

## Upping the head, face protection in softball

by Taylor Patton, ATC

Softball is a popular sport in the United States with an estimated 10 to 12 million people participating annually. Just like other sports, softball has its own unique risks for injury. Particularly, head injuries are becoming a prevalent and controversial topic in softball. The National Electronic Injury Surveillance System (NEISS) database reported 3,324 head and face injuries at 100 hospitals nationwide over the time span of five years, resulting in a nationwide estimate of 121,802 injuries. The prevalence of these injuries led softball organizations to investigate and try instituting various actions to decrease the number of athlete head and face injuries.



Protective head gear is one safety precaution becoming popular for softball infielders. This infield headgear is similar to a batting helmet without the padded hard shell helmet. The headgear is simply the facemask with some padding behind the protective bars and straps to keep it securely on the head. This headgear is available in many models made by numerous companies but there is a lack of data determining its effectiveness.

The National Operating Committee on Standards for Athletic Equipment (NOCSAE) specializes in certification of protective gear for numerous sports nationwide. NOCSAE certified protective softball headgear for both the hitters and catchers, but they have not certified protective headgear for infielders. NOCSAE chose not to develop a standard for a facemask because

mask-only headgear in their opinion does not provide enough protection to prevent head injury. NOCSAE will not certify a head injury preventative mask for softball infielders without a heavily padded shell that encompasses the head like a catcher's mask.

However, across the nation, softball athletes are starting to use protective face masks by choice in attempt to help prevent injury. Research shows this type of mask does not eliminate the risk of facial fracture, but it does help reduce the frequency and provides athletes with extra protection. Additionally, research found that wearing a face mask did not increase or decrease of the severity or frequency of an injury.

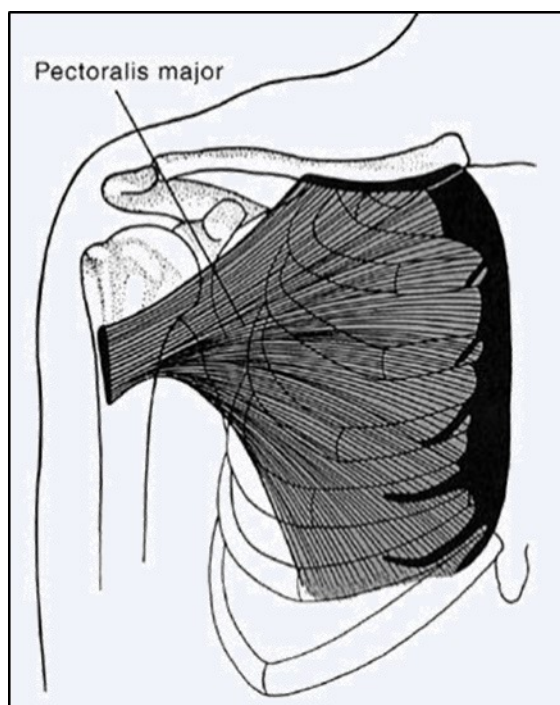
The most common types of masks on the market today are constructed from metal and plastic. According to the Biomedical Engineering Society, metal masks have shown to prevent injury better than the plastic masks because of metal's ability to better disperse and reduce the force of impact from the ball.

Preventative face masks for softball infielders are seen at all levels nationwide. They are not required by the sport or any protective softball equipment committees at any level and are a matter of coaches' and players' preference. The topic of infield facemasks and their ability to help prevent injuries continues to be researched and discussed.

## Pectoralis major tendon rupture repair/reconstruction

by Taylor Patton, ATC

Rupture of the pectoralis major tendon is a commonly missed injury that most often occurs in weightlifters, specifically while performing chest pressing activities. Particularly, this injury is becoming more common in power lifters, football players and professional bodybuilders. Research from the *American Journal of Sports Medicine* (AJSM) demonstrated the pectoralis major muscle is not considered necessary



to perform typical activities of daily living, but it is important for athletes and labor-intensive work to produce maximal force with upper extremity pressing or pushing movements.

Patients who suffer from a pectoralis major tendon injury present in a similar fashion. Most patients report performing a pressing/pushing motion when they feel a pop in the front of shoulder or upper arm followed by immediate pain and weakness. Subsequently, over the next few hours to days, they often experience progressive swelling and bruising that frequently masks the deformity around the chest and armpit left by the torn tendon. Research also shows that the use of anabolic steroids can compromise the mechanical properties of tendons throughout the body and may be a predisposing factor for pectoralis major tendon ruptures for higher demand patients.

Treatment can be conservative which includes rest, ice, anti-inflammatories and a gradual progression of exercises and activities. Physical therapy can be very helpful. However, without repair of the pectoralis major tendon back to the upper arm bone, strength deficits will remain. For the patient high level demands and wishes to perform chest resistance exercises, they will be dissatisfied in their performance. Therefore, Dr. Chudik recommends repair or reconstruction of the pectoralis major tendon.

Timing for surgery is very important. Research shows that repairing these injuries acutely, within three weeks, gives the patient the best chance for a full recovery of strength and function. If the repair is delayed, the muscle retracts (shortens), scars and atrophies (shrinks and weakens) and the tendon may shorten and lose its important mechanical properties, all compromising the outcomes for surgery. During the procedure, the pectoralis muscle and tendon are mobilized (freed up) from the surrounding tissues, brought back out to length and reattached to the humerus (upper arm bone).

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## Pectoralis major surgery

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Repair of chronic injuries are possible but require a lot more surgical dissection to mobilize the muscle. Sometimes, the tendon for the muscle also needs to be reconstructed (re-made) with a tendon graft from another site. In these challenging cases, Dr. Chudik prefers to harvest a portion of the iliotibial band from the ipsilateral (same side) thigh to make a new tendon for the muscle. The pectoralis major tendon or reconstructed tendon is connected back to the humerus with anchors and sutures.

Following pectoralis major tendon repair or reconstructive surgery, the arm needs to be immobilized in a sling and a waist strap to keep the patient's arm at his/her side with the hand on his/her abdomen (stomach) for six weeks. After six weeks of immobilization, patients require physical therapy for up to four to six months following surgery to regain motion, strength and function. With timely surgery and compliance with the post-operative directions, patients are very satisfied and can regain normal strength and function.

For additional information on pectoralis major tendon rupture or surgery to repair or reconstruct the injury, visit Dr. Chudik's website at: <http://www.stevenchudikmd.com/shoulder/>.

Dr. Chudik reconstructs the torn tendon by attaching an IT band autograft taken from the patient's leg. Following surgery, patients wear a sling continually for six weeks so they don't use the arm and risk proper healing.

