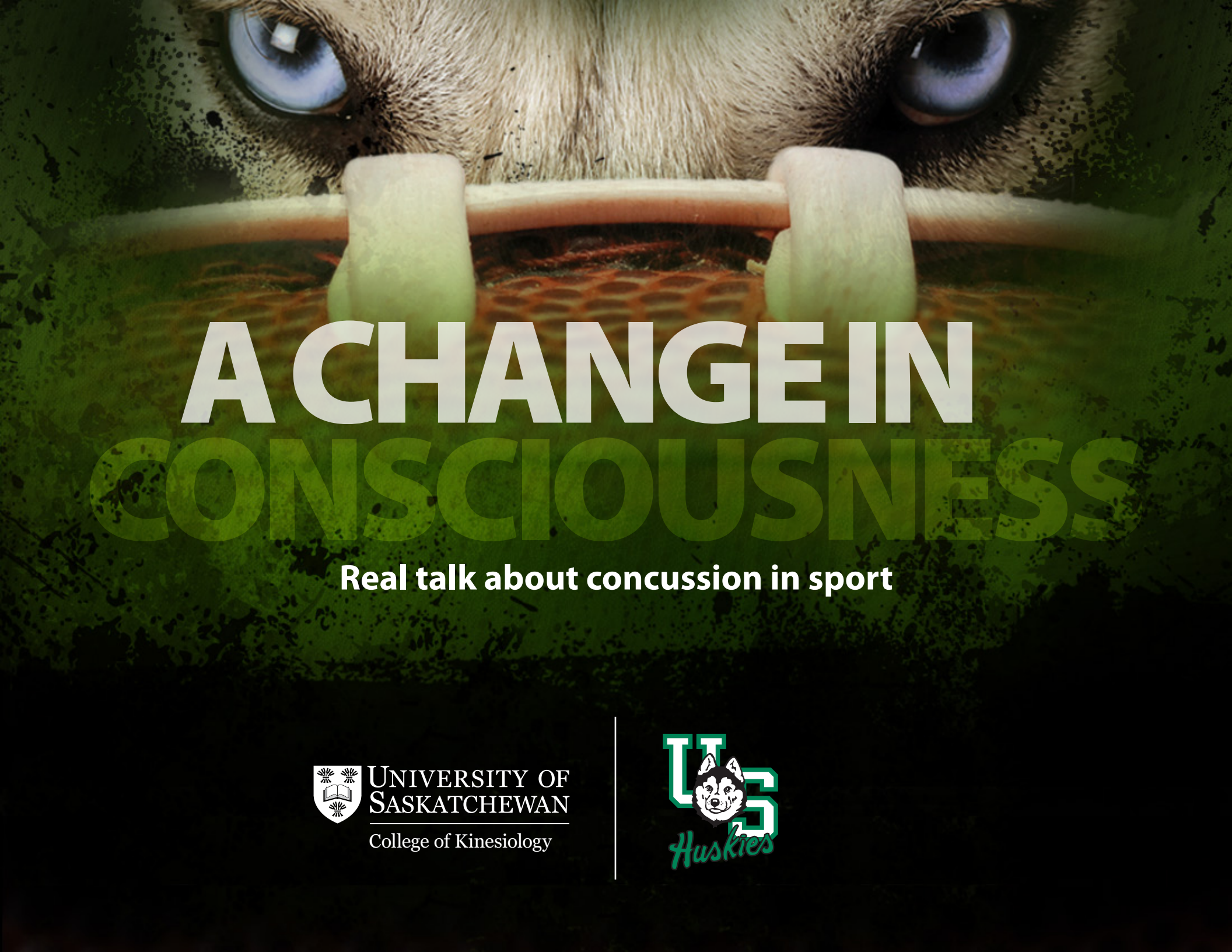
A CHANGE IN
CONSCIOUSNESS
Real talk about concussion in sport
University of Saskatchewan
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Huskies

Real talk about concussion in sport

Does your sport organization have a general policy about how to manage concussion? Are coaches required to take a concussion education and training course? Who is responsible for the sideline concussion recognition and response to suspected concussions during practices?

Concussion is an injury to the brain. It is not an injury that can be seen. Concussion affects how the brain works. It results in physical, emotional and cognitive symptoms. Concussion awareness and prevention is everybody's responsibility.

Education about concussion will aid in ensuring that concussed athletes are identified, treated and referred appropriately, receive follow up care from a health care professional, and are recovered fully before they return to activity. Early recognition of concussion may prevent more serious injuries from occurring.

The goal of an effective Concussion Management Plan is to protect athletes and return them safely to learning and athletics. Coaches, parents, athletes, educators and officials all have an important role to play in concussion prevention and management. A Concussion Management Plan will promote concussion awareness, teach safe techniques, ensure proper and well-maintained equipment is used, teach respect for opponents and self, and promote good officiating. All stakeholders need access to accurate and current concussion information.

A change in consciousness: a change in the culture around sports concussion.

In this document, information and resources are presented for use in the development of a Concussion Management Plan. Topics include concussion education, prevention, management, return to play and return to learn. The content is targeted to athletes, parents, coaches, educators and officials.

This content is for information purposes only, to be used to develop your own Concussion Management Plan. It is brought to you by a collaboration of the Sport Medicine & Science Council of Saskatchewan (SMSCS), Huskie Athletics, and the Acquired Brain Injury Partnership Project and ThinkFirst.

Concussion in sport

The whole story

True or False?

1. Most concussions involve a loss of consciousness or being knocked out for a least a few seconds. (False)

2. You have to be hit in the head to have a concussion. (False)

A concussion is a brain injury that affects the way your brain works. A concussion is caused by a blow to the head or the body. You don't have to be knocked out to have a concussion. A concussion can occur in any sport or physical activity.

Concussion symptoms differ with each person and with each injury. Signs and symptoms of concussion can show up right after the injury, or may not be noticeable for hours or days. Most athletes will get better in 7-10 days, but some may take longer.

A sport organization's Concussion Management Plan begins with education to raise participants' concussion awareness. Coaches, parents, athletes, educators and officials should participate in a concussion education program prior to the start of the season. All sport participants should know what causes a concussion, the signs and symptoms of concussion, the importance of reporting a concussion, and know what to do to aid recovery and return safely to athletics and academics.

Athletes should be encouraged to report a concussion to their coach and parents, and should understand the risks of playing while concussed. Coaches must be able to recognize a concussion and know how to respond. Athletes with a suspected concussion should be removed from play. Parents need to be aware of their child's team's Concussion Management Plan. A clear strategy for a graduated return to play and return to learn should be implemented for the care and safety of all sport participants.

Symptoms of concussion usually fall into four categories:

1. Thinking/remembering
- Difficulty thinking clearly
- Feeling slowed down
- Difficulty concentrating
- Difficulty remembering new information

2. Physical
- Fuzzy or blurry vision
- Feeling tired, having no energy
- Nausea or vomiting (early on)
- Sensitivity to noise or light
- Balance problems
- Dizziness
- Headache

3. Emotional/mood
- Irritability
- Sadness
- More emotional
- Nervousness or anxiety

4. Sleep
- Sleeping more than usual
- Sleep less than usual
- Trouble falling asleep

RESOURCES

ThinkFirst Canada Concussion Question and Answers
thinkfirst.ca/programs/concussionqanda.aspx

ThinkFirst Canada Concussion Guidelines and Return to Play for Coaches/Athletes/Parents/Teachers
thinkfirst.ca/programs/concussion_resources.aspx

Centre for Disease Control and Prevention (CDC) Concussion Education and Prevention
cdc.gov/concussion

STOP concussion in sport

Stay in the game

There are approximately 6,000 concussions in Saskatchewan each year. Everyone has a role to play in helping to prevent and manage a concussion.

Pre-Season Meeting

Concussion education and awareness should take place in a pre season meeting. Information should be presented to coaches, parents and athletes. The Concussion Management Plan should be reviewed, including who is responsible to recognize a concussion, when an athlete will be removed from play, and the policy for allowing a player to safely return to play. Distribution of concussion information handouts and forms can be done at this time.

Consider being a catalyst in changing the culture around concussion in sport. Have your athletes and coaches sign the Saskatchewan Brain Injury Association (SBIA)'s pledge to Take Brain Injury out of Play.

Baseline Testing

Baseline testing is a pre-season exam conducted by a health-care professional. It may include symptom, cognitive (memory, learning, attention) and physical (balance and coordination) evaluations. Some methods of testing are computerized, while others are not. Baseline test results can be used and compared by health-care professionals to similar tests conducted on an athlete after a concussion has occurred. Baseline testing is only one part of a Concussion Management Plan. Some baseline testing tools are only suggested for use on children over 10 years old.

Baseline testing may not be necessary on a widespread basis. Normative comparisons may be sufficient and appropriate in a wide range of situations. Symptom evaluation, cognitive and physical testing may be completed post-injury to assist in return to activity decision making by health care professionals. Each organization will determine the necessity and value of baseline testing for their athletes.

Equipment Fitting and Maintenance

Although properly fitted equipment cannot prevent concussion, it can prevent other serious injuries. Equipment should be properly maintained and fitted to each athlete.

Fundamental Skills

Coaches are on the front line of concussion prevention. Teaching head smart principles will lead to safer sports. Coaches promote sound fundamentals, use appropriate teaching progressions, and focus on good technique to ensure athletes play hard, but play safe. Creating head smart drills and practice situations will keep our athletes in the game.

Rule Changes and Enforcement

Everyone is responsible to know the rules, promote adherence to the rules, and respect the rules…it all leads to injury prevention. Promote good officiating and application of the rules to protect athletes from concussion.

RESOURCES

Saskatchewan Brain Injury Association: Take Brain Injury out of Play Player's Pledge
sbia.ca/sports.aspx

Sports Concussion Assessment Tool V3 (SCAT 3), SCAT 3 for Children
thinkfirst.ca/programs/concussion.aspx

ImPACT Computerized Neurocognitive Assessment Tool
impacttest.com

TAKE ACTION on concussion in sport

When in doubt, take them out

Playing with concussion symptoms is dangerous and can lead to a longer recovery and a delay in returning to activity. While your brain is healing, you are at a higher risk of having another concussion.

1. Recognize

A concussion should be suspected if an athlete displays signs and symptoms or behaviors consistent with a concussion following an observed or suspected blow to the head or body.

2. Respond

The emergency medical system should be activated and the athlete not moved when an athlete is unconscious, exhibits neurological, respiratory or mental status changes, or appears to be worsening.

Any athlete who displays signs, symptoms or behaviors consistent with a concussion must be removed immediately from competition or practice and should not be allowed to return to play until cleared by an appropriate health-care professional.

Inform the athlete's parents or guardians that a concussion is suspected. The athlete should be evaluated by a health-care practitioner trained in the evaluation and management of concussion.

3. Return

After a period of cognitive and physical rest, making the decision that an athlete is ready to begin a graduated return to learn and play protocol is a medical decision. The athlete should not return to activity until cleared by a health-care professional.

As concussion in sport can have an effect on cognition (learning, concentration, attention, memory), time away from school and work may be necessary. Teachers play an integral role in recovery from concussion. Individualized learning accommodations may be necessary. Once a student is ready to return to learn, a return to academics progression, which may include academic accommodations, can prevent the exacerbation of symptoms and lead to a successful recovery.

A graduated return to play protocol begins once the athlete is symptom free and has medical clearance. A progression from light activity, to sport-specific activity, to practice and games is followed in a step-wise protocol.

RESOURCES
Concussion Recognition Tool (CRT)
thinkfirst.ca/programs/concussion.aspx

RETURN to learn protocol

A concussion can have an effect on cognition (learning, concentration, attention, memory). A time away from school and work may be necessary. Once the athlete is ready to return to learn and has medical clearance, a graduated return to school can prevent the exacerbation of symptoms and lead to a successful recovery.

Educators, physicians, counsellors, parents and the athlete may all be involved in the creation of a plan for a successful return to academics. If symptoms are severe and the athlete cannot concentrate for more than 10 minutes, the athlete should stay at home.

At home

1. Total rest

- **No driving, limit mental exertion** (computers, video games, homework, texting) to a level that does not exacerbate symptoms
- Allow sunglasses/hat **if sensitive to light**
- Use ear protection **if sensitive to sounds**
- **Use quiet dark rooms**

2. Light mental activity

- **No prolonged concentration**, short (30 minutes or less) mental exertion, perform cognitive tasks in short durations
- **Listen** to a movie or TV show rather than watching and listening
- Once the athlete **can tolerate more than 30 minutes of light mental activity without symptoms,** the athlete can consider a return to school

At school

1. Part time

- **Shortened day** with **built-in breaks in a quiet place**, small amounts of learning at a time
- **No exams, modify academics,** provide extra time, provide **notes or a note taker, provide written instructions, provide help, limited homework**

2. Full time

- **Decrease extra time, help and modifications,** may require support in challenging subjects, increase homework, begin exams
- **Athletes may experience emotional symptoms.** Be mindful that athletes may feel stress related to school, their position on the team, losing their fitness level, and offer support and reassurance. Recognize athletes may be anxious or depressed as a result of their concussion. Allow athletes to connect with their teammates and be part of the team. Rather than focusing on negative symptoms, point out the improvements and steps they are making towards recovery.

RESOURCES
REAP the Benefits of Good Concussion Management
smscqlx.sasktelwebhosting.com/Concussion/pdf/REAP-RMHC-Foundation.pdf

RETURN to play protocol

All athletes will follow the Return to Play Protocol outlined below (from consensus statement on Concussion in Sport: the 4th International Conference on Concussion in Sport, Zurich 2012).

The RTP Protocol is a step-wise progression with at least 24 hours between each step. The athlete may progress to the next step if asymptomatic at the current step.

If any post-concussion symptoms occur, that athlete should discontinue RTP progressions, wait until symptoms resolve, and begin RTP progression from the previous asymptomatic step.

1. No activity
- Symptom limited physical and cognitive rest
- **Objective:** Recovery

2. Light aerobic exercise
- Activities such as walking, swimming or biking
- Intensity should be < 70 per cent predicted heart rate
- No resistance training
- **Objective:** Increase heart rate

3. Sport specific exercise
- **Example:** skating drills in hockey, running drills in soccer
- Not yet participating in practices, doing drills off to side
- No head impact activities
- No resistance training
- **Objective:** Add movement

4. Practice (non-contact training drills)
- Progression to more complex training drills Example: Passing drills in football or hockey
- May start progressive resistance training
- **Objective:** Exercise, coordination and cognitive load

5. Full contact practice (with medical clearance)
- After medical clearance participate in normal trailing activities
- **Objective:** Restore confidence and assess functional skills by coaching staff

6. Game play
- Return to normal game play

RESOURCES

CDC Concussion in Sport Recognition
cdc.gov/concussion/sports/recognize.html

ThinkFirst RTP Guidelines *thinkfirst.ca/programs/ documents/TF_Concussion_RTP_E_2012.pdf*

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ZURICH REFERENCE
McCrory, P., Meeuwisse, W.H., Aubry. M., et al. (2013). Consensus Statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012. *British Journal of Sport Medicine*, 47, 250-258.

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