Sports Medicine



A Guide to Sports Injuries for Coaches and Parents







We're a national leader in Sports Medicine for student athletes.

Every athlete has goals. We have goals, too. Most importantly, we want every student athlete to be healthy. After all, performance can only improve when good health is maintained. This guide was designed to help you prevent, recognize and react to sports-related injuries.



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Sprains and Strains

Muscle strains and sprains are some of the most common sports injuries. A strain is defined as trauma to the muscle fibers due to a strong contraction or overstretching, while a sprain involves an overstretched ligament. Remember, a ligament is connective tissue attaching bone to bone, whereas tendons connect muscle to bone.

Grades of Sprains an	Grades of Sprains and Strains							
Grade I	Mild – tissue is stretched. May have slight swelling, a mild loss in range of motion, However, there is NO decrease in loss of function.							
Grade II	Moderate – partial tearing of some tissue. Moderate amount of swelling may be present along with bruising or discoloration. There is a moderate loss of range of motion and strength to the joint. There is some decrease in loss of function.							
Grade III	Severe – complete tearing of one or more structures. Significant swelling is almost always present. Discoloration may be seen. Near complete loss of range of motion and strength. There is a marked decrease in loss of function.							

P.R.I.C.E Treatment of Acute Strain or Sprain						
Р	PROTECT the injured area from further damage. This can be a splint or brace or to use crutches if it is a lower extremity injury.					
R	REST the area until evaluated by a physician or athletic trainer.					
Ι	ICE the area to decrease pain and swelling. Ice should be applied no longer than 15-20 minutes at a time. Always ice and ice only for the first 2-3 days after injury and NEVER sleep with ice on an injury.					
С	COMPRESS the area. Use and elastic wrap (ace bandage) to control swelling leaving the fingers/toes exposed. The wrap should be applied distal to proximal (example: start at toes or fingers and wrap towards the heart).					
Е	ELEVATE the area above the heart to use gravity to diminish swelling.					

To ensure a safe and timely return to activity, athletes sustaining these types of injuries should be referred to a licensed athletic trainer or physician soon after the onset of injury in order to initiate the proper treatment.

(Arnheim, Principles of Athletic Training: A Competency Based Approach. 2013)

Fractures and Dislocations

While all fractures are painful and debilitating, some can be difficult to diagnose. Often, a dislocation or forceful disruption of a joint can emulate the bone fracture. A subluxation, defined as a dislocation that naturally realigns itself, can be equally painful.

Signs and Symptoms:

- Obvious deformity or abnormality present
- Swelling to the injured area
- Point tenderness directly over the specific area of bone
- Possible numbness sensation
- Loss of function to the area

Treatment if fracture/dislocation/subluxation is suspected:

- Splint the joints above and below the injured area in a comfortable position.
- Apply an elastic wrap to support the splint and apply pressure to the area for compression and stability.
- Use ice to control pain and swelling.
- Have the athlete transported immediately for further evaluation by a physician.
- emergency care personnel.

Returning to sport with a cast:

(Arnheim, Principles of Athletic Training: A Competency Based Approach. 2013)



• NEVER attempt to reduce (relocate a dislocated joint) yourself. This should only be done by a physician or by

• Athlete <u>must</u> have clearance letter from a licensed medical physician stating that the he or she is permitted to play with upper extremity cast. This letter should be presented to coaches as well as officials at each sporting event. • The Ohio High School Athletic Association states that casts over the elbow, hand, wrist or forearm, must be covered. Use a high density, closed-cell foam, or an alternate material of no less than ½ inch thick. The entire cast must be covered to protect the injury and other athletes. This may only be done with written approval from the treating physician.

Neck and Spine Injuries

Neck and spine injuries are common in high contact sports like football, soccer, or lacrosse. These injuries can include fractured bones, herniated discs, and/or nerve pathology.

Signs and Symptoms:

- Point tenderness and/or pain over any bony prominence in back of the neck
- Numbness/tingling in arms, legs, or down the spine
- Inability to feel or move face or limbs
- Muscle spasm
- Deformity

Treatment for neck/spine injuries:

- Remain calm.
- DO NOT move the athlete. Stabilize the head and neck in the position it is in.
- DO NOT let the athlete move.
- If any of the above symptoms persist, **call 9-1-1** and have the athlete transported immediately.
- Serious neck injury should be suspected for ALL UNCONSCIOUS athletes until proven otherwise. Stabilize the athlete (do not let them move) and **call 9-1-1** to have the athlete transported for further medical evaluation.

(NATA Position Statement: Acute Management of Cervical Spine Injured Athlete. Journal of Athletic Training; 44{3}: 2009)



Concussions

A concussion may be caused by a blow, bump, or jolt to the head or by any fall or hit that jars the brain. This "invisible" injury disrupts the brain's normal physiology which can affect mental stamina and function, causing the brain to work longer and harder to complete even simple tasks. A concussion may involve loss of consciousness, but the majority does not. A concussion is normally a temporary condition from which most kids make a full recovery if handled properly. **Ultimately, ALL concussions are serious because they are brain injuries!**

Common Concussion Symptoms								
Physical	Cognitive	Emotional	Sleep					
Headache	Feeling mentally foggy	Irritability	Trouble falling asleep					
Dizziness	Feeling slowed down	Sadness	Sleeping more than usual					
Balance problems	Difficulty concentrating	Nervousness	Sleeping less than usual					
Nausea/Vomiting	Difficulty remembering	More emotional than usual						
Fatigue	Difficulty focusing							
Sensitivity to light								
Sensitivity to noise								

Off the field management

As required by both Ohio law and OHSAA, any athlete with symptoms of a concussion is automatically held out for the remainder of the practice or game. Any athlete that has a suspected concussion should be evaluated by a physician. In rare cases, when repeated concussions occur over a brief interval, athletes may suffer from Second Impact Syndrome, a potentially life-threatening response in the brain. Parents should seek careful evaluation and management of any sports-related concussion. Athletes must have a physician note to return to play. Any athlete returning from a concussion should do so using a supervised, slow, step-by-step progression.

For more information, visit www.nationwidechildrens.org/concussions.

(NATA Position Statement: Management of Sport Related Concussion. Journal of Athletic Training; 49{2}:2014)

Pulmonary and Breathing Problems

Asthma

Asthma is a condition involving a restricted airway, making breathing difficult. Asthma attacks can be triggered by strenuous exercise (exercise induced), cold or dry air, infection, smoke, or allergen particles in the air. Symptoms of asthma include wheezing, coughing, extreme fatigue, and shortness of breath. These symptoms can be alleviated by using an inhaler that has been prescribed – and in the manner prescribed to the athlete. If the athlete does not have an inhaler present, he/she must refrain from practicing. If athlete does not have inhaler and has an attack, call 9-1-1.

Pneumothorax

Pneumothorax, or a collapsed lung, results from a ruptured air sac in the lung caused by a rib fracture or blunt trauma to the chest (tension pneumothorax). Symptoms include chest pain and shortness of breath. In a tension pneumothorax, symptoms progress rapidly and the trachea is visibly shifted to the right or left (the opposite side of injury). This can be life threatening. The athlete must be transported immediately to the hospital. Call 9-1-1.

(NATA Position Statement: Management of Asthma in Athletes. Journal of Athletic Training; 40{3}: 2005)



Mouth Guards and Dental Injuries

The National Youth Sports Foundation for Safety reports an athlete is 60 times more likely to sustain damage to the teeth when not wearing a protective mouth guard. Dental injuries are easily preventable through the use of a properly fitted mouth guard. There are three types of mouth guards currently available: ready-made or stock, "boil and bites", and custom-made (made by a dentist). The most effective mouth guards should be: comfortable, resistant to tearing, properly fitted, easily cleaned, and should not restrict speech or breathing.

Types of Dental Injuries									
Avulsion	The entire tooth is knocked o								
Fracture	The tooth is broken.								
Luxation	The tooth is in the socket, bu								

In any dental/tooth injury it is important to:

- NOT handle the tooth by the root (the part that comes out of the gums).
- NOT scrub or brush the tooth.
- NOT attempt to sterilize the tooth.

Treatment for tooth injury:

- Gently rinse off any dirt with water.
- "too short" (pushed up into gum).
- If unable to re-implant the tooth place in:
 - Tooth preserving kit
 - Cold milk
 - Saline soaked gauze
 - Under a conscious athlete's tongue
 - Cup of water
- have the best chance of tooth survival.

(American Dental Association, Statement on Athletic Mouthguards, 2015.)

out.
it in the wrong position.

• If tooth is avulsed (the entire tooth is out) reposition the tooth in the socket. Have the athlete stabilize the tooth by gently biting down on some gauze, and transport immediately to a dentist. DO NOT reposition the tooth if it looks

• The athlete needs to be transported to the dentist immediately. The tooth needs to be treated within 30 minutes to

Cardiac Problems

If an athlete experiences any warning signs or has a history of any heart issues, they should be evaluated and cleared by a physician before being permitted to participate in sports. A child is also more likely to have a cardiac issue if there is a family history of cardiac diseases or sudden cardiac death of a family member before the age of 50.

Warning Signs of Cardiac Problems							
Chest pain or light-headedness with exertion	Irregular heartbeat						
Rapid heart rate (tachycardia)	Fainting during exercise (syncope)						
Irregular/difficulty breathing	Dizziness						
Excessive/unexplained shortness of breath or fatigue with	High blood pressure						
exercise							

If an athlete exhibits any of the above symptoms during exercise, they should promptly be sent to a physician for a through medical evaluation.

(NATA Position Statement: Preventing Sudden Death in Athletes. Journal of Athletic Training; 47{1}: 2012)



Heat Illness

Heat Cramps

Heat Cramps are caused by excessive sweating or an electrolyte imbalance. Treatment:

- Proper fluid replacement
- Rest
- Stretching the affected muscles

Heat Exhaustion

Heat Exhaustion is caused by excessive fluid loss that has been inadequately replaced. Treatment:

- Cool athlete with cold water and ice.
- Fluid replacement (either water or IV fluids, cool athlete with water or ice).
- Move athlete to cool location (shade, air conditioning, etc.).

Heat stroke

Heat stroke is the failure of the body's heat-control mechanism and can cause other organ systems to shut down. Heat stroke is the most dangerous heat illness and is a life threatening medical emergency. Call 9-1-1. Treatment:

- Remove the athlete from sun/warm environment.
- Cool the body as quickly as possible.
- primarily around the neck, armpits and groin.

Symptoms of Heat Illness								
Heat Cramps	Heat Exhaustion	Heat Stroke						
Sweating	Headache	Incoherent speech						
Muscle Cramps	Nausea	Disorientation						
	Chills	Unconsciousness						
	Unsteadiness	Rapid or irregular pulse						
	Fatigue	Very warm and dry skin						
	Dizziness	Sweating stops						
	Rapid pulse							
	Cool and pale skin							
	Sweating is usually present							

Tips for prevention:

- Slowly acclimatize athlete to practicing in warm climate.
- Clothing should be light in color and weight.
- should be encouraged to drink more water before and after practices.

• Remove most of athlete's clothing and quickly cool athlete with liberal quantities of cold towels and ice packs,

• Identify athletes more at risk (i.e. overweight, out of shape, heavily muscled, and those who seem to sweat less). • Water breaks should be given AT LEAST every 15-30 minutes (10-15 in warmer, more humid weather) and athletes

Weather Guide for Activities in the Heat

National Weather Service Heat Index

	Temperature (F)										With Prolonger Exposure and/or Physical Activity							
1	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110		Extreme Danger
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136		Heat stroke or sunstroke
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137			highly likely
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137				inginy likely
55	81	84	86	89	93	97	101	106	112	117	124	130	137					Danger
60	82	84	88	91	95	100	105	110	116	123	129	137						Sunstroke, muscle cramps,
65	82	85	89	93	98	103	108	114	121	128	136							and/or heat exhaustion likely
70	83	86	90	95	100	105	112	119	126	134								E Lucia Oc. Par
75	84	88	92	97	103	109	116	124	132									Extreme Caution
80	84	89	94	100	106	113	121	129										Sunstroke, muscle cramps,
85	85	90	96	102	110	117	126	135										and/or heat exhaustion possible
90	86	91	98	105	113	122	131											Caution
95	86	93	100	108	117	127												
100	87	95	103	112	121	132												Fatigue possible

• Caution: Water breaks every 15 minutes.

- Extreme Caution: Modify practice intensity. Keep a close eve on kids who are deconditioned and/or have a history of heat illness.
- Danger: Consider changing practice times to a less humid part of the day. Eliminate need for additional equipment/ layers. Have a 10 minute rest break every 60 minutes.
- Extreme Danger: Cancel practice.

(NOAA's National Weather Service Heat Index Chart, retrieved 2016)

Hvdration

The human body contains 60% water and a fluid loss of as little as 2 - 3% of a person's body weight can impair athletic performance. In a 50-pound child, that's only a loss of one pound due to exercise. Fluid losses of 7 - 10% can lead to heat stroke and even death. Thus, dehydration and fluid replacement is of special concern for children involved in athletic activities.

Suggested Guidelines for Energy And Fluid Replacement:

- Pre-competition meals should be eaten one to four hours prior to the athletic event.
- Include high-water content foods in the diet, such as watermelon.
- Drink 16 oz. of cool water about two hours before the athletic event (training, practice or competition).
- Drink another 8 16 oz. of fluid 15 minutes before the event.
- Drink 4 6 oz. of cool water or sports drink every 10-15 minutes during the event
- Weigh athlete before and after activity. For every pound of weight lost, replace with 16 oz. of plain water.
- Avoid caffeine-containing beverages as they act as diuretics, causing increased urination and fluid loss.

Cold Weather Injuries

Frostnip

Frostnip is the freezing of the first few layers of skin and happens before frostbite. It can occur due to skin exposure to a cold surface or cold weather. The skin is usually not permanently damaged; however, it will be more sensitive to cold and more likely to develop frostnip and frostbite in the future.

Frostbite

Frostbite is damage to the skin and underlying tissues caused by prolonged exposure to dry cold. It begins as a red and painful area and progresses to a cold, hard, numb area. Frostbite occurs more often on small, exposed areas of the body such as hands, fingers, feet, toes, ears, nose and cheeks. Early signs of frostbite can be seen by looking for skin that is unusually pale and/or cold and dry. A child might also experience a burning or aching feeling and may see swelling. An additional sign of frostbite is blisters within 24 hours of cold exposure.

Treatment:

- Make sure you do not rub or massage the injured area.
- Then gently pat dry the area and keep it warm and clean.
- Do not break any blisters.
- To rewarm the face and ears, apply warm washcloths and replace them as they get cool.
- Give warm liquids to drink.
- If any area feels numb, tingling, hard, or is gray or black in color, seek medical care immediately.

Hypothermia

Hypothermia is a condition that occurs when body temperature drops below normal (98.6 F). When body temperature drops significantly, the body's metabolism slows down, which increases the risk of severe injury from freezing. Hypothermia is more likely to occur when body temperature remains low for more than a few hours. Younger children are more susceptible to hypothermia.

Treatment:

- Hypothermia is an emergency situation. Call 911 immediately to get emergency medical help.
- Victims of hypothermia must be warmed slowly.
- Move patient to a warm room.
- Remove wet clothing and replace with warm, dry clothes and blankets.
- Give warm (not hot) fluids to drink.
- If not responding to conservative treatment, the person can also be placed in warm (not hot) bath.

Tips for prevention:

- Wear several layers of warm, breathable clothing.
- Wear a waterproof and windproof outer layer.
- Wear a moisture wicking layer closes to the skin.
- Cover your head, face, and neck to retain body heat.
- Try to stay as dry as possible and replace any wet layers.
- Take multiple breaks indoors to rewarm.
- Have emergency supplies such as blankets, extra clothing, and warm liquids nearby area.

• Fill a sink with warm water and put the injured area in the water for 30 minutes or until it turns pink.

Weather Guide for Activities in the Cold

National Weather Service Windchill Chart

							Ί	empe	eratui	re (°F	2)							
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
(मू 25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
(qdu) pui∧ 30 35 40	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
Pu 35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
₿ 40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98
Frostbite Times 30 minutes 10 minutes 5 minutes																		
Wind Chill (°F) = $35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$																		
			ina C										J .4 2/					
					w nère,	T = Air	Temper	rature (vFJ ∨	= Winc	1 Speed	(mph)				Effect	ive 11/0	1701

- Caution: Individuals who are not appropriately dressed for outdoor activity and/or have a history of cold injuries are vulnerable to frostbite.
- Extreme Caution: Frosbite can occur in 30 minutes or less.
- Danger: Frosbite can occur in 10 minutes or less.
- Extreme Danger: Frosbite can occur in 5 minutes or less.

Note: The above chart is designed for adults walking at a speed of approximately 3 miles an hour. This chart does not take into account physical activity in children. Children use up energy reserves more quickly and cannot maintain an even body temperature as well as adults in cold weather. Thus, they are more like to suffer a cold injury. Please verify your outdoor practice cold weather policy with your organization.

(NOAA's National Weather Service Windchill Chart, retrieved 2016; NATA Position Statement: Environmental Cold Injuries. Journal of Athletic Training; 43[6]: 2008)

Lightning and Thunderstorms

A good reminder during lightning and thunderstorms is to use the phrase:

- If you see it (lightning), flee it. If you hear it (thunder), clear it.
- All persons should be seeking--or already safe inside--a safe structure or location. Safe shelter includes inside a building, or in a car or bus. Taking shelter under the bleachers or in the dugout is NOT safe.
- It is important to wait at least 30 minutes after the last lightning flash or sound of thunder before resuming any activity or returning outdoors.

(NATA Position Statement: Lightning Safety for Athletics and Recreation. Journal of Athletic Training; 48{2}: 2013)

Diabetes

Diabetes is the body's inability to produce or use insulin properly. Insulin converts sugar, starches, and other foods into energy the body uses for everyday living.

Type I diabetes results from the body's failure to produce insulin, and requires multiple insulin injections daily to help the body convert food to energy.

Type II diabetes results from the body's failure to properly use insulin, combined with relative insulin deficiency. If an athlete's blood sugar dips too low, he/she may go into hypoglycemic or diabetic shock. Diabetes often goes undiagnosed because many of its symptoms appear to be harmless.

Diabetic Shock Signs and Symptoms						
Clammy skin	Slurred speech					
Poor balance	Tremors					
Extreme irritability	Blurry vision					
Convulsions	Other neurological effects					

Treatment for Hypoglycemic / Diabetic Shock:

- Remove athlete from play.
- acting carbohydrate source such as cheese and crackers.
- Continue to monitor athlete's condition after diabetic episode for at least 15 minutes.
 - physician.
 - If symptoms worsen, contact guardian and transport to the hospital.
- NEVER attempt to have an athlete ingest anything while convulsing or unconscious.

Ongoing Treatment:

- Correct dose of medication throughout the day.
- Regular exercise.

(NATA Position Statement: Preventing Sudden Death in Sports. Journal of Athletic Training; 47{1}: 2012)

• Give the athlete a quick acting source of carbohydrate such as glucose tablets or orange juice, followed by a long

- If symptoms resolve, contact guardian and follow the "return to play action plan" put in place by the treating

• Eating a consistent well balanced diet that is high in fiber, low in saturated fat, and low in concentrated sweets.

Allergies

Anaphylaxis is a severe allergic reaction to venom, food, or medication. These severe reactions are most typically caused by an insect sting or ingesting foods the athlete may be allergic to. Common food allergies include milk, peanuts, or tree nuts. Anaphylaxis can be deadly. Therefore, IMMEDIATE treatment is a must! If an athlete has a known severe allergy to any substance, he or she must carry an EpiPen with them to all events and venues.

Signs and Symptoms of Anaphylaxis

- Pale skin
- Rash
- Facial, throat, or mouth swelling
- Weak rapid pulse
- Rapid shallow breathing or difficulty breathing

Treatment for Unknown Allergy

- Remove athlete from play.
- Allow athlete to sit down.
- Inspect bite or sting.
- Remove stinger if able and apply ice.
- Monitor athlete for 15 minutes.
- If symptoms resolve allow athlete to return to play.
- If symptoms have not resolved **Call 9-1-1**.

Treatment for Known Allergy

- Remove athlete from play.
- Call 9-1-1.
- Lay athlete on their back and keep calm.
- Elevate legs and cover with blanket.
- Remove stinger if able.

Note: A stinger can be removed by pinching the skin slightly below the sting and scraping upward with a credit card.

* In the event an athlete suffers a sting or anaphylactic shock, all coaches must be trained to use an epinephrine auto-injector (EpiPen). To use, pull off the top protector on the device and push the injection end into the athlete's thigh and hold. Because EpiPens can differ, coaches should become familiar with their athlete's EpiPen before an emergency event occurs.

(Arnheim, Principles of Athletic Training: A Competency Based Approach. 2013; Word Allergy Organization Statement: Epipephrine: The Drug of Choice for Anaphylaxis. WAO Journal, Supplement 2: 2008)

Skin Diseases

At any given time, one out of every three people suffers from some sort of skin disease. With the prevalence of close contact in youth sports, athletes and parents must be on high alert for spotting these lesions. If a potential infection presents itself, the athlete must be seen by a trained medical professional before being allowed to return back to sport. Skin diseases fall into three major categories: Fungal, viral, and bacterial.

Types of Infection	Common Infections	Treatment
Fungal	Tinea (ring worm) can be found anywhere on the body, but is most commonly found on the head, trunk, neck and arms. These typically round lesions can be red or gray in color and have a scaly consistency.	Topical and/or oral medication
Viral	Herpes Simplex virus is a painful, often recurring infection of clusters of small fluid filled sacs on a base of red skin.	Antiviral medications
	Molluscum Contagiosum is a highly infectious disease most commonly seen in children and is manifested by smooth flesh colored, dome-shaped bumps with a tiny depression in the center.	Antiviral medications
Bacterial	Staphylococcus Aureus (Staph) and Streptococcus bacteria can infiltrate the skin through minor trauma, preexisting skin disease or poor hygiene. Staph infections are highly contagious and are treated with proper wound care and antibiotics. A staph bacterium that has become immune to common antibiotic treatment is known commonly as MRSA. If left untreated, this infection may become life threatening.	Proper wound care and antibiotics
	Impetigo shows as thin walled sacs filled with fluid that rupture into honey colored crust often found on the face and neck.	Antibiotics
	Folliculitis/Carbunculosis is a superficial infection of the hair follicles characterized by redness, fluid or pus filled sacs at the base of hair follicles.	Antibiotics

Note: Viruses main remain dormant in the body for years manifesting themselves in situations of lowered immunity and stress.

Tips to Prevention:

- All clothing and equipment should be laundered and/or disinfected on a daily basis.

Note: To return back to an Ohio High School Athletic Association sanctioned wrestling event, the athlete must have the official National Federation of State High School Associations medical release form signed by the physician. These forms can be found on the OHSAA.org web site.

• Hand washing and daily showering by athletes is the best way to prevent the spread of these infectious diseases. • Athletes must be discouraged from sharing towels, athletic gear, water bottles, disposable razors and hair clippers.

• Athletes should be encouraged to complete daily skin surveillance and report any suspicious lesions for treatment.

Shock

Shock is a medical emergency, typically due to trauma, occurring when the organs and tissues of the body are not receiving an adequate blood flow. This deprives the organs and tissues of oxygen (carried in the blood) and allows the buildup of waste products. Shock can result in serious damage or even death.

Signs and symptoms:

- Moist, pale, cool, clammy (often ashen looking) skin
- Weak, rapid pulse
- Respiration is increased but shallow
- Decreased blood pressure
- Urinary retention
- Fecal incontinence
- Irritability
- Restlessness
- Excitement

Treatment:

- Call 9-1-1.
- Maintain body temperature as close to normal as possible.
- Elevate feet and legs 8-12 inches above heart.
- Loosen clothing.
- Nothing should be given by mouth.

(Arnheim, Principles of Athletic Training: A Competency Based Approach. 2013)



Psychological Concerns

With student-athletes reporting higher levels of stress and negative emotions than non-athlete students, it is essential that coaches are aware of signs and symptoms of psychological concerns. Due to their daily interaction, a coach might be the first person to observe changes in the athlete. These behavioral changes may be subtle or drastic, and can range in the number of changes from few to many. Coaches should be familiar with their school district or organization's plans to refer a student with psychological concerns. While it is uncommon to have these instances as a medical emergency or catastrophic event, it is vital to know the organization's plans for how to refer a student in psychological distress (i.e. threating self-harm or harm to others, suicide, homicide, etc.).

early recognition can lead to better treatment and management of these conditions.

Examples of Behaviors to Monitor in Student Athletes			
Changes in weight	Gambling	Drug Abuse	Alcohol Abuse
Feelings of loss of control	Changes in Sleeping	Withdrawal from friends	Problems managing anger
or helplessness	patterns		or stress
Self-Harm	Unexplained Wounds	Mood swings	Agitation
Talk about death/dying	Lying	Loss of emotion	Irritability
Extreme worry or fear	Risky behavior	Memory issues	Fighting
Lack of interest in activities	Increase complains of	Shaking or trembling	Sudden emotional changes
once enjoyed	injury, illness, or fatigue		in a short period of time
Issues with authority	All or nothing thinking	Negative self-talk	Changes in eating habits

(Interassociation Recommendations for Developing a Plan to Recognize and Refer Student-Athletes with Psychological Concerns: A Consensus Statement. Journal of Athletic Training; 50{3}: 2015)

Note: Only trained and licensed individuals, such as psychologists and psychiatrists, can diagnose mental illness; however,

Emergency Action Plan

Any Emergency Medical Plan should include the following:

- A protocol for medical emergencies, including who stays with the athlete and who will call/go for help. Make sure to identify the person responsible for contacting the parents.
- All athletes are required to have a pre-participation physical (PPE) form. All forms should be easily accessible to the coach and athletic trainer. Emergency contact information should be included on the PPE. Any high-risk conditions, including asthma, diabetes, or any allergy should be brought to the attention of the coach.
- Any persons calling 911 for an emergency should be taught to identify their location and proper routes for the ambulance to access the playing fields or gymnasium. Make sure the routes identified have no locked gates or obstructions. Make sure to identify a person responsible for meeting the EMS at the arrival location and directing the EMS to the injured person.
- All coaches should be trained and certified in CPR and the use of an AED. The AED should be clearly marked and available at all athletic events. Identify the individual in charge of getting the AED in case of an emergency.
- A lightning protocol, identifying who decides when games are postponed and a location for athletes/spectators/ officials to take cover. Events should be stopped for any lightning occurring within a 6-mile radius. Play may be resumed 30 minutes following the last lightning strike or sound of thunder.
- A plan for caring for athletes with neck or brain injuries, unconsciousness, collapse, respiratory distress, bee stings, heat illness, suspected fracture, tooth injury or anaphylactic shock.

Tips to Prevent Emergencies:

- Have someone responsible for checking all sporting equipment and identify any hazards on the field of play.
- Have water available for all athletes and NEVER restrict water breaks.
- Identify how athletes will be monitored for heat exhaustion and hydration during hot, humid days.



Emergency Action Plan for _____

- injured athlete in need of emergency medical treatment."
- Provide necessary information to EMS personnel:
 - Name, address, telephone number of caller
 - Number of victims; condition of victims
 - First-aid treatment initiated
 - Specific directions to locate scene
 - Other information as requested by dispatcher

history) and assist with emergency care as needed.

if needed.

- can be found.
- Each coach should be aware of existing medical conditions of each athlete participating. For example, these conditions include asthma, diabetes, or bee sting allergies.

Location of First Aid/Medical Kit:

Location of automated external defibrillator (AED):

Location of safe shelter in case of inclement weather:

In the event of severe or inclement weather, _____ the final decision to postpone or cancel event.

(venue or team name)

will call 9-1-1 in the event of an emergency situation. This person will also:

• Instruct emergency medical services (EMS) personnel to "report to and meet at a particular location as we have an

will provide appropriate emergency care until arrival of EMS personnel: on arrival of EMS personnel, provide pertinent information (method of injury, vital signs, treatment rendered, medical

will notify parents and obtain medical history and insurance information

• Each coach should have emergency medical forms easily accessible at all times where emergency contact information

will be in charge of making

Emergency Contacts	Venue Names and Locations	
In a life-threatening emergency, always call 911 first.		
Central Ohio Poison Control Center (614) 228-1323 or (800) 222-1222 (TTY 228-2272)		
Nationwide Children's Hospital Emergency 700 Children's Drive Columbus, Ohio 43205 (614) 722-4300	Department	
Nearby Hospitals/Emergency Departments:		
Name:	Name:	
Location:	Location:	
Phone:	Phone:	
Police:		
Department:	Department:	
Location:	Location:	
Phone:	Phone:	
League Manager/Director:		
Name:	Name:	
Phone:	Phone:	
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Name: Phone:	Name: Phone:	
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First-Aid Kits

First aid kits should be at all practices and events. Each kit should include the following items:

- Gloves
- Tape (1.5-2")
- Scissors
- Band-Aids
- Non-stick gauze
- Alcohol
- Neosporin
- Saline Solution (cleaning wounds/rinsing eyes)
- Tissues
- Shoulder Sling
- 4" or 6" Ace wrap
- Plastic bags
- Tweezers
- CPR Mask
- Nail Clippers
- Antibacterial Wipes
- Hand Sanitizer
- Fast and slow acting carbohydrate (glucose tabs/cheese and crackers)
- Sterile gauze
- Emergency contact information
- Instant ice pack if ice will not be readily available



How can I share this resource with others?

Nationwide Children's Hospital Sports Medicine provides an in-service on any of these topics free of charge. The length of the presentation and content can be tailored to fit the specific needs of the group. Please call (614) 355-6000 for more information.

What if I want to learn more?

Nationwide Children's Hospital Sports Medicine provides further educational resources, presentations, and print materials on concussions and other sports-related injuries, fitness, and well-being. Visit www.NationwideChildrens.org/Sports-Medicine or call (614) 355-6000.

What other services does Nationwide Children's Hospital Sports Medicine Offer?

Nationwide Children's Hospital Sports Medicine utilizes the expertise of Pediatric Sports Medicine specialists and Physical Medicine and Rehabilitation specialists to provide the following services:

Clinical

- Sports Medicine Clinics:
- Sports Concussion Clinics:
 - these brain injuries.

Programming

- Functional Rehabilitation
 - Sports
 - Performing Arts
 - Concussions
- Mechanical analysis of throwing, running, and swimming using video software
- Sports Performance
- Concussion Baseline Testing

Outreach & Education

- Outreach Athletic Training and Medical Services for:
 - High schools and colleges
 - Youth sports and tournaments
- Sports medicine education for:
 - Physicians
 - EMS personnel
 - School nurses
 - Coaches (PAV certification)
 - Athletes
 - Student Aides

Research & Professional Advancement

- Research studies
- Athletic Training Student Internships
- Primary Care Sports Medicine Fellowship

- Specially trained physicians diagnose and treat young athletes with fractures, sprains and strains, or bumps and bruises.

- Pediatric concussions are evaluated by specialists using the most current research and practices to best manage



Nationwide Children's Hospital Sports Medicine provides care at eight locations throughout central Ohio. For maps, directions and office hours of our locations, visit NationwideChildrens.org/Sports-Medicine-Locations.

To schedule an appointment at any location, call (614) 355-6000.

Canal Winchester *Close To Home*SM Center 7901 Diley Road, Suite 150 Canal Winchester, OH 43110

Dublin

Sports Medicine and Orthopedic Center 5680 Venture Drive Dublin, OH 43017

Hilliard

*Close To Home*SM Center 4363 All Seasons Drive Hilliard, OH 43026

New Albany

Philip Heit Center for Healthy New Albany 150 West Main St. New Albany, OH 43054

Engage With Us

NationwideChildrens.org/Sports-Medicine

Downtown

Orthopedic Center 479 Parsons Ave. Columbus, OH 43215

East Columbus

*Close To Home*SM Center 6435 East Broad St. Columbus, OH 43213

Marysville

*Close To Home*SM Center 100 Colemans Crossing Blvd. Marysville, OH 43040

Westerville

Sports Medicine and Orthopedic Center 584 County Line Road West Westerville, OH 43082



