Concussion Management Plan

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Black Hawk College
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PURPOSE

At Black Hawk College we are committed to promoting a "safety first" culture with our student-athletes. Consistent with this philosophy, and in keeping with the requirements of the NJCAA Member Handbook (*Bylaws, Article 1, Section 4, Subparagraphs E1, E5, and F*), Black Hawk College has developed the following Concussion Management Plan for all student-athletes, regardless of the sport in which the student-athlete participates.

The Black Hawk College Concussion Management Plan strives to provide sufficient education to help these constituents better recognize and understand concussions.

The overriding goals of Black Hawk College's Concussion Management Plan are:

1. **Education:** Raise awareness of the signs, symptoms and seriousness of concussions to all those involved – both directly and indirectly – with the sport (student-athletes, parents, and coaches);
2. **Pre-participation assessment:** Require a one-time, pre-participation assessment of all student-athletes, to include concussion history, symptom evaluation, cognitive assessment, and balance evaluation;
3. **Recognition:** Promote prompt and effective responses to concussed student-athletes, assuring they are receiving effective care and management of the concussion;
4. **Post-concussion management:** Promote healthy and effective concussion treatment to mitigate recovery time with the ultimate goal of safely and effectively restoring the student-athlete to the classroom and the playing field.

CONCUSSION OVERVIEW

A concussion is a type of traumatic brain injury (TBI) that is caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth.[1] This sudden movement can cause the brain to bounce around or twist in the skull, resulting in chemical changes in the brain as well as potentially causing brain cells to stretch and/or become damaged.[1]

All concussions should be taken seriously. Medical prescribers may describe a concussion as a "mild" brain injury because concussions are usually not life-threatening, but the effects of a concussion can be serious.[1]

There are various signs and symptoms that can point to a concussion. One or more of the signs and symptoms listed below could indicate the presence of a TBI:

Concussion Signs Observed	Concussion Symptoms Reported
• Can't recall events prior to or after a hit or fall	• Headache or "pressure" in the head
• Appears dazed or stunned	• Nausea or vomiting
• Forgets an instruction, is confused about an assignment or position, or is unsure of the game, score, or opponent	• Balance problems or dizziness, or double or blurry vision
• Moves clumsily	• Bothered by light or noise
• Answers questions slowly	• Feeling sluggish, hazy, foggy, or groggy
• Loses consciousness (even briefly)	• Confusion, concentration, or memory problems

• Shows mood, behavior, or personality changes	• Just not "feeling right," or "feeling down"

(Source: Center for Disease Control- https://www.cdc.gov/headsup/basics/concussion_whatis.html)

What are some other danger signs to look out for?
In addition to symptoms, there are also various serious danger signs of a concussion. In rare cases, a dangerous collection of blood (hematoma) may form on the brain after a bump, blow, or jolt to the head or body that may squeeze the brain against the skull.[1] Call 9-1-1 immediately, or take the individual to the emergency department if they have one or more of the following danger signs after a bump, blow, or jolt to the head or body:

- One pupil larger than the other;
- Drowsiness or inability to wake up;
- A headache that gets worse and does not go away;
- Slurred speech, weakness, numbness, or decreased coordination;
- Repeated vomiting or nausea, convulsions or seizures (shaking or twitching);
- Unusual behavior, increased confusion, restlessness, or agitation;
- Loss of consciousness (passed out/knocked out)—even a brief loss of consciousness should be taken seriously.

Are there any long-term effects resulting from concussions?
Concussions are traumatic brain injuries. As such, concussions impact various functions of the brain. These impacts are typically only temporary, and will resolve with time and proper recovery. However, individuals who have a history of concussions, or who have had repeat-concussions, have been shown to retain many of the concussion symptoms for an extended period of time.[2] When compared to athletes experiencing their first concussion, athletes who have a concussion history show sharper declines in midcingulate cerebral blood flow 8 to 14 days after a subsequent concussion and greater declines in posterior cingulate cerebral blood flow 1 year after return-to-play.[2] Essentially, the more concussions an individual has, the longer the symptoms of subsequent concussions remain…potentially even resulting in some subacute and chronic neurological effects.[2]

PRE-SEASON EDUCATION

All Black Hawk College first-year and returning student-athletes are provided a hard-copy and/or online web-links to the Black Hawk College Concussion Management Plan. All student-athletes are required to read this Concussion Management Plan and understand the Concussion Fact Sheet for student-athletes (Appendix A).

Participating student-athletes for all sports will be required to attend an information session covering the information contained in the Concussion Management Plan and in the Student-Athlete Fact Sheet. These information sessions will be administered annually by Risk Management for every student-athlete, regardless of sport.

In addition, all student-athletes (and their parents, if the student-athlete is under 18-years of age) will be required to sign the Risk of Concussion or Other Head Injury Acknowledgement Form (Appendix B).

Annually all Black Hawk College coaches and athletic staff shall complete the Concussion Management Program training and review the Concussion Information Sheet for Coaches (Appendix C). As part of their training they will:

1. Acknowledge they understand the material
2. Encourage student-athletes to report their symptoms of concussion
3. Refer student-athletes for medical care if a concussion is suspected

PRE-PARTICIPATION

Prior to participation in intercollegiate competition, all first-year student-athletes will complete a baseline evaluation. The evaluation will include an iPad-based neurologic performance assessment which includes neurocognitive, neuromotor, balance, vestibular ocular, and physical symptom assessments. This assessment is used to establish an individual's "normal" neurocognitive baseline so health professionals have a reference point they can use to measure an athlete's function post-injury. Student-athletes may complete the baseline evaluation through Black Hawk College's athletic training provider at no additional cost to the student-athlete.

Student-athletes will be allowed to practice without the pre-participation baseline evaluation, however it is expected that the student-athlete baseline evaluation will be completed within the first week of practice. Under no circumstances will student-athletes be allowed to compete without the baseline evaluation.

Returning student-athletes who had a subsequent concussion (whether incurred through their sport or otherwise) will need to again be baseline tested prior to the start of their sport.

RECOGNITION AND DIAGNOSIS OF CONCUSSION

Student-athletes who exhibit signs, symptoms, or behaviors consistent with a concussion shall be removed from practice/competition immediately and evaluated by either the team athletic trainer or another qualified medical provider trained in concussion injuries. Any student-athlete with a suspicion of concussion shall be excluded from all athletic activity for the remainder of the day. If the student-athlete is competing at another location, then the host-site medical personnel should be contacted for evaluation.

RETURN-TO-LEARN[3]

The return-to-learn, or "return to academics," guidelines assume that both physical and cognitive activities require brain energy utilization, and that after a sport-related concussion, brain energy may not be available for physical and cognitive exertion because of a brain energy crisis, which is the conundrum of the brain demanding more energy than is readily available due to diminished cerebral blood flow.[4] Return-to-learn should be managed in a stepwise program that fits the needs of the individual, within the context of a multi-disciplinary team (which may consist of athletic trainers, physicians, coaches, professors, etcetera).

It is important to note that it is difficult to provide prescriptive recommendations for return-to-learn. The student-athlete may appear physically normal but may be unable to perform as expected due to the symptoms of the concussion. The overarching consensus for return-to-learn recommendations is outlined below.

Return-to-learn Stepwise Progression

The first step of return-to-learn is relative physical and cognitive rest. Relative cognitive rest involves minimizing potential cognitive stressors, which includes things like school work, video games, reading,

texting, and watching T.V. Cognitive rest has a beneficial effect on concussion recovery, and as such, consideration should be given to avoiding the classroom for at least the same day as the sport-related concussion. This period of time needed to avoid class or homework should be individualized, and the gradual return to academics should be based on the absence of concussion symptoms following cognitive exposure. The consensus to date includes:

1. If the student-athlete cannot tolerate light cognitive activity, they should remain at home (away from the classroom).
2. Once the student-athlete can tolerate cognitive activity without the return of symptoms, they should return to the classroom, often in graduated increments.
3. The student-athlete is required to receive a signed release from the treating physician stating that they can return to the classroom. The release should be submitted to Black Hawk College's Risk Management Department.

At any point, if the student-athlete becomes symptomatic (i.e., more symptomatic than baseline), the student-athlete's treating physician should be notified and the student-athlete's cognitive activity reassessed.

The majority of student-athletes who are concussed will not need a detailed return-to-learn program because full recovery typically occurs within two-weeks. For the student-athlete whose academic schedule requires some minor modification in the first one or two weeks following a sport-related concussion, adjustments can often be made without requiring meaningful curriculum or testing alterations.

For those student-athletes whose symptoms persist for longer than two weeks, there are differing ways to assess academic adjustment and/or accommodations. The student-athlete may need a change in their class schedule; special arrangements may be required for extended absences for tests and other related class requirements. The student-athlete may need to work out an individualized plan through their instructors, which would assist the concussed student-athlete to progress from cognitive rest to gradual return to studying and the classroom. If the student-athlete reports worsening symptoms with academic activity, the physician will need to reevaluate.

If the student-athlete's condition is severe enough to qualify as a disability under the Americans with Disabilities Act (ADA), and subsequently requires extended periods of time away from the classroom, the student-athlete should seek the assistance of Black Hawk College's Disability Services Department (http://www.bhc.edu/student-resources/disability/).

RETURN-TO-PLAY[3,5]

The return-to-play process is based on a standardized protocol of a stepwise increase in physical activity with the purpose of safely and effectively returning a recovering concussed student-athlete to their sport. The initial management of sport-related concussions is relative physical and cognitive rest. Athletes presumed to have concussions must be removed from play and must not return to sport-related activity for a minimum of one calendar day, and they are to be evaluated by a health care provider with knowledge and expertise in sport-related concussions. Once a concussed student-athlete has returned to baseline level of symptoms, cognitive function, and balance, then the return-to-play progression can be initiated.

The return-to-play protocol is as follows. **NOTE:** ***Each step takes a minimum of 24-hours before progression to the next step.***

1. Complete physical and cognitive rest. No exertion until symptoms stop.
2. Return to full cognitive demands (school, work, reading, etcetera).
3. Low impact activities; light aerobic exercise. NO weight training or resistance training.
4. Impact activities; basic exercises including running.
5. Weight-training can resume; full return to physical demands.
6. Following medical clearance, return to full-level of activities (return-to-play). Medical clearance will be determined by the treating physician*

A signed release from the treating physician must be turned into the BHC Risk Management Department prior to the student-athlete being allowed to participate in their sport.

At any point, if the student-athlete becomes symptomatic (more symptomatic than their baseline), or scores on clinical/cognitive measures decline, the medical provider should be notified and the student-athlete should be returned to the previous level of activity. Final determination of return-to-play ultimately resides with the treating physician.

For additional information, please utilize the Genesis Health System Concussion Management Plan overview (Appendix D).

REDUCING EXPOSURE TO HEAD TRAUMA

While "reducing" may be difficult to quantify, BHC will emphasize ways to minimize head trauma exposure through education of both student-athletes and coaches. Student-athletes will be taught and practice the 'safety first' approach. Some examples of minimizing head-trauma exposure include:

- Taking a "safety first" approach to sport.
    - Limit over-aggression and illegal play (fouls)
    - Adherence to rules and regulations encourages respect for opponents and emphasizes safety precautions for athletes.[6]
- Taking the head out of contact.
- Coach and student-athlete education regarding safe play and proper technique.
- Wearing protective equipment that fits properly, is well maintained, worn correctly, and is appropriate for each activity
    - Protective equipment does not *eliminate* the occurrence of concussions— it *reduces* frequency and severity of concussions.
    - Avoid *Risk Compensation*, as it negates any benefits of the protective equipment.[6]
    - **Risk Compensation-** theory that every individual has an acceptable level of risk. If a protective device lowers that risk, the individual's actions will change in such a way as to re-equilibrate the risk to the maximum acceptable level.[6]

APPENDIX A – CONCUSSION FACT SHEET FOR STUDENT-ATHLETES

CONCUSSION INFORMATION SHEET – For Student Athletes

WHAT IS A CONCUSSION?

A concussion is a brain injury that:

- Is caused by a blow to the head or body from:
  - Contact with another player;
  - Hitting a hard surface such as the ground, ice or floor;
  - Or being hit by a piece of equipment, such as a bat, a basketball, or soccer ball.
- Can change the way your brain normally works;
- Can range from mild to severe;
- Presents itself differently for each athlete;
- Can occur during practice or competition in ANY sport;
- Can happen even if you do not lose consciousness.

HOW CAN I PREVENT A CONCUSSION?

Basic steps you can take to protect yourself from concussion:

- Do not initiate contact with your head or helmet. You can still get a concussion even if you are wearing a helmet;
- Avoid striking an opponent in the head, flying elbows, stepping on a head, and excess aggression;
- Follow Black Hawk College's rules for safety and the rules of the sport;
- Practice good sportsmanship at all times;
- Practice and perfect the skills of the sport.

WHAT ARE THE SYMPTOMS OF A CONCUSSION?

You can't see a concussion, but you might notice some of the symptoms right away. Symptoms can show up hours or days after the injury. Concussion symptoms include:

- Amnesia
- Confusion
- Headache
- Loss of consciousness
- Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light or noise
- Nausea (feeling that you might vomit)
- Feeling sluggish, foggy or groggy
- Feeling unusually irritable
- Concentration or memory problems (forgetting game plays, facts, meeting times)
- Slowed reaction time

Exercise or activities that involve a lot of concentration, such as studying, working on the computer, or playing video games may cause concussion symptoms (such as headache or tiredness) to reappear or get worse.

WHAT SHOULD I DO IF I THINK I HAVE A CONCUSSION?

- **Don't hide it**. Tell your athletic trainer and/or coach. Never ignore a blow to the head. Also, tell your athletic trainer and/or coach if one of your teammates might have a concussion. Sports have injury timeouts and player substitutions so that you can get checked out.
- **Report it**. Do not return to participation in a game, practice or other activity with symptoms. The sooner you get checked out, the sooner you may be able to return to play.
- **Get checked out**. Your athletic trainer or health care professional can tell you if you have had a concussion and when you are cleared to return to play. A concussion can affect your ability to perform everyday activities, your reaction time, balance, sleep and classroom performance.
- **Take time to recover**. If you have had a concussion, your brain needs time to heal. While your brain is still healing, you are much more likely to have a repeat concussion. In rare cases, repeat concussions can cause permanent brain damage, and even death. Severe brain injury can change your whole life.

REMEMBER:

It's better to miss one game or one competition than the whole season.
When in doubt, get checked out!

For more information and resources, visit: https://www.cdc.gov/headsup/basics/index.html

APPENDIX B – STUDENT ATHLETE ACKNOWLEDGEMENT FORM

Risk of Concussion or Other Head Injury Acknowledgement

I, _____, acknowledge that I have to be an active participant in my own
(Print First & Last Name)
healthcare. As such, I have the direct responsibility for reporting all of my injuries and illnesses to the coaches and/or athletic trainers of Black Hawk College. I recognize that the appropriateness of diagnosis, treatment, and return-to-play and other decisions are dependent upon me providing an accurate medical history, including fully disclosing all symptoms and complaints regarding both previous and current injuries, disabilities, and medical concerns. I hereby affirm that I have fully disclosed in writing all prior medical conditions and injuries. I further understand that I am responsible for disclosing all future medical conditions and injuries to Black Hawk College.

I am aware that participation in my sport carries a risk of injury to me, including death. For example, head injuries and concussions may occur. I freely assume all risks related to my participation.

By initialing and signing below, I acknowledge that Black Hawk College has provided me with specific educational material on head injuries and concussions. I understand the importance of immediately reporting symptoms of a head injury or concussion to the Black Hawk College coaches and/or athletic trainers.

I, _____, understand that:
(Print First & Last Name)

(INITIAL EACH LINE)

____ A concussion is a brain injury. I am responsible for immediately self-reporting signs and symptoms of a concussion to Black Hawk College coaches and/or athletic trainers.
____ Participating in intercollegiate athletics may result in a concussion or other head injury.
____ I have received information concerning the signs and symptoms of a concussion, and I understand those signs and symptoms.
____ Helmets, face shields, mouth guards, and other protective equipment do not eliminate the risk of concussions.
____ I understand that purposeful head contact in any sport is prohibited.
____ A concussion is not visible but is recognized by symptoms such as headache, dizziness, loss of consciousness, amnesia, vision problems, nausea, sensitivity to light, feeling sluggish, foggy or groggy, irritability, slow reaction time and concentration or memory problems.
____ Additional symptoms of a concussion may arise hours or days after the initial injury.
____ Returning to practice/games prior to being symptom free may result in a return of symptoms, a repeated concussion, or a more serious injury including death.
____ Repeated concussions may lead to permanent brain damage, psychological disorders or even death.
____ If I suspect a teammate has a concussion or other head injury, I am responsible for reporting the Injury to the Black Hawk College coaches and/or athletic trainer.
____ Clearance for return to play after a head injury or concussion will be determined by medical personal trained in the treatment of head injuries or concussions.
____ Black Hawk College has the authority to permanently remove me from participation in athletic activities if it is determined to be appropriate to protect my safety and well-being.

Student-Athlete's Name (Print) _____ Sport: _____ DOB: _____

Student-Athlete's Signature _____ Date _____

Parent/Guardian Signature (If under 18) _____ Relationship_____
Date_____

APPENDIX C – CONCUSSION FACT SHEET FOR COACHES

CONCUSSION INFORMATION SHEET – For Coaches

One of the main jobs of a college coach is keeping athletes safe. This sheet has information to help you protect athletes from a concussion or other serious brain injury, learn how to spot a concussion, and know what to do if a concussion occurs.

WHAT IS A CONCUSSION?

A concussion is a type of traumatic brain injury—TBI— caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move quickly back and forth. This fast movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging the brain cells.

HOW CAN I HELP KEEP ATHLETES SAFE?

Sports are a great way for students to stay healthy and can help them do well in school. As a college coach, your actions create the culture for safety and can help lower an athlete's chance of getting a concussion or other serious injury. Aggressive and/or unsportsmanlike behavior among athletes can increase their chances of getting a concussion or other serious injury. Here are some ways you can help keep your athletes safe:

- **Talk with athletes about the importance of reporting a concussion:**
  - Talk with athletes about any concerns they might have about reporting their concussion symptoms. Make sure to tell them that safety comes first and you expect them to tell you if they think they have a concussion.
- **Create a culture of safety at games and practices:**
  - Teach athletes ways to lower the chances of getting a concussion.
  - Enforce the rules of the sport for fair play, safety, and sportsmanship.
  - Ensure athletes avoid unsafe actions such as:
    - Striking another athlete in the head;
    - Using their head or helmet to contact another athlete;
    - Making illegal contacts or tackling, or colliding with an unprotected opponent; and/or
    - Trying to injure or put another athlete at risk for injury.
    - Tell athletes that you expect good sportsmanship at all times, both on and off the playing field.
- **Keep up-to-date on concussion information:**
  - Review your state, league, and/or organization's concussion guidelines and protocols
  - Take a training course on concussions. (CDC offers concussion training at no cost at https://www.cdc.gov/headsup/resources/training.html)
  - Download the CDC's HEADS UP app or a list of concussion signs and symptoms that you can keep on hand.
- **Check out the equipment and sports facilities:**
  - Make sure all athletes wear a helmet that fits well and is in good condition when appropriate for the sport or activity. There is no "concussion-proof" helmet, so it is important to enforce safety rules that protect athletes from hits to the head and when a helmet falls off during a play.
  - Work with the game or event administrator to remove tripping hazards and ensure that equipment, such as goalposts, have padding that is in good condition.

- **Keep emergency contact information handy:**
    - Bring emergency contact information for health care providers to each game and practice in case an athlete needs to be taken to an emergency department right away for a concussion or other serious injury.
    - If first responders are called to care for an injured athlete, provide them with details about how the injury happened and how the athlete was acting after the injury.

HOW CAN I SPOT A POSSIBLE CONCUSSION?
Athletes who show or report one or more of the signs and symptoms listed below—or simply say they just "don't feel right" after a bump, blow, or jolt to the head or body—may have a concussion or other serious brain injury.

SIGNS OBSERVED BY COACHES:

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

SYMPTOMS REPORTED BY ATHLETES:

- Headache or "pressure" in head.
- Nausea or vomiting.
- Balance problems or dizziness, or double or blurry vision.
- Bothered by light or noise.
- Feeling sluggish, hazy, foggy, or groggy.
- Confusion, or concentration or memory problems.
- Just not "feeling right", or "feeling down"

NOTE: Concussion signs and symptoms often show up soon after the injury, but it can be hard to tell how serious the concussion is at first. Some symptoms may not be noticed or may not show up for hours or days.

What are some danger signs to look out for?
In addition to symptoms, there are also various serious danger signs of a concussion. In rare cases, a dangerous collection of blood (hematoma) may form on the brain after a bump, blow, or jolt to the head or body that may squeeze the brain against the skull.[1] Call 9-1-1 immediately, or take the individual to the emergency department if they have one or more of the following danger signs after a bump, blow, or jolt to the head or body:

- One pupil larger than the other;
- Drowsiness or inability to wake up;
- A headache that gets worse and does not go away;
- Slurred speech, weakness, numbness, or decreased coordination;
- Repeated vomiting or nausea, convulsions or seizures (shaking or twitching);
- Unusual behavior, increased confusion, restlessness, or agitation;

- Loss of consciousness (passed out/knocked out)—even a brief loss of consciousness should be taken seriously

CONCUSSIONS AFFECT EACH ATHLETE DIFFERENTLY.
While most athletes with a concussion feel better within a couple of weeks, some will have symptoms for months or longer. Talk with the athlete if you notice their concussion symptoms come back after they return to play.

WHAT SHOULD I DO IF I THINK AN ATHLETE HAS A POSSIBLE CONCUSSION?
As a coach, if you think an athlete may have a concussion, you should:

- **REMOVE THE ATHLETE FROM PLAY.**
  - When in doubt, sit them out!
- **KEEP AN ATHLETE WITH A POSSIBLE CONCUSSION OUT OF PLAY ON THE SAME DAY OF THE INJURY AND UNTIL CLEARED BY A HEALTH CARE PROVIDER.**
  - **Do NOT try to judge the severity of the injury yourself**. Only a health care provider should assess an athlete for a possible concussion. After you remove an athlete with a possible concussion from practice or play, the decision about return to practice or play is a medical decision that should be made by a health care provider. As a coach, recording the following information can help a health care provider in assessing the athlete after the injury:
    - Cause of the injury and force of the hit or blow to the head or body.
    - Any loss of consciousness (passed out/knocked out) and if so, for how long.
    - Any memory loss right after the injury.
    - Any seizures right after the injury.
    - Number of previous concussions (if any).

- **ASK FOR WRITTEN INSTRUCTIONS FROM THE ATHLETE'S HEALTH CARE PROVIDER ON RETURN TO PLAY.**
  - These instructions should include information about when they can return to play and what steps you should take to help them safely return to play. A copy of these instructions are to be sent to Risk Management.

- **NOTIFY RISK MANAGEMENT IMMEDIATELY VIA EMAIL OR PHONE.**
  - Complete accident forms and submit to Risk Management.

WHY SHOULD I REMOVE AN ATHLETE WITH A POSSIBLE CONCUSSION FROM PLAY?
The brain needs time to heal after a concussion. An athlete who continues to play with concussion has a greater chance of getting another concussion. A repeat concussion that occurs while the brain is still healing from the first injury can be very serious and can affect an athlete for a lifetime. It can even be fatal.

SOME ATHLETES MAY NOT REPORT A CONCUSSION BECAUSE THEY DON'T THINK A CONCUSSION IS SERIOUS.
They may also worry about:

- Losing their position on the team or during the game.
- Jeopardizing their future sports career.

- Looking weak.
- Letting their teammates or the team down.
- What their coach or teammates might think of them.

WHAT STEPS CAN I TAKE TO HELP AN ATHLETE RETURN TO PLAY?
An athlete's return to school and sports should be a gradual process that is approved and carefully managed and monitored by a health care provider. When available, be sure to also work closely with your team's certified athletic trainer.

Below are five gradual steps that you, along with a health care provider, should follow to help safely return an athlete to play. Remember, this is a gradual process. These steps should not be completed in one day, but instead over days, weeks, or months.

BASELINE:
Athlete is back to their regular school activities, is no longer experiencing symptoms from the injury when doing normal activities, and has a green light from their health care provider to begin the return to play process.
An athlete should only move to the next step if they do not have any new symptoms at the current step, and only after a minimum of 24 hours has passed at the current step.

- **STEP 1: Light aerobic activity**
  - Begin with light aerobic exercise only to increase an athlete's heart rate. This means about 5 to 10 minutes on an exercise bike, walking, or light jogging. No weightlifting at this point.
- **STEP 2: Moderate activity**
  - Continue with activities to increase an athlete's heart rate with body or head movement. This includes moderate jogging, brief running, moderate-intensity stationary biking, moderate-intensity weightlifting (less time and/or less weight than a typical routine).
- **STEP 3: Heavy, non-contact activity**
  - Add heavy non-contact physical activity, such as sprinting/running, high-intensity stationary biking, regular weightlifting routine, non-contact sport-specific drills (in 3 planes of movement).
- **STEP 4: Practice & full contact**
  - An athlete may return to practice and full contact (if appropriate for the sport) in controlled practice.
- **STEP 5: Competition**
  - An athlete may return to competition.

REMEMBER:
It is important for you to watch for concussion symptoms after each day's return to play progression activity. If an athlete's concussion symptoms come back, or they get new symptoms when becoming more active at any step, this is a sign that the athlete is pushing themselves too hard. The athlete should stope these activities, and the athlete's health care provider should be contacted. After the okay from the athlete's health care provider, the athlete can begin at the previous step.

Content Source: CDC's HEADS UP campaign. Created through a grant to the CDC Foundation from the National Operating Committee on Standards for Athletic Equipment (NOCSAE).

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For more information and resources, visit: https://www.cdc.gov/headsup/basics/index.html

APPENDIX D – Genesis Health System Concussion Management Plan Overview

Following a concussion, it is **essential** to give the brain rest both physically and cognitively to allow appropriate healing. Returning to daily activities prior to appropriate rest can cause a continuation of symptoms, longer recovery time and long-term symptoms.

Return to Activity Protocol

Step 1: Complete physical and cognitive rest. No exertional activities until symptoms stop. This may include staying home from work or school and limiting cognitive demands, going part days if required. Cognitive rest includes:

- Limited use of cell phone, especially texting
- No video games
- Minimal TV
- Limited to no use of computer
- Brief periods of reading followed by rest
- Avoiding environments with excessive stimulation and noise

Step 2: Return to full cognitive demands (work, school, bills, etc).

Step 3: Low impact, light aerobic exercise including brisk walking, light jogging, swimming, riding exercise bike, etc. at a slightly elevated heart rate. No weight or resistance training. This should not begin until fully asymptomatic.

Step 4: Basic exercise, including running and other high impact activities.

Step 5: Weight-training can begin, full return to physical demands.

Step 6: Following medical clearance (if required from doctor, physical therapy etc.), return to full prior level of activities (extracurricular activities, for athlete's full contact practice or training).

Step 7: Athletes return to normal competition.

***Each step takes a minimum of 24 hours before progression to the next step**

Physical Symptoms	**Cognitive Symptoms**	**Emotional Symptoms**
Headache	Difficulty concentrating	Irritability
Fatigue	Feeling mentally foggy	Feelings of depression
Dizziness or imbalance	Feeling sluggish or slowed	Angers easily
Sensitivity to noise and/or	down	Restlessness Easily frustrated
light	Difficulty remembering,	Sadness
Nausea or vomiting	forgetfulness	Impatience

RESOURCES CITED

1. Center for Disease Control: HEADS UP – Brain Injury Basics: https://www.cdc.gov/headsup/basics/concussion_whatis.html
2. Acute and Chronic Effects of Multiple Concussions on Midline Brain Structures. Nathan W. Churchill, Michael G. Hutchison, Simon J. Graham, Tom A. Schweizer. Neurology Sep 2021. DOI: https://doi.org/10.1212/WNL.0000000000012580
3. 2014-15 NCAA Sports Medicine Handbook: https://www.ncaapublications.com/productdownloads/MD15.pdf
4. Journal of Athletic Training. The Neurometabolic Cascade of Concussion: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC155411/
5. Genesis Health Group, Sports Medicine. Genesis Concussion Management: https://www.genesishealth.com/a-z/outpatient-physical-therapy/our-specialties/concussion/
6. National Library of Medicine. Sports-Related Concussions in Youth: Improving the Science, Changing the Culture: https://www.ncbi.nlm.nih.gov/books/NBK185338/

ADDITIONAL RESOURCES

1. Clinical Outcome Following Concussion Among College Athletes with a History of Prior Concussion: A Systematic Review
    a. Clinical Outcome Following Concussion Among College Athletes with a History of Prior Concussion: A Systematic Review | Sports Medicine - Open | Full Text (springeropen.com)
2. Depression and anxiety have a greater association with postconcussion symptoms than a remote history of sport-related concussion in college students.
    a. Depression and anxiety have a greater association with postconcussion sympt...: EBSCOhost
3. Greater Acute Concussion Symptoms Are Associated With Longer Recovery Times in NCAA Division III Collegiate Athletes
    a. Frontiers | Greater Acute Concussion Symptoms Are Associated With Longer Recovery Times in NCAA Division III Collegiate Athletes (frontiersin.org)
4. Pluralistic Ignorance in Concussion Reporting Among Student-Athletes
    a. Pluralistic Ignorance in Concussion Reporting Among Student- Athletes - Paul D. Berkner, Haley T. Driscoll, Gregory F. Marchetti, Joseph W. Penna, Humza Ali, Danielle E. Jewell, Lily Herrmann, 2022 (sagepub.com)
5. Previous concussions increase risk of mental health disability in college athletes.
    a. Previous concussions increase risk of mental health disability in college athletes - PMC (nih.gov)
6. The Influence of Individual Factors and Specific Concussion Symptoms on College Athletes' Intentions to Report a Sport-Related Concussion
    a. "The Influence of Individual Factors and Specific Concussion Symptoms o" by Karle M. Linden (lasalle.edu)