

Hypothermia at Regattas

LANGLEY'S EXPERIENCE IN 2015

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revised
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Langley Experience in Early 2015

- ▶ At the March regatta when the women's 4 capsized, one of our boys became hypothermic and had symptoms that persisted for a week.
- ▶ Our analysis of the situation concluded that
 - ▶ He was not dressed properly for the temperature
 - ▶ He was exposed to 35 degree temperatures for more than 1 hour while wet from the normal splashing in a boat
 - ▶ He was shivering and very cold, and complained to his boat mates who noticed he was disoriented but
 - ▶ They had no way to communicate with their coaches or parents and
 - ▶ They didn't feel empowered to pull themselves out of the race
 - ▶ When he finally returned to the dock no one checked him for hypothermia symptoms, and finally
 - ▶ He had to wait in sub-40 degree conditions until another parent realized the seriousness of his conditions.
- ▶ We have taken measures to ensure that this will not happen again to a Langley rower

Hypothermia is Serious

- ▶ We all know that hypothermia (**body temperature below 95° F**) can eventually cause death
- ▶ Like many, I always thought that if you just went home and crawled under the covers, you'd recover with no other consequences. Not necessarily...
- ▶ There are other consequences of becoming hypothermic that are injurious to the body
 - ▶ Body fluids thicken and it becomes more difficult to push the fluids through the body putting strain on the heart
 - ▶ Decreased blood flow to the brain
 - ▶ Impaired kidney function
 - ▶ Changes in endocrine system
- ▶ Cold Water Shock can increase the risk of drowning

Four Stages Of Cold Water Immersion

Cold water shock is a rapid development of a number of shock responses caused by cold water immersion that can result in sudden drowning.

- ▶ **Initial cold shock (first 3-5 minutes).** Sudden immersion in cold water causes the **gasp reflex**, which can result in water inhalation, hyperventilation, changes in heart rate and rhythm and blood pressure, and panic. *If you fall into very cold water the first reaction should be to maintain your head above water because the cold-shock reflex is going to cause you to gasp and hyperventilate uncontrollably. This will subside in a few minutes.*
- ▶ **Short term swim failure (3-30 minutes).** Cold water saps energy and arms and legs become weak. Movement is difficult and slow. Death can occur by drowning, as the victim can no longer stay afloat.
- ▶ **Long term hypothermia (30 minutes +).** The body loses heat to cold water 25 times faster than cold air. The body becomes hypothermic when it loses heat at a rate faster than it can generate heat. Continued exposure leads to unconsciousness and death. At this stage death may occur without drowning.
- ▶ **Post immersion collapse. This stage occurs during or after rescue. Your body temperature may continue to fall. The body is still hypothermic and death may occur due to complications from inhaling water or lowered body temperature.**

Immediate Symptoms

- ▶ **Shivering**
 - ▶ **Shivering indicates that the body is still trying to warm itself up; a good thing**
- ▶ **Slowing heartbeat**
- ▶ **Shallow breathing**
- ▶ **Purple fingers and toes**
- ▶ **Lack of coordination**
- ▶ **Difficulty in making decisions**
- ▶ **Slurred speech**
- ▶ **Dilated pupils**
- ▶ **Confusion**
- ▶ **Drowsiness**
- ▶ **Weak pulse**
- ▶ **Tiredness**

Immediate Actions – Warm Gradually

- ▶ Hypothermia is a medical emergency
 - ▶ At the first sign, find medical help immediately.
 - ▶ The survival of the victim depends on their co-workers ability to recognize the symptoms of hypothermia
 - ▶ The victim is generally not able to notice his or her own condition
- ▶ First aid for hypothermia includes the following steps:
 - ▶ Ensure that wet clothing is removed.
 - ▶ Place the victim between blankets (or towels, newspaper, etc.) so the body temperature can rise gradually. Body-to-body contact can help warm the victim's temperature slowly. Be sure to cover the person's head.
 - ▶ Give warm, sweet (caffeine-free, nonalcoholic) drinks unless the victim is rapidly losing consciousness, unconscious, or convulsing.
 - ▶ Quickly transport the victim to an emergency medical facility
 - ▶ Do not attempt to rewarm the victim quickly (e.g., do not use hot water bottles or electric blankets).
- ▶ Perform CPR (cardiopulmonary resuscitation) if the victim stops breathing. Continue to provide CPR until medical aid is available. The body slows when it is very cold and in some cases, hypothermia victims that have appeared "dead" have been successfully resuscitated.

Current VASRA Procedures

- ▶ Rowing is *discouraged* when air and/or water *temperatures* are below 35 °F
- ▶ If air temperature is below 40° and/or water temperature below 50° degrees, boats should stay close together
- ▶ During practice, launches should carry the following minimum emergency supplies:
 - ▶ First aid kit
 - ▶ Blanket for each rower
 - ▶ Warning/signaling device
 - ▶ Shells should have a whistle for emergency signaling.
 - ▶ Flags flown where **White** means Air/water temperature below 35 degrees and **Red** means Launching of boats is prohibited

Cold Weather Regattas

- ▶ **Our advice to all people involved in conducting regattas during cold weather is to become familiar with the seriousness of hypothermia and take measures to**
 - ▶ **Learn how to prevent it**
 - ▶ **Develop a Go/No-go decision based on wind chill**
 - ▶ **Learn to recognize the symptoms**
 - ▶ **Educate coaches, especially, about the dangers of hypothermia**
 - ▶ **Educate coxswains to be vigilant during cold-weather operations for signs of distress among rowers**
 - ▶ **Have procedures in place for getting emergency assistance when needed**

(Continued)

Cold Weather Regattas

- ▶ There are many good sources of information on the internet about hypothermia such as:
 - ▶ WebMD: <http://www.webmd.com/a-to-z-guides/what-is-hypothermia>
 - ▶ Mayo Clinic: <http://www.mayoclinic.org/diseases-conditions/hypothermia/basics/definition/con-20020453>
 - ▶ National Institutes of Health:
<https://www.nia.nih.gov/health/publication/hypothermia>
 - ▶ Center for Disease Control and Prevention (CDC):
<http://emergency.cdc.gov/disasters/winter/staysafe/hypothermia.asp>

Wind Chill Table

Table of Windchill Values: National Center for Atmospheric Research

Keep in mind that a racing shell is moving at 15 mph, often into the wind

Windspeed (mph)	Air Temperature (degrees F)															
	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30
5	43	37	32	27	22	16	11	6	0	-5	-10	-15	-21	-26	-31	-36
10	34	28	22	16	10	3	-3	-9	-15	-21	-27	-34	-40	-46	-52	-58
15	29	22	15	9	2	-5	-12	-18	-25	-32	-38	-45	-52	-59	-65	-72
20	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-53	-60	-68	-75	-82
25	22	15	8	0	-7	-15	-22	-30	-37	-44	-52	-59	-67	-74	-82	-89
30	20	13	5	-3	-10	-18	-25	-33	-41	-48	-56	-64	-71	-79	-87	-94
35	19	11	3	-5	-12	-20	-28	-36	-44	-51	-59	-67	-75	-83	-90	-98
40	18	10	2	-6	-14	-22	-30	-38	-46	-53	-61	-69	-77	-85	-93	-101
45	17	9	1	-7	-15	-23	-31	-39	-47	-55	-63	-71	-79	-87	-95	-103
50	17	9	1	-7	-15	-23	-31	-40	-48	-56	-64	-72	-80	-88	-96	-104

Example: If the wind is 10 mph and the temperature is 45° F, a racing shell could be experiencing a 25 mph wind and a wind chill of 22° F