diagnosis.
- 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 or loss of consciousness for any length of time.
- 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 **direct blow to the head, face, or jaw;**
- From a **blow to the body (from behind or any other angle);**
- From a **sideways blow 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.
- 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 [Sport Concussion Assessment Tool – 3rd Edition](#) (page 2) refer to the [Ontario Physical Education Safety Guidelines, Appendix C-2](#) (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 direct hit to the head, face, or jaw; hit to the body from behind (or any other) angle; or a sideways hit to the head.
- Stress the importance of a history of experiencing previous concussions, which are thought to be cumulative in nature.
- Ensure students are 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 Learn and Return to Physical Activity protocols. (See Module 5.) The Ontario Physical Health and Education Association (Ophea) guidelines may be accessed [here](#).
- 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 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 Learn** and **Return to Physical Activity** protocols. 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 recognise or report the injury.

Correct!

3. Leave Jamal alone.

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

Module 4: 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 recognise 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 Learn** and **Return to Physical Activity protocols**, 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.

Module 4 Discussion Points

Scenario: A student suffered a concussion, took the proper steps for recovery, and was cleared to Return to Learn and 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 Learn and Return to Physical Activity protocols. (See Module 8.) The Ontario Physical Health and Education Association (Ophea) guidelines 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.
- 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 should be removed from the game and be monitored for increasing signs or symptoms of a concussion.

Correct!

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: The answer is 2.

The injured player should **stop playing** and **rest** while being **watched by a responsible adult**.

It is not necessary to have experienced a blackout/loss of consciousness to be **diagnosed** with a **concussion**.

The player should be **directly monitored** by a **responsible adult** for **increasing signs or symptoms**, such as such as **headache**, **experiencing fuzzy or foggy thoughts**, fatigue, **feeling nauseous**, **weakness**, or **seizures**. If the athlete's symptoms **get worse**, the responsible adult should **call 911** and the Board of Education's **Emergency Action Plans and Concussion Protocol** should be activated.

The player should **also** be seen by a **medical doctor**, **nurse practitioner**, or (whenever available) **medical concussion specialist** the **same day** or **as soon as possible**.

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.

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 direct hit to the head, face, or jaw; hit to the body from behind (or any other) angle; or a sideways hit to the head.
- 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, they should be removed from the game and monitored for increasing signs or symptoms, such as headache, weakness, or nausea. The teacher, coach, or responsible adult should call the student's parents/guardians to have them evaluated by a medical doctor, nurse practitioner, or (whenever available) medical concussion specialist as soon as possible.
- 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 gull 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 the importance of reporting concussion symptoms to others.
- 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 Learn protocol**.

1. True.

Or

2. False.

Module 8: The answer is 1. True.

Once a student is diagnosed with a **concussion** by a **medical doctor**, **nurse practitioner**, or (when-ever available) **medical concussion specialist**, **cognitive** (e.g., reading, school work, screen activity) and **physical REST (Step 1 in the Return to Learn protocol)** is prescribed under **medical supervision**. It is suggested that the student initially **remain at home** while they are experiencing symptoms, but should not be isolated from friends, family, or normal activities. It is important to a student's recovery that the **Return to Learn/Return to Physical Activity plan** be developed through a collaborative team approach. Led by the **school principal**, the team should include: the concussed student, their **parents/guardians**, and select **school staff**, as well as the **medical doctor**, **nurse practitioner**, or (when-ever available) **medical concussion specialist**. When the student's symptoms improve, a **Return to Learn protocol** may be started, **beginning** with some **learning activities to do at home**. After the student feels comfortable, they should **slowly return to school (Step 2 in the Return to Learn protocol)**.

Individualized modification of **time spent at school** and the **amount of school work** that occurs during this stage is organized by the **collaborative team**.

It is suggested that **no active recess play**, **physical education**, **game practice**, or **game play** should occur before the student has **fully returned to normal school work** and the **Return to Learn protocol** is **completed**. The student should maintain simple physical activities (e.g., walking short distances) during the initial **Return to Learn protocol**.

After the **Return to Learn protocol** has been fulfilled, there are **6 Return to Physical Activity steps** the **medical doctor** or **nurse practitioner**, and whenever available a **medical concussion specialist** will have the student complete before returning to **full participation** in all physical activities and sports. They are as follows:

- **Step 1: REST the brain** (no video games or school work). The student should **not do any physical activity** until their **symptoms** have **gone away**.
- **Step 2:** The student can participate in **individual, light aerobic physical activity** only, such as **walking, swimming, or cycling**.
- **Step 3:** The student may participate in individual, **sport-specific physical activity** only; **running drills in soccer, skating drills in hockey, and shooting drills in basketball**. **No activities are allowed** where the **head could be hit**. Such restrictions include: **no resistance/weight training, no competitive or complex training drills** (including practices or scrimmages), and **no activities involving body or head contact** (e.g., heading a ball in soccer) or other **jarring motions** (e.g., high-speed stops, hitting a baseball with a bat).
- **Step 4:** The student may participate in **non-contact practice, sport drills, or individual activities/sports** such as **dance and badminton**. **Progressive resistance training** may also be started, as well as slow **progression to more complex training drills** (e.g., soccer and ice hockey passing drills). Restrictions during this step include: activities that involve **body contact, head impact** (e.g., heading the ball in soccer), or **jarring motions** (e.g., high-speed stops, hitting a baseball with a bat). After student has successfully completed physical activities in Step 4 without signs or symptoms the student must be examined by a medical doctor, nurse practitioner
- **Step 5:** The student must be examined by a **medical doctor, nurse practitioner, or** (when-ever available) **medical concussion specialist**. When the student is found to be **symptom-free and medically cleared**, they are permitted to participate fully in **all non-contact activities and sports**. This includes **regular physical education/intramural/interscholar activities and full training/practices for contact sports**. Restriction at this stage include: **no competition** (e.g., games, meets, events) that **involve body contact**.
- **Step 6:** Student participates in **all physical activity, including contact sports**.

Please note that **cognitive or physical activities** can cause a student's **symptoms to reappear**. If any step does not feel right and **ANY** symptoms return, the student should see their **medical doctor, nurse practitioner, or** (whenever possible) **medical concussion specialist**, who will provide **informed medical management**. The student should then **wait** until there are **no symptoms** and are **medically permitted** to move to the **next step**.

Steps do not equal days and each will take a **minimum of 24 hours to implement**. The length of time needed to complete each step will **vary with** each student/athlete, and will be determined by their **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?

Signs and symptoms of a suspected concussion can be identified by an individual designated as a first responder (student, teacher, coach, or parent) with training in concussion identification.

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.

- Discuss the Opeha Return to Learn and Return to Physical Activity protocols guidelines, which may be accessed [here](#).
- Stress that the Return to Learn protocol should be completed prior to the start of the Return to Physical Activity protocol.
- An individual's Return to Learn and Return to Physical Activity 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, (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 **coping 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.
- Ensure students understand 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 Learn or protocols** 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.

- Stress the importance of self-reporting, as well as concussion identification by friends and teammates.
- 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 informed 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 Learn (RTL) and Return to Physical Activity (RPA) protocols, 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 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**, along with successfully completing the school's **Return to Learn** and **Return to Physical Activity protocols**, 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**.

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 should not be allowed to return to physical activity until successfully completing the school's Return to Learn and Return to Physical Activity protocols, as outlined by the school's collaborative team. If the student returns to physical activity before medical clearance there is a risk of 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 Opeha Return to Learn and Return to Physical Activity Protocol Guidelines may be access at safety.ophea.net.

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 4th International Conference on Concussion in Sport held in Zurich, November 2012](#);
- 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 Mansbridge (on documentary section).

The instructor should review all videos and extra material to ensure that they are relevant to the age and academic level of their audience.

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 the [Ontario Physical Education Safety Guidelines, Appendix C-2](#) (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).