



SAVE THE BRAIN

Save the Brain Concussion Campaign Consensus Recommendations

Preamble

In May 2013 Montana passed the Dylan Steiger's Act¹ that requires any child exhibiting signs, symptoms or behaviors consistent with concussion to be removed from athletic events and prohibited from practice or play until a licensed health care provider has evaluated the child.

By late 2013 it became clear to Northwest Montana regional Neuroscience leaders that there was considerable variability within the region in the way that communities and clinicians were evaluating and managing people with concussion. Further, it was found that there was a general lack of consensus within the medical community regarding which guidelines should be used in addressing sports concussion. Several highly credible medical groups² have published guidelines or statements for concussion evaluation and treatment, and in many cases these guidelines/statements are not consistent with each other.

To address these issues, The Neuroscience and Spine Institute of Kalispell Regional Healthcare has established an expert group of clinicians to review and monitor the medical literature related to concussion and to apply the best available science in making consensus recommendations for our unique service area and beyond. The following consensus recommendations are intended to provide a consistent set of guidelines to the clinical, educational, and sports communities of Montana.

The consensus recommendations provide carefully considered evidence and guidance that can be applied and adapted to meet the diverse needs and resources of Montana communities. They are reviewed annually and revised, expanded and updated as deemed appropriate.

¹ <http://leg.mt.gov/bills/2013/billpdf/SB0112.pdf>

² American Academy of Neurology, American Medical Academy of Sports Medicine, National Federation of State High School Associations, American Academy of Orthopedic Surgeons, The 4th International Conference on Concussion in Sport Held in Zurich, November 2012, American Association of Neurological Surgeons, American Academy of Pediatrics, National Athletic Trainers' Association, American Academy of Family Physicians

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Education & Local Government Committee
Sept. 25, 2015
Exhibit 7

Consensus Recommendations

1. Individuals who are planning to participate in sports activities that have an elevated risk for concussion should undergo pre-participation evaluation of their baseline neuro-cognitive and balance status.
 - a. The SCAT 3/ *Child SCAT 3* tool may be used for baseline neuro-cognitive and balance testing.
 - b. Where available, the *ImPact* computerized neuro-cognitive evaluation system is recommended for obtaining baseline neuro-cognitive data.
 - c. Where available, the *Biodex* computerized balance evaluation system is recommended.
2. Sideline evaluation for suspected concussion may be conducted using the *Sideline Concussion Recognition* card.
3. Post concussion evaluation should be completed using the original baseline tools where available. Where the original tool is not available, the SCAT 3 (for persons age 13 years and older), and the *Child SCAT 3* (for children ages 5 to 12) is recommended for post concussion assessment.
 - a. The SCAT 3/*Child SCAT 3* tool should be used by persons who have received training in use of the tool.
4. Return to Play decisions should be based on completion of the graduated 6 step *Return to Play Protocol* as described in the 2012 Zurich protocol.
 - a. For children ages 5 to 12, the timeframe for moving from one step to the next is 72 hours.
 - b. For persons 13 and older, the minimum timeframe for moving forward is 24 hours.
 - c. The *Return to Play Protocol* should be monitored by a licensed healthcare provider who has been trained in concussion management.
5. Concussed students should undergo a period of cognitive rest and stimulation restriction followed by a gradual, staged increase in cognitive activity prior to resuming normal academic loads. The *Return to Learn Plan* protocol is recommended as a guide for successful return to learning following concussion.
 - a. School personnel are encouraged to complete training sessions regarding recognition of concussion symptoms, principles of cognitive rest, stimulation control and gradual return to learning activities.
 - b. School personnel should communicate with parents and healthcare providers regarding progress or lack thereof during the concussion recovery process.



SAVE THE BRAIN

Parent/Athlete Concussion Information

A concussion is a type of traumatic brain injury that changes the way the brain normally works. A concussion is caused by bump, blow, or jolt to the head or body that causes the head and brain to move rapidly back and forth. Even a "ding," "getting your bell rung," or what seems to be a mild bump or blow to the head can be serious.

What are the signs and symptoms of concussion?

Signs and symptoms of concussion can show up right after the injury or may not appear or be noticed until days or weeks after the injury.

Did You Know?

- Most concussions occur without loss of consciousness.
- Athletes who have, at any point in their lives, had a concussion have an increased risk for another concussion.
- Young children and teens are more likely to get a concussion and take longer to recover than adults.

If an athlete reports one or more symptoms of concussion listed below after a bump, blow, or jolt to the head or body, s/he should be kept out of play the day of the injury and until a health care professional, experienced in evaluating for concussion, says s/he is symptom-free and it's OK to return to play.

SIGNS OBSERVED BY COACHING STAFF

- Appears dazed or stunned
- Is confused about assignment or position
- Forgets an instruction
- Is unsure of game, score, or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows mood, behavior, or personality changes
- Can't recall events prior to hit or fall
- Can't recall events after hit or fall

SYMPTOMS REPORTED BY ATHLETES

- Headache or "pressure" in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Confusion
- Just not "feeling right" or "feeling down"

Concussion danger signs

In rare cases, a dangerous blood clot may form on the brain in a person with a concussion and crowd the brain against the skull. If a person exhibits any of the following danger signs after a bump, blow or jolt to the head seek immediate medical attention

- One pupil larger than the other
- Is drowsy or cannot be awakened
- A headache that not only does not diminish, but gets worse
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Cannot recognize people or places
- Becomes increasingly confused, restless, or agitated
- Has unusual behavior
- Loses consciousness (even a brief loss of consciousness should be taken seriously)

Why should an athlete report their symptoms?

If an athlete has a concussion, his/her brain needs time to heal. While an athlete's brain is still healing, s/he is much more likely to have another concussion. Repeat concussions can increase the time it takes to recover. In rare cases, repeat concussions in young athletes can result in brain swelling or permanent damage to their brain. They can even be fatal.

It's better to miss one game than the whole season.

For more information on concussions,
visit: www.cdc.gov/Concussion or www.krh.org/savethebrain

Do you have questions? Call the Brain Injury Helpline at 1-800-241-6442.

To find a healthcare provider trained in concussion management
Concussion Clinic: 758-7035 or www.krh.org/savethebrain
Appointments available M-F in the Flathead Valley

Remember

Concussions affect people differently. While most athletes with a concussion recover quickly and fully, some will have symptoms that last for days, or even weeks. A more serious concussion can last for months or longer.

What should you do if you think your athlete has a concussion?

If you suspect that an athlete has a concussion, remove the athlete from play and seek medical attention. Do not try to judge the severity of the injury yourself. Keep the athlete out of play the day of the injury and until a health care professional, experienced in evaluating for concussion, says s/he is symptom-free and it's OK to return to play.

Rest is key to helping an athlete recover from a concussion. Exercising or activities that involve a lot of concentration, such as studying, working on the computer, or playing video games, may cause concussion symptoms to reappear or get worse. After a concussion, returning to sports and school is a gradual process that should be carefully managed and monitored by a health care professional.



Concussion Recovery Recommendations

What is a concussion?

A concussion is a type of traumatic brain injury that changes the way the brain normally works. A concussion is caused by a bump, blow or jolt to the head or body that causes the head and brain to move rapidly back and forth. The damage to the brain occurs at a chemical level and normal brain cell function is disrupted. Additional injury is complicated by the restriction of blood flow to the damaged areas, and simultaneous increase in demand of blood flow that is necessary for repair. Diagnostic imaging studies are typically normal after a concussion.

What are signs and symptoms of concussion?

Signs and symptoms of concussion can show right after the injury or may not appear or be noticed until days or weeks after the injury.

If a person reports one or more symptoms of concussion listed below after a bump, blow, or jolt to the head or body, s/he should not return to normal activity until a health care professional, experienced in evaluating concussion, says s/he is symptom-free and can be released from all restrictions.

Did you know?

- 90% concussions occur without loss of consciousness
- Severity of the injury is not determined by location of impact or loss of consciousness
- People who previously had a concussion have increased risk for additional concussions
- Young children take longer to recover

Symptoms:

Thinking 	Physical 	Emotional 	Sleep/Energy 
<ul style="list-style-type: none"> • Disorientation & confusion Feeling slowed down/in a fog • Memory loss • Difficulty concentrating/thinking clearly • Difficulty retaining new information 	<ul style="list-style-type: none"> • Prolonged headache • Sensitivity to light or noise • Vision disturbances • Dizziness • Nausea or vomiting • Impaired balance (this is often the first symptom to recover) 	<ul style="list-style-type: none"> • Irritability • Sadness • Anxiety • Personality Changes • Behavioral Changes • Depression • Lack of motivation 	<ul style="list-style-type: none"> • Fatigue • Excess sleep • Trouble Falling Asleep • Drowsiness • Sleeping less than usual • Altered sleep pattern

How long do symptoms last?

- 75% of the time symptoms resolve within 10 days
- 90% of the time, symptoms resolve within 3 weeks
- If symptoms persist greater than 3 months, a diagnosis of Post-Concussion Syndrome may be appropriate.

Recovery

The basis of concussion management is physical and cognitive REST until symptom-free, with gradual resumption of daily activities. The imbalance of energy is a key reason why patients are susceptible to worsening symptoms after an injury, if proper rest does not occur. Thus, premature activity, both cognitive and physical can worsen symptoms.

Do NOT:

- Drink alcohol or caffeine
- Drive



It is okay to:

- Take Tylenol for headaches
- Ice the head/neck
- Eat a light diet
- Rest and sleep



Steps to Recovery

1. Use the attached *Cognitive Activity Monitoring Log* as a tool for gradually reintroducing activities that involve thinking and stimulation.
2. Use the *Symptom Evaluation* forms to rate your symptoms every 72 hours
3. As activities are increasingly tolerated without symptom increase, one can use *The Return to Play Protocol* following concussion as a guideline for increasing activity.

Questions?

Please refer to the **Resource List** for additional information

Visit our website for more information and a list of healthcare professionals who are experienced in evaluating concussions: www.krh.org/savethebrain



SAVE THE BRAIN

Resource List

Save the Brain website

<http://krh.org/savethebrain>

Concussion Clinic

Appointments available Monday-Friday
406-758-7035

Centers for Disease Control

<http://www.cdc.gov/concussion>

Extensive resource for solid concussion information.

Moms Team

<http://www.momsteam.com/health-safety/concussion-safety>

Moms Team Concussion Safety Center has grown to be the largest, most comprehensive library of concussion safety information on the Internet.

Brain Injury Association of America

<http://www.biausa.org>

The country's oldest and largest nationwide brain injury advocacy organization.

Brain Injury Alliance Montana

<http://biamt.org>

Statewide resource for brain injury information, research, advocacy and Montana support groups. **Brain Injury Helpline 1-800-241-6442**

Kalispell Regional Healthcare, Neuroscience and Spine Institute

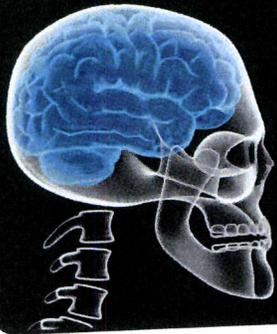
<http://www.kalispellregional.org>

Find local experts in evaluating and treating concussion.

REAP Concussion Management Program by Health ONE

<http://usarugby.org/documentation/membership/medical/reap-benefits-of-good-concussion-management.pdf>

A program based out of Colorado that seeks to reduce, educate, accommodate and pace concussion patients and help recovery.



SAVE THE BRAIN

Athlete/Parent Concussion Notice

The athlete named below has been removed from play due to a suspected concussion. You are being provided with a *Parent/Athlete Concussion Information Sheet* from the CDC. Please review this information. More information is available at www.cdc.gov/concussion/sports.

The athlete should not be left alone or allowed to drive for the next 24 hours and should be monitored for concussion danger signs. If danger signs develop, he/she should be taken for immediate medical attention.

The athlete should see a qualified healthcare provider within the next 24-48 hours. This can be a physician, nurse practitioner, physician's assistant, chiropractor, certified athletic trainer, physical therapist, or school registered nurse. Call (406) 752-5170 to get a list of healthcare providers who have been trained in concussion care through the Save The Brain campaign.

Physical and mental rest is very important for recovery, especially in the first 24-72 hours. The concussed athlete should avoid all exercise and minimize mental tasks such as concentration, studying, video games, phone or computer work until all concussion symptoms have cleared and stay gone. Your healthcare provider will give additional instructions. The Brain Injury Alliance of Montana, www.biamt.org offers a free Brain Injury Help Line at 1-800-241-6442.

By Montana Law, the athlete will not be allowed to return to practice or play until cleared by a healthcare provider.

I have reviewed this notice and the *Parent/Athlete Concussion Information Sheet*:

Athlete
Name and signature _____ Date _____

Parent/Guardian/Responsible adult
Name and signature _____ Date _____

Person giving notice
Name and signature _____ Date _____



Emergency Room/Urgent Care Concussion Notice

Name: _____ Date: _____

The person named above has been diagnosed with a concussion. This is a brain injury that changes the way the brain normally works. The injury starts with a bump, blow or jolt to the head or body. Brain injury often continues for 48 to 72 hours (2 - 3 days) after the initial trauma.

The concussed person **should not be left alone or allowed to drive for the next 24 hours**, and should be monitored for **RED FLAG** signs or symptoms, until seen by a healthcare provider trained in managing concussions. If **RED FLAGS** are noticed, return to the emergency room. Otherwise plan to see a concussion trained healthcare provider within 3 days.



Immediately after injury

Do NOT:

- Drive
- Drink alcohol
- Stay alone
- Try to work, play or think hard



It is okay to:

- Take Tylenol for headaches
- Ice the head/neck
- Eat a light diet
- Rest and sleep

See a healthcare provider trained in concussion management within 3 days.

BY MONTANA LAW A CONCUSSED ATHLETE MAY NOT RETURN TO PLAY UNTIL CLEARED BY A QUALIFIED HEALTHCARE PROVIDER

RED FLAGS



- Increasing Confusion or Irritability
- Repeated Vomiting
- Seizure or convulsion
- Weakness or tingling/burning in arms or legs
- Deteriorating consciousness
- Severe or increasing headache
- Unusual behavior changes
- Double Vision

Neuroscience Concussion Clinic
(406) 758-7035

For more information and listings of concussion trained clinicians, go to www.krh.org/savethebrain

Child-SCAT3™



Sport Concussion Assessment Tool for children ages 5 to 12 years

For use by medical professionals only

What is childSCAT3?

The ChildSCAT3 is a standardized tool for evaluating injured children for concussion and can be used in children aged from 5 to 12 years. It supersedes the original SCAT and the SCAT2 published in 2005 and 2009, respectively². For older persons, ages 13 years and over, please use the SCAT3. The ChildSCAT3 is designed for use by medical professionals. If you are not qualified, please use the Sport Concussion Recognition Tool¹. Preseason baseline testing with the ChildSCAT3 can be helpful for interpreting post-injury test scores.

Specific instructions for use of the ChildSCAT3 are provided on page 3. If you are not familiar with the ChildSCAT3, please read through these instructions carefully. This tool may be freely copied in its current form for distribution to individuals, teams, groups and organizations. Any revision and any reproduction in a digital form require approval by the Concussion in Sport Group.

NOTE: The diagnosis of a concussion is a clinical judgment, ideally made by a medical professional. The ChildSCAT3 should not be used solely to make, or exclude, the diagnosis of concussion in the absence of clinical judgement. An athlete may have a concussion even if their ChildSCAT3 is "normal".

What is a concussion?

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific signs and/or symptoms (like those listed below) and most often does not involve loss of consciousness. Concussion should be suspected in the presence of any one or more of the following:

- Symptoms (e.g., headache), or
- Physical signs (e.g., unsteadiness), or
- Impaired brain function (e.g. confusion) or
- Abnormal behaviour (e.g., change in personality).

SIDELINE ASSESSMENT

Indications for Emergency Management

NOTE: A hit to the head can sometimes be associated with a more severe brain injury. If the concussed child displays any of the following, then do not proceed with the ChildSCAT3; instead activate emergency procedures and urgent transportation to the nearest hospital:

- Glasgow Coma score less than 15
- Deteriorating mental status
- Potential spinal injury
- Progressive, worsening symptoms or new neurologic signs
- Persistent vomiting
- Evidence of skull fracture
- Post traumatic seizures
- Coagulopathy
- History of Neurosurgery (eg Shunt)
- Multiple injuries

1 Glasgow coma scale (GCS)

Best eye response (E)

No eye opening	1
Eye opening in response to pain	2
Eye opening to speech	3
Eyes opening spontaneously	4

Best verbal response (V)

No verbal response	1
Incomprehensible sounds	2
Inappropriate words	3
Confused	4
Oriented	5

Best motor response (M)

No motor response	1
Extension to pain	2
Abnormal flexion to pain	3
Flexion/Withdrawal to pain	4
Localizes to pain	5
Obeys commands	6

Glasgow Coma score (E + V + M) of 15

GCS should be recorded for all athletes in case of subsequent deterioration.

Potential signs of concussion?

If any of the following signs are observed after a direct or indirect blow to the head, the child should stop participation, be evaluated by a medical professional and **should not be permitted to return to sport the same day** if a concussion is suspected.

- Any loss of consciousness? Y N
 "If so, how long?" _____
- Balance or motor incoordination (stumbles, slow/laboured movements, etc.)? Y N
 Disorientation or confusion (inability to respond appropriately to questions)? Y N
 Loss of memory: Y N
 "If so, how long?" _____
 "Before or after the injury?" _____
- Blank or vacant look: Y N
 Visible facial injury in combination with any of the above: Y N

2

Sideline Assessment – child-Maddocks Score³

"I am going to ask you a few questions, please listen carefully and give your best effort."

Modified Maddocks questions (1 point for each correct answer)

Where are we at now?	0	1
Is it before or after lunch?	0	1
What did you have last lesson/class?	0	1
What is your teacher's name?	0	1
child-Maddocks score	of 4	

Child-Maddocks score is for sideline diagnosis of concussion only and is not used for serial testing.

Any child with a suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration (i.e., should not be left alone). No child diagnosed with concussion should be returned to sports participation on the day of injury.

BACKGROUND

Name: _____ Date/Time of Injury: _____
 Examiner: _____ Date of Assessment: _____
 Sport/team/school: _____
 Age: _____ Gender: M F
 Current school year/grade: _____
 Dominant hand: right left neither
 Mechanism of Injury ("tell me what happened?"): _____

For Parent/carer to complete:

- How many concussions has the child had in the past? _____
 When was the most recent concussion? _____
 How long was the recovery from the most recent concussion? _____
- Has the child ever been hospitalized or had medical imaging done (CT or MRI) for a head injury? Y N
 Has the child ever been diagnosed with headaches or migraines? Y N
 Does the child have a learning disability, dyslexia, ADD/ADHD, seizure disorder? Y N
 Has the child ever been diagnosed with depression, anxiety or other psychiatric disorder? Y N
 Has anyone in the family ever been diagnosed with any of these problems? Y N
 Is the child on any medications? If yes, please list: Y N

SYMPTOM EVALUATION

3 Child report

Name: _____

	never	rarely	sometimes	often
I have trouble paying attention	0	1	2	3
I get distracted easily	0	1	2	3
I have a hard time concentrating	0	1	2	3
I have problems remembering what people tell me	0	1	2	3
I have problems following directions	0	1	2	3
I daydream too much	0	1	2	3
I get confused	0	1	2	3
I forget things	0	1	2	3
I have problems finishing things	0	1	2	3
I have trouble figuring things out	0	1	2	3
It's hard for me to learn new things	0	1	2	3
I have headaches	0	1	2	3
I feel dizzy	0	1	2	3
I feel like the room is spinning	0	1	2	3
I feel like I'm going to faint	0	1	2	3
Things are blurry when I look at them	0	1	2	3
I see double	0	1	2	3
I feel sick to my stomach	0	1	2	3
I get tired a lot	0	1	2	3
I get tired easily	0	1	2	3

Total number of symptoms (Maximum possible 20) _____

Symptom severity score (Maximum possible 20x3=60) _____

self rated clinician interview self rated and clinician monitored

4 Parent report

The child

	never	rarely	sometimes	often
has trouble sustaining attention	0	1	2	3
is easily distracted	0	1	2	3
has difficulty concentrating	0	1	2	3
has problems remembering what he/she is told	0	1	2	3
has difficulty following directions	0	1	2	3
tends to daydream	0	1	2	3
gets confused	0	1	2	3
is forgetful	0	1	2	3
has difficulty completing tasks	0	1	2	3
has poor problem solving skills	0	1	2	3
has problems learning	0	1	2	3
has headaches	0	1	2	3
feels dizzy	0	1	2	3
has a feeling that the room is spinning	0	1	2	3
feels faint	0	1	2	3
has blurred vision	0	1	2	3
has double vision	0	1	2	3
experiences nausea	0	1	2	3
gets tired a lot	0	1	2	3
gets tired easily	0	1	2	3

Total number of symptoms (Maximum possible 20) _____

Symptom severity score (Maximum possible 20x3=60) _____

Do the symptoms get worse with physical activity? Y N
Do the symptoms get worse with mental activity? Y N

parent self rated clinician interview parent self rated and clinician monitored

Overall rating for parent/teacher/coach/carer to answer.

How different is the child acting compared to his/her usual self?

Please circle one response:

no different very different unsure N/A

Name of person completing Parent-report: _____

Relationship to child of person completing Parent-report: _____

Scoring on the ChildSCAT3 should not be used as a stand-alone method to diagnose concussion, measure recovery or make decisions about an athlete's readiness to return to competition after concussion.

COGNITIVE & PHYSICAL EVALUATION

5 Cognitive assessment

Standardized Assessment of Concussion – Child Version (SAC-C)⁴

Orientation (1 point for each correct answer)

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1

Orientation score _____ of 4

Immediate memory

List	Trial 1	Trial 2	Trial 3	Alternative word list
elbow	0 1	0 1	0 1	candle baby finger
apple	0 1	0 1	0 1	paper monkey penny
carpet	0 1	0 1	0 1	sugar perfume blanket
saddle	0 1	0 1	0 1	sandwich sunset lemon
bubble	0 1	0 1	0 1	wagon iron insect
Total				

Immediate memory score total _____ of 15

Concentration: Digits Backward

List	Trial 1	Alternative digit list
6-2	0 1	5-2 4-1 4-9
4-9-3	0 1	6-2-9 5-2-6 4-1-5
3-8-1-4	0 1	3-2-7-9 1-7-9-5 4-9-6-8
6-2-9-7-1	0 1	1-5-2-8-6 3-8-5-2-7 6-1-8-4-3
7-1-8-4-6-2	0 1	5-3-9-1-4-8 8-3-1-9-6-4 7-2-4-8-5-6
Total of 5		

Concentration: Days in Reverse Order (1 pt. for entire sequence correct)

Sunday-Saturday-Friday-Thursday-Wednesday-Tuesday-Monday 0 1

Concentration score _____ of 6

6 Neck Examination:

Range of motion Tenderness Upper and lower limb sensation & strength

Findings: _____

7 Balance examination

Do one or both of the following tests.

Footwear (shoes, barefoot, braces, tape, etc.) _____

Modified Balance Error Scoring System (BESS) testing⁵

Which foot was tested (i.e. which is the non-dominant foot) Left Right

Testing surface (hard floor, field, etc.) _____

Condition

Double leg stance: _____ Errors
Tandem stance (non-dominant foot at back): _____ Errors

Tandem gait^{6,7}

Time taken to complete (best of 4 trials): _____ seconds

If child attempted, but unable to complete tandem gait, mark here

8 Coordination examination

Upper limb coordination

Which arm was tested: Left Right

Coordination score _____ of 1

9 SAC Delayed Recall⁴

Delayed recall score _____ of 5

Since signs and symptoms may evolve over time, it is important to consider repeat evaluation in the acute assessment of concussion.

BACKGROUND

Name: _____ Date: _____
 Examiner: _____
 Sport/team/school: _____ Date/time of injury: _____
 Age: _____ Gender: M F
 Years of education completed: _____
 Dominant hand: right left neither
 How many concussions do you think you have had in the past? _____
 When was the most recent concussion? _____
 How long was your recovery from the most recent concussion? _____
 Have you ever been hospitalized or had medical imaging done for a head injury? Y N
 Have you ever been diagnosed with headaches or migraines? Y N
 Do you have a learning disability, dyslexia, ADD/ADHD? Y N
 Have you ever been diagnosed with depression, anxiety or other psychiatric disorder? Y N
 Has anyone in your family ever been diagnosed with any of these problems? Y N
 Are you on any medications? If yes, please list: Y N

SCAT3 to be done in resting state. Best done 10 or more minutes post exercise.

SYMPTOM EVALUATION

3 How do you feel?

"You should score yourself on the following symptoms, based on how you feel now".

	none	mild	moderate	severe			
Headache	0	1	2	3	4	5	6
"Pressure in head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Trouble falling asleep	0	1	2	3	4	5	6
More emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or Anxious	0	1	2	3	4	5	6

Total number of symptoms (Maximum possible 22) _____
 Symptom severity score (Maximum possible 132) _____

Do the symptoms get worse with physical activity? Y N
 Do the symptoms get worse with mental activity? Y N
 self rated self rated and clinician monitored
 clinician interview self rated with parent input

Overall rating: If you know the athlete well prior to the injury, how different is the athlete acting compared to his/her usual self?
 Please circle one response:

no different very different unsure N/A

Scoring on the SCAT3 should not be used as a stand-alone method to diagnose concussion, measure recovery or make decisions about an athlete's readiness to return to competition after concussion. Since signs and symptoms may evolve over time, it is important to consider repeat evaluation in the acute assessment of concussion.

COGNITIVE & PHYSICAL EVALUATION

4 Cognitive assessment

Standardized Assessment of Concussion (SAC)⁴

Orientation (1 point for each correct answer)

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
What time is it right now? (within 1 hour)	0	1
Orientation score	of 5	

Immediate memory

List	Trial 1	Trial 2	Trial 3	Alternative word list
elbow	0 1	0 1	0 1	candle baby finger
apple	0 1	0 1	0 1	paper monkey penny
carpet	0 1	0 1	0 1	sugar perfume blanket
saddle	0 1	0 1	0 1	sandwich sunset lemon
bubble	0 1	0 1	0 1	wagon iron insect
Total				of 15

Immediate memory score total _____ of 15

Concentration: Digits Backward

List	Trial 1	Alternative digit list
4-9-3	0 1	6-2-9 5-2-6 4-1-5
3-8-1-4	0 1	3-2-7-9 1-7-9-5 4-9-6-8
6-2-9-7-1	0 1	1-5-2-8-6 3-8-5-2-7 6-1-8-4-3
7-1-8-4-6-2	0 1	5-3-9-1-4-8 8-3-1-9-6-4 7-2-4-8-5-6
Total of 4		

Concentration: Month in Reverse Order (1 pt. for entire sequence correct)

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan	0	1
Concentration score	of 5	

5 Neck Examination:

Range of motion Tenderness Upper and lower limb sensation & strength
 Findings: _____

6 Balance examination

Do one or both of the following tests.
 Footwear (shoes, barefoot, braces, tape, etc.) _____

Modified Balance Error Scoring System (BESS) testing⁵
 Which foot was tested (i.e. which is the non-dominant foot) Left Right
 Testing surface (hard floor, field, etc.) _____

Condition	Errors
Double leg stance:	Errors
Single leg stance (non-dominant foot):	Errors
Tandem stance (non-dominant foot at back):	Errors

And / Or
 Tandem gait^{6,7}
 Time (best of 4 trials): _____ seconds

7 Coordination examination

Upper limb coordination
 Which arm was tested: Left Right
Coordination score _____ of 1

8 SAC Delayed Recall⁴

Delayed recall score _____ of 5



Return to Play Protocol following Concussion

Athlete's Name _____ Licensed Healthcare Provider _____

Date of concussion _____ Concussion Monitor/Tester _____

The key to recovery from a concussion is 24-72 hours of rest followed by a gradual increase in brain and body activity, but only if the increased activity does not make symptoms come back.

To advance to the next stage of recovery the concussed person needs to be symptom-free (**normal**) **without any new medications** for headache, pain or sleep.

For children 12 and under	Minimum of 72 hours before advancing to the next stage.
For people 13 and older	Minimum of 24 hours before advancing to the next stage.

If symptoms return after advancing to the next stage, the athlete should go back one stage and follow the activity level for that stage. If symptoms are getting worse or not going away, see your licensed healthcare provider.

Stage	Activity	Monitor
1. Rest and Recovery	No exercise. No thinking. No work or school. No media.	Date cleared: _____ By: _____
2. Light aerobic exercise	Walking, stationary bike, or elliptical. Pulse <70-80% of max. No lifting.	Date cleared: _____ By: _____
3. Moderate aerobic exercise and drills	Non-contact drills at reduced speed. Light lifting.	Date cleared: _____ By: _____
4. Non-contact training drills	Full speed non-contact drills. Full aerobic exercise. Heavier lifting.	Date cleared: _____ By: _____
5. Full-contact training	Full participation in practice. Full contact. Full exercise. Full lifting.	Date cleared: _____ By: _____
6. Full Return to Play	Game ready!	See backside of this sheet.



Release to Return to Play

Athlete's Name _____ Licensed Healthcare Provider _____

Date of concussion _____ Concussion Monitor/Tester _____

I certify that I have consulted with the licensed healthcare provider and received information about monitoring this athlete's recovery from concussion. I accept responsibility for monitoring the athlete and will consult with the licensed healthcare provider if I have any questions or concerns.

Name and signature of Concussion Monitor _____ Date _____

Name and signature of Concussion Monitor # 2 _____ Date _____

By signing this form I certify that I am a licensed healthcare provider in the state of Montana and that, per Montana law, I have evaluated this athlete, and in my opinion this athlete is capable of resuming participation in sports activities.

Licensed Healthcare Provider Signature _____ Date _____

Printed Healthcare Provider Name _____ Office Phone _____

Office Address



Patient Name _____
 Date of Injury _____
 Today's Date _____
 Clinician _____

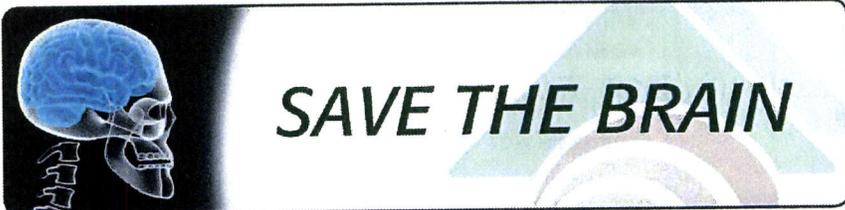
To advance to the next stage of recovery, the concussed person needs to be symptom-free (normal) without any new medications for headache, pain, or sleep.

Return to Learn Plan			
	Stage	Activity	Objective
I	Rest	Complete cognitive rest No activity of any kind, no school, no texting, no video games, no computer work	Recovery
II	Gradually integrate cognitive activity	Add cognitive activity for short periods of time, 5-15 minutes CAM log may be helpful	Gradual controlled increase in cognitive activities.
III	Continue integration of cognitive activities AND Begin light aerobic exercise	Cognitive activities in longer increments of time, 20 to 30 minutes. Add light aerobic exercise if activities are tolerated. Walking, stationary bike or elliptical, pulse <70-80% max. No lifting.	Increase cognitive stamina by repetition of short periods of self-paced cognitive activity.
IV	School Re-entry	Partial day of school with 1 to 2 hours cumulative homework	Re-enter school with accommodations to permit controlled increase in cognitive load.
V	Integrate into school setting	Gradually increase to full day of school Moderate aerobic exercise as tolerated	Decrease accommodations
VI	Resume full cognitive workload	Introduce testing and catch up on essential work missed.	Full recovery to school <i>Commence Stage 3 of Return to Play Protocol</i>

I have monitored the above student as he/she has recovered from a concussion. He/she is now cleared to resume full academic participation.

 Name and signature of concussion monitor

 Date



School Recommendations Following Concussion

This form must be filled in by a Licensed Healthcare Provider

Student Name: _____

Today's Date : _____

Date of Injury: _____

Healthcare Provider : _____

Attendance	
<input type="checkbox"/>	No school for _____ school day(s)
<input type="checkbox"/>	Attendance at school _____ days per week
<input type="checkbox"/>	Partial School days as tolerated by the student
<input type="checkbox"/>	Full Schools days as tolerated by the student

Breaks	
<input type="checkbox"/>	Allow the student to go to the nurse's office if symptoms increase
<input type="checkbox"/>	Allow student to go home if symptoms do not subside
<input type="checkbox"/>	Allow other breaks during school day as deemed necessary and appropriate by

Visual Stimulus	
<input type="checkbox"/>	Allow student to wear sunglasses/hat in school
<input type="checkbox"/>	Pre-Printed notes for class material or have a note taker
<input type="checkbox"/>	Limited computer, TV screen, bright screen use
<input type="checkbox"/>	Reduce brightness on monitor/screen
<input type="checkbox"/>	Change classroom seating as necessary

Audible Stimulus	
<input type="checkbox"/>	Lunch in a quiet place with a friend
<input type="checkbox"/>	Avoid music or shop class
<input type="checkbox"/>	Allow to wear earplugs as needed
<input type="checkbox"/>	Allow class transitions before bell

Workload/Multi-Tasking	
<input type="checkbox"/>	Reduce overall amount of makeup work, class work and homework
<input type="checkbox"/>	Prorate workload when possible
<input type="checkbox"/>	Reduce amount of homework given each night

Physical Exertion	
<input type="checkbox"/>	Nophysical exertion/athletics/gym/recess
<input type="checkbox"/>	Walking in gym class only
<input type="checkbox"/>	Begin return to play protocol

Testing	
<input type="checkbox"/>	Additional time to complete tests
<input type="checkbox"/>	No more than one test a day
<input type="checkbox"/>	No standardized testing until _____
<input type="checkbox"/>	Allow for scribe, oral response, and oral delivery of questions if available

Additional Recommendations:

Current Symptoms List Today:							
	Headache		Visual Problems		Sensitivity to noise		Memory Issues
	Nausea		Balance Problems		Feeling Foggy		Fatigue
	Dizziness		Sensitivity to Light		Difficulty Concentrating		Irritability

Student is reporting most difficulty in:							
	All Subjects		Reading		Foreign Language		Math
	Science		Music		History		Using Computers
	Focusing		Listening		Other: _____		

The patient will be reassessed for revision of the recommendations in _____ weeks. This patient has been diagnosed with a concussion (brain injury) and is currently under our care. Please excuse the patient from school today due to the medical appointment. Flexibility and additional supports are needed during recovery. The above are recommendations for academic adjustments to be individualized for the student as deemed appropriate in the school setting. Feel free to apply/remove adjustments as needed, as the student's symptoms improve/worsen.

I, _____, give permission for _____ to share the following information with my child's school and for communication to occur between the school and the healthcare provider listed above.

Parent Signature

Date

Provider Information:

Office

Phone: _____ Fax: _____

Visit www.krh.org/savethebrain for a list of *SAVE THE BRAIN* Healthcare Providers.

SIDELINE CONCUSSION RECOGNITION



SAVE THE BRAIN

When in doubt, take 'em out!

For any injury, remember:

Apply basic first aid (Airway, Breathing, Circulation)
Do not move the athlete (other than to open the airway) unless trained to do so.

RED FLAGS

If any of the following are present the athlete should immediately and safely be removed from the field by a qualified medical professional or emergency personnel and brought to the nearest Emergency Medical Facility for urgent assessment.

- Witnessed loss of consciousness
- Athlete complains of neck pain
- Increasing confusion or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness or tingling/burning in arms or legs
- Deteriorating consciousness
- Severe or increasing headache
- Unusual behavior change
- Double Vision

Suspect concussion and REMOVED from play if any ONE or more of the following is present: (items in red are RED FLAGS)

- Visible clues

- Loss of consciousness or responsiveness
- Lying motionless on the ground/Slow to get up
- Unsteady on feet/balance problems/falling/incoordination
- Grabbing/clutching of head
- Dazed/blank or vacant stare
- Confused/not aware of plays or events

- Signs or symptoms

- Loss of consciousness
- Seizure or convulsion
- Balance problems
- Nausea or vomiting
- Drowsiness
- Increased emotionality
- Irritability
- Sadness
- Fatigue or low energy
- Nervousness or anxiousness
- "Don't feel right"
- Difficulty with memory
- Headache
- Dizziness
- Confusion
- Feeling slowed down
- "Pressure in head"
- Blurred vision
- Sensitivity to light
- Amnesia
- "In a fog"
- Neck pain
- Sensitivity to noise
- Difficulty with concentration

- Memory function

Ask the following questions. Failure to correctly answer any of these correctly should result in immediate removal from play.

"Where are we now?"

"Which half/period is it now?"

"Who scored last in this game?"

"What team did you play before this game?"

"Did your team win the last game?"

Any athlete with a suspected concussion should be immediately removed from play and not allowed to return until they have been assessed by a qualified medical provider. They should not be left alone or allowed to drive a vehicle.

adapted from McCrory et. al, Consensus Statement on Concussion in Sport. Br. J. Sports Med 47(5), 2013