

# SKILL DEVELOPMENT

Mark Aubry M.D.

# SKILL DEVELOPMENT

## WHAT DOES MEDICINE HAVE TO DO WITH SKILL DEVELOPMENT?

Health and nutrition

Safety

Education

# SKILL DEVELOPMENT

## EXPERIENCE

- Sport medicine physician
- CMO – Hockey Canada and IIHF
- Team Physician
  - Ottawa Senators (2005 – present)
  - Ottawa 67s (1990 – 2007)
  - National Junior team (1987 – 1989)
- Trainer program – Minor hockey (1990 – 2000)
- Hockey parent

# Skill Development

## WHAT IS SKILL DEVELOPMENT?

- Strength
- Speed
- Stick handling, Puck control, Coordination
- Vision
- Mental toughness
- Body checking
- Education in injury prevention



# HEALTH AND NUTRITION

## HEALTH - one of the building blocks

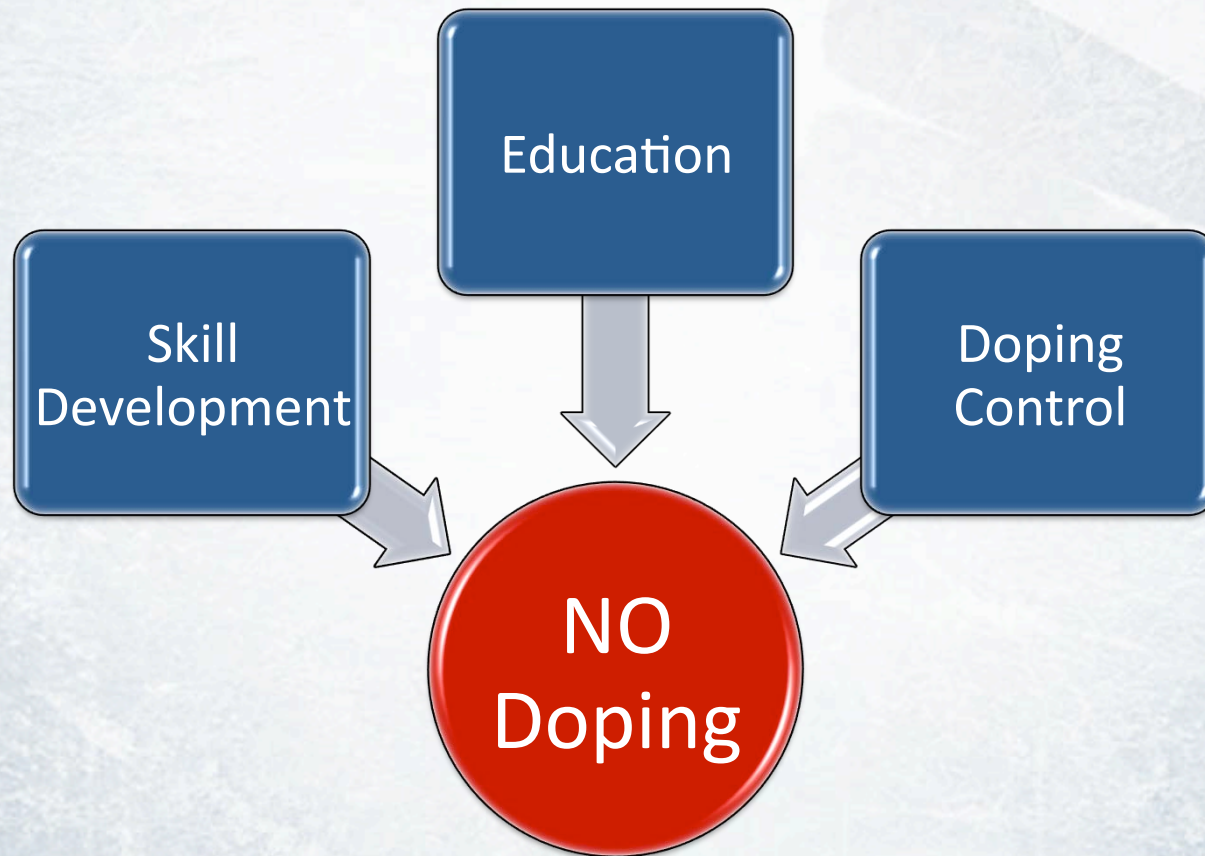
- Physical examination
- Fitness issues
  - Strength training
  - Conditioning – aerobic / anaerobic
  - Age
  - Type

# HEALTH AND NUTRITION

## **NUTRITION – another important building block**

- Balanced diet
  - 5 food groups
- Healthy diet means
  - Avoiding certain foods
  - Timing of meals
  - Pre-game meal
  - Post-game meal
  - Fluids
- Supplements – Risks
- Doping

# LINK BETWEEN DOPING AND SKILL DEVELOPMENT?



# “GREEN PUCK” PROJECT

## ANTI-DOPING CAMPAIGN

- IIHF and WADA initiative
- Launched at the 2010 IIHF World Championship in Germany
- **GREEN PUCK** theme and logo
- Say **NO** tagline
- Video clips involving numerous NHL and international participants
- Online educational program



# BODY CHECKING

## Questions to consider:

- Should skill development include body checking?
- Does body checking prevent development of other skills?
- Is there a spectrum of permissible body checking?
- At what age should body checking be introduced?
- Is body checking linked to injuries?



# SAFETY ISSUES

SKILL DEVELOPMENT

BODY CHECKING

INJURIES

# MINOR HOCKEY INJURIES

## STUDIES RELATING TO

- Ages of body checking
- Risk of injury
- Types of injuries

# INJURIES AND BODY CHECKING

## SEARCH OF THE LITERATURE REVEALED

### 20 IMPORTANT STUDIES:

- 8 studies comparing checking vs. non-checking groups
- 12 descriptive studies reporting on types of injuries related to body checking in minor hockey

Walsh et al., Clin. J. Sport Med., 2009:134-44

# INJURIES AND BODY CHECKING

## Results - Comparative studies - **SAME AGE**

- 3 studies comparing groups of same age
- Risk of injury higher among teams that allowed checking
- Rate of injury (checking / non-checking)
  - 39.8 (minor atom)
  - 6.72 (pee-wee)

# INJURIES AND BODY CHECKING

## Results - Comparative studies - DIFFERENT AGES

- Compared atom (non-checking) with pee-wee, bantam and midget (checking)
- Risk of injury was always higher for the checking teams (range 1.84 to 5.43)
- Age was not a significant factor in predicting the risk of injury

# MINOR HOCKEY INJURIES

## Types of injuries:

- Fractures are the biggest group of injuries
- Concussions, shoulder and knee injuries also present in different groups
- Body checking is responsible for 2.9 to 91% of injuries

# **CONTACT IN WOMEN'S HOCKEY**

**NO BODY CHECKING  
BUT**

**BODY CONTACT IS ALLOWED**

## **INTERESTING FACTS:**

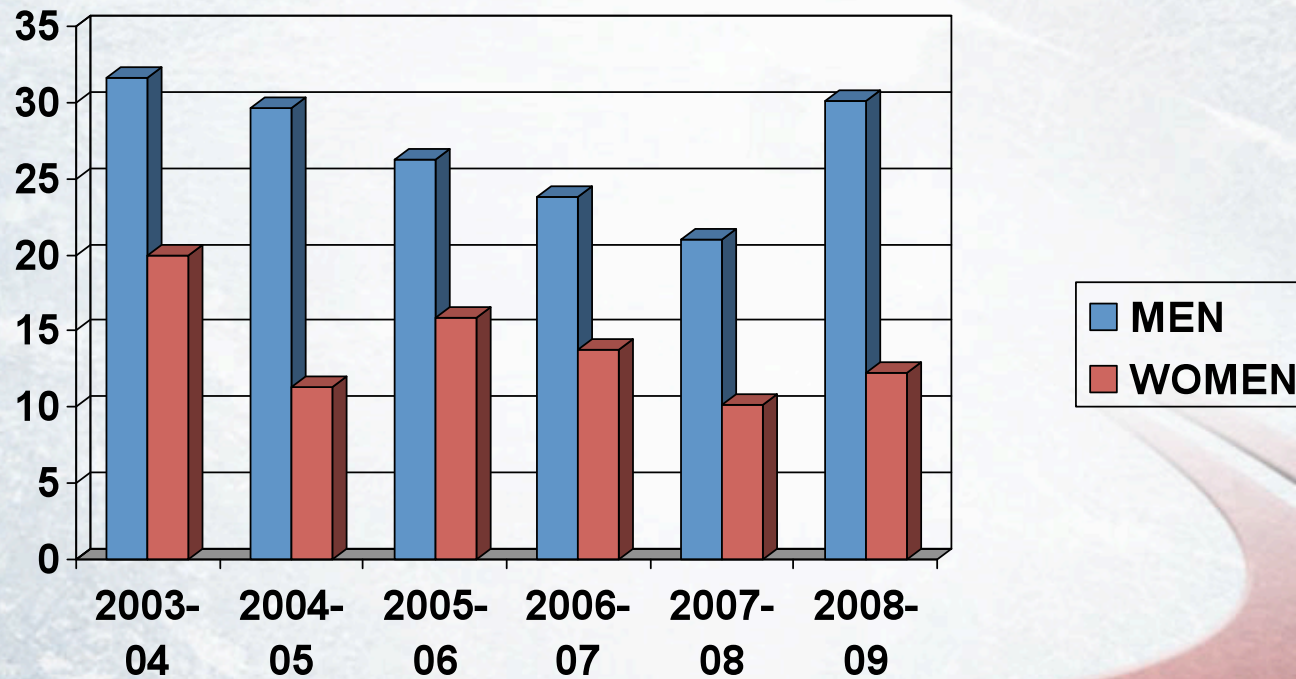
- Rate of injury is much lower in all years of reporting
- Most injuries are from incidental contact or no contact

IIHF Injury Reporting System





# RATE OF INJURY – Male vs. Female



# SKILL DEVELOPMENT VS. BODY DEVELOPMENT

## Changes to keep in sync:

- Puberty
- Height and weight increase
- Other changes associated with adolescence
- Physical and mental capacity
- Social issues

# SAFETY CONCERNS

**ALL** injuries are of concern.

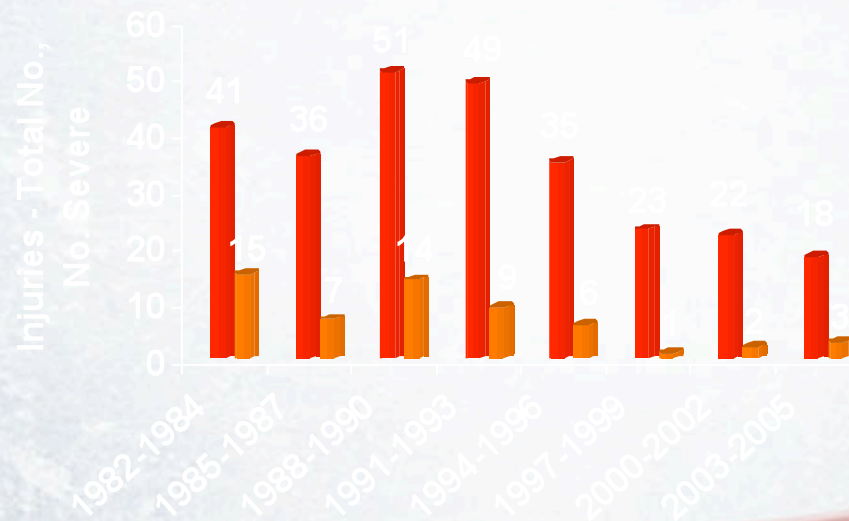
Education and skill development are important factors in the prevention of certain injuries, such as:

- Spinal injuries
- Concussions
- Eye injuries

# A GOOD NEWS STORY CANADIAN HOCKEY SPINAL INJURIES 1943-2005



Total Number of Injuries and Severe Injuries per  
Three-Year Period, 1982-2005



3 - Year Time Interval

# SPINAL INJURIES IN ICE HOCKEY

By country – 1943 to 1999

<b>Europe</b>	<b>74</b>	<b>USA</b>	<b>40</b>
Czech Rep./Slovakia	1		
Germany	1		
Switzerland	1		
Scotland	2		
France	3		
Finland	8		
Sweden	58		
		<b>JAPAN</b>	<b>1</b>
		<b>TOTAL</b>	<b>115</b>

# INTERNATIONAL REGISTRY



- Only a few cases have been reported
- Factors that may be leading to under-reporting
- *Is there less risk of spinal injuries in international hockey?*

# SPINAL INJURIES

## FACTORS AND MECHANISMS OF INJURY

- Speed and weight of players are up (  $F = M \times A$  )
- Aggressiveness and risk-taking are up
- Lack of respect for themselves and others
- Lack of knowledge about these injuries
- Poor neck muscle conditioning
- Impact on boards
- Checking and pushing from behind
- Coaching, refereeing and league factors

# THINKFIRST: HOCKEY SPINAL INJURY REGISTRY



## IT'S ESSENTIAL!

- The only organized body collecting data on spinal cord injuries in ice hockey
- Used to determine trends and assess effectiveness of injury prevention programs
- Acts as a reminder that more effort is required to examine causes of injuries and develop appropriate prevention strategies



# SPINAL INJURIES HIGHLIGHTS

- Decrease in number of spinal injuries
- Hitting from behind is a crime – rules and enforcement have proven very beneficial
- Skill development - educate players to be careful when turning their back to protect the puck along the boards

# CONCUSSIONS

## IMPORTANT FACTS:

- Affects all ages
- Hits to the head
- Victim's fault
- Skill development is an important prevention tool

# SKILL DEVELOPMENT

## A KEY FACTOR IN THE PREVENTION OF CONCUSSIONS

- Keep your head up
- Know where the players are on the ice
- No hits to the head
- Education – make players aware of the risks and serious consequences of concussions

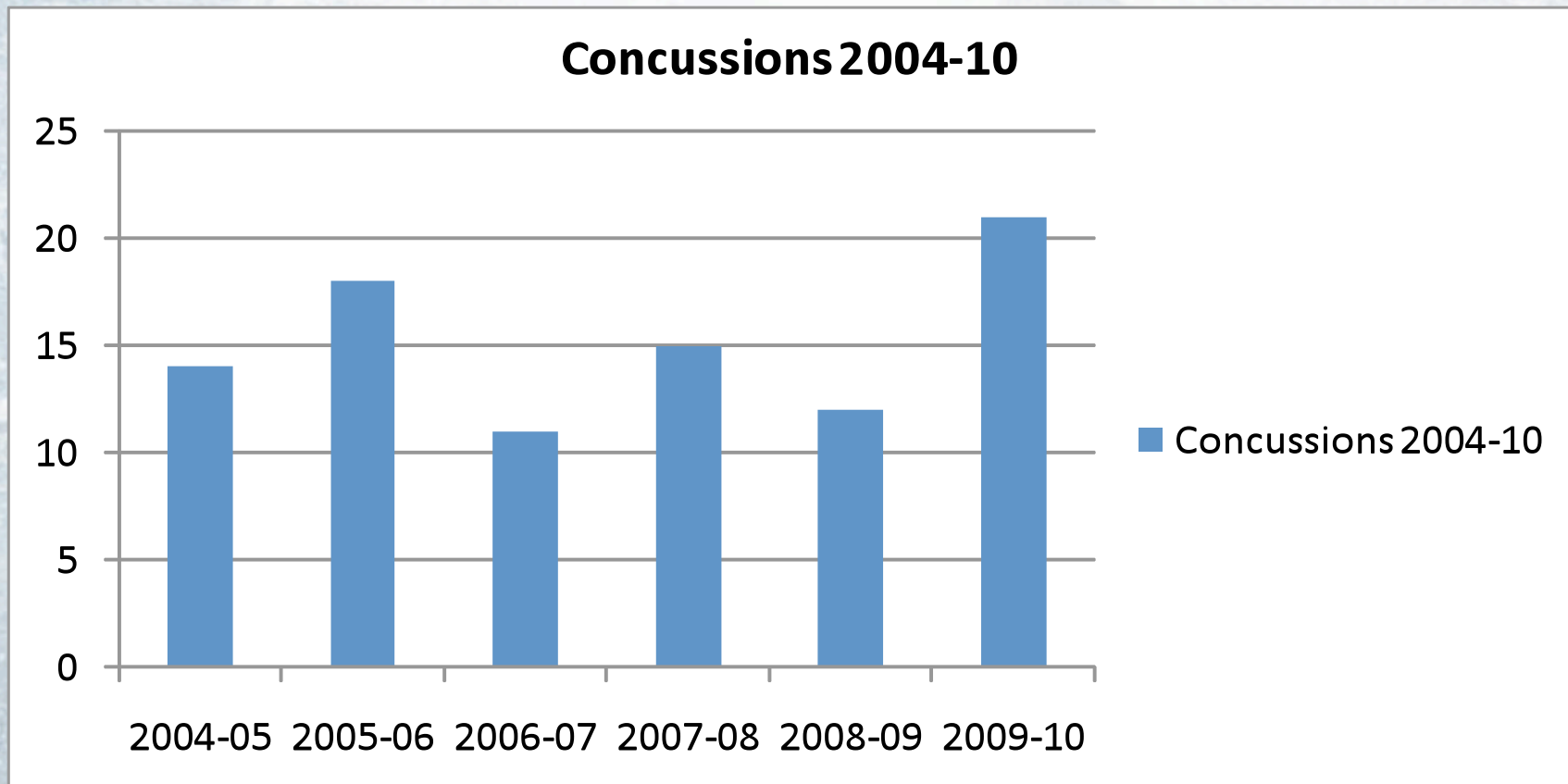
# RULE CHANGES AND ENFORCEMENT

## Another key factor in the prevention of concussions

Some of the important milestones in international hockey:

2002-03	No head checking
2005-06	Reinforcement of the rules
2007-08	Two-referee system
2006-08	Rule emphasis

# CONCUSSIONS IIHF CHAMPIONSHIPS



# FIRST, SECOND AND THIRD INTERNATIONAL SYMPOSIA ON CONCUSSION IN SPORT

## PARTNERSHIP

IIHF

IOC

FIFA

IRB



## CONSENSUS



MOLSON  
**CANADIAN.** TORONTO 2010  
**WORLD HOCKEY SUMMIT**

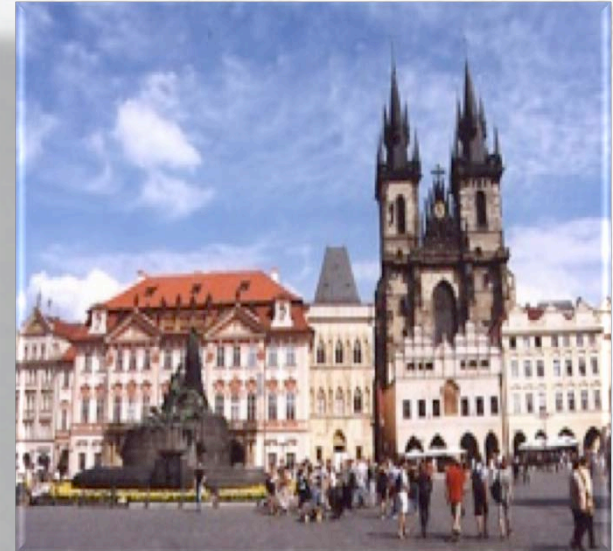
# Agreement statements on concussion in sport

**Vienna 2001**

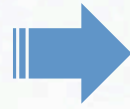
**Prague 2004**

**Zurich 2008**

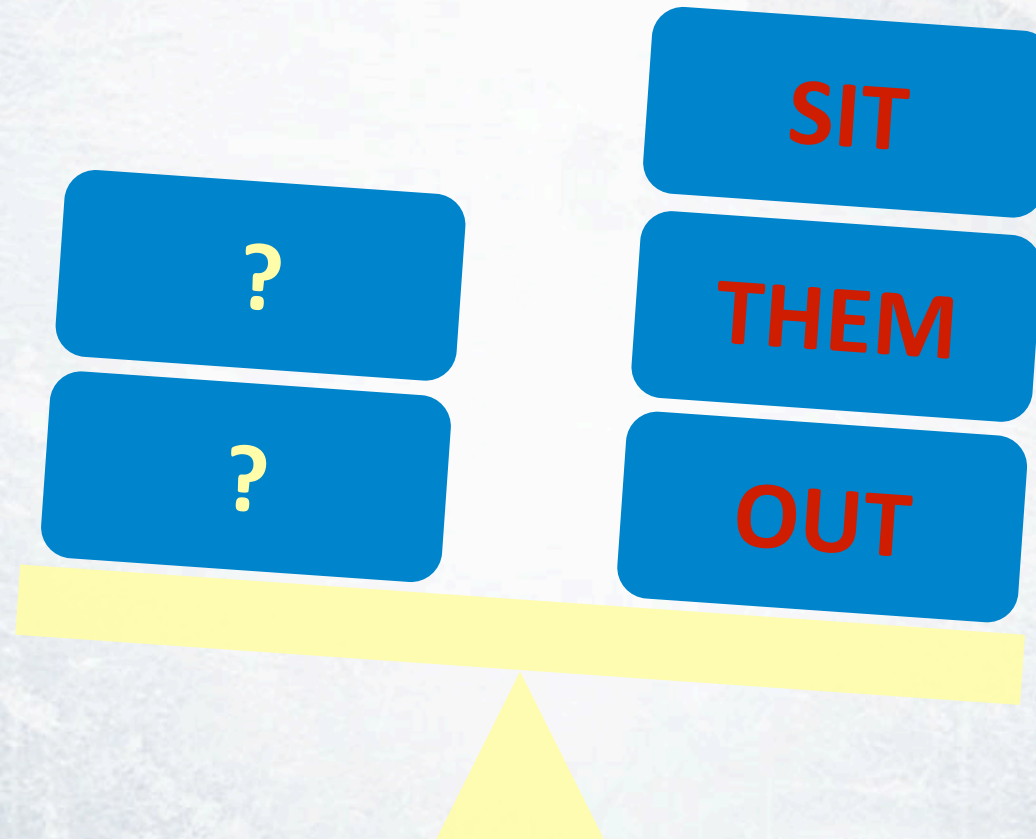
- Individualized symptom-based approach
- Retrospective grading of severity
- Stepwise process to return to play



RETURN TO PLAY?



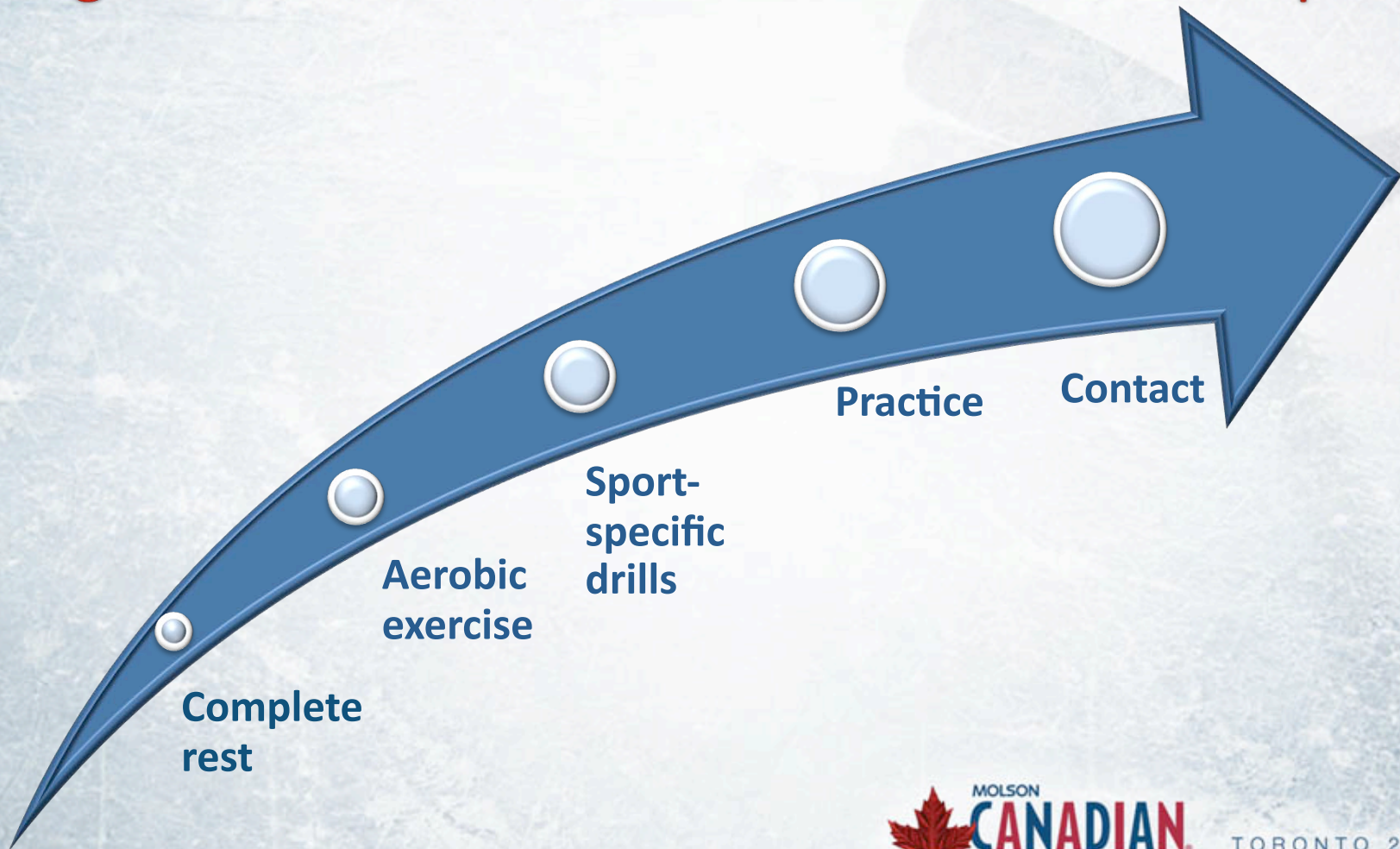
WHEN IN DOUBT...





# Stepwise process to return to play

## Agreement Statements on Concussion in Sport



# CONCUSSIONS NEXT STEPS

- Continue the awareness campaign for coaches and players
  - Skill development
  - Return to play
- Stronger rule enforcement and more severe penalties? Rules alone have no effect without enforcement
- Learn from the success story with spinal injuries
- Fair play and respect



**FAIR PLAY** 

**AND RESPECT**

# THINGS TO CONSIDER IN SKILL DEVELOPMENT AND SAFETY



- Emphasize the building blocks
- Say No to doping
- Teach one skill at a time
- Body checking is a skill not a “licence to kill”
- Introduce body checking at the appropriate age
- Educate parents, players and coaches

# REMEMBER THE GOALS

