

# Markham Waxers Concussion Policy Training Session



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# Markham Waxers Concussion Policy Training Session

Chat will be used to share links and resources or to provide general comments. Please direct questions to other two features

Please submit your written questions throughout the webinar and we will answer during dedicated Q&A periods



If it's easier you can also ask your questions verbally during a Q&A period by raising your hand

# Outline

## Part 1:

1. Concussion 101 & Rowan's Law
2. Recognizing a suspected concussion
  - Q&A
3. Remove-from-sport protocol, report and refer
  - Q&A
4. Initial medical assessment and diagnosis
5. Recovery and clinical support
  - Q&A
6. Return-to-sport protocol & medical clearance for stage 5 & 6
  - Q&A



# Who are we?

- Holland Bloorview is Canada's largest kids rehabilitation hospital
- Centre specializing in youth concussion
- Clinicians specifically trained in pediatric brain injury and leading researchers in the field of youth concussion
- Education, research, clinical care
- Focus on getting kids back to what they need, want, and love to do



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# Goals of Collaboration

1

Access to  
concussion  
services

2

Concussion  
policy  
development

3

Concussion  
training for  
team  
trainers

4

Standardized  
concussion  
resources for  
families



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# Rowan's Law

Legislative  
Assembly  
of Ontario



Assemblée  
législative  
de l'Ontario

2ND SESSION, 41ST LEGISLATURE, ONTARIO  
67 ELIZABETH II, 2018

## Bill 193

*(Chapter 1 of the Statutes of Ontario, 2018)*

**An Act to enact Rowan's Law (Concussion Safety), 2018  
and to amend the Education Act**



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# Rowan's Law

## **Rowan's Law: Concussion Awareness Resources**

[Review the Concussion Awareness Resources](#) (if you are an athlete, parent, coach, team trainer or official).

## **Requirements for Sport Organizations**

Ontario is a national leader in concussion management and prevention. *Rowan's Law (Concussion Safety)*, 2018 makes it **mandatory for sports organizations** to:

- 1** ensure that athletes under 26 years of age,\* parents of athletes under 18, coaches, team trainers and officials confirm every year that they have reviewed Ontario's Concussion Awareness Resources
- 2** establish a Concussion Code of Conduct that sets out rules of behaviour to support concussion prevention
- 3** establish a Removal-from-Sport and Return-to-Sport protocol



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# Rowan's Law

As of January 2022 *Rowan's Law (Concussion Safety)* removal-from/return-to-sport requirements will come into effect. After this date, all children and youth under the age of 25 who participate in organized sport and sport within schools will be required to seek medical assessment for two mandatory touchpoints:

**Medical diagnosis:** All children and youth suspected of sustaining a concussion will require medical concussion assessment and diagnosis by a physician or nurse practitioner, with a letter which confirms positive or negative diagnosis.

**Medical clearance for unrestricted physical activity:** All children and youth diagnosed with concussion will require medical clearance by a physician or nurse practitioner, with a letter which confirms child or youth has met criteria to participate in unrestricted sport/physical activity participation.



# What is a Concussion?

- An injury to the brain
- Caused by blow to head or another part of the body
- “Traumatically induced physiological disruption of brain function”
- Causes non-specific onset of signs and symptoms (physical, cognitive, emotional, sleep)

(McCrory et al., 2013; CDC, 2016)



ONF Living guidelines on diagnosing and managing pediatric concussion



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# What is a Concussion?

- **Every injury is different** - A person's experience with concussion and their recovery are individual and different with each injury
- Symptoms may take up to **24-48 hours** to appear - some children/youth do not recognize symptoms until at school the following day
- Only need **1 symptom** to treat as a suspected concussion
- Concussions cannot be seen on a CT scan or MRI
- There is currently no biomarker test (i.e. blood test) which can identify concussions

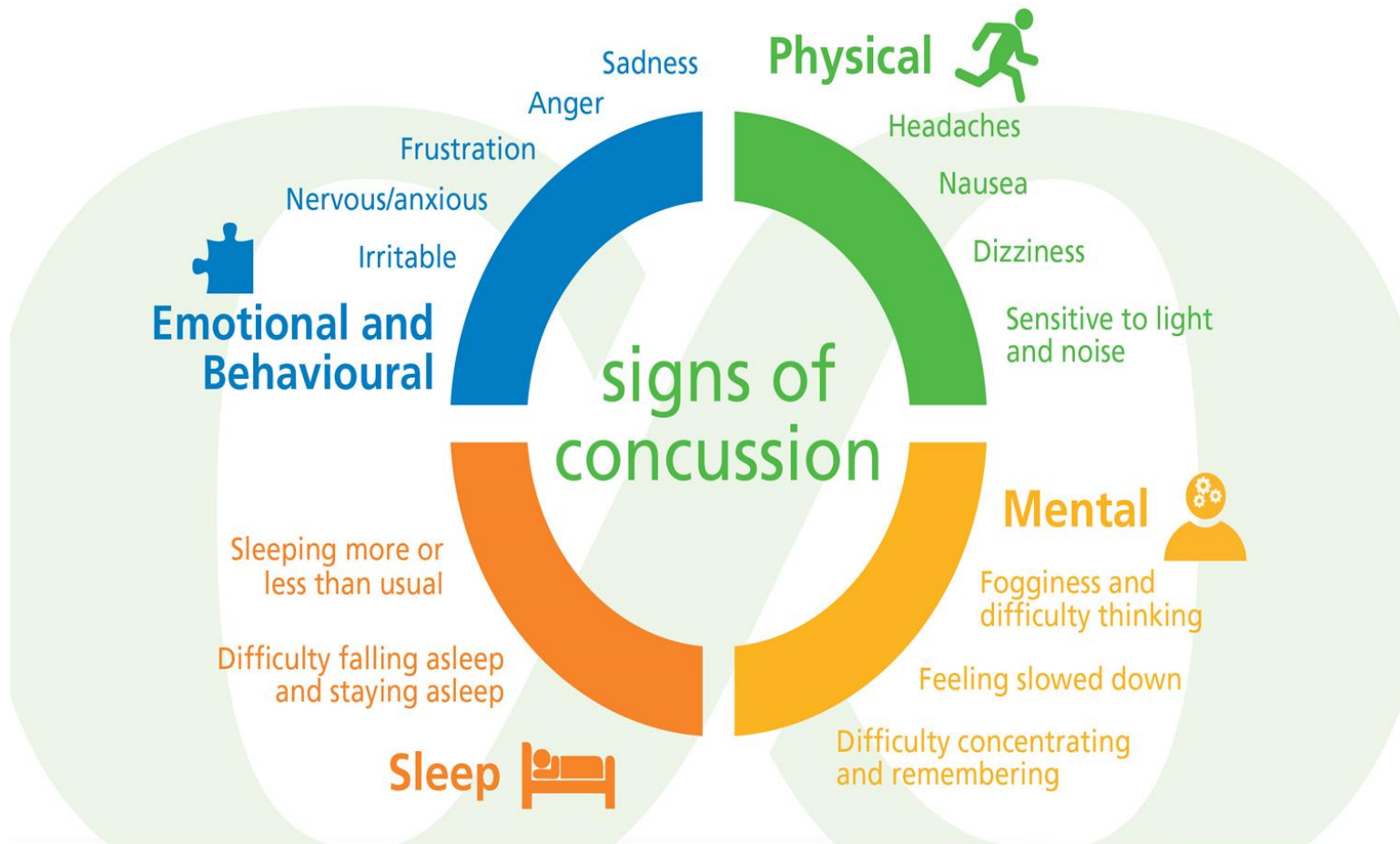
Canadian Guideline for Concussion in Sport, 2017



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# Concussion Signs & Symptoms



# Recognizing a Suspected Concussion

## Physical Concussion Symptoms:

- Headache
- Sensitive to light
- Sensitive to noise
- Dizziness
- Nausea
- Vomiting
- Visual problems
- Balance problems
- Numbness/tingling

## Example:

- Slow to get up after direct/indirect hit
- Balance/walking difficulties
- Uncoordinated/slow movements

Physical 



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# Recognizing a Suspected Concussion

## **Cognitive Concussion Symptoms:**

- Feeling mentally foggy
- Feeling slowed down
- Difficulty concentrating
- Difficulty remembering

Example:

- Disoriented or confused
- Difficulty responding to questions
- Blank or vacant look

**Cognitive**



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# Recognizing a Suspected Concussion

## Emotional & Behavioural Concussion Symptoms:

- Irritability
- Sadness
- Nervous/anxious
- More emotional

Example:

-Abnormal behaviour for that child that is caused by an event or impact



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# Recognizing a Suspected Concussion

## **Sleep Concussion Symptoms:**

- Drowsiness
- Sleeping more/less than usual
- Trouble falling asleep
- Fatigue

### Note:

-Important to monitor from a parent perspective



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# Red Flag Symptoms

## Red Flag Symptoms :

- Headaches that worsen
- Can't recognize people or places
- Seizures or convulsion
- Increasing confusion or irritability
- Repeated vomiting
- Weakness/tingling/burning in arms or legs
- Loss of consciousness
- Persistent or increasing neck pain
- Looks very drowsy/can't be awakened
- Unusual behavioural change
- Slurred speech
- Focal neurologic signs (e.g. paralysis, weakness, etc.)

**If a player experiences a sudden onset of any of these symptoms, 911 should be called immediately**



# Concussion Prevention

## Rule Changes

- Must enforce organizational rules and penalize hits to the head

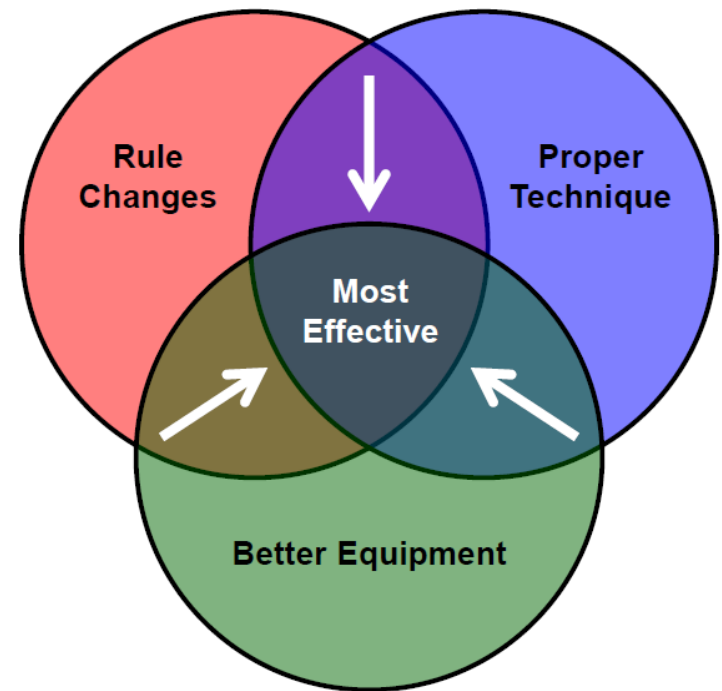
## Proper Technique

- Need to teach players how to prepare for contact, give and receive hits safely

## Better Equipment

- Helmets and mouth guards cannot fully protect a player from having a concussion, however risk can be minimized

### 3 Strategies:



(Rowson, 2015)



# Baseline Testing- Updates to Best Practice Guidelines

**Baseline testing on children/adolescents using concussion assessment tools or tests (or any combination of tests/tools) is not recommended or required for concussion diagnosis or management following an injury.**

- Baseline testing refers to the practice of having an athlete complete certain concussion assessment tools/tests prior to sports participation to provide baseline measurements that can be compared to post-injury values in the event of a suspected concussion.
- Current evidence does not support a significant added benefit of baseline testing athletes. This includes the Child SCAT5 and the SCAT5 tools, as well as neuropsychological and neurocognitive tests, both computerized or not.



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# Q & A

- ✓ Rowan's Law
- ✓ What is a concussion
- ✓ Concussion signs and symptoms
- ✓ Concussion prevention



# Recognizing a Suspected Concussion

## **When should a concussion be suspected?**

All players who experience any concussion reported signs and symptoms or visual/observation symptoms following a blow to the head or another part of the body is considered to have a suspected concussion and must stop participation in the activity immediately.

Reminder: Symptoms of concussion typically appear immediately but may be delayed and evolve within the first 24-48 hours.



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# Recognizing a Suspected Concussion

## **3 ways to identify signs and symptoms of a suspected concussion:**

1. Self-reported signs & symptoms by player
2. Observable signs & symptoms from any team official
3. Peer-reported signs & symptoms from players, parents and/or team officials



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# Recognizing a Suspected Concussion

**Figure 1: GENERAL CONCUSSION SYMPTOMS**

Headache	Feeling mentally foggy	Sensitive to light
Nausea	Feeling slowed down	Sensitive to noise
Dizziness	Difficulty concentrating	Irritability
Vomiting	Difficulty remembering	Sadness
Visual problems	Drowsiness	Nervous/anxious
Balance problems	Sleeping more/less than usual	More emotional
Numbness/tingling	Trouble falling asleep	Fatigue



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# Recognizing a Suspected Concussion

**Figure 2: VISUAL/OBSERVABLE SYMPTOMS**

Lying down motionless on the playing surface
Slow to get up after a direct or indirect hit
Disorientation or confusion, or an inability to response appropriately to questions
Blank or vacant look
Balance, gait difficulties motor incoordination, stumbling, slow labored movements
Facial injury after head trauma



# Recognizing a Suspected Concussion

**Figure 2: RED FLAG SYMPTOMS**

Headaches that worsen	Can't recognize people or places
Seizures or convulsion	Increasing confusion or irritability
Repeated vomiting	Weakness/tingling/burning in arms or legs
Loss of consciousness	Persistent or increasing neck pain
Looks very drowsy/can't be awakened	Unusual behavioural change
Slurred speech	Focal neurologic signs (e.g. paralysis, weakness, etc.)

**Initiate emergency action plan**



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# Remove-from-sport

- Any child/youth who experiences signs and symptoms of concussion following a blow to the head or body will be considered to have a suspected concussion and must stop participation in the sport activity immediately
- **Who is responsible for recognising a suspected concussion?** All team officials hold a responsibility to recognise the signs and symptoms of a suspected concussion
- **Who is responsible for removal from play?** When present, **team trainers hold the final decision to remove players with a suspected concussion.** If there is doubt whether a concussion has occurred, it is to be assumed that it has. ***If no team trainer is present order of next most responsible individuals:***
  - An individual with trainer certification
  - Team head coach

# Remove-from-sport

## Once removed the trainer must:

1. Monitor the player until a parent/guardian is contacted or on-site. Players with a suspected concussion should not be left alone. Older players should not drive themselves.
2. Complete a ***Suspected Concussion Report Form*** immediately after a concussion is suspected. *Trainer must provide copies of the Suspected Concussion Report Form to:*
  - The individual's parents/guardian to bring to their medical appointment
  - One copy to the head trainer [barbm.waxers@gmail.com](mailto:barbm.waxers@gmail.com)
3. Recommend to the players parent/guardian that they see a medical doctor or nurse practitioner as soon as possible for assessment


# Suspected Concussion Report Form

**Player Name:** \_\_\_\_\_ **DOB:** \_\_\_\_\_ **Sex:** ☐ M ☐ F ☐ Unspecified  
**Club Name:** \_\_\_\_\_ **Division:** \_\_\_\_\_ **Level:** ☐ A ☐ AA ☐ AAA  
**Height:** \_\_\_\_\_ **Weight:** \_\_\_\_\_ **Position:** ☐ Forward ☐ Defense ☐ Goalie

## INJURY DESCRIPTION

**Date of injury:** \_\_\_\_\_ **Time:** \_\_\_\_\_ **Date you were aware of suspected injury:** \_\_\_\_\_  
**Arena location:** \_\_\_\_\_ **Opposing team:** \_\_\_\_\_

A) Initial injury scenario	B) Resulted in contact with	C) Was contact anticipated?
<input type="checkbox"/> Contact with Opponent	<input type="checkbox"/> Boards	<input type="checkbox"/> Yes
<input type="checkbox"/> Contact with Opponent (From Behind)	<input type="checkbox"/> Ice	<input type="checkbox"/> No
<input type="checkbox"/> Contact with Teammate	<input type="checkbox"/> Opponent's Body	<input type="checkbox"/> Unsure
<input type="checkbox"/> Fall	<input type="checkbox"/> Stick	D) Was there a penalty called on play?
<input type="checkbox"/> Other	<input type="checkbox"/> Puck	<input type="checkbox"/> Yes
	<input type="checkbox"/> Net	<input type="checkbox"/> No
	<input type="checkbox"/> Other	<input type="checkbox"/> Unsure

E) Game Scenario	F) Period	G) Puck Possession	H) Score	I) Injury Location
<input type="checkbox"/> On ice practice	<input type="checkbox"/> 1 <sup>st</sup> period	<input type="checkbox"/> Yes	<input type="checkbox"/> Winning	 <p>Mark an "X" of event on rink</p>
<input type="checkbox"/> Regular game	<input type="checkbox"/> 2 <sup>nd</sup> period	<input type="checkbox"/> No	<input type="checkbox"/> Losing	
<input type="checkbox"/> Exhibition	<input type="checkbox"/> 3 <sup>rd</sup> period	<input type="checkbox"/> Just released	<input type="checkbox"/> Winning >2	
<input type="checkbox"/> Tournament	<input type="checkbox"/> Overtime	<input type="checkbox"/> Other	<input type="checkbox"/> Losing >2	
<input type="checkbox"/> Playoffs	<input type="checkbox"/> Other		<input type="checkbox"/> Tie Game	
<input type="checkbox"/> Other _____				
<b>Additional Comments:</b> _____ _____ _____				

# Suspected Concussion Report Form

## REPORTED SYMPTOMS (CHECK ALL THAT APPLY)

<input type="checkbox"/> Visual problems	<input type="checkbox"/> Balance problems	<input type="checkbox"/> Drowsiness	<input type="checkbox"/> Irritability
<input type="checkbox"/> Nausea	<input type="checkbox"/> Feeling mentally foggy	<input type="checkbox"/> Sleeping more/less than usual	<input type="checkbox"/> Sadness
<input type="checkbox"/> Dizziness	<input type="checkbox"/> Feeling slowed down	<input type="checkbox"/> Trouble falling asleep	<input type="checkbox"/> Nervous/anxious
<input type="checkbox"/> Vomiting	<input type="checkbox"/> Difficulty concentrating	<input type="checkbox"/> Sensitive to light	<input type="checkbox"/> More emotional
<input type="checkbox"/> Headache	<input type="checkbox"/> Difficulty remembering	<input type="checkbox"/> Sensitive to noise	<input type="checkbox"/> Fatigue

## RED FLAG SYMPTOMS (CHECK ALL THAT APPLY): CALL 911 IMMEDIATELY WITH A SUDDEN ONSET OF ANY OF THESE SYMPTOMS

<input type="checkbox"/> Severe or increasing headache	<input type="checkbox"/> Neck pain or tenderness	<input type="checkbox"/> Seizure or convulsion
<input type="checkbox"/> Double vision	<input type="checkbox"/> Loss of consciousness	<input type="checkbox"/> Repeated vomiting
<input type="checkbox"/> Weakness or tingling/burning in arms/legs	<input type="checkbox"/> Deteriorating conscious state	<input type="checkbox"/> Increasingly restless, agitated or combative

Are there any other symptoms or evidence of injury to anywhere else? ☐ Yes ☐ No

If yes, what: \_\_\_\_\_

Has this player had a concussion before? ☐ Yes ☐ No ☐ Prefer not to answer

If yes, how many: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ >5 ☐ Unsure

Any pre-existing medical conditions or take any medications? ☐ Yes ☐ No ☐ Prefer not to answer

If yes, please list: \_\_\_\_\_

I [name of trainer completing this form] \_\_\_\_\_ recommended to player's parent/guardian that the player seek medical assessment as soon as possible. A medical assessment must be from a family doctor, pediatrician, emergency room doctor, sports-medicine physician, physiatrist, neurologist or a nurse practitioner.

Signature \_\_\_\_\_ Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

**PLEASE NOTE:** This form is to be completed by the team trainer in the event of a suspected concussion in any Markham Waxers activity. Once this form is complete, give one copy of this report to parent/guardian and the other to head trainer. EMAIL: [barbm.waxers@gmail.com](mailto:barbm.waxers@gmail.com) Parents are to take this form for medical assessment appointment

Report form informed by NHL Heads-Up Checklist from Hutchison et al 2013

Version Nov 2021

# Suspected Concussion Report Form

## Importance of suspected concussion report forms:

- **Catalyst:** Initiates the concussion policy process
- **Recording:** Record of the suspected injury
- **Communicating:** Consistent way of communicating suspected injuries to parents, head coaches and medical community
- **Surveillance:** Can support clubs/districts in injury data collection

# Refer to medical assessment/diagnosis

- a) **Seeking medical assessment:** If a player has been deemed to have had a suspected concussion, it is the parent/guardian's responsibility to take the player to see a medical doctor or nurse practitioner as soon as possible. Players with suspected concussions may not return to any activity until they have received medical assessment and submitted necessary documentation.
  
- b) **Required type of initial medical assessment:** In addition to nurse practitioners, the types of medical doctors that are qualified to evaluate patients with a suspected concussion include: family physician, pediatrician, emergency room physician, sports-medicine physician, neurologist or internal medicine and rehabilitation (physiatrists). Documentation from any other source will not be acceptable.

Note: Written documentation by a medical doctor or nurse practitioner may be provided in any format from the medical assessment. A recommended **Medical Assessment Letter** template can be found in Parachute's Canadian Guideline for Concussion in Sport.

# Medical assessment/diagnosis-

## No Concussion

Parents/Player	Trainer
<ul style="list-style-type: none"><li>• Parent/guardian must take the written documentation from the medical assessment (highlighting that the player did not have a concussion), and give this document to the team trainer.</li><li>• Parent/guardian should continue to monitor the player for at least 24-48 hours after the event, as signs and symptoms may be delayed or evolve over that period.</li></ul>	<ul style="list-style-type: none"><li>• Team trainer to submit medical documentation to the Barb Matthews before the player is permitted to return to a hockey activity (<a href="mailto:barbm.waxers@gmail.com">barbm.waxers@gmail.com</a>)</li><li>• Team trainers and head coaches will not allow return until documentation has been received.</li><li>• Team trainers have the right to refuse a player to return to any hockey activity if they deem the player unfit to do so.</li></ul>

# Medical assessment/diagnosis- Yes Concussion

Parents/Player	Trainer
<ul style="list-style-type: none"><li>• Parent/guardian must take the written documentation from the medical assessment (highlighting that the player has been diagnosed with a concussion), and give this document to the team trainer</li><li>• The player is to begin stage 1 of the return-to-sport protocol.</li></ul>	<ul style="list-style-type: none"><li>• Team trainer to submit medical documentation, in addition to the <b><u>Hockey Canada Injury Report Form</u></b>, to the to the Markham Waxers now that it is a confirmed injury/concussion.</li><li>• Team trainers and head coaches will follow gradual return-to-sport protocol and ensure no participation in stage 5 and 6 sport activities until medical clearance (See details on page 9-10)</li></ul>



# Tools to have on the sideline

## REGONIZE IT

### CONCUSSION RECOGNITION TOOL 5®

To help identify concussion in children, adolescents and adults



#### RECOGNISE & REMOVE

Head impacts can be associated with serious and potentially fatal brain injuries. The Concussion Recognition Tool 5 (CRT5) is to be used for the identification of suspected concussion. It is not designed to diagnose concussion.

#### STEP 1: RED FLAGS – CALL AN AMBULANCE

If there is concern after an injury including whether ANY of the following signs are observed or complaints are reported then the player should be safely and immediately removed from play/game/activity. If no licensed healthcare professional is available, call an ambulance for urgent medical assessment.

- Neck pain or tenderness
- Double vision
- Weakness or tingling/burning in arms or legs
- Severe or increasing headache
- Seizure or convulsion
- Loss of consciousness
- Deteriorating conscious state
- Vomiting
- Increasingly restless, agitated or combative

#### Remember:

- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- An assessment for a spinal cord injury is critical.
- Do not attempt to move the player (other than required for airway support) unless trained to do so.
- Do not remove a helmet or any other equipment unless trained to do so safely.

If there are no Red Flags, identification of possible concussion should proceed to the following steps:

#### STEP 2: OBSERVABLE SIGNS

Visual clues that suggest possible concussion include:

- Lying motionless on the playing surface
- Disorientation or confusion, or an inability to respond appropriately to questions
- Balance, gait difficulties, motor incoordination, stumbling, slow laboured movements
- Slow to get up after a direct or indirect hit to the head
- Blank or vacant look
- Facial injury after head trauma

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## REPORT IT

### Suspected Concussion Report Form

**GENERAL INFORMATION**

Player Name: \_\_\_\_\_ DOB: \_\_\_\_\_ Sex: ☐ M ☐ F ☐ Unspecified  
Club Name: \_\_\_\_\_ Division: \_\_\_\_\_ Level: ☐ A ☐ AA ☐ AAA  
Height: \_\_\_\_\_ Weight: \_\_\_\_\_ Position: ☐ Forward ☐ Defense ☐ Goalie

**INJURY DESCRIPTION**

Date of injury: \_\_\_\_\_ Time: \_\_\_\_\_ Date you were aware of suspected injury: \_\_\_\_\_  
Arena location: \_\_\_\_\_ Opposing team: \_\_\_\_\_

**A) Initial injury scenario**

☐ Contact with Opponent ☐ Brains  
☐ Contact with Opponent (from behind) ☐ Ice  
☐ Contact with Teammate ☐ Opponent's Body  
☐ Fall ☐ Stick  
☐ Other ☐ Punch  
☐ Other ☐ Not  
☐ Other ☐ Unsure

**B) Game Scenario**

☐ On ice practice ☐ 1st period ☐ Yes ☐ Wrecking  
☐ Regular game ☐ 2nd period ☐ No ☐ Losing  
☐ Exhibition ☐ 3rd period ☐ Just released ☐ Winning x2  
☐ Tournament ☐ Overtime ☐ Other ☐ Losing x2  
☐ Playoffs ☐ Other ☐ The Game

**C) Was contact anticipated?**

☐ Yes  
☐ No  
☐ Unsure

**D) Was there a penalty called on play?**

☐ Yes  
☐ No  
☐ Unsure

**E) Injury Location**

Mark up "X" at point of risk.

**Additional Comments:**

**REPORTED SYMPTOMS (CHECK ALL THAT APPLY)**

☐ Visual problems ☐ Balance problems ☐ Drowsiness ☐ Irritability  
☐ Nausea ☐ Feeling mentally foggy ☐ Sleeping more/less than usual ☐ Seizure  
☐ Dizziness ☐ Feeling upward down ☐ Trouble falling asleep ☐ Nervous/Anxious  
☐ Vomiting ☐ Difficulty concentrating ☐ Sensitive to light ☐ More emotional  
☐ Headache ☐ Difficulty remembering ☐ Sensitive to noise ☐ Fatigue

**RED FLAG SYMPTOMS (CHECK ALL THAT APPLY): CALL 911 IMMEDIATELY WITH A SUDDEN ONSET OF ANY OF THESE SYMPTOMS**

☐ Severe or increasing headache ☐ Neck pain or tenderness ☐ Seizure or convulsion  
☐ Double vision ☐ Loss of consciousness ☐ Repeated vomiting  
☐ Weakness or tingling/burning in arms/legs ☐ Deteriorating conscious state ☐ Increasingly restless, agitated or combative

**Are there any other symptoms or evidence of injury to anywhere else?** ☐ Yes ☐ No  
If yes, what: \_\_\_\_\_

**Has this player had a concussion before?** ☐ Yes ☐ No ☐ Prefer not to answer  
If yes, how many: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Unsure

**Any pre-existing medical conditions or take any medications?** ☐ Yes ☐ No ☐ Prefer not to answer  
If yes, please list: \_\_\_\_\_

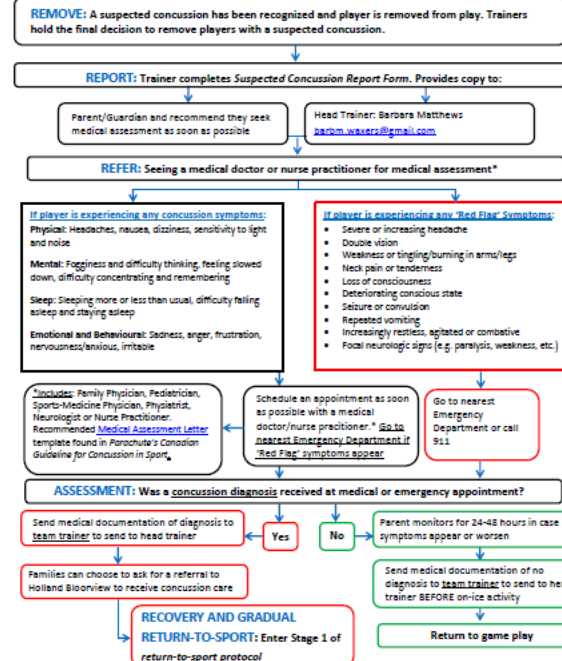
**I (name of trainer completing this form) \_\_\_\_\_ recommended to player's parent/guardian that the player seek medical assessment as soon as possible. A medical assessment must be from a family doctor, pediatrician, emergency room doctor, sports-medicine physician, physiotherapist, neurologist or a nurse practitioner.**  
Signature: \_\_\_\_\_ Phone Number: \_\_\_\_\_  
Email Address: \_\_\_\_\_

**PLEASE NOTE:** This form is to be completed by the team trainer in the event of a suspected concussion in any Markham Waxers activity. Once this form is complete, give one copy of this report to parent/guardian and the other to head trainer. EMAIL: [markham.waxers@gmail.com](mailto:markham.waxers@gmail.com). Parents are to take this form for medical assessment appointment.  
Report form informed by NICE Head-Up Checklist from Hutchinson et al 2013

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## REFER IT

### Markham Waxers remove-from-sport summary



The GTHL Concussion Protocol was made in collaboration with the GTHL Safety Committee and the Holland Bloorview Concussion Centre from the Holland Bloorview Kids Rehabilitation Hospital [hollandbloorview.org/concussion](https://hollandbloorview.org/concussion).  
This version was adopted for Markham Waxers organization

Version Nov 2021

# Q & A

- ✓ **Recognize** the sign and symptoms (classroom, sport, other activities)
- ✓ **Remove** child/youth from the activity
- ✓ **Report** suspected injury to child/youth's parent/guardian and a team/club designate. Ensure they are not left alone and do not drive themselves
- ✓ **Refer** child/youth to medical doctor or nurse practitioner for assessment and diagnosis



# Concussion Recovery & Clinical Support

## The shift to an active rehabilitation approach

- Rest beyond 48 hours and strict limitations to low-risk activity **is no longer recommended**
- Encourage patients with post-concussion symptoms to engage in cognitive activity and low-risk physical activity **as soon as tolerated** while staying below their symptom-exacerbation thresholds. (Reed, N. & Zemek, R. et al 2019)
- Prolonged rest and periods of restricted activity **may place children and youth at risk for secondary issues and contribute to the chronicity of concussion symptoms** (Schneider et al, 2013; Silverberg et al 2019; Thomas et al 2015)

# Concussion Recovery & Clinical Support

**Increased evidence for identification of high risk youth and need for early referral to specialized care**

**Recommendation 2.1b:** Note common modifiers that may delay recovery and use a clinical risk score to predict risk of prolonged symptoms. (Reed, N. & Zemek, R. et al 2019)

**Recommendation 3.5:** Consider early referral (prior to 4-week post-injury) to an interdisciplinary concussion team in the presence of modifiers that may delay recovery. (Reed, N. & Zemek, R. et al 2019)

# Concussion Recovery & Clinical Support

## Understanding who may need more support

### Common modifiers:

ONF/PedsConcussion Living guidelines on diagnosing and managing pediatric concussion

- ✓ Age (13-18 higher risk)
- ✓ Sex (female higher risk)
- ✓ Duration of recovery from a previous concussion
- ✓ High pre-injury symptom burden
- ✓ High symptom burden at initial presentation
- ✓ Clinical evidence of vestibular or oculomotor dysfunction
- ✓ Personal and family history of migraines
- ✓ History of learning or behavioural difficulties
- ✓ Personal and family history of mental health issues
- ✓ Family socioeconomic status/education – High & Low
- ✓ Family stress

# Concussion Recovery & Clinical Support

## Does history of concussion influence recovery?

ONF/PedsConcussion Living guidelines on diagnosing and managing pediatric concussion

- **Duration of recovery from previous concussions** (i.e. >4 weeks of symptoms) is a factor which has increased likelihood of a longer recovery with subsequent concussions
- Number of previous concussions **has not shown as a consistent factor** for prolonged recover in the research – unless there is multiple concussion injuries in a short time period.
- This is why it's important to follow active but gradual return-to-sport and school protocols to limit risk of another injury during concussion recovery

# Concussion Services

## Early Concussion Care Clinic



- All Markham Waxers athletes have access if family chooses once diagnosed
- $\leq 4$  weeks from injury to physician/NP, occupational therapy (OT)
- Requires physician referral
- Focus: symptom management, return to school support, return to sport guidance and medical clearance

## Persistent Symptoms Clinic



- $> 4$  weeks from injury
- OHIP covered
- Focus: ongoing symptom management strategies and individualized approach to client and family goals



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# Return-to-sport

## What should return to sport look like:

0. **Diagnosis received and initial rest period of 24-48 hours**
1. **Symptoms limited activity** → Reintroduce work/school
2. **Light aerobic exercise** → Increase heart rate
3. **Sport-specific drills** → Add movement
4. **Non-contact drills** → Exercise, coordination and increased thinking

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Follow up with medical doctor or nurse practitioner for clearance

5. **Full contact practice** → Restore confidence and assess functional skill by coaching staff
6. **Return to full sport participation/competition**

McCrory, 2016



# Return-to-sport

- **Parent/guardian and the player are responsible** to ensure that each stage of the *return-to-sport protocol* is followed appropriately and the required signatures are completed at each stage.
- Players should complete each stage of the return-to-sport protocol for a **minimum of 24 hours without new or worsening symptoms before progressing to the next stage**. If a player experiences, new or worsening symptoms at a particular stage they should return to the previously successful stage.

# Return-to-sport

**Stage 0: Initial rest period of 24-48 hours before beginning return-to-sport protocol**

**Stage 1: Symptom limited activity (at least 24 hours)**

- Daily activities that do not worsen symptoms
- Conserve your brain and body's energy, it is needed to feel well and allow the brain to heal.

Confirmed completion Stage 1 for minimum of 24 hours with no new or worsening symptoms on \_\_\_\_\_  
MM/DD/YY

\_\_\_\_\_  
(Player Signature)

\_\_\_\_\_  
(Parent/Guardian Signature)

**Stage 2: Light aerobic exercise (at least 24 hours)**

**Effort: 50%**

- OFF THE ICE. NO CONTACT.
- Begin with a warm up (stretching/flexibility) for 5-10 minutes.
- Start a cardio workout for 15-20 minutes which can include: stationary bicycle, elliptical, treadmill, fast paced walking, light jog, rowing or swimming.

Confirmed completion Stage 2 for minimum of 24 hours with no new or worsening symptoms on \_\_\_\_\_  
MM/DD/YY

\_\_\_\_\_  
(Player Signature)

\_\_\_\_\_  
(Parent/Guardian Signature)

# Return-to-sport

## Stage 3: General conditioning & hockey specific exercise done individually (at least 24 hours)

Effort: 50-60%

- OFF THE ICE. NO CONTACT.
- Begin with a warm up (stretching/flexibility) for 5-10 minutes.
- Increase intensity and duration of cardio workout to 20-30 minutes.
- Begin hockey specific skill work: individual stick handling and shooting drills.

Confirmed completion Stage 3 for minimum of 24 hours with no new or worsening symptoms on \_\_\_\_\_  
MM/DD/YY

\_\_\_\_\_  
(Player Signature)

\_\_\_\_\_  
(Parent/Guardian Signature)

## Stage 4 (a): Hockey specific training drills done with a teammate (at least 24 hours)

Effort: 75%

- CAN BEGIN ON-ICE ACTIVITIES. NO CONTACT. NO SCRIMMAGES. NO BODY CHECKING.
- Increase duration up to 60 minutes. Begin resistance training including neck and core strengthening exercises.
- Begin on-ice skating warm-up: forwards, backwards, stop and start, cones.
- Begin on-ice drills with a partner: passing, shooting on goalie and position specific drills like face-offs and deflections.
- Goalies begin in net with a coach shooting pucks in a controlled manner (e.g. progressing from shots to the pads/along the ice, glove shots then shots to the corners).

Confirmed completion Stage 4(a) for minimum of 24 hours with no new or worsening symptoms on \_\_\_\_\_  
MM/DD/YY

\_\_\_\_\_  
(Player Signature)

\_\_\_\_\_  
(Parent/Guardian Signature)

\_\_\_\_\_  
(Trainer)

# Return-to-sport

## Stage 4(b): Non-contact team training

Effort: 90-100%

- ON THE ICE. NO CONTACT. NO SCRIMMAGES. NO BODY CHECKING.
- Resume pre-injury duration of practice and team drills.
- Practice team passing, shooting drills and individual defensive skills.
- Practice break-out drills, 3 on 2's/2 on 1's and defensive coverage drills.
- Practice offensive and defensive plays.
- Review body checking and protection techniques.
- Goalies begin in net for controlled player drills (e.g. facing a single puck in play or players shooting one at a time). No drills that require a skater to drive hard to the net, to minimize accidental contact.

Confirmed completion Stage 4(b) for minimum of 24 hours with no ongoing symptoms on \_\_\_\_\_  
MM/DD/YY

\_\_\_\_\_  
(Player Signature)

\_\_\_\_\_  
(Parent/Guardian Signature)

\_\_\_\_\_  
(Trainer)

\_\_\_\_\_  
(MD or NP signature)



*MD or NP signature stamp and credentials*

- ☐ Family Physician
- ☐ Pediatrician
- ☐ Sports Medicine Physician
- ☐ Neurologist
- ☐ Psychiatrist
- ☐ Nurse Practitioner

**MEDICAL CLEARANCE REQUIRED BEFORE PROCEEDING TO STAGE 5 & 6**

# Medical Clearance

- Once Stages 1-4 (b) of the *return-to-sport protocol* have been completed, the player must receive medical clearance to proceed to *Stage 5: Full contact practice with team*. **A player is not permitted to return to *Stage 5: Full contact practice with team* or *Stage 6: Game Play* until written permission by a medical doctor/nurse practitioner.**
  - In addition to nurse practitioners, the types of medical doctors that are qualified to support medical clearance for concussion include: family physician, pediatrician, sports-medicine physician, neurologist or internal medicine and rehabilitation (physiatrists). **Documentation from any other source will not be acceptable.**
  - Written clearance by a medical doctor or nurse practitioner may be provided in any format from the medical appointment. See recommended medical clearance letter template on in Parachute's Canadian Guideline for Concussion in Sport.

# Return-to-sport

## Stage 5: Full contact practice with team (at least 24 hours)

Effort: 100%

- ON THE ICE. SCRIMMAGES. CONTACT. INCLUDING BODY CHECKING (if applicable).
- Participate in a full practice, review body checking and protection techniques. Focus on skills needed.
- If completed with no symptoms, discuss with coach/trainer about returning to full game play.
- Coaches/trainers make sure player has regained pre-injury skill level and is confident in ability to return to game play.
- Goalies return to full team practice with hard driven shots, drives to the net and puck battles around the net.

Confirmed completion Stage 5 for minimum of 24 hours with no ongoing symptoms on \_\_\_\_\_  
MM/DD/YY

\_\_\_\_\_  
(Player Signature)

\_\_\_\_\_  
(Parent/Guardian Signature)

\_\_\_\_\_  
(Trainer)

## Stage 6: Game play

# Medical Clearance

Parents/Player	Trainer and Coach
<ul style="list-style-type: none"><li>• Must provide the trainer with:<ul style="list-style-type: none"><li>• Written clearance from the medical doctor/nurse practitioner (highlighting player is safe to return to stage 5 &amp; 6)</li><li>• Completed return-to-sport protocol with all signatures completed</li></ul></li></ul>	<ul style="list-style-type: none"><li>• It is the responsibility of the <b>team trainer</b> to submit written medical clearance and return-to-sport protocol with signatures completed to the Barb Matthews prior to the player participating in <b>Stage 6: Game Play</b>.</li><li>• Coaches do not progress to game play until player has regained their pre-injury skill-level and player is confident in their ability to return to game play.</li><li>• Team trainers have the right to refuse a player to return to any hockey activity if they deem the player unfit to do so.</li></ul>

# Special Considerations

*What happens when a suspected concussion from a Waxers activity is not identified/reported until days or weeks after the Waxers activity?*

**Action:** Remove from sport, report and refer a suspected concussion to medical assessment

**Rationale:** Immediately upon the concussion being suspected and/or reported to team officials, the trainer is to complete a Suspected Concussion Report Form and recommend that the player see a medical doctor/nurse practitioner as soon as possible.



# Special Considerations

***What happens when a child/youth sustains a concussion from a non Waxers activity (i.e. school, other sports, non club/team related games or training)?***

**Action:** request or obtain medical diagnosis

**Rationale:** As the concussion did not happen at a club/team activity, no *Suspected Concussion Report Form* is needed. However, regardless of where a concussion was sustained child/youth is required to follow a return-to-sport protocol

# Waxers Concussion Policy - Summary

## Trainers

- **At the Waxers activity:**
  - Recognize, remove, report, refer
- **Documentation to submit to head trainer:**
  1. Suspected Concussion Report Form
  2. Medical diagnosis
  3. Return-to-sport protocol (Co-sign stages 4, 5 & 7) with medical clearance
- Have the right to refuse a player to return to any Waxers hockey activity if they deem the player unfit to do so



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# Waxers Concussion Policy - Summary

## Coaches

- Recognize the signs & symptoms of concussion, report them to trainer and support remove from sport for suspected concussions
- Be familiar with the Concussion Policy
- Create a team culture where players feel comfortable reporting injuries
- **Trust the trainer** and know that they have the final say about removing a player
- Modify practices to support return-to-sport protocol for players



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# Waxers Concussion Policy - Summary

## Parents

- Obtain documentation from medical diagnosis and clearance
- Most responsible person for gradual return-to-sport protocol
- Co-sign all stages in return-to-sport protocol
- Communicate with team trainer and send documentation

## Players

- Be honest with trainers, coaches and parents
- Gradually move through return-to-sport protocol
- Co-sign all stages in return-to-sport protocol

## Referees

- Recognize the signs & symptoms of concussion
- Enforce rules and penalize hits to the head



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# Waxers Concussion Policy - Summary

- Share information about the *Concussion Policy* with the parents and players on your team so they know what to expect prior to start of season
- Create a team culture where players feel comfortable reporting injuries



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# Q & A

- ✓ Recovery and best practice updates
- ✓ Clinical support
- ✓ Return-to-sport protocol
- ✓ Medical clearance requirements



# Additional Info

[www.waxers.com](http://www.waxers.com)

-> Resources

-> Concussion Program



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