

SPECIAL EDITION

RBS

Job One



HYPERTHERMIA

**WHAT BOATERS AND
AUXILIARISTS
SHOULD KNOW**

USCG AUXILIARY

RBS *Job One*

SPECIAL EDITION

Publication of the United States Coast Guard Auxiliary
Recreational Boating Safety Directorates

INSIDE

**HYPERTHERMIA:
A CLEAR AND PRESENT DANGER**

INFO ON PADDLE CRAFT REFLECTOR KITS

**UPDATE ON NATIONAL SAFE BOATING
WEEK**

ON THE COVER Auxiliarist Jim Palermo stands radio guard during a patrol on Lake Pleasant, Arizona. Photo by Sydney Hay. Both are from Flotilla 10-7 Phoenix, District 11SR.

RBS Job One is the flagship publication for the U.S. Coast Guard Auxiliary RBS Directorates; RBS Outreach (B), Public Education (E) and Vessel Examination and Partner Visitation (V). Its purpose is to inform all members of the Auxiliary of current developments affecting their job performance in conducting the core mission assigned by the Coast Guard and to share best practices. Send submissions to sydneyhay@mindspring.com.

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Hyperthermia: A Clear and Present Danger

Hyperthermia Awareness While on Patrol

By Steven Henkind, MD

Twice, in the past several years, I have had to put on my doctor hat and treat casualties for hyperthermia. In both of these cases, we were out on patrol and happened upon a casualty who had clear signs and symptoms of hyperthermia. Since I am familiar with how to recognize hyperthermia, as well as how to treat it, I was able to prevent a serious situation from becoming even worse. The casualties were not individuals on other boats – they were, in fact, the very same Coast Guard auxiliaries with whom I was on patrol.

Hyperthermia is a common medical condition which is uncomfortable and debilitating. If left untreated, it can become fatal. Because of a variety of factors, it is also a condition for which many auxiliaries are at risk. The good news is that hyperthermia can be prevented, is easy to recognize, and can be readily treated in the field --if it has not progressed too far. This article provides a description of hyperthermia, a summary of the contributing factors, techniques to prevent it, how to recognize it, and how to treat it.

The Spectrum of Hyperthermia

Although most of us learned, at some point, that 98.6°F is a normal temperature, there is, in fact, variability in the actual number with various sources listing different cutoff numbers for an above-normal temperature. Depending on the information source, this could be anywhere from 99.5°F to 100.9°F . Whatever the exact number is, the temperature for an individual will vary over the course of a day due to activity levels and other factors. If your “normal” temperature is 98.6°F, your measured temperature in the afternoon may be 99.9°F.

Deep within a portion of our brain called the hypothalamus is a thermostat. Just like the thermostat in your house, the hypothalamus has a “set point” -- the target temperature for your body. By controlling a number of body functions like sweating, shivering, and so forth, the body is usually able to maintain a temperature at, or close to, the set point. A number of things can raise our body temperature. For example, if you acquire a systemic infection, the hypothalamus will raise the set point in an effort to combat the infection.

Hyperthermia, on the other hand, is an entirely different phenomenon. In hyperthermia, the body’s set point remains the same, but the ability to lose heat by sweating, for example, is overwhelmed by heat that is either internally generated, by exercise for example, or by external heat such as the high temperatures boaters and boat crews experience on a hot summer day. This distinction -- the set point remaining the same --is critical because it guides our choice of therapies. For example, Tylenol and aspirin will lower the set point, and thus lower a fever caused by infection, but these medications are of no benefit, and may even be harmful, in the case of hyperthermia.

Given that there is variability in numerical thresholds, it will be useful for us to describe hyperthermia in two broad clinical constel-

Because of a variety of factors, hyperthermia is a condition which may put auxiliaries at risk.



Steven Henkind, MD



Auxiliarist Mike Chapman wears the hot weather uniform at Lake Powell.

(Photo by Karen Chapman)

lations: heat exhaustion and heat stroke. In heat exhaustion, the body has become overheated, and the means by which the body compensates are still in effect. For example, these patients will generally be sweating — evaporation of sweat has a cooling effect.

In heat stroke, the body becomes so hot that, to put it in fairly graphic terms, your brain is cooking, including your hypothalamus, and the compensatory mechanisms are no longer in effect. These patients generally don't sweat. Although we are not emphasizing numerical thresholds, it is generally accepted that a core temperature of 104°F, in combination with a severely altered mental status, and lack of sweating, is highly suggestive of heat stroke. Heat stroke is a critical medical emergency that must be dealt with in a hospital.

Factors Contributing to Hyperthermia

Factors which can contribute to hyperthermia include external sources of heat such as atmospheric temperature, and sun exposure, as well as internal sources of heat such as that caused by physical exertion. Other factors contribute to hyperthermia by preventing the

body's cooling mechanisms from being effective. For instance, atmospheric humidity can impede, or totally prevent, evaporative cooling while certain types of clothing can seal heat in.

Older individuals, such as those over 50, and those who are overweight are more pre-disposed to hyperthermia. This is a familiar demographic profile for many in the auxiliary. In addition, those individuals who have already had hyperthermic episodes may be predisposed to additional occurrences.

Another insidious contributing factor is dehydration. Many auxiliary facilities are small boats with limited or non-existent bathroom facilities. How many auxiliarists avoid drinking while underway in order to avoid needing to urinate? Does this sound familiar to you?

At a recent flotilla meeting, I asked how many in the group don't drink a lot, or at all, while underway, in order to avoid the need for "bathroom breaks." More than half of the people in the room raised their hands!

In addition to lack of fluid intake, there are a number of other common causes of dehydration. Many prescription medications have a diuretic effect. Vomiting, diarrhea, and alcohol intake (presumably the night before) can cause dehydration.

Therefore, if you have recently changed or adjusted your medications, have a GI illness, or previously consumed a significant amount of alcohol, you should be very cautious about getting underway.

By understanding the causes of hyperthermia, it is possible to mitigate some of the contributing factors. For example, try to stay out of the direct sun and minimize, as possible, physical exertion when it is very hot. Certain preventative strategies deserve additional comments.

Crew Rotation: On most small boats, certain parts are warmer than others due to differing amounts of shade, shielding from the wind, proximity to the engine, and so forth. Accordingly, it can be advantageous to keep rotating crew positions, in order to "share the heat." There are other advantages to crew rotation such as keeping different skills current and increasing alertness.

Hydration: You must stay hydrated. The key is to stay ahead of the game — by the time you are thirsty, you have already lost significant fluid. If you are urinating regularly, and the urine is clear or very lightly colored, then you are probably hydrating sufficiently. On the other hand, if you haven't urinated for many hours and/or your urine is dark, then you probably haven't been drinking enough. Sports drinks work well for rehydration but if you don't have them, water will do.



Author Steve Henkind MD, Flotilla 11-10 Dunedin, District 7, serves the Coast Guard Auxiliary as navigation instructor and Quartermaster of the Watch (QMOW) aboard Eagle, the US Coast Guard historic sailing vessel.

(Photo courtesy of Steve Henkind)

Clothing: Clothing does help to keep the sun off you, but can be a bit of a double-edged sword. Some types of clothing can seal heat in, while others reflect it away. Given the auxiliary's uniform requirements, there isn't a lot of flexibility here. However, even within the bounds of authorized uniforms, smart choices can be made. On a hot day, if at all possible, the coxswain should specify that the hot weather uniform will be worn on patrol. As

"All of our boats can create their own wind -- by moving.

So, on a hot day, the coxswain should strongly consider cooling the crew by bringing the boat up to speed. "

Dr. Steven Henkind, MD

another example, Tilley hats provide more shade from the sun than do ball caps.

Evaporative Cooling: Sweating is a critical mechanism for dissipating heat. On most days (except when the atmospheric humidity is 100%), it is possible to create additional evaporative cooling. For example, applying water to your clothing, including your hat, will lead to additional cooling. Although not a required piece of equipment, a plant mister filled with water serves admirably in this role. Increasing air flow will also assist with evaporative cooling. Some boats have fans which can be turned on, but all of our boats can create their own wind by moving. So, on a hot day, the coxswain should strongly consider cooling the crew by bringing the boat up to speed.

Avoidance: Although we can't control the atmospheric temperature, we can try to avoid the sun by staying under an enclosed, shaded area in the boat. Ultimately, at a certain level, however, the heat can become so intense that hyperthermia becomes a major risk. These are days when a decision may need to be made to postpone or cancel the mission due to excessive heat. In particular, on any day when the heat index exceeds 94°, extreme cau-



(Photo courtesy of Rick Harrach)

tion should be exercised and, if the heat index exceeds 104o, the mission should probably be scrubbed.

Recognizing Hyperthermia

You don't need to be a medical professional to recognize hyperthermia, nor do you need to carry a medical thermometer (although it's not a bad idea). Hyperthermia can, in fact, be easily recognized, if you know the signs and symptoms.

Heat Exhaustion: Typically, patients with heat exhaustion will complain of being weak, and may have a headache or feel nauseated. They will generally be sweaty, have a fast/weak pulse, and be breathing rapidly. Due to evaporative cooling, even though they are overheated, their skin may feel cool. Of note: Many of these signs and symptoms are also typical for a heart attack (also not uncommon in our Auxiliary demographic), but a typical cardiac patient will also have chest pain. Chest pain is not a typical symptom for hyperthermia and, thus, lack of chest pain is a critical differentiating clue.

Heat Stroke: The big clues for heat stroke are lack of sweating and an altered mental status. A typical heat stroke patient will be red, their skin will feel hot and dry, and they will have a significantly altered mental status. They may be confused, hostile, or acting as if they are intoxicated. Some patients with heat stroke will, in fact, have damp skin, although it is less common than dry skin – but if there is an altered mental status, it is much more likely to be heat stroke. Note: When gauging a patient's skin temperature, use the back of your hand – it has more heat-sensitive receptors than the front of your hand.

Treatment of Hyperthermia

As noted previously, heat stroke is a major medical emergency. If you suspect it, you should call EMS. The patient must be evacuated immediately. Before help arrives, strip the victim's clothing, and use water or ice and airflow to cool them.

Heat exhaustion, on the other hand, is easy to treat in the field. Just as the contributing causes are multi-factorial, the treatment should be as well. Key interventions include:

- The casualty should cease all physical activity.
- Administer cool liquids to drink – and have the casualty keep drinking.
- Accentuate evaporative cooling by wetting clothing



Tilley hat worn by Auxiliarist Mike Johnson, Flotilla 10-7 Metro Phoenix, District 11SR, provides better sun protection than the uniform ball cap.

(Photo by Karen Chapman)

(including the hat) with cool water. I have found that putting ice cubes in a hat is very effective, and ice under the armpits may help as well, but the use of ice is a bit controversial. If you are going to use ice, be careful about freezing the skin. Consider wrapping the ice in a thin towel or putting it in a baggie with a few paper towels. This provides a slight degree of insulation and avoids direct skin-to-ice contact.

- If possible, move the casualty out of the direct sun.
- Although not in compliance with uniform regulations, it may be advisable to remove the casualty's hat if they are not in the sun, since a hat can seal the heat in.
- If the casualty is in full ODUs, I would recommend removing some, or much, of the clothing to allow for cooling.

Case Report

Three of us were on patrol on a very hot summer day as is typical in Florida. I was a crew member as was an auxiliarist in his mid-fifties. He was a big guy – a former col-

lege football lineman. Part way through the patrol, he stated that he wasn't feeling well – he felt weak and nauseated. I did a quick exam, and noted that he was sweaty and had a rapid pulse. The diagnosis was obvious: heat exhaustion.

I told him to start drinking, and kept handing him bottles of cold water to down. We didn't have any sports drinks with us. I filled his hat with ice cubes from the cooler, and poured cool water on his clothing. It was a windless day, and we were at idle. Accordingly, I asked the coxswain to come up to speed in order to create some wind. There was no shade in the cockpit and the small cabin in the boat was stifling hot – so I had him stay in his seat.

We were wearing the hot weather uniform (shorts and t-shirt) but, if we had been in full ODU's I would have stripped some of the clothing from him.

Our fellow crew member recovered rapidly to this series of interventions – within fifteen minutes he began to feel better and in a half hour, he was back to normal.

Later, I asked whether he had anything to drink while underway prior to becoming ill. His answer: He did not because he didn't want to have to go to the bathroom on the boat. **Lesson learned!**

US Coast Guard Urges Auxiliary to Distribute Paddle Craft Reflector Kits

Auxiliary National Supply Center Has Thousands Currently in Stock

The Auxiliary National Supply Center (ANSC) has thousands of Paddle Craft Reflector Kits in stock.



Auxiliary Vessel Examiner, Doug Houle, Flotilla 10-7 Metro Phoenix, District 11SR, gives important guidance to paddle craft operators. **(Photo by Sydney Hay)**

Developed by the Coast Guard Auxiliary under a grant from the Sport Fish Restoration and Boating Trust Fund, and administered by the Coast Guard, these kits help make paddlers more visible to boaters. The kits are available from ANSC as stock line item number 3004B.

The recreational boating season will soon be in full swing across the country, making this the ideal time to distribute reflector kits as part of Auxiliary engagement with paddlers at public education events, vessel safety checks, and program visits.

Each kit consists of a sheet of shiny, reflective plastic film containing four reflectors, one for each paddle tip. Paddlers can peel the reflectors from the sheets and apply them to the tip of each paddle. On the water, these reflectors catch the sun and reflect it with a glint to make the paddle craft more visible to other paddlers and boaters.

Also included in the kit is a safety checklist that can be marked with the paddle craft owner's name and contact information, and then applied to the paddle craft. Other important safety information is covered as well.

According to the U.S. Coast Guard, "Auxiliary flotillas that engage with paddle craft communities are strongly encouraged to place their orders now and distribute these valuable reflector kits soon in order to promote and achieve improved paddle craft safety."

Mary Larsen, A Tribute

By Berry Berg

District 8WR, Flotilla 11-2 Twin Cities Metro-South

Commodore Mary Todd Larsen crossed the bar Tuesday, Mar. 12, 2019. She served the US Coast Guard Auxiliary and the US Coast Guard for 32 years as a District Commodore, a VNACO (now DNACO), Prevention Directorate Division Chief for Outreach admirably and brought credit and honor to her Flag. Those are the simple facts.

When I received the news of her death it was neither just fact nor simple. It felt like I was punched in the gut. In the Coast Guard we often get some dramatic highs, like when we save peoples' lives, or assist a boater in trouble, or when we see the expression on a child's face when they first realize how fragile is our world and its environment. Contrast that to the low I now feel.

This is not the simple passing of a friend and shipmate. Mary was a colleague and a mentor. It was very personal. When I first started in prevention and environmental outreach, Mary encouraged and nurtured me. As a Branch Chief in Prevention Outreach, Mary was the next step in my chain of leadership. We worked together on Sea Partners Education, America's Waterway Watch, Pollution Outreach and other programs. I learned from Mary that these things are not programs you do, but how you live.

There were times we disagreed, not many, but she was always and above all my friend. Mostly, what I think about Mary is that she deeply cared. I can still hear an almost wry smile in her voice when I suggested my newest crazy idea, and her response was always the same, "Go ahead and do it."

It may not sound terribly important to the passing world, but I am very proud to say that COMO Mary Todd Larsen, DVC-PW, was my friend, my mentor, and I am proud she considered me a shipmate. My sadness will pass as it does for all of us, and I will be left with the warm memory of my good friend and colleague.



Mary Larson crossed the bar on March 12, 2019

(Photo courtesy of Dottie Riley)

*... Twilight and evening bell,
And after that the dark!
And may there be no sadness of fare-
well,*

When I embark;

*For tho' from out our bourne of Time
and Place*

*The flood may bear me far,
I hope to see my Pilot face to face
When I have crost the bar.*

*from "Crossing the Bar"
by Alfred Lord Tennyson*

A Tribute to Pauline Grace Longenecker

By the National Association of Safe Boating Law Administrators

The National Association of Safe Boating Law Administrators mourns the loss of Pauline Grace Longenecker who passed away on March 9, 2019.

She was born in Council Bluffs Iowa on August 1, 1954 to the late Roland and Regina (Nusser) Zuch. She is survived by her husband, Ron Longnecker; brother, Charles Zuch (Beverly); sisters, LaVon Brockman and Janet Henke (Robert); nieces, nephews, and a host of other family and friends.

Pauline and Ron joined the Coast Guard Auxiliary 32 years ago in 1988. Both were very active in Operations, Public Education, and Vessel exams. They held the offices of Division Commander and District Captain. Pauline received 64 awards from the Coast Guard Auxiliary during her time as a member. The most recent and top five awards included USCG Auxiliary Award of Operational Merit, USCG Auxiliary Commendation Medal (2), USCG Auxiliary Achievement Medal, USCG Auxiliary Commandant's Letter of Commendation(5), and Recreational Boating Safety Device (achieved expertise in recreational boating safety).

As an Auxiliarist, Pauline developed a professional and vital partnership with the National Association of State Boating Law Administrators (NASBLA) by teaching seven years at the NASBLA Leadership Academy. Her passion for boating safety encompassed every part of her life and Auxiliary career.

Pauline also had a thirst for knowledge and became a Boat Crew Coxswain, Qualifying Examiner, Team Coordination Training Facilitator, and Fingerprint Technician. Pauline also held the office of President of the Past



Pauline Longenecker crossed the bar on March 9, 2019.

(Photo courtesy of The National Association of Safe Boating Law Administrators)

Division Commanders Association. Pauline was the Division Chief-District Liaison Officer and Branch Chief-Atlantic West Region and Aid Verifier for recreational boating safety.

Pauline was the State Liaison officer for Iowa and worked closely with Boating Law Administrators to deliver classroom education courses, Governor-supported State Proclamations during National Safe Boating Week and boating safety messages delivered to Iowa State Parks.

Pauline showed a great commitment to service during her Auxiliary career. She was a mentor and a friend and will be dearly missed.

(By Hannah Hensley and reprinted from the NASBLA Connect, the newsletter of the National Association of Safe Boating Law Administrators)

Coast Guard RBS Statistics for 2018 to be Released Soon

The statistics are always sobering. Despite the fact that recreational boating deaths were down by 6% from the prior year, 658 people lost their lives in boating accidents in 2017. We anticipate the statistics to be released during or soon after National Safe Boating Week, May 18-24, 2019.

It is no surprise to members of the Auxiliary that the overwhelming majority (76%) of deaths are from drowning. In 85% percent of these drowning accidents, the victims were not wearing a life jacket.

Another important statistic stands out. Over 80% of boating deaths occurred on vessels where the operator had never taken a boating safety course, the type of course the Coast Guard Auxiliary and other safety groups offer free or at little cost to boaters.

Loved ones mourned the deaths of 658 people in 2017 who never came home from a day on the water. An additional 2,629 others suffered serious injury.

What will the 2018 statistics show? No doubt, the numbers will again clearly demonstrate why recreational boating safety continues to be job one.

National Safe Boating Week Events Bring Public Awareness to the Importance of Life Jackets

The annual kick-off of the summer boating season for many auxiliarists is National Safe Boating Week. Held the week of May 18, 2019 and sponsored by the National Safe Boating Council, “Ready, Set, Wear It!” life jacket events, a key focus of National Safe Boating Week, once again taught boaters about the importance of always wearing a life jacket, along with helpful care and maintenance information. Events were hosted by Safe Boating Campaign partners around the world including the Coast Guard Auxiliary.

Local partners are encouraged to plan an event all summer, any time between May 1 and October 31. Free downloadable resources including templates for media releases are available at safeboatingcampaign.com.



NORTH MYRTLE BEACH, South Carolina — Flotilla 12-4 Central Grand Strand kicks off National Safe Boating Week with a boating safety booth at West Marine. John Brown, the Recreational Boating Safety Program Visitor for both flotilla and division talks to a boater/ customer about the many boating safety programs offered by the Auxiliary. Photo by Bruce Donagen, Flotilla 12-4 (Photo courtesy of Safe Boating Council)