



Geneseo Central School District

**Concussion
Management
Protocol**

Revised 2014

Resources:

**The New York State Public High School Athletic Association
(<http://www.nysphsaa.org/safety/>)**

**The New York State Athletic Administrator's Association
Concussion Management Protocols (Cynthia DiLaura Devore, M.D., M.A., M.S.,
F.A.A.P)**

**Sports Medicine Concepts (SMC), Center for Sports Medicine Research and
Education (Michael Cendoma, M.S., ATC, Director/
www.SportsMedicineConcepts.com)**

Unity Health System Sports Concussion Clinic (Dr. Dombovy)

Center for Disease Control (CDC)

This plan includes the following:

- A. Concussion Information
- B. Athletic Director – responsibilities
- C. Coach – responsibilities
- D. Student Athlete – responsibilities
- E. School Nurse – responsibilities
- F. School Physician – responsibilities
- G. School Counselor – responsibilities

Appendices:

- A. Sideline Evaluation
- B. Return to Play Protocol
- C. Concussion Policy Acknowledgment Form
- D. Physician Evaluation (Form DR-1V)

A. Concussion Information:

What is a concussion?

- Mild traumatic brain injury. (CDC)
- A disruption in normal brain function due to a blow or jolt to the head. (CDC)
- A trauma induced alteration in mental status that may or may not involve loss of consciousness. (American Academy of Neurology)
- Immediate and temporary alteration of mental functioning due to trauma. The trauma may not necessarily be to the head. (www.sportsmedicineconcepts.com)

What else should you know?

- There is no such thing as a mild head injury. All concussions are serious.
- A concussion can happen from a blow to the body.
- Many concussions go unreported and/or undetected.
- Loss of consciousness is not an indicator of whether or not a concussion is present. An athlete can still have a concussion if there has been no loss of consciousness.
- Recognition and proper management of concussions when they *first occur* can help prevent further injury or even death.
- Repeated jolts or blows to the brain but not to the severity of causing a concussion are under investigation. The phenomenon of “sub-concussive blows” is being researched.

Metabolic Cascade Following Traumatic Brain Injury (Journal of Athletic Training - <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC155411/>)

“Following concussion, cerebral pathophysiology can be adversely affected for days in animals and weeks in humans. Significant changes in cerebral glucose metabolism can exist even in head-injured patients with *normal* Glasgow Coma Scores, underscoring the need for in-depth clinical assessment in an effort to uncover neurocognitive correlates of altered cerebral physiology. Improved guidelines for clinical management of concussion may be formulated as the functional significance and duration of these postinjury neurometabolic derangements are better delineated.”

Research shows that the chemical changes and metabolic activity that occurs in the brain following a concussion takes at least 10 days to return to normal chemical levels. Refer to the above referenced article for detailed information.

What is Second Impact Syndrome?

“A repeat concussion that occurs before the brain recovers from the first – usually within a short period of time (hours, days or weeks) – reportedly can result in brain swelling, permanent brain damage, and even death. This condition is called second impact syndrome.” (CDC – *Head’s Up: Concussion in High School Sports, Guide for Coaches*)

Neurocognitive Testing (<http://www.nysphsaa.org/safety/>)

As stated in the Zurich Consensus Statement on Concussion in Sport (McCroory et al, 2009), the application of neuropsychological testing in concussion has been shown to be of clinical value and contributes significant information in concussion evaluation. At the same time, NYSPHSAA recognizes that neuropsychological assessment should not be the sole basis of concussion management decisions, nor should it be conducted or used in isolation from appropriate professional consultation and supervision, such as that which can be provided by a neuropsychologist trained and experienced in the neurocognitive assessment of concussion. Moreover, it is also understood that the assessment and management of concussion continues to be an evolving practice and science, and there are currently various approaches to the role and application of neuropsychological testing in concussion. As such, the NYSPHSAA has reviewed a variety of neurocognitive testing tools, some of which are used in the practice of baseline cognitive testing in order to provide potentially useful information by which to compare with post-injury test data. Ultimately, the specific tool or approach which a school district chooses to use should be based, in large part, on the professional resources available to that district by which to ensure proper administration, interpretation, and application of that instrument. The NYSPHSAA, then, suggests that school districts consider the use of neurocognitive testing, administered or closely supervised by a medical professional with concussion management expertise, as they develop their District Concussion Management Policies, Procedures, and Protocols.

B. Athletic Director – Responsibilities

1. Seasonal meetings will be held with coaches and parents providing information (basic awareness information) concerning concussion and the GCS Concussion Management Plan. In addition, general information can be obtained from Center for Disease Control (CDC) and The New York State Public High School Athletic Association (<http://www.nysphsaa.org/safety/>)
2. Athletic Director will monitor neurocognitive testing program. The neurocognitive testing will be used as a helper source for the medical professional.
3. Athletic Director will give final notification for full participation after *all* Return to Play (RTP) documentation is completed. This includes, but is not limited to, Student-Athlete's physician's signed clearance *and* completion of Return to Play Protocol (RTP) from the coach.
4. Athletic Director will involve the school employed Athletic Trainer, if one is on staff. The Athletic Director will inform the Athletic Trainer about the Concussion Management Protocol. The Athletic Trainer will be utilized as much as possible for the planning of standard procedures and implementation of initial first aid and recovery process of all concussed Student-Athletes.
5. The Athletic Director will oversee the organization and distribution of materials to all personnel involved with the Concussion Management Program (Student-Athletes, coaches, parents, nurse, counselors, athletic trainer, PE teachers, general GCS staff where applicable, Impact Test Administrators, and the like). This includes giving school nurse a copy of Sideline Evaluation as the Athletic Director receives them.
6. The Athletic Director will form a concussion management team that will meet at least twice a year. This team should consist of the following members: Athletic Director, Athletic Trainer, School Nurse, 1 PE teacher, 1 Coach, 1 School Counselor.

C. Coach – Responsibilities

1. The coach will participate in basic awareness programs set forth by the Athletic Director. This may include watching videos on concussion signs and symptoms, first aid response to an injury, implementing sideline evaluations, return to play protocol and others.
2. The coach will read “Student-Athlete responsibilities” to every player prior to 1st practice. Coaches also will review the signs and symptoms of a concussion.
3. The coach will remove an Student-Athlete from *all activity* if a concussion is suspected. The coach will administer proper first aid to the Student-Athlete and involve necessary medical professionals as needed.
4. The coach will not discuss the Student-Athletes condition with anyone other than those allowed by FERPA law.
5. The coach will conduct a sideline evaluation. “Sideline Evaluation Form” in triplicate will be used. One copy to Student-Athlete/Parent to give to medical professional, one copy for coach, one copy to AD. This form needs to be done to the best of your ability immediately after the injury occurs. It can be done by an assistant coach, athletic trainer or a qualified GCS staff member under the coach's direction. If it is not possible to question the Student-Athlete, record as much information as you can, as soon as possible.
6. The coach will use the standard GCS accident report form for all injuries and submit to school nurse within 24 hours without exception.
7. The coach will give Student-Athlete/parents form DR-1V (Doctor's - Visit Form). Inform parents that this form must be returned to the school nurse. Return To Play Protocol (RTP) will start when the school nurse notifies coach. Student-Athlete must be cleared by physician that he/she is symptom free and able to return to activity. If clearance is not given after 1st visit, the school nurse will send an additional form (DR - 1V). Once this form is returned and Student-Athlete is cleared to play the Return To Play Protocol may begin. **All coaches must refer to Return to Play Protocol for procedures.**
8. The coach will monitor and conduct the Return To Play Protocol. The coach may designate another school approved staff member (Athletic Trainer, PE teacher, coach, etc.) to conduct the protocol, but then must track day to day happenings. Step 5, full exertion is not allowed until the school nurse gives you clearance. The school nurse will send Step 5 paperwork with the athlete.

D. Student-Athlete – Responsibilities

1. The Student-Athlete will report any injury to his/her coach. This includes but is not limited to anything that may have caused a brain injury (fall, collision, quick stop, blow to the head, hit by an object, etc.).
2. The Student-Athlete will report any incident/injury that he/she suspects a teammate may have to his/her coach. This includes but is not limited to anything that may have caused a brain injury (fall, collision, quick stop, blow to the head, hit by an object, etc.).
3. The Student-Athlete will be given paperwork to take to his/her doctor. This paperwork must be completed filled out by his/her doctor and immediately returned to the school nurse.
4. The Student-Athlete will report all signs and symptoms to the best of his/her ability. This is done two ways – 1) report signs and symptoms to school nurse or coach; 2) answer all questions as accurately as you are able.
5. The Student-Athlete will receive Return To Play paperwork from the school nurse. The Student-Athlete reports to coach with paperwork. The coach will then supervise the RTP Step-Wise protocol. The above mentioned occurs once Student-Athlete is cleared by his/her doctor. The Student-Athlete is responsible for keeping the RTP folder throughout the Step-Wise protocol. Daily signatures are required on the Step-Wise forms (ex: coach and nurse). Once Step 4 is completed, Student-Athlete receives additional paperwork to proceed to Step 5 – full exertion.
6. The Student-Athlete will complete follow-up tests (Neurocognitive Testing – presently ImPACT Computer Program) by appointment with the school nurse or other designated staff member.

E. School Nurse – Responsibilities

1. The school nurse will document the injury/incident once forms are submitted by the coach – accident report and sideline evaluation form.
2. The school nurse will notify the Athletic Director, PE teacher, coach and guidance counselor and report medical restrictions and details concerning the injury. The student's academic day may need to be modified.
3. The school nurse will give Student-Athlete the Return To Play Protocol (RTP) folder medical clearance is received. Students will receive paperwork for Steps 1 – 4. Once this is completed, Step 5 paperwork will be given to student to complete the RTP protocol.
4. The school nurse, athletic director or designated approved staff member will complete the second signs and symptoms chart that is required on the Step-Wise RTP form.
5. The school nurse will retest students with neurocognitive testing as long as testing doesn't aggravate symptoms. This information will be faxed to the Student-Athlete's physician. The number of post tests conducted will be left up to the discretion of the school nurse and physician.
6. The school nurse will submit all paperwork to the Athletic Director for final notification for full participation (see RTP Protocol).

F. School Physician – Responsibilities

1. The school physician will review the GCS Concussion Management Policy and Procedures.
2. The school physician will fill out form **DR-1V Physician Evaluation** completely and photo copy the information for his/her records if athlete is seen by school physician. All other physicians will be asked to do the same. See form **DR-1V Physician Evaluation** – Appendix D.
3. The school physician will become familiar with the neurocognitive testing software used by the GCS District. The information will be provided. Presently, the product used is ImPACT – www.impacttest.com. The school nurse will provide test results (pre and post). Information can be provided on how to interpret data or found on the ImPACT website.
4. The school physician will become familiar with the following study - **Metabolic Cascade Following Traumatic Brain Injury (Journal of Athletic Training – <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC155411/>)**.
5. If the Student-Athlete is not a patient of the school physician, the school physician will make the final determination of a Student-Athlete's return to play *if requested* by GCS District. This may happen if a school official is in question about a Student-Athlete's return to play and the Student-Athlete has been medically cleared by his/her physician. All documentation will be provided to the school physician.

G. School Counselor - Responsibilities

1. The school counselor will notify student's teachers and make modifications for student in recovery phase. This recommendation should come from the student's physician.

Note: Depending on the severity and duration of concussion-related symptoms and associated academic difficulties, a 504 plan or IEP may need to be developed and implemented. Collaboration and communication with the medical providers treating the concussed student will foster development of an appropriate plan. Accommodations and activity restrictions will need to be modified according to the student's particular symptoms and the speed of recovery from injury. See - Concussion in the Classroom (<http://www.nysphsaa.org/safety/>)

2. The school counselor will track academic progress during the RTP protocol.

3. The school counselor will contact the Athletic Director of new entrants to participate in baseline neurocognitive testing.

Appendix A

Sideline Evaluation (SE)

1. **Sideline Evaluation (SE)** is a critical piece in protecting the Student-Athlete. When a coach believes, witnesses or receives a report of a possible head injury, the player must be taken out of play and immediately evaluated.

2. Follow proper first aid procedures. The “Sideline Evaluation” form must be completed by the coach or qualified staff member. If a coach has assistance, a more detailed evaluation may be done - “**SCAT2**” evaluation (British Journal of Sports Medicine, 2009;43;i89-i90). **SCAT2** can be done but will depend on the severity and circumstances around the injury. **SCAT2** has a specific procedure and should be followed.

SCAT2 form will be included in your folder. The coach makes a copy before handing it in to the school nurse. The original goes to the school nurse who will then send to appropriate medical professional. This form is not in triplicate, therefore the school needs to maintain a record of the results before forwarding to medical professionals.

3. The **SE** form is then distributed as follows: one copy to the Student-Athlete/parents to give to medical professional; one copy to the Athletic Director; one copy stays with the coach. The Athletic Director will make a copy for the school nurse. The Student-Athlete must see a medical professional.

Appendix B

Return to Play Protocol (RTP)

1. The Student-Athlete must return form - **Physician Evaluation** (DR-1V) to the school nurse after doctor's appointment. If the Student-Athlete is given medical clearance the school nurse will begin the process for RTP. If any information is missing on the form (DR-1V), the school nurse will contact the Student-Athlete's doctor for complete information. If the Student-Athlete is not cleared to begin RTP, the school nurse will monitor the circumstances according to the doctor's orders. The doctor will be asked to fill out additional **Physician Evaluation** forms until the Student-Athlete is cleared.
2. The Student-Athlete has the option to participate in RTP rehabilitation at an accredited Rehabilitation Facility approved by his/her doctor. GCS reserves the right to have the GCS school physician review a case before full clearance is given.
3. Once medical clearance is received the Student-Athlete will begin the Step-Wise Return to Play Protocol under the supervision of a trained GCS staff member. **The Student-Athlete must be symptom free and stay symptom free throughout the entire process.** If the Student-Athlete experiences any symptoms, the activity stops and report findings to the school nurse.
4. The school nurse will notify the coach when the Student-Athlete is cleared to begin the RTP process. The school nurse will give the Student-Athlete a folder with RTP paperwork. The Student-Athlete gives the folder to the coach for each Step-Wise visit.
5. The coach then follows the Step-Wise procedures as written. If variations/modifications are needed, this can only be done through the approval of the Athletic Director. Steps 1 – 4 will be done first. Step 5 will not be done until coach is notified by school nurse or athletic director. At which time, the necessary paperwork will be given to the Student-Athlete. This is to safe-guard the Student-Athlete.
6. The coach will monitor the RTP process. Each Step-Wise step must be done as follows:
 - a) One step per 24 hours – totally symptom free.
 - b) On RTP Step-Wise form, Post Concussion Symptoms Scale (PCSS), left side chart, will be asked immediately after Step-Wise workout. A second Post Concussion Symptoms Scale (PCSS), right side chart, must be completed the next day before exercising in the Step-Wise protocol. Ex: This can be done at the beginning of the school day by the school nurse. It can be done by trainer or coach before Step-Wise exercise begins.
 - c) A Student-Athlete may need to repeat a Step. Additional forms available from the school nurse.
 - d) Heart Rate monitors are available from the PE department if needed. Student-Athlete is asked to maintain specific heart rate for time noted. This will mean that the entire activity will take longer in order to gradually increase heart rate to appropriate level.
 - e) **Student-Athlete is responsible for turning in paperwork to the school nurse at the end of Step 4. Student-Athlete then receives paperwork for Step 5 and returns the paper to the school nurse as soon as it is completed.**

Appendix B (cont.)

Geneseo Central School Step-Wise Concussion Return-to-Participation (RTP) Protocol

If signs and symptoms appear, stop activity, wait until asymptomatic, return to last asymptomatic Step-Wise stage and begin progression anew.

Step 1:

10 - 15 minutes of aerobic activity at 30 - 40% of maximum heart rate using stationary bike, seated elliptical, swimming or walking on a treadmill. Exercise in a quiet area such as a rehabilitation or treatment room if possible. No impact or resistance activities. Limit head movement and positional change. Limit concentration activities. If Student-Athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Step 2:

20 - 25 minutes of aerobic activity at 40 - 60% of maximum heart rate using stationary bike, seated elliptical, swimming or walking on a treadmill. Exercise in area using various Nautilus style equipment, such as a weight room or fitness center if possible. Allow some positional changes and head movement. If Student-Athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Step 3:

25 - 30 minutes of aerobic activity at 60 - 80% of maximum heart rate using stationary bike, seated elliptical, swimming or walking on a treadmill. Exercise in any environment (indoor or outdoor). Initiation of agility drills appropriate at this stage, however, with no contact. Modify drills to ease the Student-Athlete back into sport specific activity. If Student-Athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Step 4:

Sport performance activities can be allowed. No contact activity allowed. Exercise with enough intensity to reach 80% or maximum heart rate. If Student-Athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Note: Clearance needed from nurse, Athletic Director and/or Physician before moving on to Step 5.

Step 5:

Practice Only—NO Athletic Contests allowed until this step is completed!

Sport performance activities with full exertion. Initiate contact activities as appropriate to sport activity.

Note: The Geneseo Central School Administration reserves the right to have the district's School Physician give final clearance. An example where this may occur is when an Student-Athlete gets full clearance from an "After Hours" physician's assistant or doctor or an Emergency Room's physician's assistant or doctor from the first/initial visit. This is for the protection of the Student-Athlete.

Appendix C – to be included in Student-Athlete Handbook

Geneseo Central PARENT/GUARDIAN CONCUSSION POLICY ACKNOWLEDGMENT FORM

In order to help protect the student athletes of Geneseo Central School this form is designed to inform all athletes, parents/guardians and coaches about the dangers of concussion.

A concussion is a brain injury and all brain injuries are serious. It may be caused by a bump, blow, or jolt to the head, or by a blow to another part of the body with the force transmitted to the head.

It can range from mild to severe and can disrupt the way the brain normally works. Even though most concussions are mild, **all concussions are potentially serious and may result in complications including prolonged brain damage and death if not recognized and managed properly.** In other words, even a “ding” or a bump on the head can be serious. You can’t see a concussion and most sports concussions occur without loss of consciousness. Signs and symptoms of concussion may show up right after the injury or can take hours or days to fully appear. If your child/player reports any symptoms of concussion, or if you notice the symptoms or signs of concussion yourself, seek medical attention right away.

Symptoms may include one or more of the following:

1. Headache.
2. Nausea/vomiting.
3. Balance problems or dizziness.
4. Double vision or changes in vision.
5. Sensitivity to light or sound/noise.
6. Feeling of sluggishness or fogginess.
7. Difficulty with concentration, short-term memory, and/or confusion.
8. Irritability or agitation.
9. Depression or anxiety.
10. Sleep disturbance.

Signs observed by teammates, parents and coaches include:

1. Appears dazed, stunned, or disoriented.
2. Forgets plays or demonstrates short-term memory difficulties (e.g. is unsure of the game, score, or opponent)
3. Exhibits difficulties with balance or coordination.
4. Answers questions slowly or inaccurately.
5. Loses consciousness.
6. Demonstrates behavior or personality changes.
7. Is unable to recall events prior to or after the hit.

What can happen if my child/player keeps on playing with a concussion or returns too soon?

Athletes with the signs and symptoms of concussion should be removed from play immediately. Continuing to play with the signs and symptoms of a concussion leaves the young athlete especially vulnerable to greater injury. There is an increased risk of significant damage from a concussion for a period of time after that concussion occurs, particularly if the athlete suffers another concussion before completely recovering from the first one. This can lead to prolonged recovery, or even to severe brain swelling (second impact syndrome) with devastating and even fatal consequences. It is well known that adolescent or teenage athletes will often under report symptoms of injuries. And concussions are no different. As a result, education of administrators, coaches, parents and students is the key for student-athlete’s safety.

If you think your child/player has suffered a concussion...

Any athlete even suspected of suffering a concussion should be removed from the game or practice immediately. No athlete may return to activity after an apparent head injury or concussion, regardless of how mild it seems or how quickly symptoms clear. Close observation of the athlete should continue for several hours.

An athlete who is suspected of sustaining a concussion or head injury in a practice or game shall be removed from competition at that time and may not return to play until the athlete is evaluated by a medical doctor trained in the evaluation and management of concussion and received written clearance to begin return to play protocol.

You should also inform your child’s Coach, Athletic Trainer (ATC), and/or Athletic Director, if you think that your child/player may have a concussion. And when it doubt, the athlete sits out. For current and up-to-date information on concussions you can go to:

<http://www.cdc.gov/concussion/sports/index.html>

Appendix D

Geneseo Central School (DR-1V) Physician Evaluation

One of our student-athletes has an appointment at your office for evaluation/follow-up for a possible concussion. Our school has adopted a specific concussion management and return to participation policy based on the Consensus Statement on Concussion in Sport resulting from the 3rd International Conference on Concussion in Sport, Zurich 2008. A copy of this consensus statement is available for your review upon request.

To help us provide our student-athletes with the most prudent care possible, please:

- 1) Complete the following form after completing your evaluation. Please photocopy for your records.
- 2) Please enclose any additional instructions for the athlete for the school nurse to share with the appropriate personnel. The athlete has been instructed to return this information to our school nurse.
- 3) The athlete will begin Return To Play Protocol at school or rehab facility upon your approval to do so.
- 4) Add separate documentation for medical restrictions (include physical and cognitive for classroom modifications).

Thank You

Athlete's Name: _____ Date of Evaluation: _____

Signs and Symptoms Observed	None	Minor → → → →	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
Balance problems/dizziness	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Vision problems	0	1	2	3	4	5	6
Hearing problems/tinnitus	0	1	2	3	4	5	6
Don't feel right	0	1	2	3	4	5	6
Feeling "dinged" or "dazed"	0	1	2	3	4	5	6
Confusion	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
Drowsiness	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
More emotional than usual	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Sadness/depression	0	1	2	3	4	5	6
Nervousness/anxious	0	1	2	3	4	5	6
Trouble falling asleep	0	1	2	3	4	5	6
Sleeping more than usual	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
Other:	0	1	2	3	4	5	6
Other:	0	1	2	3	4	5	6

Did this athlete sustain a concussion? Yes No (one must be circled)

Please check one of the following:

_____ No further evaluation is necessary. Student may resume normal activities.

_____ Athlete is asymptomatic and able to begin step-wise return to play protocol (RTP) indicated on the back of this form. The athlete reports being completely asymptomatic on: _____ (date)

_____ Athlete is symptomatic and requires a follow-up evaluation. Date of follow-up: _____

_____ Athlete is symptomatic and is being referred to a specialist.

_____ Other: _____

Physician's Signature: _____ Date: _____

School Medical Doctor: _____ Date: _____

Appendix D (cont.)

Geneseo Central School

Step-Wise Concussion Return-to-Participation (RTP) Protocol Review

GCS concussion policy requires a Step-Wise return to play progression be completed before final release of a concussed student-athlete to play, practice, and/or return to physical education class/athletics. The student-athlete must be asymptomatic prior to the initiation of the RTP progression.

Please confirm that this student-athlete is asymptomatic and provide permission for our staff to initiate the RTP progression. You may be asked to make a final examination to allow the student athlete to proceed to Step 5 and therefore, giving clearance to return to Physical Education class and athletics.

The following Step-Wise progression is listed below. The athlete must be **symptom free** in order to initiate this RTP protocol. A minimum of 24 hours is required between steps.

If signs and symptoms appear, stop activity, wait until asymptomatic, return to last asymptomatic Step-Wise stage and begin progression anew.

Step 1:

10 - 15 minutes of aerobic activity at 30 - 40% of maximum heart rate using stationary bike, seated elliptical, swimming or walking on a treadmill. Exercise in a quiet area such as a rehabilitation or treatment room if possible. No impact or resistance activities. Limit head movement and positional change. Limit concentration activities. If athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Step 2:

20 - 25 minutes of aerobic activity at 40 - 60% of maximum heart rate using stationary bike, seated elliptical, swimming or walking on a treadmill. Exercise in area using various Nautilus style equipment, such as a weight room or fitness center if possible. Allow some positional changes and head movement. If athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Step 3:

25 - 30 minutes of aerobic activity at 60 - 80% of maximum heart rate using stationary bike, seated elliptical, swimming or walking on a treadmill. Exercise in any environment (indoor or outdoor). Initiation of agility drills appropriate at this stage, however, with no contact. Modify drills to ease the athlete back into sport specific activity. If athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Step 4:

Sport performance activities can be allowed. No contact activity allowed. Exercise with enough intensity to reach 80% or maximum heart rate. If athlete is symptom free during and after workout, 24 hours must pass before starting the next step.

Note: Clearance needed from nurse, Athletic Director and/or Physician before moving on to Step 5.

Step 5:

Practice Only—NO Athletic Contests allowed until this step is completed!

Sport performance activities with full exertion. Initiate contact activities as appropriate to sport activity.