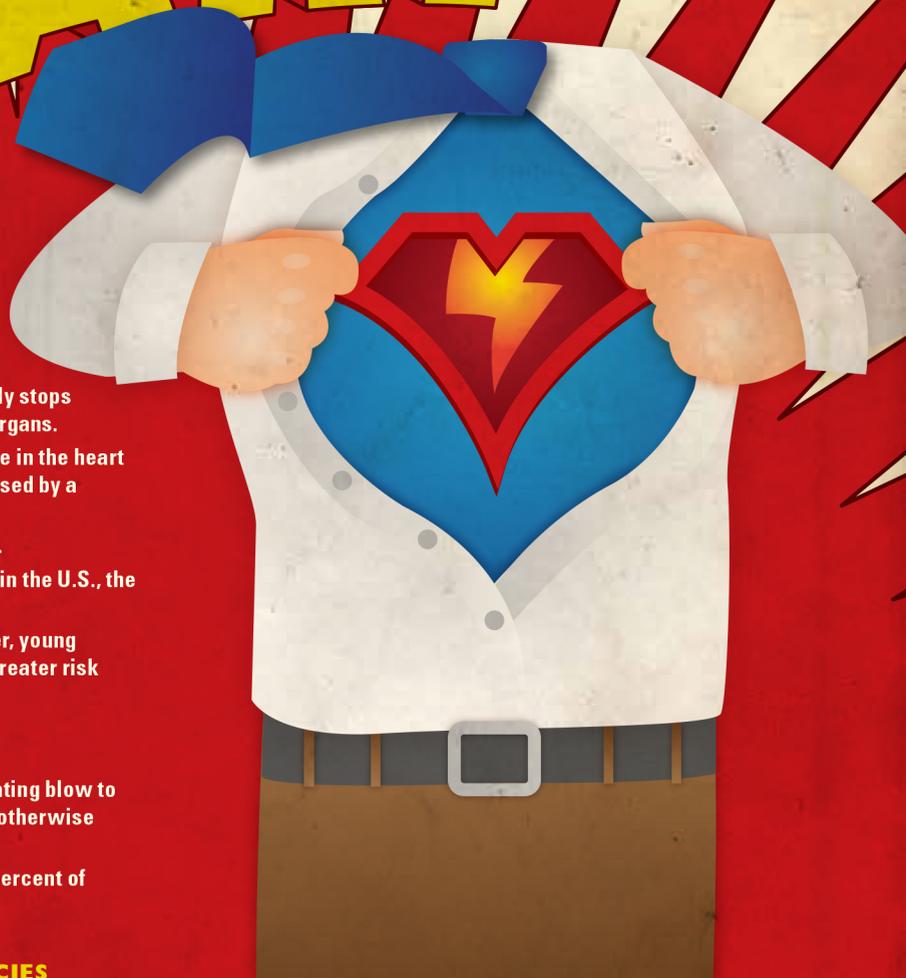


# MATTERS OF THE HEART



## SUDDEN CARDIAC ARREST

- SCA is a condition in which the heart unexpectedly stops beating, halting blood flow to the brain and vital organs.
- SCA is usually caused by an electrical disturbance in the heart that disrupts pumping, while a heart attack is caused by a blockage of blood flow to the heart.
- SCA results in death if not treated within minutes.
- 2,000 patients under age 25 die of SCA every year in the U.S., the Center for Disease Control estimates.
- The cause of SCA in athletes is unknown, however, young athletes with underlying heart conditions are at greater risk during vigorous exercise.

## COMMOTIO CORDIS

- Commotio Cordis is caused by a blunt, nonpenetrating blow to the chest. It induces ventricular arrhythmia in an otherwise structurally normal heart.
- Commotio Cordis accounts for approximately 20 percent of sudden cardiac deaths in young athletes.

## PREPARING FOR CARDIAC EMERGENCIES

- Schools, clubs and sports facilities should have emergency action plans that include a response plan for SCA events.
- All facilities where sports are played should have automatic external defibrillators (AEDs) within 1-3 minutes.
- Schools, clubs and sports facilities should have someone on staff trained in CPR.
- When CPR is provided and an AED shock is administered within the first 3 to 5 minutes after a collapse, reported survival rates from cardiac arrest are as high as 74%.

## SCREENING ATHLETES FOR CARDIOVASCULAR ISSUES

- Athletes should undergo cardiovascular screening before athletic participation.
- A minimum standard of cardiovascular screening should include a comprehensive medical history, family history and physical exam.
- An electrocardiogram (ECG) can help identify underlying cardiac conditions that put athletes at greater risk. However, it's not a universal standard right now because of cost, physician infrastructure and sensitivity and specificity concerns.

## SIGNS AND SYMPTOMS OF CARDIAC ARREST IN ATHLETES

MALE ATHLETES	FEMALE ATHLETES
Chest, ear or neck pain	Center chest pain that comes and goes
Severe headache	Lightheadedness
Excessive breathlessness	Shortness of breath with or without discomfort
Vague discomfort	Pressure, squeezing, fullness
Dizziness, palpitations	Nausea, vomiting
Abnormal fatigue	Cold sweat
Indigestion, heartburn	Pain or discomfort in arms, back, neck, jaw or stomach

NOTE: Many young cardiac arrest victims have no symptoms until the cardiac arrest occurs.

# PRESCRIPTION OPIOIDS: WHAT YOU NEED TO KNOW



Prescription opioids can be used to help relieve moderate-to-severe pain and are often prescribed following a surgery or injury, or for certain health conditions. These medications can be an important part of treatment but also come with serious risks. It is important to work with your health care provider to make sure you are getting the safest, most effective care.

## WHAT ARE THE RISKS AND SIDE EFFECTS OF OPIOID USE?

**Prescription opioids carry serious risks of addiction and overdose, especially with prolonged use.** An opioid overdose, often marked by slowed breathing, can cause sudden death. The use of prescription opioids can have a number of side effects as well, even when taken as directed:

- Tolerance—meaning you might need to take more of a medication for the same pain relief
- Physical dependence—meaning you have symptoms of withdrawal when a medication is stopped
- Increased sensitivity to pain
- Constipation
- Nausea, vomiting, and dry mouth
- Sleepiness and dizziness
- Confusion
- Depression
- Low levels of testosterone that can result in lower sex drive, energy, and strength
- Itching and sweating

As many as  
**1 in 4**  
PEOPLE\*



receiving prescription opioids long term in a primary care setting struggles with addiction.

\* Findings from one study

## RISKS ARE GREATER WITH:

- History of drug misuse, substance use disorder, or overdose
- Mental health conditions (such as depression or anxiety)
- Sleep apnea
- Older age (65 years or older)
- Pregnancy

Avoid alcohol while taking prescription opioids. Also, unless specifically advised by your health care provider, medications to avoid include:

- Benzodiazepines (such as Xanax or Valium)
- Muscle relaxants (such as Soma or Flexeril)
- Hypnotics (such as Ambien or Lunesta)
- Other prescription opioids



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

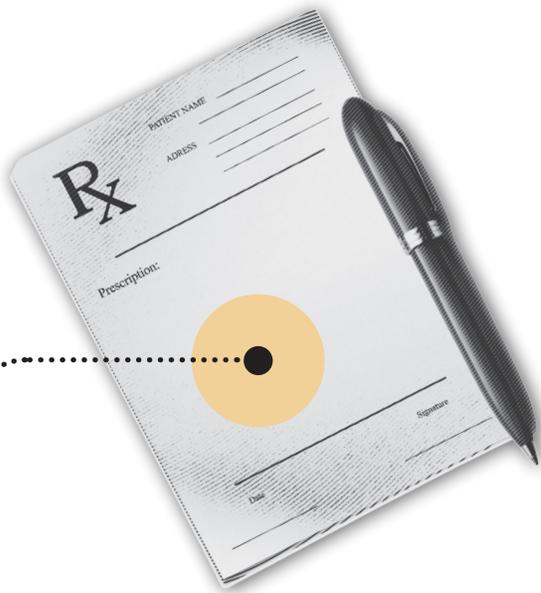


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## KNOW YOUR OPTIONS

Talk to your health care provider about ways to manage your pain that don't involve prescription opioids. Some of these options **may actually work better** and have fewer risks and side effects. Options may include:

- ❑ Pain relievers such as acetaminophen, ibuprofen, and naproxen
- ❑ Some medications that are also used for depression or seizures
- ❑ Physical therapy and exercise
- ❑ Cognitive behavioral therapy, a psychological, goal-directed approach, in which patients learn how to modify physical, behavioral, and emotional triggers of pain and stress.



### Be Informed!

Make sure you know the name of your medication, how much and how often to take it, and its potential risks & side effects.



## IF YOU ARE PRESCRIBED OPIOIDS FOR PAIN:

- ❑ Never take opioids in greater amounts or more often than prescribed.
- ❑ Follow up with your primary health care provider within \_\_\_ days.
  - Work together to create a plan on how to manage your pain.
  - Talk about ways to help manage your pain that don't involve prescription opioids.
  - Talk about any and all concerns and side effects.
- ❑ Help prevent misuse and abuse.
  - Never sell or share prescription opioids.
  - Never use another person's prescription opioids.
- ❑ Store prescription opioids in a secure place and out of reach of others (this may include visitors, children, friends, and family).
- ❑ Safely dispose of unused prescription opioids: Find your community drug take-back program or your pharmacy mail-back program, or flush them down the toilet, following guidance from the Food and Drug Administration ([www.fda.gov/Drugs/ResourcesForYou](http://www.fda.gov/Drugs/ResourcesForYou)).
- ❑ Visit [www.cdc.gov/drugoverdose](http://www.cdc.gov/drugoverdose) to learn about the risks of opioid abuse and overdose.
- ❑ If you believe you may be struggling with addiction, tell your health care provider and ask for guidance or call SAMHSA's National Helpline at 1-800-662-HELP.

# BEAT THE HEAT

Summer's high temperatures put student athletes at increased risk of heat illness. There are several types of heat illness. They range in severity, from heat cramps and heat exhaustion, which are common but not severe, to heat stroke, which can be deadly. Although heat illnesses can be fatal, death is preventable if they're quickly recognized and properly treated.

## DEHYDRATION AND HEAT ILLNESSES



As a rule-of-thumb, most athletes should consume 200 to 300 milliliters of fluid every

**15 MINUTES**  
OF EXERCISE.

It takes only **30 MINUTES** for cell damage to occur with a core body temperature of 105 degrees.



Currently, 13 states have heat-acclimatization policies for secondary school athletics with New Jersey being the first.



Exertional heat stroke is one of the top three killers of athletes and soldiers in training.

- From 2010-15, 20 athletic heat stroke fatalities were reported.
- It takes seven to 14 days for a body to adapt to exercising in the heat.
- Dehydration at levels of 3 to 4 percent body mass loss can reduce muscle strength by an estimated 2 percent.

### SAFETY TIPS

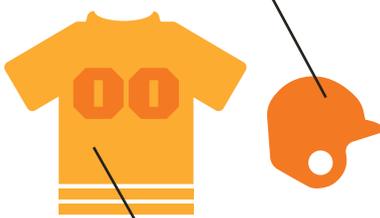


Have sports drinks on hand for workout sessions lasting longer than an hour.

Keep beverages cold – cold beverages are consumed 50 percent more than warm beverages.

Hydrate before, during and after activity.

Remove unnecessary equipment, such as helmets and padding, when environmental conditions become extreme.



Clothing worn by athletes should be light colored, lightweight and protect against the sun.

- For the first week or so, hold shorter practices with lighter equipment so players can acclimate to the heat.
- Follow a work-to-rest ratio, such as 10-minute breaks after 40 minutes of exercise.
- Get an accurate measurement of heat stress using a wet-bulb globe temperature, which accounts for ambient temperature, relative humidity and radiation from the sun.
- If someone is suffering from exertional heat stroke, remember to cool first and transport second.
- Have large cold tubs ready before all practices and games in case cold water immersion is needed to treat exertional heat stroke.

# SIGNS OF MINOR HEAT ILLNESS



Dizziness

Cramps, muscular tightening and spasms



Lightheadedness, when not associated with other symptoms

### EARLY WARNING SIGNS OF EXERTIONAL HEAT STROKE

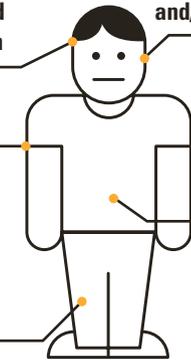
Headache, dizziness, confusion and disorientation

Excessive sweating and/or flushing

Fatigue

Nausea and/or vomiting

Chills and/or goose bumps



# SIGNS OF EXERTIONAL HEAT STROKE



Core body temperature of more than 105 degrees



Signs of nervous system dysfunction, such as confusion, aggression and loss of consciousness



Increased heart rate

Rapid breathing



Low blood pressure

Seizures



# CONCUSSION 101

WITH MORE ATTENTION BEING PAID TO CONCUSSIONS, they're no longer being thought of as simple "bumps on the head" or "bell-ringers." Help keep young athletes protected by better understanding the symptoms, treatment and prevention of concussions.

- A concussion is defined as a "trauma-induced alteration in mental status that may or may not involve loss of consciousness."
- This can be caused by a bump, blow or jolt to the head or by a hit to the body that causes the head and brain to move quickly back and forth.
- Concussion symptoms can appear immediately (e.g., headache, dizziness) or within the first week (e.g., sleep issues, irritability) following injury.

## HOW TO REMAIN SAFE ON THE FIELD

- Make sure all helmets and safety equipment are sport specific, properly fitted and refurbished according to industry standards.
- Follow sports safety rules and use proper techniques.
- Practice good sportsmanship.

## YOU HAVE A CONCUSSION – NOW WHAT?

- **Report symptoms:** Tell a coach, parent or athletic trainer if you suspect an athlete has a concussion.
- **Get checked out:** Only a health care professional experienced with concussion management can tell if a concussion has occurred and when it is OK to return to play.
- **Get plenty of rest:** Immediately after the concussion is sustained, rest is recommended. This includes keeping a regular sleep routine and avoiding activities that require a lot of concentration.
- **Give time to recover:** It's important to allot time to heal. Another concussion sustained while the brain is healing can result in long-term problems or even death in rare cases.
- **Take it slow at first:** After the physician or athletic trainer gives the OK to return to activity, an athlete shouldn't jump in all at once. The athletic trainer will work with the athlete to develop a safe plan for progressively returning to play.
- **Address concerns:** If there are concerns, don't hesitate to bring them up with a health care provider or (athletic trainer, physician, etc.).

Sources: NATA, Sanford Orthopedic Sports Medicine, Center for Disease Control and Prevention, Heads Up Concussion, Fifth Annual Youth Sports Safety Summit

Illustration by: Thinkstock/ bakhtiar\_zein

Infographic courtesy of the National Athletic Trainers' Association

## KNOWING THE RED FLAGS FOR IMMEDIATE REFERRAL

- CAN'T BE AWAKENED
- REPEATED VOMITING
- SLURRED SPEECH
- CAN'T RECOGNIZE PEOPLE OR PLACES



- WORSENING HEADACHE
- SEIZURES



- LOOKS LESS ALERT



- BALANCE PROBLEMS
- DIZZINESS

- INCREASING CONFUSION OR IRRITABILITY
- LOSS OF CONSCIOUSNESS
- WEAKNESS OR NUMBNESS IN ARMS OR LEGS
- UNUSUAL BEHAVIORAL CHANGE



- BOTHERED BY LIGHT OR NOISE
- SLOWED REACTION TIME
- SLEEP PROBLEMS