Exercise and Heat Stress in Young Athletes

About Fluids and Heat Exposure

The following amounts are generally enough to stay hydrated, while avoiding over-drinking. Prehydration is also important to prevent heat stress.

For 9-12 year olds, allow about 3-8 ounces every 20 minutes. This is also a good guideline for younger children.

For 12-18 year olds, allow up to 34-50 ounces of fluids per hour.

Water is often enough for short practices. For activities lasting ONE HOUR or longer, or for multiple outdoor activities in one day, use an electrolyte-supplemented beverage with sodium to help rehydrate.

Preventing heat injuries
Understanding the risk factors
Recognizing the symptoms of heat stress
Knowing what to do if you see signs of heat stress

Call us for more information about heat stress or other public education classes and events.

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Signs of Heat Stress

Heat Cramps are your body’s way of telling you that it is out of sodium and potassium. A person with heat cramps needs fluids with electrolytes and sodium, and rest in a cool or shaded area. After symptoms have subsided the person may return to activity, but use caution. Further exertion may lead to heat exhaustion.

- Muscle cramps or spasms in the arms, legs, or abdomen
- Headache, nausea, or vomiting

Heat Exhaustion is the next stage of heat stress. If you see these symptoms, take immediate action to cool the person’s body and begin rehydration. Seek medical attention and do not allow a return to activity.

- Heavy sweating
- Paleness, skin may be clammy
- Muscle cramps
- Weakness, dizziness, or tiredness
- Headache, nausea, or vomiting
- Fainting
- Weak, fast pulse
- Fast, shallow breathing

Heat Stroke is a life-threatening emergency. If you see these symptoms, call 911 and take immediate action to cool the person’s body by moving him or her to a cool or shaded area, removing protective equipment or clothing, and applying cold water or ice packs to the body. If the person is alert and can drink, begin rehydration while you wait for EMS.

- No sweating
- Red, hot, dry skin
- Extremely high body temperature (over 103)
- Dizziness or loss of coordination
- Throbbing headache
- Nausea
- Fast, strong pulse
- Confusion
- Loss of consciousness

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AAP Recommendations

Playing and practicing outdoors in the heat is practically unavoidable in our area, but sports and outdoor play can be safe for young athletes.


Their recommendations include:

- Educate young athletes to prepare, hydrate, and report problems.
- Emphasize awareness, education, and risk reduction to all adults involved.
- Modify activity schedules and breaks when it’s too hot. Try lower intensity activities, shorter sessions, or longer and/or more frequent breaks.
- Gradually adapt to the heat over 10-14 days.
- Leave time to rest and recover—at least TWO hours between activities.
- Have fluids readily available and make sure athletes drink before, during and after activities.
- Keep an athlete out of the heat if he or she is sick or recovering, especially from a fever or gastrointestinal illness.
- Monitor all athletes for signs of heat stress and be ready to take immediate action.
- Make a clear, written emergency action plan. Know what to do until EMS arrives.
- Call 911 immediately if you suspect heat stroke.

Risk Factors

Some risk factors affect the whole team, like the heat and humidity, or a practice schedule with inadequate rest and recovery time.

Heat tolerance also varies from person to person, and athletes, coaches, and parents should keep each individual’s needs in mind.

Consider factors like:

- Preparation - An athlete who is not acclimated to the heat, has inadequate rehydration, is functioning on little sleep or rest, or has poor fitness may be more susceptible to heat injury.
- Medical factors such as overweight/obesity and other conditions, or medications such as ADHD medications can place an athlete at higher risk.
- A current or recent illness can also contribute to reduced heat tolerance, especially with fever or gastrointestinal symptoms.
- Finally, inadequate rehydration is a factor, as are clothing, equipment, or uniforms that retain heat.

Coaches should monitor each athlete for signs of heat stress and be ready to take action.

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