

# **Rub Some Dirt On It!**

## **A Guide to On the Field Injuries!**



By,  
Steven M. Horwitz, DC, CCSP, CSCS, CKTP,  
HKC, USAW

**[www.DCSportsInjury.com](http://www.DCSportsInjury.com)**

**301-622-9000**

# **Rub Some Dirt On It!**

## **A Guide to On the Field Injuries!**

### **TABLE OF CONTENTS**

**Section 1: Emergency Plan, Logistics, First Aid Kit**

**Section 2: CPR, Stroke, and Choking Guidelines**

**Section 3: On-Field Injury Assessment**

**Section 4: Concussion Assessment and Management**

**Section 5: Strains and Sprains**

**Section 6: PRICE: Protection, Rest, Ice, Compression, Elevation**

**Section 7: Conditions Needing First Aid Treatment**

**Section 8: Heat Injury Management and Prevention**

**Section 9: Sports Diet and Nutrition**

**Section 10: Injuries and Recommendations by Sport**

#### **Disclaimer**

This guide is for informational purposes only and is not a substitute for professional medical advice. It is not meant to be a thorough review of each topic. The goal of this guide is to provide the coach and parent with the necessary tools to provide a safe environment for the athlete, especially if professional medical care is not immediately available.



*Too many athletes end their athletic careers not because they want to, but because they have to.  
Don't let this happen to you!*

**Call 301-622-9000**

**Email us at [painfree123@gmail.com](mailto:painfree123@gmail.com)**

## **Injury Care**

- **Active Release Technique**
- **Graston Technique**
- **Cold Laser**
- **Ambulatory Lumbar Traction Decompression**
- **Chiropractic Manipulation**
- **Corrective Exercise**
- **Clinical Nutrition**
- **Kinesio Taping**

## **Wellness Care**

- **Maintenance Therapeutic Treatments**
- **Functional Exercise**
- **Lifestyle Diet and Nutrition**

## **Sports Performance and Personal Training**

- **ACL Injury Prevention Program**
- **Rotator Cuff Injury Prevention Program**
- **Strength – Speed – Agility Training**
- **Sports Specific Performance Training**
- **CPR/AED Training for Coaches, Parents, and Athletes**



**You are a coach, parent, or referee at a game or practice.**

**An athlete goes down – possibly your child.**

**There is no medical professional in attendance.**

**Do you know what to do?**

**Read on...**

## **PLAY-BY-PLAY.**

### **Sport Specific Results and Recommendations**

#### **16-Year Review of NCAA Injury Surveillance System (ISS) Data**

<http://www.medicalnewstoday.com/articles/72597.php>

**Among the key findings across all sports over 16 years (1988-1989 through 2003-2004) were the following:**

1. More than half of all collegiate athletic injuries were to the lower extremities.
2. Preseason practice injury rates were two to three times higher than injury rates recorded during the regular seasons.
3. Competition injury rates were higher than practice.
4. Rates of concussions and ACL injuries increased significantly, likely due in part to improved reporting and identification of these injuries.

#### **Additional general findings:**

1. Competition injury rates did not change substantially over time (though competition rates appear to be declining over the past few years). Several sports showed decreased competition injury rates, including women's gymnastics, basketball and field hockey. Spring football and women's basketball practice injury rates also decreased.
2. Sports involving contact and collision, such as football and wrestling, had the highest injury rates in both games and practices; whereas men's baseball had the lowest rate of injuries in practice and women's softball the lowest rate in games.
3. Sports that inherently limit or prohibit player contact, such as men's and women's soccer and basketball, and women's ice hockey, still have a significant number of injuries caused by player contact.

#### **Recommendations include the following:**

- Prophylactic ankle taping and bracing.
- Balance-training exercise programs.
- Neuromuscular conditioning.
- Data driven rule and policy changes and subsequent evaluation.

# Section 1: EMERGENCY PLAN, LOGISTICS, FIRST AID KIT

## EMERGENCY PLAN

1. Call 9-1-1
2. Instruct EMS (Emergency Medical Services) to “report to \_\_\_\_\_ and meet (name of person) at (location) as we have an injured student athlete in need of emergency medical treatment.” Give brief description of injury.
3. Provide necessary information to EMS:
4. Name of caller, phone # of caller, nature of emergency
5. Address of school, specific location of field, specific directions to field
6. Number of injured athletes, nature and condition of injured athletes
7. What first aid treatment has been initiated
8. Any other information requested by dispatcher. **Do not hang up until dispatcher hangs up!**
9. Provide appropriate emergency care until arrival of EMS. Upon arrival of EMS provide athlete medical card, vital signs, treatment rendered.
10. Coach/parent should accompany athlete to hospital
11. Notify parent(s) if not present. For schools – notify school nurse and Athletic Director.

## LOGISTICS

1. Designated first aid stations, which could be in the form of tents or other cool, shady areas to treat injuries/illnesses.
2. Designated parking spaces for the ambulances.
3. Adequate first aid equipment and supplies including:
  - First aid kits
  - Portable, lightweight, reliable stretchers
  - Coolers of water, towels
  - Ice Cooler, ice, plastic bags
  - Communication sets (e.g. Walkie Talkie, cell phones)
4. Notification of all local medical facilities regarding the upcoming competition.
  - Location of closest Fire/EMT station
5. Development of a chain of command that establishes and defines the responsibilities of all parties involved.
6. Regular rehearsal of the emergency response plan.

## FIRST AID KIT

Epi Pen	Flashlight	Q-tips	Tweezers
Ace Wraps 2", 4", 6"	Gauze Pads	Save a Tooth Kit	Emergency Contact, Medication/Medical history card for each athlete
Airway	Gauze, Rolled	SCISSORS	Blanket
Alcohol (swabs)	GLOVES	Sling	
Antibiotic Ointment	Hydrocortisone Cream	Splints - multiple sizes	
Band-Aids	Ice Packs (instant)	Sun Block	
SteriStrips	Insect Repellent	Tape and Pre-Wrap	
Contact Lens Kit	Iodine Prep Pads	Tape Cutter	
Disinfectant Soap	PEN and PAPER	Thermometer - oral	
Eye Wash/ Patch	Plastic Bags for Ice	Tongue Depressors	

## EMERGENCY CONTACT, PRIOR INJURY, MEDICATION CARD

### Emergency Contact Information

- Names of at least two contacts with phone numbers
- Choice of hospital

### Prior Injuries

- List all prior surgeries, significant injuries (e.g. concussions, dislocations, etc.), and disorders/diseases with dates of occurrence
- Instructions pertinent to any disorders/diseases

### Medication Card

There MUST be a medication card for each student-athlete. The card must include:

- Name
- Date of Birth (Age)
- Medication Name
- Dosage
- Reason for Medication (name of disorder)
- Instructions for Use
- Name and phone of doctor who prescribed drug
- Drug Allergies

## Section 2: CPR Guidelines

Step/Action	Adult 8 years and up	Child 1 to 8 years	Infant under 1 year
<b>Survey the Scene</b>			
<b>Get Help</b>	Call 9-1-1	Call 9-1-1	
<b>Airway</b>	Head tilt / chin lift		
<b>Breaths</b> Initial	2 breaths at 1 second/breath		
Foreign body airway obstruction	Abdominal thrusts		Back slaps and chest thrusts
<b>Compressions</b>			
Compression landmarks	In the center of chest, between nipples		Just below nipple line
Compression method Push hard and fast Allow complete recoil	<b>2 hands:</b> Heel of 1 hand, second hand on top	<b>2 hands:</b> Heel of 1 hand with second on top or <b>1 hand:</b> Heel of 1 hand only	2 fingers
Compression depth	1.5 to 2 inches	About 1/3 to 1/2 the depth of the chest	
Compression rate	100/min ( <i>Sing Row, Row, Row Your Boat</i> )		
Compression Ventilation ratio	30:2 ( <i>Sing Row, Row, Row Your Boat twice</i> )		
<b>Defibrillation</b>			
AED	Use adult pads. Do not use child pads/child system	Use after 5 cycles of CPR. Use child pads/system if available.	No recommendation

## Section 2: Stroke Symptoms and Management

### SYMPTOMS

- SUDDEN one sided numbness/weakness of face, arm or leg.
- SUDDEN confusion, trouble speaking or understanding.
- SUDDEN trouble seeing in one or both eyes.
- SUDDEN trouble walking, dizziness, loss of balance or coordination.
- SUDDEN severe headache with no known cause.

### MANAGEMENT: Act F.A.S.T.

- Face: Smile – Does one side of face droop?
- Arms: Raise both arms – Does one arm drift downward?
- Speech: Repeat a sentence – Are words slurred and/or out of order?
- Time: If symptoms present – CALL 9-1-1 immediately!

<http://www.stroke.org/site/PageServer?pagename=SYMP>

## Section 2: Choking Guidelines



### Check the Scene

- Make sure it is safe for you to help the choking victim. Don't become another victim yourself.

### Check the Victim

- Ask if they are choking. If they can not cough, speak, or breathe, then they need help.
- Ask for permission to help.

### Call for Help

- Tell someone to call 9-1-1 and come back!

## Abdominal Thrusts

### Perform abdominal thrusts:



- Place the thumb side of your fist just above the victim's belly button.
- Grab your fist with your free hand.
- Pull quick, upward thrusts to dislodge the object.
- Use chest thrusts on a pregnant woman (middle of the breast bone)

**Repeat Abdominal Thrusts until the object is forced out, the victim can breathe, or the victim becomes unresponsive.**

### If victim becomes unresponsive:

- Open the airway, look for an object. If an object is visible, remove it. DO NOT perform a blind finger sweep.
- Begin CPR (starting with compressions) with one extra step: each time you open the airway, look for the object in the back of the throat. If you see an object, remove it.

## Recovery Position



Place the person on her left side with the left arm perpendicular to the body and the right arm draped over the left. By placing the victim on their side, fluid can drain from the mouth. You must still monitor the person's ABCs (airway, breathing, and circulation).

## Section 3: On the Field Assessment

### ABCDE

**Airway:** “Airway assessment is the first priority in any casualty. The airway must be kept open and patent (remove foreign debris, chin lift or jaw thrust).

**Breathing:** Breathing is then assessed with “look, listen and feel” method. If the casualty is not breathing, then mouth-to-mouth resuscitation must be instituted. Medical coverage staff for sports events should be CPR and defibrillator trained.

**Circulation:** Palpating peripheral pulse, e.g., the carotid pulse at the angle of the jaw next assesses circulation. If there is no pulse, then external cardiac compressions are instituted, along with defibrillation where appropriate.

**Disability/Neurologic Status:** Disability is then determined with a very rapid and brief neurologic assessment using the mnemonic “AVPU” (alert, responding to vocal stimuli, responding to painful stimuli, unresponsive).

**Exposure:** of the casualty must be adequate to allow for a careful examination and assessment.”

[From IAAF Medical Manual, Chapter 8 Emergency Care](#)

#### 1. Survey the scene while moving toward the injured athlete:

- a. Has the play stopped? Make sure the referees have stopped the game.
- b. Is the injured athlete moving?
- c. Are parents, players, coaches approaching the athlete?
  - i. Keep parents, players, coaches a significant distance from the injured athlete – no touching or moving the injured athlete unless specifically requested by medical personnel. **TAKE CONTROL OF THE SITUATION!**

#### 2. When you reach the athlete on the field:

- a. Are you OK? (Is player conscious or unconscious?)
- b. If unconscious:**
  - i. Assume head/neck injury – immobilize head and **DO NOT MOVE ATHLETE!**
  - ii. Start CPR, get an AED and
  - iii. Call 9-1-1
- c. If conscious:**
  - i. Is there any bleeding?**
    1. If yes, control the bleeding with **direct pressure** to the site with a sterile gauze pad.
  - ii. If no bleeding:**
    1. Where does it hurt?
    2. Is there any deformity (protruding bone, swelling)?
      - a. If yes, split or brace and call 9-1-1
  - iii. Can the athlete “walk off” the playing field safely? YES**
    1. Yes means there is
      - a. no bleeding
      - b. no deformity

- c. no dizziness
  - d. no head or neck pain with movement
  - e. no disorientation
  - f. no loss of sensation, numbness, or tingling in arms or legs
  - g. If in doubt, DO NOT MOVE ATHLETE! The athlete must be alert and responsive!
2. Have athlete get up slowly and with support.
    - a. Sit first and monitor symptoms. Then have athlete stand, with support, then without support.
    - b. Brace yourself properly as athlete may collapse. If athlete collapses, make sure head does not hit ground and call 9-1-1.
  3. Walk athlete to sideline and begin sideline assessment.

**iii. Can the athlete “walk off” the playing field safely? NO**

1. Immobilize neck or other body part involved.
2. Cover athlete with blanket
3. **The Log-Roll Maneuver.**
  - a. Requires a minimum of three persons; preferably four to six.
  - b. One person maintains stabilization at all times.
  - c. Another person places one hand on the shoulder with the other at the hip.
  - d. The athlete is then rolled towards the individuals and the rigid support slid behind the athlete.
  - e. The athlete is then rolled back onto the rigid support.
  - f. The person responsible for stabilization of the head and neck directs the log roll maneuver.
3. Call 9-1-1 and assist EMTs if requested.

**3. Sideline Assessment** - Signs and symptoms of injury may appear once the athlete is off the field. Never leave the athlete alone until serious injury is ruled out.

- a. Reassess athlete’s mental status
  - i. If deterioration, call 9-1-1
- b. Reassess injury site
  - i. Compare injured side to uninjured side. If not the same, athlete cannot continue and must be examined by a health care professional.
  - ii. If there is increased pain, burning, swelling, weakness, decreased range of motion – if severe, call 9-1-1.
  - iii. If not severe, send athlete with parents for proper examination.
- c. Send for professional evaluation if:
  - i. Pain continues while attempting to play
  - ii. Pain not relieved by rest
  - iii. Point specific pain

- iv. Pain affects performance
- v. Decrease range of motion in a joint
- vi. Comparative weakness
- vii. Swelling
- viii. Numbness and/or tingling

**4. Return to Play: REST - Resume Exercise Below the Soreness Threshold**

Compare injured side to uninjured side. In order to safely return to play there must be:

- No more pain
- Full healing (no swelling)
- Complete ROM
- Equal Strength
- Equal Flexibility
- Restored Endurance
- Able to replicate sport movements with no pain
- Athlete must listen to body – if things do not feel “right,” further evaluation may be necessary.

a. During Game Return to Play - Only allow the player to return if they are capable of playing at 100% with no signs and symptoms present. **IF IN DOUBT, KEEP HIM/HER OUT!**

b. Next Game Return to Play - physician clearance is required to return to play.

**5. Parental or guardian permission and notification**

a. Notify the parent if an injury occurred that precluded the athlete’s ability to continue play.

b. If the player is under the age of 18, always get parental or guardian permission before treating the player. This may be done before the season begins or by the permission of the parent at the field of play

[On-the-Field Assessment, American Osteopathic Academy of Sports Medicine](#)  
[Quick Sports Injury Management Guidelines, Massachusetts General Hospital](#)  
[2009-2010 NCAA Sports Medicine Handbook](#)  
[First Aid, Journal of the American Heart Association](#)

## Section 4: Concussion Signs and Symptoms Evaluation

**Any athlete with a suspected concussion should be IMMEDIATELY REMOVED FROM PLAY, urgently assessed medically, should not be left alone and should not drive a motor vehicle.**

### What is a Concussion? (from [Sports Concussion Assessment Tool](#))

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of nonspecific symptoms (like those listed below) and often does not involve loss of consciousness. Concussion should be suspected in the presence of any one or more of the following:

- Symptoms (such as headache), or
- Physical signs (such as unsteadiness), or
- Impaired brain function (e.g. confusion) or
- Abnormal behavior.

### On the Field Testing (see [http://bjsm.bmj.com/cgi/reprint/43/Suppl\\_1/i89](http://bjsm.bmj.com/cgi/reprint/43/Suppl_1/i89))

Concussion should be suspected in the presence of any one or more of the following symptoms (such as headache), or physical signs (such as unsteadiness), or impaired brain function (e.g. confusion) or abnormal behavior.

#### 1. Presence of any of the following signs and symptoms may suggest a concussion:

Loss of consciousness	Seizure or convulsion	Amnesia	Ringing in the ears
Pressure in head	Neck pain	Nausea	Sensitivity to light
Dizziness	Blurred vision	Balance problems	Don't feel right
Sensitivity to noise	Feeling slowed down	Feeling like in a fog	Confusion
Difficulty concentrating	Difficulty remembering	Fatigue or low energy	Vomiting
Drowsiness	More emotional	Sadness	Irritable
Nervousness	Anxious	Headache	

#### 2. Memory Function

Failure to answer all questions correctly may suggest a concussion. Listen for slurring of the speech.

- “At what venue are we at today?”
- “Which half is it now?”
- “Who scored last in this game?”
- “What team did you play last week / game?”
- “Did your team win the last game?”

#### 3. Balance Testing - Tandem Stance

“Stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. You should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes.”

**Observe the athlete for 20 seconds. If they make more than 5 errors** (such as lifting their hands off their hips; open their eyes; lift their forefoot or heel; step, stumble, or fall; or remain out of the start position for more than 5 seconds) **then this may suggest a concussion.**

### **Signs to Watch For After Concussion** (from [Sport Concussion Assessment Tool](#))

Problems could arise over the first 24-48 hours. Athlete should not be left alone and must go to a hospital at once if he/she:

- Has a headache that gets worse
- Are very drowsy or can't be awakened (woken up)
- Can't recognize people or places
- Has repeated vomiting
- Behave unusually or seem confused; are very irritable
- Has seizures (arms and legs jerk uncontrollably)
- Has weak or numb arms or legs
- Are unsteady on your feet; have slurred speech

### **Seeing a Doctor**

Be safe and see a doctor after a concussion. The doctor should use the [Sport Concussion Assessment Tool](#) as an examination guideline.

### **Return To Play** (from [Sport Concussion Assessment Tool](#))

1. No return to play in current game
2. Stepwise return to play
  - a. No activity - rest (physical and mental) until asymptomatic
  - b. Light aerobic exercise (e.g. stationary bike)
  - c. Sport-specific training
  - d. Non-contact drills (start light resistance training)
  - e. Full-contact drills after medical clearance
  - f. Return to competition - Game Play

There should be approximately 24 hours (or longer) for each stage and the athlete should return to stage 1 if symptoms recur. Resistance training should only be added in the later stages. Medical clearance should be given before return to play.

## Section 5: Sprains and Strains

“Sprains and strains” are the most common injuries that occur in sports regardless of the type of sport or age of the athlete.

**Sprains – tear of ligament (attaches bone to bone)**

**Strains – tear of muscle and/or tendon (attaches muscle to bone)**

### **General Signs and Symptoms**

- Pain, tenderness and swelling, especially at the site of injury
- Pop or tearing sensation at the time of injury
- Bruising – “black and blue” coloration a few days after the injury

### **Degrees of Injury**

#### **First Degree**

- Minimal tear of tissue fibers, Inflammation. Possibly able to play, some pain.
- Usually heals enough in 5-7 days to allow modified activity and requires up to 6 weeks to heal completely

#### **Second Degree**

- Moderate tear of tissue fibers, inflammation, swelling. Unable to play, pain, loss of range of motion. Needs medical attention.
- Second Degree – Requires 6-10 weeks to heal completely

#### **Third Degree**

- Severe tear of tissue. Unable to play, severe pain and loss of range of motion. Unstable and requires immediate medical attention.
- Third Degree – Requires 12-16 weeks to heal completely

## Section 6: Injury Management – P.R.I.C.E.S.

### **P – Protection**

Remove athlete from competition. Protect the injured area from further injury.

### **R – Rest**

Complete cessation of activity and assessment of injury.

### **I – Ice**

Ice significantly helps to minimize pain, swelling and inflammation. Ice may be applied in the form of an ice pack (ice in a plastic bag; chemical ice pack or flexible gel pack – 15 minutes), ice massage (ice cube rubbed directly on the skin – 5 minutes), or ice bath (immersion of the body part in ice water – 15 minutes). Ice can be applied every 2 hours until swelling is relieved.

### **C – Compression**

Use compressive wrap to help minimize swelling. The bandage should be applied firmly with an overlap of one-half the bandage’s width.

### **E – Elevation**

Elevating the injured area above the level of the heart helps to minimize the swelling.

### **S – Support**

Use a brace or splint to support the injured area.

## Section 7: CONDITIONS NEEDING FIRST AID

### Allergic Reactions

1. If an athlete has an allergic reaction, it is important that he/she gets medical treatment immediately.
2. If the athlete experiences breathing difficulty and and/or if he/she has an Epi-Pen, get it for them and have him/her give themselves an injection. Do not do it for them. If they cannot do it themselves, call 9-1-1.
3. If the athlete's reaction is minor (hives, itching, irritation, etc.), contact parent. In most cases, a Benadryl will fix the problem but as a coach, you cannot give that medicine to the athlete.

### Asthma

1. Only athletes who have been diagnosed with asthma should use inhalers;
2. Athletes with asthma should only be allowed to use their own inhaler;
3. If trouble persists, call 9-1-1.

### Bleeding

#### **Shock**

1. Excessive bleeding can lead to shock. Don't waste time trying to find a dressing;
2. Use gloved hand and apply direct pressure over the wound;
3. Elevate the extremity;
4. Keep applying steady, firm pressure until the bleeding is controlled;
5. Once bleeding is controlled, apply a dressing firmly in place (pressure bandage);
6. Call 9-1-1.

#### **Bloody Nose**

1. If available always wear protective gloves
2. Nosebleeds are common and usually short lived
3. Control the bleeding by squeezing the nose with constant pressure for 5-10 minutes. Ice may be applied to both sides of the nose to help speed coagulation and stop bleeding. Keep the head higher than the rest of the body.
4. Do not tilt the head back
5. Do not let the athlete blow his or her nose
6. Seek medical attention if:
  - a. Persistent breathing difficulty
  - b. A deformity of the nose
  - c. Persistent bleeding
  - d. A deep cut
  - e. A known or suspected fracture

### **Dental - Broken Tooth**

1. Always wear protective gloves
2. Keep the tooth. Never pick up the tooth by the roots. Grasp the tooth by the crown.
3. If possible reposition the tooth in its socket immediately. Hold the tooth in place by gently biting down on it or have the athlete gently hold it in place with his or her fingers. A tooth has the best chance of survival if placed back in its socket within the first 30 minutes.
4. If you are not able to place the tooth back into its socket the following are recommended methods of transport (in order of preference):
  - a. If the tooth is dirty rinse the tooth off in water. Do not scrub the tooth or dry it.
  - b. Emergency tooth preservation kit
  - c. Cold whole milk
  - d. Saline solution
  - e. Saliva
  - f. Cold water.
5. Send to dentist – don't forget to send the tooth.

### **Diabetics**

1. Symptoms: rapid onset of altered mental status, intoxicated appearance, elevated heart rate, cold and clammy skin, hunger, seizures, anxiousness
2. What to Do: Ask the athlete. The athlete will direct you (is he/she hypoglycemic or hyperglycemic?). Does he/she want juice? Sugar? Get athlete orange juice immediately.

### **Eye Injuries**

#### **Eye Contusion**

1. Be cautious of a fracture of the orbit (eye socket). Things to look for:
  - a. Blurred vision
  - b. Swelling
  - c. Discoloration of the area surrounding the eye
  - d. Broken blood vessels in the eye
  - e. Injured eye appears lower than un-injured eye
2. Gentle application of cold compress
3. Call 9-1-1.

#### **Object in Eye**

1. If an object such as dirt, eyelash or chemical substance is in the eye
  - a. Gently flush the eye with clean water or saline
  - b. Continue to flush until the object is removed
2. If you are unable to flush the eye successfully cover both eyes and transport the athlete to medical attention. Covering both eyes will minimize movement of the eye with the foreign substance in it.

3. If the eye is penetrated with a sharp object or if the eye is bleeding cover both eyes with a light dressing and seek immediate medical attention. Do not attempt to remove the object.

### **MRSA - methicillin-resistant Staphylococcus aureus infection**

1. Keep an eye on minor skin problems — pimples, insect bites, cuts and scrapes — especially in children. Signs of infection are:
  - a. Redness, warmth, swelling, tenderness, red streaks, abnormal color
  - b. Pus — a yellowish-white fluid that may have a foul smell
  - c. Fever
  - d. Longer than normal healing time
  - e. Any increase in size
  - f. Unexplained or unusual pain or sensitivity
  - g. Induration (hardness) of wound
2. Wash your hands.
3. Keep personal items personal.
4. Keep wounds covered.
5. Shower after athletic games or practices.
6. Sit out athletic games or practices if you have a concerning infection.
7. Launder workout clothing/uniforms after each use using hot water and detergent.
8. Report all wounds to team coach/trainer/nurse/doctor.
9. Use antibiotics as per doctor's orders.

<http://www.mayoclinic.com/health/mrsa/DS00735>

### **Muscle Cramping**

1. Stop activity immediately
2. Administer Gatorade or other sports drink
3. Gently massage and stretch muscle

### **Seizures**

1. Have athlete lie down. Remove any objects in hand or nearby
2. Loosen restrictive clothing
3. Allow the seizure to finish
4. Do not stick your fingers or other objects in the athlete's mouth
5. After the convulsions have ended, protect the airway.
6. If athlete is blue, lift chin and tilt head back.

## **WOUND CARE**

### **General Information**

1. Always wear protective gloves
2. Apply a sterile gauze pad to the wound (if not available use a clean towel), elevate the wound and apply direct pressure for until bleeding stops. If the bleeding continues past 5-10 minutes seek medical attention.

3. If the wound is soiled, irrigate with a disinfectant, or if nothing else is available, clean water.
4. Cover the wound with a clean or sterile dressing to prevent infection.
5. Clean blood spills (or blood on uniforms or clothes)

### **Abrasions & Turf Burns**

Covering the wound is not enough. It is imperative that the wound is first cleaned thoroughly in order to prevent potentially harmful bacteria

1. Clean affected area thoroughly with clean water or hydrogen peroxide
2. Apply antibiotic ointment (Neosporin, Triple Antibiotic ointment)
3. Cover with gauze bandage, pre-wrap and soft tape
4. After 2 days, uncover and air dry. The open air will help the wound to scab over
5. Wrap with pre-wrap and soft tape for all participation.

Covering the wound is not enough. It is imperative that the wound is first cleaned thoroughly in order to prevent potentially harmful bacteria

### **Lacerations**

1. Apply direct pressure with gauze to stop bleeding;
2. Clean the wound thoroughly and irrigate with saline and Betadine;
3. Steri-strip, if the bleeding stops;
4. If bleeding does not stop and wound is deep (greater than 1/8" deep, cover with pressure bandage and send to physician for evaluation/stitches;
5. If wound is caused by object, refer for tetanus.

### **Blisters**

1. Clean thoroughly. Irrigate with saline and Betadine;
2. Place petroleum jelly pad over blister to avoid continuous rubbing;
3. Wrap with pre-wrap and soft tape;
4. Watch for inflammation (redness) and warmth, and possibly streaking (long term). These are signs of infection;
5. If infection develops, refer to physician immediately for antibiotics.
6. Never cut away the top skin off a blister if it's soft. The skin helps to provide a protective barrier.

NEVER apply white athletic tape around muscle. This eventually kills muscle cells and places unnecessary stress on bones – potentially causing stress fractures. Only use stretch elastic tape (adhesive) around muscle bellies.

## Section 8: Heat Injury Management and Prevention

**Muscle Cramps** – Painful spasm of muscles

1. Move athlete to a shaded, cooler area.
2. Have athlete drink cold water.
3. Gently stretch the cramped muscle.

**Heat Exhaustion** – The most common type of heat illness. Caused by a decrease in blood volume due to dehydration. Common signs and symptoms are dizziness, headache, nausea, profuse sweating, cool/clammy skin, rapid weak pulse and body temperature at or slightly below normal.

1. Move athlete to a shaded, cooler area.
2. Elevate legs and have athlete drink cold water.
3. Place athlete in cold water bath or use ice at base of neck, groin, armpits
4. Monitor vital signs - respiration, pulse and level of consciousness. If pulse and breathing rates increase and athlete feels faint, call 9-1-1.

**Heat Stroke** – Least common, but most serious problem that can even be fatal. In this case the blood volume is so low that the body's cooling system has shut down, the person stops sweating and goes into shock. Common signs and symptoms are disorientation, possible unconsciousness, no sweating, hot/dry skin, rapid/strong pulse and an increased body temperature.

1. **CALL 9-1-1. This is a medical emergency and requires rapid cooling and immediate transport to the hospital.**
2. Move athlete to a shaded, cooler area.
3. **Reduce body temperature by placing athlete in cold water bath!**
4. Monitor vital signs - respiration, pulse and level of consciousness.

### HEAT AND DEHYDRATION INJURY PREVENTION PLAN

Too many high school, college, and professional athletes have died of heat exhaustion and dehydration. Do not allow this to happen to your child. Coaches must follow these guidelines and be properly trained in CPR/AED use.

- Weigh the athletes before and after practice and replace each pound lost with 16 - 24 oz of water. This water must be sipped throughout the remainder of the day after practice to get the best absorption. Dehydration can occur over several days to weeks of practice and incomplete rehydration (observe urine color - if dark yellow, hydrate). This is why athletes can die in weather in the 70's with little humidity.
- An electrolyte replacement drink may be needed in practices greater than one hour if the athlete is a salty sweater (white rim on cap or armpit of shirt – if in

doubt, lick your sweaty skin – if it tastes salty use an electrolyte replacement).  
Try ¼ teaspoon of salt in a 32 oz. sports drink.

- Acclimate to the heat over 7 - 14 days:
  - Days 1 – 5: One practice per day, three hour maximum time limit.
  - Days 1 – 2: No protective gear except a helmet allowed.
  - Days 3 – 5: Helmets and shoulder pads only.
  - Day 6: Full gear and full contact allowed.
  - Days 6 – 14: Two-a-day practices must be followed the next day by a single practice day or a rest day. On two-a-day practice days each practice session must not exceed three hours (maximum five hours total daily practice time) and the two practice sessions must be separated by at least three hours in a cool environment.
- Coaches must pay attention to the heat index - be very careful when in the red zone – walk through only, no vigorous practice!
- Have a kiddie pool (Toys-R-Us for \$15.00) filled with water and ice ready for athletes for break time and after practice. At minimum, the athletes should walk through it and if necessary perform full body immersion.
- If the field has no shaded areas, get an EZ Up tent. Break time must be in the shade.
- Have a buddy system to quickly recognize a problem. Football teams are large and it is difficult for the coaches to observe everyone.
- Parents, athletes and coaches must know these guidelines.

#### References

1. Preseason Heat-Aclimatization Guidelines for Secondary School Athletics, Journal of the National Athletic Trainers Association, June 2009, pp.332-333.
2. NOAA's National Weather Service Heat Index Table.
3. Prevention of Heat Illness, NCAA 2008-2009 Sports Medicine Handbook, pp.30-32.

## Section 9: Sports Diet and Nutrition

1. Eat a balanced diet every day, including a good breakfast.
2. Carbs are for energy – avoid processed foods and sugar and eat whole grains.
3. Proteins build muscle – avoid fatty meats and eat fish, poultry, and lean meat.
4. Fast foods don't make you fast – they slow you down.
5. Read food labels – look at serving size and the ingredient list.
6. Have FUN FUN FUN and enjoy being active – it's the best habit you can have!!!

### Pre and Post Game/Practice Meal and Snack Ideas

Eat snacks with no more than 5 grams of fat or 12 grams of sugar per serving – fewer is better

- ✓ *Fruit and veggies like grapes, orange and apple slices, a half of a banana, baby carrots, celery sticks, cucumber slices*
- ✓ Pretzels, Popcorn
- ✓ Make a trail mix with nuts and dried fruits
- ✓ Chex cereal mix or other low sugar cereals
- ✓ Fruit cups/apple sauce
- ✓ Low fat granola bars and crackers like graham/whole wheat bread and peanut butter
- ✓ Yogurt (try Dannon Gogurts or Stonyfield squeeze tubes)
- ✓ Popsicles
- ✓ Healthy quick-breads or muffins (banana, zucchini, pumpkin)
- ✓ Cheese sticks or cubes
- ✓ Eat a balanced meal within 60 minutes after a game or practice.

### Fluid Replacement

- |  |   |
|--|---|
| 1. 2 to 3 hours before the event           | Drink 16 ounces of water  |
| 2. 1 hour before the event                 | Drink 8 ounces of water   |
| 3. 15 minutes before the event             | Drink 4 ounces of water   |
| 4. Immediately before the event            | Weigh yourself  |
| 5. Every 10 to 20 minutes during the event | Drink 4 ounces of water   |
| 6. Events longer than 60 to 90 minutes     | Drink 4 ounces of sports drink every 10 to 20 minutes   |
| 7. Immediately after the event             | Weigh yourself again  |
| 8. For every pound of weight loss          | Drink 16 to 24 ounces for every pound of weight loss – see below  |
| 9. The rest of the day                     | Keep sipping water throughout the day. For example, if you lose 3 pounds you cannot guzzle 48 to 72 ounces in one sitting. Consume this amount throughout the remainder of the day. |
| 10. Next Morning                           | Weigh yourself again. Make sure you have fully rehydrated.  |

## Section 10: Injuries and Prevention by Sport

### GUIDE TO BASEBALL INJURY PREVENTION

Almost 500,000 baseball-related injuries are treated each year. Baseball players' injuries are most often caused by overuse, repetitive throwing, poor body mechanics, muscular imbalance, muscle weakness, and muscle inflexibility. Kids are particularly susceptible to injury—an estimated 58 percent of baseball players age 11 - 18 experience elbow injuries during or after organized games.<sup>1</sup>

- Baseball has the highest fatality rate of all children's team sports: Three to four children per year in the U.S. die as a result of impact from the ball.
- Baseball is the leading cause of sports related eye injuries in children.
- As many as 45 percent of pitchers under the age of 12 have chronic elbow pain.
  - Among high school pitchers, the percentage rises to 58 percent.
- Pitchers suffer the most injuries (21.6 percent) of the high school players
- Most Common Injuries
  - Little League Elbow
  - Little League Shoulder
  - Rotator Cuff Tears
  - Back, Knee, and Wrist Sprains

#### INJURY PREVENTION MEASURES

- **The National Athletic Trainers' Association suggests that high school athletes engage in conditioning training at least six weeks before the start of practice.**
- **Previous injury is the most important risk factor for injury.** Do not return to play too soon. Follow your doctor's recommendations. Your team needs its players on the field, not on the sidelines.
- **Teach proper throwing mechanics.**
  - More body rotation to decrease shoulder stress (core strength).
  - Improper elbow angle – arm away from body when ball released.
  - Do not try to throw too hard.
- **Warm-up to throw, don't throw to warm-up.**
- **Limit the number of pitches thrown.**
  - Age 10 and under: 75/day, 11-12: 85/day, 13-16: 95, 17-18: 105
- **Use properly fitting equipment; especially shoes (cleats).**
- **Never play through pain!**
- **Make sure first aid is available at all games and practices.**

<sup>1</sup> Petty DH, Andrews JR, Fleisig GS, Cain EL. *The American Journal of Sports Medicine*. 32:1158-1164, 2004.

## GUIDE TO FIELD HOCKEY INJURY PREVENTION

The modern game of field hockey is played in 132 countries around the world and is second only in popularity to soccer as a team sport. Epidemiological studies have consistently shown that injuries in field hockey are numerous and can be serious. Most serious injuries result from being struck by the stick or the ball.

- It is estimated that 15 percent of hockey players are injured during a single season, and that injuries cause players to spend 11 percent of the total hockey season training and playing at less than full capacity.
- Strains are the most common type of injury, followed by sprains, overuse injuries, fractures, and contusions.
- The body areas most commonly injured are the ankle, followed by back, knee, thigh, upper extremity, shin, and groin.
- ACL injuries mainly occur in plant and cut moves or one-leg landings without direct contact with other players.

### INJURY PREVENTION MEASURES

- **The National Athletic Trainers' Association suggests that high school athletes engage in conditioning training at least six weeks before the start of practice.**
- **Previous injury is the most important risk factor for injury.** Do not return to play too soon. Follow your doctor's recommendations. Your team needs its players on the field, not on the sidelines.
- **Proper Warm-Up is essential to injury prevention.**
- **Proper strength training will decrease injuries.**
  - Learning to squat, jump, land, change direction, and balance will help prevent knee and ankle injuries.
  - Performing specific hamstring and groin exercises will help prevent pulls to these areas.
- **Use properly fitting cleats, shin guards, and mouth guards. Goalkeepers should wear throat protection.**
- **All field hockey players should undergo at least a pre-season fitness screening for general strength, flexibility and endurance.**
- **Coaches and officials must enforce rules aimed at preventing dangerous use of the hockey stick and careless play of the ball.**
- **Make sure first aid is available at all games and practices.**

## GUIDE TO FUTSAL INJURY PREVENTION

Futsal (futsal salon) was approved by FIFA as the indoor version of soccer in 1962. Futsal uses five players on a side and is played on a court similar in size to a basketball court. The game does not use sideboards like other forms of indoor soccer. A player in a 40-minute Futsal match runs between 2.5 and 3.7 miles depending on the position played and the style of play of the team. In contrast, in a 90-minute high school soccer game, a player runs three to five miles.

- The most common injuries are to the ankles and knees.
- Sprains, strains, and fracture/dislocations are the most common types of injuries.
- The early teens are the most prevalent time for injury, especially to the ankles and knees.
- Most of the ankle sprains happened in struggles for ball possession on the ground.
- Knee injuries mainly occur in plant and cut moves or one-leg landings without direct contact with other players.

### INJURY PREVENTION MEASURES

- **The National Athletic Trainers' Association suggests that high school athletes engage in conditioning training at least six weeks before the start of practice.**
- **Avoid head flicking the ball.** Take a step back and control it with your chest or thigh.
- **Previous injury is the most important risk factor for injury.** Do not return to play too soon. Follow your doctor's recommendations. Your team needs its players on the field, not on the sidelines.
- **Proper Warm-Up is essential to injury prevention.**
- **Proper strength training will decrease injuries.**
  - Learning to squat, jump, land, change direction, and balance will help prevent knee and ankle injuries.
  - Performing specific hamstring and groin exercises will help prevent pulls to these areas.
- **Use properly fitting cleats and shin guards.**
- **Never leave a goal unsecured.**
- **Make sure first aid is available at all games and practices.**

## GUIDE TO LACROSSE INJURY PREVENTION

Lacrosse is a physical sport that involves swinging sticks, high speed projectiles, and fast running. Because of the high speeds and high number of collisions in men's lacrosse, helmets as well as face masks, mouth guards, gloves and upper body padding are mandatory for all players. Women also play at high speeds, but only incidental contact between players is allowed. Mouth guards for women are required; in 2005 protective eye wear was mandated.

- In high school play, the injury rate for adolescent boys was slightly higher than that for girls. The most prevalent injuries for adolescent girls and boys are knee and ankle sprains resulting from non-contact mechanisms.
- Male players had significantly higher rates of shoulder, neck, trunk, and back injuries and higher game-to-practice injury ratios. They are also more likely to suffer a concussion due to player-to-player contact.
- Female players had higher rates of overall head injuries, many involving contusions and abrasions from stick and ball contact.
- In college, more than 60 percent of all severe game injuries for women were non-contact lower extremity sprains and strains and knee derangement (ACL injuries).

### INJURY PREVENTION MEASURES

- **The National Athletic Trainers' Association suggests that high school athletes engage in conditioning training at least six weeks before the start of practice.**
- **Previous injury is the most important risk factor for injury.** Do not return to play too soon. Follow your doctor's recommendations. Your team needs its players on the field, not on the sidelines.
- **Proper Warm-Up is essential to injury prevention**
- **Proper strength training will decrease injuries.**
  - Learning to squat, jump, land, change direction, and balance will help prevent knee and ankle injuries.
  - Performing specific hamstring and groin exercises will help prevent pulls to these areas.
- **Use properly fitting cleats, mouth guards, and eyewear.**
- **Focus on training and education in stick handling.**
- **Enforce current rules of play.**
- **Make sure first aid is available at all games and practices.**

## GUIDE TO SOCCER INJURY PREVENTION

Soccer is one of the most widely played sports in the world and is characterized by short sprints, rapid acceleration or deceleration, turning, jumping, kicking, and tackling. An elite player covers on average between five and seven miles per game.

- The most common injuries are: hamstring strains, groin strains, ankle sprains, knee sprains, foot sprains, and concussions.
- Injury risk factors include: mechanical instability in ankles or knees, general joint laxity, functional instability, poor posture, lack of strength training, lack of endurance training, low training-to-match ratio, and playing on a hard surface.
- Boys aged 11 to 14 are at a special risk. During puberty, height increases faster than muscle growth. The tall, weak boy gets injured more often than the shorter, less mature or the taller more mature boy.
- ACL injuries mainly occur in plant and cut moves or one-leg landings without direct contact with other players.

### INJURY PREVENTION MEASURES

- **The National Athletic Trainers' Association suggests that high school athletes engage in conditioning training at least six weeks before the start of practice.**
- **Avoid head flicking the ball.** Take a step back and control it with your chest or thigh.
- **Previous injury is the most important risk factor for injury.** Do not return to play too soon. Follow your doctor's recommendations. Your team needs its players on the field, not on the sidelines.
- **Proper Warm-Up is essential to injury prevention.**
- **Proper strength training will decrease injuries.**
  - Learning to squat, jump, land, change direction, and balance will help prevent knee and ankle injuries
  - Performing specific hamstring and groin exercises will help prevent pulls to these areas.
- **Use properly fitting cleats and shin guards.**
- **Never leave a goal unsecured.**
- **Up to 50 percent of traumatic soccer injuries are due to foul play. Avoid collisions.**
- **Make sure first aid is available at all games and practices.**

## GUIDE TO SOFTBALL INJURY PREVENTION

The various motor skills associated with softball, such as pitching, batting and fielding, place considerable perceptual and physical demands upon players. Each of these disciplines comes with their own injury risks.

- Ankle sprains, knee internal derangements, shoulder, and low back injuries were the most common conditions in NCAA women's softball.
  - Sliding results in 23 percent of all game injuries, primarily ankle sprains.
  - Non-contact knee internal derangement (ACL injury) accounts for the greatest amount of activity time loss.
  - Both pitching and batting can put significant strain on the shoulders, meaning that shoulder overuse injuries can grow over time.
  - Prolonged periods of batting can lead to serious back injuries like muscle strains and herniated discs.
- In a game versus a practice, an athlete was more than three times as likely to sustain a concussion, more than twice as likely to sustain a knee internal derangement, and almost twice as likely to sustain an ankle sprain.
- A common misconception is that the windmill motion of softball pitching creates less stress on the arm than the overhead motion of baseball pitching does.

### INJURY PREVENTION MEASURES

- **The National Athletic Trainers' Association suggests that high school athletes engage in conditioning training at least six weeks before the start of practice.**
- **Teach proper sliding technique and early decision making.**
- **Teach proper throwing mechanics. Warm-up before you throw; do not throw to warm-up.**
- **Proper strength training will decrease injuries.**
  - Learn to squat, jump, land, and change direction to prevent knee and ankle injuries.
  - Perform specific shoulder girdle exercises to help prevent rotator cuff and other shoulder injuries.
  - Core strengthening will help prevent lower back injury.
- **Never play through pain! Your team needs its players on the field, not on the sidelines.**
- **Field maintenance is critical to injury prevention.**
- **Make sure first aid is available at all games and practices.**

## GUIDE TO VOLLEYBALL INJURY PREVENTION

Each year, more than 187,000 volleyball-related injuries are treated in hospitals, doctors' offices, clinics, ambulatory surgery centers and emergency rooms.

- Over 60 percent of volleyball injuries are related to jumping.
  - Blocking, followed by spiking, accounts for the highest rate of injury.
- Injuries are more common on concrete or linoleum than on wood.
- Ankle injuries are the most common acute injury. They are usually caused when a blocking player's foot lands on the opponent. Other acute injuries include finger and knee sprains and meniscus tears.
- Patellar tendonitis (jumper's knee) accounts for up to 80 percent of overuse injuries. ACL injuries mainly occur in plant and cut moves or one-leg landings without direct contact with other players.
- Overhead movements such as overhead serving and spiking increase risk of shoulder impingement.
- Low back overuse accounts for approximately 10 to 14 percent of injuries.

### INJURY PREVENTION MEASURES

- **The National Athletic Trainers' Association suggests that high school athletes engage in conditioning training at least six weeks before the start of practice.**
- **Previous injury is the most important risk factor for injury.** Injury rehabilitation must be complete before return to play.
- **Ankle Injury Prevention:** Emphasize avoidance of the center line during practice and teach players who jump forward when spiking to take longer steps prior to jumping and to jump straight up rather than forward.
- **Proper strength training will decrease injuries.**
  - Learning to squat, jump, land, change direction, and balance will help prevent knee and ankle injuries.
  - Performing specific shoulder girdle exercises will help prevent rotator cuff and other shoulder injuries.
  - Core strengthening will help prevent lower back injury.
- **Buddy tape fingers, especially if previously injured.**
- **Never play through pain! If you are recovering from an injury, do not return to play too soon. Follow your doctor's recommendations. Your team needs its players on the field, not on the sidelines.**
- **Use padding around posts and maintain playing surfaces.**
- **Remove all jewelry.**
- **Make sure first aid is available at all games and practices.**