Graham ISD Athletic Department
Guidelines for Concussion Management

House Bill 2038 Establishes a concussion protocol for student athletes. This bill requires:

- **General information on concussions**
- **Parents receive a copy of Graham ISD concussion guidelines**
- **Parent signature required of all athletes. (Acknowledgment of Rules)**
- **Graham ISD home care of concussions**

Concussion: Definition

"Sports Concussion (MTBI The term mild traumatic brain injury (MTBI) is used interchangeably with the term concussion.**) Is defined as a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces." Or "An injury to the brain that affects function"**

- **Usually no damage to brain anatomy- as far as we can tell**
- **Disturbance in brain metabolism**
- **Common features:**
  - **Direct blow to head or body**
  - **Loss of consciousness not necessary**
  - **Rapid onset of symptoms (usually)**
  - **Traditional medical test usually normal (CAT/MRI)**

Facts

- **Concussions can occur in any sport and all concussions are serious**
- **Concussions can occur without loss of consciousness**
- **10% of all contact sports athletes sustain concussions**
- **63% of all concussions occur in football**
- **Girls soccer report second highest # of concussions**
- **An athlete who sustains a concussion is 4-6 times more likely to sustain a second concussion. "Bell ringers" account for 75% of all concussive injuries**
- **Effects of concussion are cumulative in athletes who return to play prior to complete recovery**
- **<u>The best way to prevent problems with concussions is to manage them effectively when they occur</u>**
- **80 % of all concussions get better in one week, 20% usually take 3 weeks or longer to recover.**
- **Repeat concussions can result in brain swelling, permanent brain damage, and even death**
- **2nd impact usually occurs within 14 days of the first concussion and under age 21**

****

Graham ISD Athletic Department
Guidelines for Concussion Management

Common Signs and Symptoms of a Concussion

Signs observed	Signs reported by athlete
• Appears to be dazed or stunned	• Headache
• Is confused about assignment	• Nausea
• Forgets plays	• Balance problems or dizziness
• Is unsure of game, score, or opponent	• Double or fuzzy vision
• Moves clumsily	• Sensitivity to light or noise
• Answers questions slowly	• Feeling sluggish
• Loses consciousness (even temporarily)	• Feeling "foggy"
• Shows behavior or personality change	• Change in sleep pattern
• Forgets events prior to hit (retrograde amnesia)	• Concentration or memory problems
• Forgets events after hit (anterograde amnesia)	

Post-Concussion Syndrome

Although the majority of athletes who experience a concussion are likely to recover, an unknown number of these individuals may experience chronic cognitive and neurobehavioral difficulties related to recurrent injury. Symptoms may include:

- Chronic headaches
- Fatigue
- Sleep difficulties
- Personality changes (e.g. increased irritability, emotionality)
- Sensitivity to light or noise
- Dizziness when standing quickly
- Deficits in short-term memory, problem solving and general academic functioning

This constellation of symptoms is referred to "Post-Concussion Syndrome" and can be quite disabling for an athlete. In some cases, such difficulties can be permanent and disabling.

In addition to Post-Concussion Syndrome, suffering a second blow to the head while recovering from an initial concussion can have catastrophic consequences as in the case of "Second Impact Syndrome," which has led to approximately 30-40 deaths over the past decade. What we now know is that each concussion should be treated individually depending on the symptoms and the neurocognitive test results. This may be the reason why standardized

Graham ISD Athletic Department
Guidelines for Concussion Management

concussion management guidelines were unsuccessful.

The following recommendations are made to improve concussion management and speed the recovery process:

Recommendation #1:	No adolescent with a concussion should continue to play or return to a game after sustaining a concussion.
Recommendation #2:	An individual sustaining a concussion should cease doing any activity that causes the symptoms of a concussion to increase.
Recommendation #3:	School attendance and activities may need to be modified.
Recommendation #4:	Neurocognitive testing is an important component of concussion management.
Recommendation #5:	No athlete should return to contact competitive sports until they are symptom free, both at rest and with exercise and have normal neurocognitive testing.
Recommendation #6:	All sports and health education programs should teach students the specific signs and symptoms of concussions.

Evaluation for Concussion/MTBI

1. **At time of injury the Athletic Trainer, or physician will administer one of the assessments.**

    a. **Sports Concussion Assessment Tool (SCAT 1/SCAT 2)**
    b. **Graded Symptom Checklist (GSC)**
    c. **Sideline Functional & Visual Assessments**
    d. **On-field Cognitive Testing**

2. **Observe 15 to 20 minutes and re-evaluate**
3. **Athlete does not return to a game or practice until all protocols have been exhausted.**
4. **Physician referral**
5. **Home instructions**
6. **ImPACT Post-Injury test approximately 48 hours after injury**
7. **Note-If in doubt, athlete is referred to physician**

Concussion Management- School management

1. **Notify school nurse/counselor and all classroom teachers of the student that has had a concussion.**
2. **Notify teachers of post concussion symptoms.**

3. **Student may only be able to attend school for half days or may need daily rest periods until symptoms subside. In case of protracted concussion, the student may need a 504 meeting to deal with accommodations.**

Return to Play Guidelines

1. **ImPACT Assessment**
   - **Evaluation should occur at 48 hours**
   - **Clinical Interview, ImPACT**
   - **Referral (as needed) to other specialist**
   - **Recommendations Regarding Cognitive & Physical Activity**
     - **School attendance**
     - **Athletic attendance**
     - **Academic accommodations**
     - **Athletic participation**
2. **Future evaluation as recommended**
3. **Return to norm on symptom data and cognitive data**
4. **Progress through exertion/practice (5 stage post-concussion exertion program)**
5. **Return to competition**

5 Stage Post-Concussion Exertion Program

Stage 1
***Target Heart Rate* : 30-40% of maximum exertion**
***Recommendations*: 10-15 minutes of cardio exercise; low stimulus environment; no impact activities; balance and vestibular treatment (prn); limit head movement/ position change; limit concentration activities**

-Very light aerobic conditioning
-Sub-max strengthening
-ROM/ Stretching
-Very low level balance activities

Stage 2
***Target Heart Rate* : 40-60% of maximum exertion**
***Recommendations*: 20-30 minutes of cardio exercise; exercise in gym areas; use various exercise equipment; allow some positional changes and head movement; low level concentration activities**

-Moderate aerobic conditioning
-Light weight strength exercise
-Stretching (active stretching initiated)
-Low-level balance activities

Stage 3
***Target Heart Rate*: 60-80% of maximum exertion**
***Recommendations*: any environment ok for exercise (indoor, outdoor); integrate strength, conditioning, and balance /proprioceptive exercise; incorporate concentration challenges**

-Moderately aggressive aerobic exercise
-All forms of strength exercise (80% max)
-Active stretching exercise
-Impact activities running, plyometrics (noncontact)
-Challenging proprio-balance activities

Stage 4 (Sports Performance Training)
***Target Heart Rate*: 80-90% of maximum exertion**
***Recommendations*: continue to avoid contact activity, resume aggressive training in all environments**

-Non-contact physical training
-Aggressive strength exercise
-Impact activities/ plyometrics
-Sports specific training activities

Stage 5 (Sports Performance Training)
***Target Heart Rate*: Full exertion**
***Recommendations*: Initiate contact activities as appropriate to sport activity; full exertion for sport**

-Resume full physical training activities with contact
-Continue aggressive strength/conditioning exercise
-Sport specific activities

Graham ISD Athletic Department
Guidelines for Concussion Management

Home Care for a Concussed Athlete

An athlete who has experienced a head injury or concussion may have signs and symptoms that do not become apparent until hours after the initial traumatic event. At the time of injury, hospitalization may not have been required. However, you should be alert for possible signs and symptoms in the athlete. Seek medical attention immediately if you observe any changes of these symptoms:

- Headache (especially one that increases in intensity) or headache that is persistent
- Any period of loss of consciousness
- Seizure activity
- Nausea or vomiting
- Drowsiness, lethargy or sleepiness
- Memory deficits
- Mental confusion/disorientation or inability to focus attention (easily distracted)
- Emotions out of proportion to circumstances
- Delayed verbal and motor responses/slurred speech
- Feeling "foggy"
- Gross observable lack of coordination (such as changes in gait or balance)
- Vacant stare (puzzled facial expressions)
- Blurry or double vision
- One pupil larger than the other from right to left eye, or dilated pupils
- Bleeding and/or clear fluid from the nose or ears
- Ringing in the ears

The best guideline is to note ***symptoms that*** worsen and behaviors that seem to represent a change in your son or daughter. If you have any questions or concerns about the symptoms you are observing, contact your family physician for instructions, or seek medical attention at the closest emergency department.

A person with a concussion may:

- Use acetaminophen (Tylenol) for headaches
- Use ice pack on head and neck as needed for comfort
- Eat a light diet
- Go to sleep
- Rest (no strenuous activity or sports)

There is no need to:

- Wake up every hour
- Test reflexes
- Stay in bed

Do not:

- Drink alcohol
- Drive while symptomatic
- Exercise or lift weights
- Use a computer or test message
- Watch TV for long periods of time
- Take Ibuprofen, aspirin, naproxen or other non-steroidal anti-inflammatory medications

Graham ISD Athletic Department
Guidelines for Concussion Management

Lights out on Electronics

The use of computers, TV and phone, including texting, can delay the brain's healing process. Restriction from using these items as well as avoidance of concerts and loud music may improve healing time. During the next few days, limit TV time and only non-violent programs.

Academic Accommodation

The school administrators (principals, counselors and teachers should be contacted and informed that the student athlete has sustained a concussion. Request "academic accommodation" such as excuse from classes and homework for a few days. This should occur until the symptoms diminish. Please remind your child to check in with the school nurse prior to going to class on the first day he or she returns to school.

Your child should also follow up with the school's athletic trainer and should be restricted from participation until the symptoms resolve and a physician has cleared them to return to play. Return to play should be gradual and increase in stress over a period of few days. If signs or symptoms return with workouts, then restrict them from exercise until the athlete is able to work out without symptoms returning.

Physicians recommend neurocognitive testing as a tool to determine safe return-to-play time lines. This online test is easily implemented in the office of the athletic trainer. You child will be tested after 48 hours after initial injury.