

Hypothermia & Cold Stress

PRE EMPLOYMENT TRAINING FOR:



B L U E C O L L A R G R O U P

www.bluecollargroup.ca



WHAT IS HYPOTHERMIA



Hypothermia occurs when your body loses heat faster than it can produce it, causing a dangerously low body temperature.

Normal body temperature is around 37° C .

Hypothermia occurs as your body temperature passes below 35° C .



HYPOTHERMIA - WHO IS AT RISK?

Anyone who works in an environment with either artificial or natural cold is potentially at risk.

Artificial cold is found in areas such as:

- ▶ Cold storage rooms
- ▶ Freezers, and refrigerated tractor trailers

Natural cold exposure applies to workers who work outdoors in such industries as:

- ▶ Fishing, Commercial Diving, Forestry, Construction, Agriculture, Petroleum, and Nurseries



WHAT CAUSES HYPOTHERMIA?



Cold is the most common cause of hypothermia. Chilled air cools down the body.

Wind removes the thin insulating layer of warm air next to the skin. The stronger the wind at a given temperature, the cooler the wind chill will be.

Cold water immersion speeds up the process of cooling down the body. When you are in the water, heat is conducted away from the body 25 times faster than in cold air.

Fatigue will increase your vulnerability to the risk of hypothermia.



HOW TO REDUCE THE RISKS OF HYPOTHERMIA

- ▶ Wear warm head covering (most body heat is lost through the head)
- ▶ Wear layered clothing
- ▶ Protect your feet and hands
- ▶ Carry emergency supplies
- ▶ Drink plenty of non-alcoholic fluids
- ▶ Pace yourself during vigorous activity
- ▶ When possible, heat the working environment



PERSONAL PROTECTIVE EQUIPMENT

In fall or winter conditions, or when it is cold, windy, rainy, or when working in the cold storage or similar cold areas; wear your personal protective equipment to protect yourself from cold stress and hypothermia!

- ▶ Layers of loose fitting, insulated clothes
- ▶ Insulated jacket, gloves and hat
- ▶ Insulated and waterproof boots

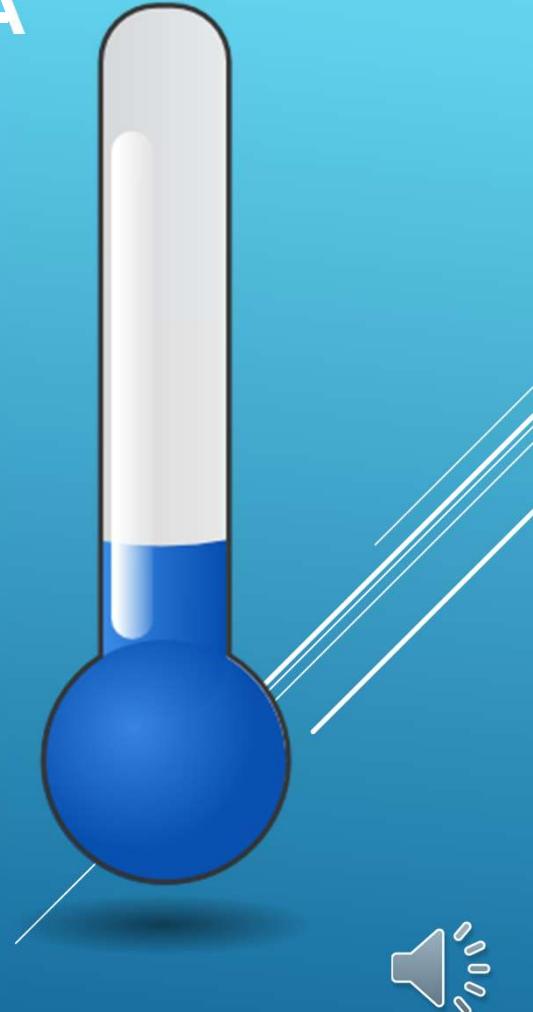




DANGER SIGNS OF HYPOTHERMIA

Mild hypothermia:

- Grogginess, poor judgment, muddled thinking, and abnormal behaviour
- Bouts of shivering
- Normal breathing and pulse



DANGER SIGNS OF HYPOTHERMIA

Moderate hypothermia:

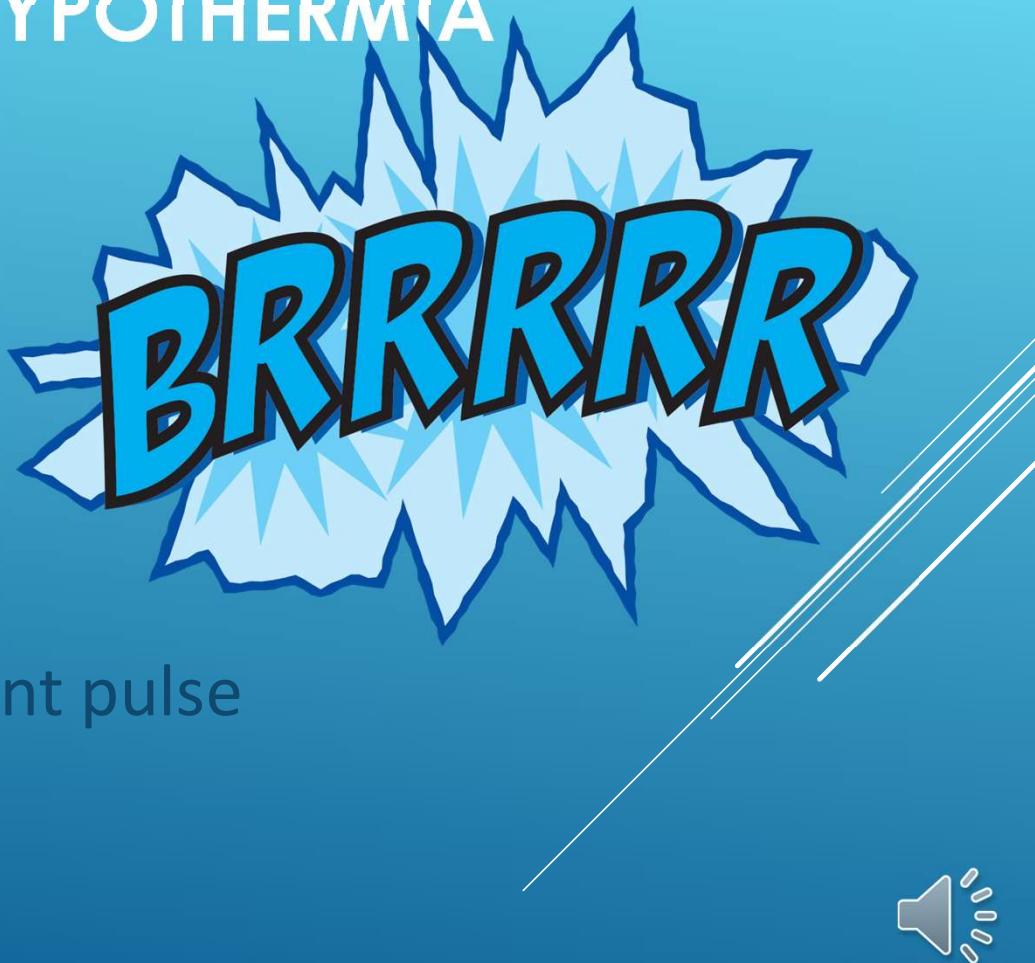
- Violent shivering, or shivering has stopped altogether
- Inability to think and pay attention
- Slow, shallow breathing, slurred speech, or poor body co-ordination
- Slow, weak pulse



DANGER SIGNS OF HYPOTHERMIA

Severe hypothermia:

- Shivering stopped
- Unconsciousness
- Little or no breathing
- Weak, irregular, or non-existent pulse
- Dilated (wide open) pupils



DEALING WITH HYPOTHERMIA PATIENT

- ▶ Always handle the patient extremely gently
- ▶ Remove the patient from the cold environment – get emergency help
- ▶ Cover the patient with blankets or warm clothing
- ▶ Do not give patient food or water
- ▶ Do not have the patient move to warm them up



WHAT IS FROSTBITE?

Frostbite refers to the freezing of body tissue that results when the blood vessels contract, reducing blood flow and oxygen to the affected body parts.

Signs and symptoms:

- Numbness
- Reddened skin develops gray/white patches
- Feels firm hard
- May blister



Temperature (°F)

Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times

- 30 minutes
- 10 minutes
- 5 minutes



HOW TO PROTECT YOURSELF AND OTHERS

- ▶ Know the symptoms; monitor yourself and co-workers
- ▶ Drink warm, sweetened fluids (no alcohol)
- ▶ Dress accordingly

