

4-H



JOURNEYS

IN HEALTH & SAFETY

Issue 3

I Pledge My... Health to Better Living

*What you need to
know about heat stress*

I Pledge My... Hands To Larger Service

*Strategies to prevent
heat related problems*

HOW TO HANDLE HEAT



UNIVERSITY OF GEORGIA
EXTENSION



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Journeys is a magazine for middle school students produced by Georgia 4-H. This issue, *Journeys in Health and Safety: Heat Stress*, is the third edition of our Georgia 4-H Middle School publication series. A journey is described as a trip, expedition, or tour. While this *Journeys* magazine won't allow you to physically take a trip, expedition, excursion or tour, we do hope it allows your mind to explore the content and concepts shared in the pages ahead.

The Chinese philosopher, Laozi, is credited with the saying, "A journey of a thousand miles begins with a single step." We hope this magazine begins a journey of exploration for you. Georgia 4-H can offer you many paths to explore in hopes of finding one that is of interest to you. In the pages ahead, you will read about individuals who credit Georgia 4-H for helping them find a path to their chosen career or college major. Through independent project work, content or subject exploration, public speaking experience, service to your community, and efforts to be part of a team, Georgia 4-H is excited to be a small part of your journey toward becoming a leader.

Join us on this journey to learn more about heat stress, career opportunities related to health, and how you can educate others on avoiding heat related illness.

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Contact your UGA County Extension Office for more information

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Georgia 4-H is a partner in public education and strives to incorporate relevant Georgia standards in education materials for in-school use. The following Georgia standards for Health Education are correlated to the content delivery included in this publication.

HE6/7/8.1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

HE6/7/8.7: Students will demonstrate the ability to practice health-enhancing behaviours and avoid or reduce the health risk.

HE6/7/8.8: Students will demonstrate the ability to advocate for personal, family and community health.



Think Green! Not just 4-H Green...but let's help do our part to recycle and reuse. Save this book, reread it or pass it along to a friend. If it's too worn, please recycle it.

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What is *Heat Stress?*



In summer, it can become very hot and humid outdoors. While this is fun for activities like soccer and tag, it can also be dangerous. In extreme heat, individuals can sometimes experience *heat stress*.

Heat stress is when the body is exposed to too much heat, and one begins to feel sick as a result.

Playing sports and games outdoors when the weather is warm and sunny requires planning and preparation to keep your body cool and comfortable. Be safe by learning about the effects, treatments, and preventative measures regarding heat-related illnesses.

Put yourself **In the Hot Seat**. How prepared are you for sports and outdoor activities?

Yes, all the time - **5** Most of the time - **4** Sometimes - **3** Rarely - **2** Never - **1**

	5	4	3	2	1
Do you drink water before, during, and after outdoor physical activity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you take a break from physical activities when you start to feel tired, thirsty, or sick?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you wipe off the sweat from your body when you play or exercise?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you check in on your friends during and after outdoor physical activity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Add up your
In the Hot Seat
score:**

- If you scored 15-20 points you are a **Heat Hero**! Keep reading to see what more you can learn, and how you can help others!
- If you scored 10-14 points you are on your way to being happy in the heat! Read on and continue to improve your heat health knowledge.
- If you scored 9 points or less, there is no need to worry! Pay close attention to the following pages, and you will learn how to be a **Heat Hero**!

HOT:

How to Handle Heat Exhaustion

Heat Exhaustion

Definition:

Feeling sick as a result of the body losing too much water and/or salt, typically through sweat.

When outdoors in the heat, especially when engaging in physical activity, individuals tend to sweat. This puts them at risk of becoming dehydrated and/or experiencing *hyponatremia* (hi-poh-nah-tree-mia), having too little sodium in one's blood. If this occurs, they may experience heat stress.

Heat exhaustion, if left untreated, can sometimes develop into a heat stroke. Prolonged exposure to heat can cause someone's body temperature to rise dangerously high (104 degrees Fahrenheit or greater). This intense internal heat can damage one's organs, causing them to work improperly. A person experiencing heat exhaustion may faint, experience seizures, and if left untreated this could be life threatening. By understanding the symptoms and actions necessary for dealing with a heat stroke we can be prepared to treat and prevent it.

Who is at risk?

Athletes, the elderly, young children, overweight individuals, and those with a pre-existing heart or health condition are most susceptible to heat exhaustion.

However, anyone can experience heat exhaustion. If it is warm enough to sweat—regardless of exact temperature, cloud coverage, or location—heat exhaustion is a possibility. However, it is especially common when the temperature reaches or goes above 90 degrees Fahrenheit, or when the humidity level (the concentration of water vapor in the air) is above 60%. That is to say, be extra cautious in muggy weather.



What to Look For:

Symptoms of heat exhaustion include the following:

- Heavy sweating
- Headache
- Dehydration
- Dizziness
- Muscle cramps
- Nausea
- Irritability
- High body temperature
- Lightheadedness
- Being tired or lethargic

What to Do:

If you begin to feel these symptoms, follow the acronym **HOT**:

Halt what you are doing.

Do not continue any physical activity. Find somewhere shady and cool to sit down. Remove any unnecessary clothing. Rest until all of your symptoms are gone. Try to avoid strenuous activity for the rest of the day. Your body needs time to recover.

Obtain a beverage to drink, and something to cool you down.

Small yet frequent sips of cool water works best for this purpose. Sports drinks are good options for replenishing sodium in the body. Avoid caffeinated drinks such as soda, tea, or coffee.

A wet cloth, an icepack, or a damp towel can be used as a cold compress for one's forehead or neck.

Tell an adult about how you are feeling.

If you follow the HOT instructions, but feel worse after 15 minutes have passed, alert a healthcare provider as soon as possible.

Spotlight on Careers



◀ **Claudia Brown** is a health scientist with the Centers for Disease Control and Prevention’s Climate and Health Program. Claudia works to understand the health impacts of more intense and frequent heatwaves and hurricanes, as well as how climate change impacts the pollen season and vector-borne diseases like ticks and mosquitoes. Claudia has a bachelor’s degree in Ecology and Anthropology from the University of Georgia and a master’s degree in Development Practice from Emory University. During her time at both universities, Claudia enjoyed traveling and gaining knowledge about sustainability. Claudia wants youth to know that her field of work is important, impactful, and rewarding because of the difference she can help make in people’s lives. In their free time, Claudia and her husband enjoy hiking and even went on a 5 ½ month hike through the Appalachian Trail!

▶ **Dr. Rebecca Philipsborn** is a primary care pediatrician at Emory University and Children’s Healthcare of Atlanta. She also serves as the Director of Climate, Health Education and Clinical Partnerships for Emory’s Resilience and Sustainability Collaboratory. Dr. Philipsborn works to treat/prevent illness in children, support children and families, and research/teach students and future doctors about climate change and medicine. She attended medical school at Emory University. Dr. Philipsborn loves her career choice because it allows her to keep meeting new people from all walks of life who continue to inspire and humble her. Dr. Philipsborn wants youth to know that the climate crisis is urgent and may seem overwhelming, but there are real and meaningful steps that we can take to prevent the worst for Georgia and protect the future. Dr. Philipsborn lives with her husband, two children, and a border collie mix named Scout.



► **Lieutenant Colonel David DeGroot** is the director of the Army Heat Center at Fort Benning, Georgia. He oversees the Army's efforts on heat illness prevention, treatment, research and policy making. He began his career as a medical laboratory technician at the US Army Research Institute of Environmental Medicine, supporting research in heat and cold stress on health and performance. He left the Army to earn a PhD in Physiology at Penn State (specializing in physiology of body temperature regulation) and then returned to the US Army Research Institute of Environmental Medicine. His time in the Army has allowed him to visit four continents. He shares that heat stress is not a concern just for the military. Anyone who plays sports or does anything outside may experience heat stress and if they're not prepared may become a heat casualty. He wants you to know that as a scientist, he gets to make contributions that will outlast his time in this particular job and leave an enduring impression on the Army personnel he has served.



DETOUR

Here are some career-related questions for you to think about...

- Have you ever considered a career related to health or science?
- What skills do you have that can be applied to careers related to health or science?
- What might you do to gain more experience in the areas of health or science?

HEAT:

Spotting and Stopping Heat Stroke



Heat Stroke

Definition:

When the body becomes unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106°F or higher within 10 to 15 minutes.

Heat stroke is the most serious heat-related illness. It can cause death or permanent disability if emergency treatment is not given.

Call 911 for emergency medical care. Stay with the individual until help arrives.

Symptoms:

The following can be used as warning signs before a heat stroke:

- Confusion, altered mental status, slurred speech
- Loss of consciousness (coma)
- Hot, dry skin or profuse sweating
- Seizures
- Very high body temperature
- Fatal if treatment delayed

What to do:

Heat stroke can be a very serious and scary concept. If we are aware of what is happening, we can keep ourselves and our peers alert and safe.

Remember the acronym **HEAT**:

Halt what you are doing and find somewhere cool or shady to rest.

If you notice a friend or peer experiencing these symptoms, ask them to stop what they are doing, and bring them into a cool area.

Someone should stay with the individual experiencing symptoms of a heat stroke at all times.

Emergency services should be contacted.

Call or alert someone else to call 911.

Alert an adult or chaperone for help.

Try to cool yourself or your peer down in any way possible.

- Sit in the air conditioning, shade, or by a fan. Remove unnecessary clothing.
- Use cool or room-temperature water and a rag/towel to create a cold compress for the neck and armpits.

Other Heat-Related Conditions:

Be in the Know



Heat Cramps or Spasms

Definition:

Pain, tightness, or involuntary muscle movements that usually occur in the abs, legs, or arms. This is the result of a loss of salt and/or water in the muscles due to sweat.

What to do:

If you experience heat cramps, rest for a little bit, and drink water or a sports drink. Try and eat something high in carbs or salt like crackers.

Heat cramps or spasms may be a sign of heat exhaustion. Be mindful of any other symptoms.

Heat Rash

Definition:

Heat rash occurs when sweat irritates the skin, and is most common on very hot or humid days. A heat rash presents as redness or small blisters that appear in areas that tend to sweat most (chest, neck or knee/elbow creases).

What to Do:

To avoid a heat rash, wipe off excessive sweat, and keep your skin as dry as possible. If you do have a skin rash, tell your parents/guardians, and keep that area dry until it heals. Do not apply cream or ointment.

Heat stress can impact your body in a variety of ways. We have already discovered how heat exhaustion and heat stroke can impact you. Let's learn more about other ways heat-related conditions present in our bodies.

Heat Syncope (*sink-a-pea*)

Definition:

Dizziness or fainting as a result of standing in a single position (especially when locking the knees) for too long, or from standing up too suddenly. This usually occurs when an individual is dehydrated.

What to do:

To prevent fainting, bend your knees when standing in a single position, and change positions slowly.

If you find yourself feeling faint, sit down in a cool area and slowly drink water, a sports drink, or juice. If someone else experiences these symptoms, help them follow these same instructions.

If an individual passes out, they usually wake up shortly after. In any case, alert an adult. If you are alone call 911; if an adult is with you, defer to them for a decision on alerting emergency services.

Our 4-H *Journeys*

Have you ever been playing a 7-inning game and you're in the last inning catching the star pitcher then the whole world starts to spin and you pass out? Many sports players think that skipping that rest time to go play on the playground or not taking a drink of water in between innings is okay but that's what can take away those big moments. Heat stress is when your body temperature is over the temperature it can handle so it starts affecting you with cramping, dizziness, and nausea. It's important to stay hydrated and well rested while doing any outdoor or indoor activity to help prevent this.

As a softball player, I have personally experienced the effects of heat stress during base running or just playing my position and it is not a good feeling to be sick and missing out on the sport you love. My family and community have been affected by heat stress because children are not educated on how dangerous it is and how to prevent or help heat stress.



Mackenzie Kimbarl

County: Forsyth
District: Northwest
Grade: 10th

Photos courtesy of Mackenzie Kimbarl





Photos courtesy of Caroline Hampton



Caroline Hampton

County: Monroe

District: Northeast

Grade: 12th

Georgia heat can sometimes be quite unbearable and at times uncomfortable when you have to be outside all day. I know exactly just how hot it gets at times as I participate in outdoor summer activities, as well as running for my high school Cross Country team from late July to early November. Some days, especially in late August, my team has to practice indoors because it is just too hot outside. But since we have to be outdoors for most of the sport, I take a few precautions to help with preventing heat stress.

One of the precautions that I take to prevent heat stress is drinking lots of water. Staying hydrated is important for someone who is always outside because it helps with not becoming dehydrated (which can happen if you are

sweating a lot from the heat), as well as making you feel better in general. I make sure that I drink at least two to four 16 oz water bottles before I have to go work out in the afternoon and that I always have a filled-up water bottle with me.

Another precaution that I take to prevent heat stress is staying in the shade as much as possible. Being in direct sunlight can be quite harsh and draining especially when it is hot, so when I have to stretch for my workouts or take breaks from running, I make sure I stand in the shade. With these few precautions that I take, I am able to make sure that my body does not overheat, and I am still able to participate in the sport that I enjoy so much!



Contact your local county Extension office today!

georgia4h.org/projectachievement **GEORGIA** 4-H

Being safe in the heat is easy and fun!

- Hydrate! Drink water before, during, and after outdoor activity.
- Stagger indoor and outdoor time in order to take a break from the heat and sweating.
- Wear sunscreen and a hat.
- Wear loose fitting, lightweight, and light colored clothing in the heat.
- Avoid being outdoors during the hottest hours of the day (between noon and 3:00 pm)
- Know your body! Be extra careful if you have a pre-existing heart, lung, or general health condition.
- Make sure someone knows where you are going, and have a friend with you outdoors. It is always a good idea to have a buddy system!
- Do not leave any people or pets in a car on a hot day.
- Be mindful of the symptoms of heat stress, so that you can catch and treat them early!