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# HPSMSportsWrap

## Welcome Back

*HPSM Staff*

Once again, another school year is upon us and the fall sports season is underway.

We, the Athletic Training Staff of High Plains Sports Medicine, are truly grateful for the opportunity to serve your school and athletes. We are looking forward to another great year.

At this time, we would also like to welcome Dr. Daniel Divilbliss to our team. Dr. Divilbliss is located in the Hays Family Medicine Office – but, because of a background, and significant interest in Sports Medicine, will be providing a walk-in clinic at Hays Orthopedic Institute on Thursday mornings from 8am-11am (in addition to the Monday morning walk-in clinic with Dr. Alex). Please see Dr. Divilbliss’ biography to follow.

We would again like to thank you for your continued support and trust you demonstrate by allowing us to provide athletic training services to your athletes. Please don’t ever hesitate to call if there is a question or concern regarding any aspect of our program.

Good luck and have a great year!



## Daniel Divilbiss, M.D.

Dr. Divilbiss was born and raised in Salina, Kansas. He attended Kansas State University, where he earned his degree, while also being a member of the varsity football team under Coach Bill Snyder. He earned his degree in Medicine from the University of Kansas, before moving to Greenwood, South Carolina where he completed a residency in Family Medicine and a fellowship in Primary Care Sports Medicine. He and his family are grateful for the chance to return closer to home and serve the people of Hays and the surrounding area. He is married with two young children and enjoys spending time with them away from work, as well as travelling and following the K-State Wildcats athletic teams.

### Education

Undergrad:	Kansas State University BS in Pre-Medicine
Medical:	University of Kansas School of Medicine
Residency and Primary Care Sports Medicine Fellowship:	Self Regional Healthcare in Greenwood, SC

### Year started in practice:

2009

### Board certification:

American Board of Family Medicine - 2008  
Certificate of Added Qualification in Sports Medicine – Pending 2009

### Hospital Affiliations:

Hays Medical Center

### Organization Memberships:

American Medical Society for Sports Medicine  
American Academy of Family Practitioners  
South Carolina Academy of Family Practitioners  
Kansas Academy of Family Practitioners

### Medical Interests

I enjoy Sports Medicine. In particular, management of chest pain in athletes, overuse injuries, concussion, and acute musculoskeletal injuries are of interest.

### Interests outside of medicine:

Traveling, spending time with my family, and following K-State athletics.

### Place of birth:

Salina, KS

### Immediate Family

Married with two children



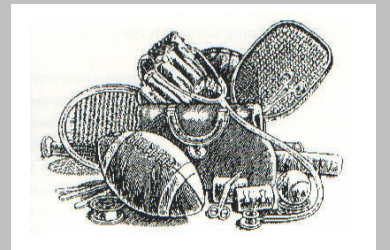
## Coming Events

### **August 24 - October 31 *Athletic Edge (ages 10 & up)***

Call Shawn Landers, MS, LAT, ATC, CSCS, at 623-6369, or Jamie Kohl, MEd, LAT, ATC, CSCS, at 623-6382, with any questions regarding the Athletic Edge.

### **November 2009 *HSPM Sports Wrap***

If there are topics you would like to see in upcoming issues, please speak with your athletic trainer, or call Candy Domann, MS, LAT, ATC, at 623-6368.



# HPSM Staff

Jenny Wildeman, MS, LAT, ATC, CSCS



Athletic Training is a specialization within the Sports Medicine field, with its major concern being the health

training providing a major link between the sports programs and the medical community. The Athletic Trainer is the one individual who deals with the athlete throughout the period of rehabilitation, from the time of the initial injury until the athlete's return to competition. An athletic trainer has six domains of performance: 1) prevention of athletic injuries 2) recognition, evaluation, and assessment of injuries 3) immediate care 4) treatment, rehabilitation, and reconditioning 5) organization and administration 6) professional development and responsibility. The mission statement of the National Athletic Trainers' Association states *"To enhance the quality of health care for the physically active through education and research in prevention, evaluation, management, and rehabilitation of injuries."*

High Plains Sports Medicine has five Certified Athletic Trainers on staff. Here's a little information on your favorite ATC.

## Lyle Christensen, MEd, LAT, ATC

*Certified Athletic Trainer, Clinical Instructor - FHSU Athletic Training Education Program, First Aid/CPR*

Education: Masters of Education, Northwest Missouri State University  
Concentration in Administration  
Bachelor of Arts in Physical Education, Washburn University  
Emphasis in Athletic Training

Hometown: Topeka, KS

Current Schools: Norton HS  
Trego Community HS  
Victoria HS  
Palco HS

Experience: Graduate Assistant Athletic Trainer, NWMSU. 1994-1995  
Certified Athletic Trainer, Frankfurt Galaxy. NFL Europe 1996  
Head Athletic Trainer at DCCC, Benedictine College, St. Mary College.  
High Plains Sports Medicine, Hays Medical Center. 2001-Present

Favorite Food: Steak

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## Candy Domann, MS, LAT, ATC

*Certified Athletic Trainer, Clinical Instructor - FHSU Athletic Training Education Program, First Aid/CPR*

Education: Masters of Science in Health and Human Performance, Fort Hays State University  
Emphasis in Exercise Science  
Bachelor of Science in Physical Education, Fort Hays State University  
Emphasis in Athletic Training

Hometown: Ransom, KS

Current Schools: Stockton HS  
Plainville HS  
Hoxie HS  
Osborne HS

Experience: Graduate Assistant Athletic Trainer, HPSM. 1999-2001  
High Plains Sports Medicine, Hays Medical Center. Aug 2001 - Present

Favorite Food: Grilled Deer Back Strap

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**Jamie Kohl, M.Ed, LAT, ATC, CSCS**

*Certified Athletic Trainer, Certified Strength and Conditioning Specialist, Clinical Instructor -  
FHSU Athletic Training Education Program, First Aid/CPR*

Education: Masters of Education in Adult and Community College Education, North Carolina State  
University, Raleigh NC  
Bachelor of Science in Physical Education, Fort Hays State University  
Emphasis in Athletic Training

Hometown: Ellis, KS

Current Schools: Grinnell/Wheatland H.S.  
Ellis HS  
Natoma HS

Experience: Graduate Assistant Athletic Trainer, North Carolina State University Raleigh, NC 2003-2005  
Head Athletic Trainer/Instructor, Southwestern College, Winfield, 2005-2006  
High Plains Sports Medicine, Hays Medical Center. July 2006 – Present

Favorite Food: Sushi

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**Shawn Landers, MS, LAT, ATC, CSCS**

*Certified Athletic Trainer, Certified Strength and Conditioning Specialist, Certified Ergonomics  
Assessment Specialist, Clinical Instructor - FHSU Athletic Training Education Program, First  
Aid/CPR*

Education: Masters of Science in Health and Human Performance, Fort Hays State University  
Emphasis in Administration  
Bachelor of Arts in Exercise Science, Northwestern College, IA  
Emphasis in Athletic Training and Health

Hometown: Greene, IA

Current Schools: TMP-M HS  
LaCrosse HS

Experience: High Plains Sports Medicine, Hays Medical Center. Nov. 2000 – Present

Favorite Food: Tacos

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**Jenny Wildeman, MS, LAT, ATC, CSCS**

*Certified Athletic Trainer, Certified Strength and Conditioning Specialist, Clinical Instructor - FHSU Athletic Training Education Program, First Aid/CPR*

Education: Masters of Science in Health and Human Performance, Fort Hays State University  
Emphasis in Exercise Science and Sports Administration  
Bachelor of Arts in Physical Education, Washburn University  
Emphasis in Athletic Training  
Associate of Arts, Dodge City Community College  
Emphasis in Athletic Training

Hometown: Parks, NE

Current Schools: Hays HS  
Otis-Bison HS

Experience: Graduate Assistant Athletic Trainer, FHSU. Aug. 2002- May 2004  
HealthSouth Sports Medicine & Rehab, Great Bend July 2004- May 2005  
Advanced Therapy & Sports Medicine, Great Bend. May 2005 - Aug 2005  
High Plains Sports Medicine, Hays Medical Center. Aug. 2005 – Present

Favorite Food: Steak and Spaghetti



# Concussion Management for Coaches

*Shawn Landers, MS, LAT, ATC, CSCS*

The most common head injury in sports is concussion. Symptoms can vary from a loss of consciousness to a brief headache but all should be taken seriously. Concussion is defined as a transient disturbance of neurologic function caused by trauma. Symptoms can include dizziness, headache, difficulty in concentrating, loss of balance, blurry vision, amnesia and loss of consciousness. It is estimated that as many as 250,000 concussions occur each year in high school football. Some studies show that up to 20 percent of all players sustain a concussion during their careers. Although most of these head injuries are mild and resolve without any problems, it is important to evaluate and treat them appropriately to avoid potentially life-threatening outcomes.

## **Assessment.**

Evaluation of an athlete with a head injury should begin with basic life support. Once it has been assured that airway, breathing, and circulation are intact, coaches should take special care to rule out a neck injury before allowing the athlete to move. Emergency medical attention should be used immediately if an athlete is unconscious or if a neck/spinal cord injury is suspected. When these are ruled out, the athlete may be moved to the sideline. There, a neurologic examination should be performed. Questioning should include tests of memory, cognitive function, and symptoms. A number of basic concussion assessment tools are available for coaches to follow (please see assessment guides). This assessment helps to determine the severity of any symptoms and also demonstrates to the coach the athlete's ability to play safely. It is important to note that NO athlete should return to competition while still showing symptoms of concussion, including a headache. The injured athlete should then be reassessed frequently (every 5-10 minutes) so that any continuation/deterioration of symptoms can be noted. If follow-up evaluations show symptoms increasing or the athlete's condition worsening, emergency medical attention should be sought immediately. When in doubt, athletes should be referred for medical attention as a precaution.

## **Return to Play.**

It is recommended that return to competition decisions are left up to medical professionals such as physicians or athletic trainers. If there is any doubt as to whether an athlete should return, coaches should err on the side of caution and withhold the athlete. While there are varying opinions, all guidelines agree that an athlete should not return to play while concussion symptoms are present. Even if symptoms are present at rest, the individual should be tested during exertion. Having an athlete perform some sprints, push ups, or jumping jacks may cause a return of symptoms. High Plains Sports Medicine has specific protocols for determining severity of concussions and the steps to ensure an athlete's safe return to play (please see concussion protocols).

Medical coverage of athletic events is a service to the community, athletes, and coaching staff. It is important, especially in sports with high risk of head injury, that a medical professional be available for making what could potentially be a life-threatening decision. Coaches, athletes, and parents should also have a working knowledge about concussions and be educated on keeping all athletes safe. Return to play decisions are always difficult, especially in the heat of the competition. Medical professionals who are specifically trained in evaluating and managing head injuries can help to ensure the proper management and safe return of the athlete.

# Plyometrics

*Jamie Kohl, MEd, LAT, ATC, CSCS*

**Plyometrics Defined:** Plyometrics is a type of exercise training designed to produce fast, powerful movements, and improve the functions of the nervous system, generally for the purpose of improving performance in sports. Plyometric movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervation of muscle and surrounding tissues to jump higher, run faster, throw farther, or hit harder, depending on the desired training goal. Plyometrics is used to increase the speed or force of muscular contractions, often with the goal of increasing the height of a jump.

Plyometric training involves practicing movements to toughen tissues and train nerve cells to stimulate a specific pattern of muscle contraction so the muscle generates as strong a contraction as possible in the shortest amount of time. A plyometric contraction involves first, a rapid muscle lengthening movement, followed by a short resting phase, then an explosive muscle shortening movement; which enables muscles to work together in doing the particular motion. A good example is thinking of the actions taken by an athlete when asked to perform a vertical leap test. Plyometric exercises use explosive movements to develop muscular power. Plyometric training acts on the nerves, muscles, and tendons to increase an athlete's power output, although it does not have any effect on increasing maximum strength.

**Safety considerations:** Good levels of physical strength, flexibility and proprioception should be achieved before commencement of plyometric training.

Flexibility is required both for injury prevention and to enhance the effect of the stretch shortening cycle. It is important that an athlete is well warmed-up and stretched out before proceeding with plyometrics. This should include a dynamic warm-up not just simple static stretching.

Proprioception is an important component of balance, coordination and agility, which are also required for safe performance of plyometric exercises. If an athlete is unable to control their body in space, they are more likely to land awkwardly and injure themselves.

Further safety considerations include:

- Age - low-intensity and low-volume only for athletes under the age of 13, or for athletes who squat less than 1.5 times their bodyweight.
- Surface - some degree of softness is needed. Gymnastics mats are ideal, grass is suitable. Hard surfaces such as concrete should never be used.
- Bodyweight - athletes who are over 240 pounds (109 kg) should be very careful and low-intensity plyometric exercises should be selected.
- Technique - most importantly, a participant must be instructed on proper technique before commencing any plyometric exercise. They should be well rested and free of injury in any of the limbs to be exercised.

Plyometrics is not inherently dangerous, but the highly focused, intense movements used in repetition increase the potential level of stress on joints and musculo-tendonous units. For this reason, safety precautions are imperative to this particular method of exercise. Low-intensity variations of plyometrics are frequently utilized in various stages of injury rehabilitation, indicating that the application of proper technique and appropriate safety precautions can make plyometrics safe and effective for most populations.

### Progression:

It is key to understand a progression when utilizing plyometrics. Beginning at too high difficulty not only compromises proper plyometric mechanics, but also the safety of the athlete. For example, with box jumps it would be wise with a young athlete to begin simply by having them step up onto a 12 inch box and practice stepping off and landing. While doing this, the instructor has the opportunity to teach the athlete proper landing mechanics which will decrease the chance of injury (not only in plyometrics, but in athletic events). It also allows the instructor to decide who may or may not be able to move into more advanced forms of plyometrics. A safe progression is important in upper body plyometrics as it is in lower body plyometrics for the same reasons. If an athlete is young or weak, upper body plyometrics can begin with simple chest passes with a medicine ball. The athlete should focus on quick, explosive, maximal throws.

### Some Exercises:

Double-Leg Box Jump



Single-Leg Box Jump



Push-Up Off the Ground



Push-Up with a Clap



Once you have a basic understanding of plyometrics, safety precautions, and the type of athletes that you have, your imagination is really all that limits one to a comprehensive plyometric training regimen. For development of explosive strength in either the upper or lower body, plyometric training is a great compliment to strength training with free weights or machines.

# Hydration

*Candy Domann, MS, LAT, ATC*

Water is the most crucial ingredient to a healthy life. Many important functions in the body rely on water, including:

- transportation of nutrients / elimination of waste products
- lubricating joints and tissues
- temperature regulation through sweating
- facilitating digestion

Proper hydration is especially important during exercise. Adequate fluid intake for athletes is essential for comfort, performance, and safety. The longer and more intense the exercise, the more important it is to drink the right kind of fluids.

Athletes need to stay hydrated for optimal performance. It has been found, that as little as a 2% loss of body weight secondary to sweating (only 3 pounds in a 150 pound person) is linked to a drop in blood volume. This causes the heart to work harder to move blood through the system. This can also cause muscle cramps, dizziness, fatigue, and can even lead to heat exhaustion and heat stroke.

Some causes of dehydration include:

- inadequate fluid intake
- excessive sweating
- failure to replace fluid losses during and after exercise
- exercising in dry, hot weather
- drinking only when thirsty

Because there is a wide variability in sweat rates, losses, and hydration levels of individuals, it is difficult to provide specific recommendations or guidelines about the type or amount of fluids athletes should consume.

Finding the right amount of fluid to drink depends on a variety of individual factors including the length and intensity of activity and other individual differences. There are two simple methods of estimating adequate hydration:

- **Monitor urine volume output and color.** A large amount of light colored, diluted urine probably means you are hydrated; dark colored, concentrated urine probably means you are dehydrated.
- **Weighing yourself before and after activity.** Any weight lost is likely from fluid, so try to drink enough to replenish those losses. Any weight gain could mean you are drinking more than you need.

Some other factors to take into consideration, that affect fluid loss in athletics include:

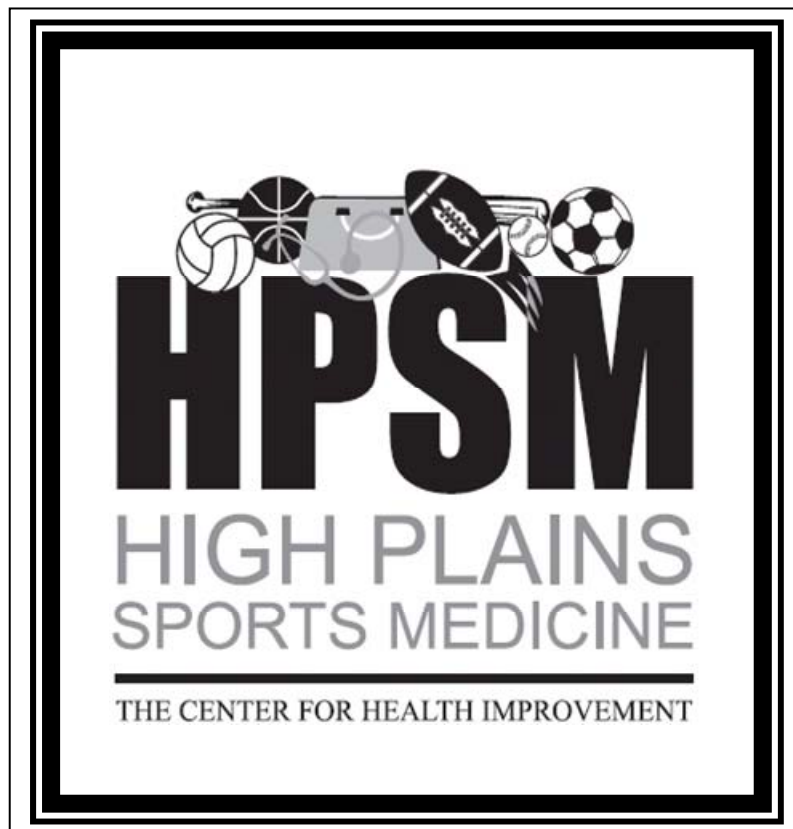
- **Temperature**
  - Exercising in the heat increases fluid losses through sweating and exercise in the cold can impair the ability to recognize fluid losses and increase the fluid lost through respiration. In both cases it is important to hydrate.
- **Sweating**
  - Some athletes sweat more than others. Increased sweating puts the individual at a greater risk for dehydration. Again, weighing before and after exercise is important to judge weight loss.
- **Exercise Duration and Intensity**
  - Exercising for hours (endurance sports) means drinking more and more frequently to avoid dehydration.

As previously mentioned, it isn't possible to give specific recommendations for fluid intake due to individual variability; most athletes can use the following guidelines as a starting point, and modify their fluid needs accordingly.

- **Hydration Before Exercise**
  - Drink about 15-20 fl oz, 2-3 hours before exercise
  - Drink 8-10 fl oz 10-15 minutes before exercise
- **Hydration During Exercise**
  - Drink 8-10 fl oz every 10-15 minutes during exercise
    - Do not rely on thirst – thirst is not an accurate measure of the body’s need for fluid
- **Hydration After Exercise**
  - Weigh yourself before and after exercise and replace fluid losses
  - Drink 20-24 fl oz water for every 1 pound lost

The bottom line is this – proper hydration:

- Improves regulation of body temperature: sweat rate and skin blood flow are increased and core body temperature is decreased.
- Improves cardiovascular function
- Allows athletes the best opportunity to perform at their highest levels.



# The Importance of Helmet Fitting

Lyle Christensen, MSED, LAT, ATC

I hope that everyone enjoyed their summer, because the fall season is in full swing. Over the last few seasons we have seen a rise in concussions with our athletes and I wanted to take this time to go over some quick, easy tips to ensure that their helmets fit properly. The helmet should be monitored closely because the fit of the helmet can be altered by environmental factors, loss of air from the cells, or spread of the face mask. The following is a list of check points for a properly fitted helmet:

**1. Determine the normal hair length of the athlete.**

Check with the athlete to make sure that this is the hair length he/she will have during the season. This will ensure the athlete has a proper fit.

**2. Before fitting, note any possible irregularities of the head.**

Each head shape requires different considerations when fitting.

**3. Take the players head measurements to determine the proper skull size.**

To do this measure the circumference of the head approximately one inch above the eyebrow.

**4. During this preliminary fitting period, conduct an on head visual inspection.**

It may sometimes appear to fit during the visual inspection, but some tests will show the need for adjustments to be made.

**5. The side ear holes should coincide with the ear canals.**

**6. The front of the helmet should be approximately two finger widths above the eyebrow.**

**7. The helmet should not recoil on impact.**

**8. The jaw pads should fit snugly to prevent lateral rocking.**

A properly fitted helmet should only move slightly.

**9. The chinstraps should be equal in distance from the center of the helmet.**

Straps must keep the helmet from moving up and down or side to side.

The strap should always be locked so that a hard external force to the helmet can not release it.

**10. Check the fit in the rear of the helmet.**

The back of the helmet should cover the skull base but not dig into the neck with neck extension.

**11. The face mask should be attached securely to the helmet, allowing a complete field of vision, and positioned three finger widths from the nose.**

**12. Air helmets need to be checked regularly for the appropriate air mass.**

