

Learning Engagement Tool

Person Overboard Rescue

A Learning Engagement Tool is developed to discuss important issues relating to a theme and how to prevent similar incidents from happening. In this case, how to prevent severe consequences when a person has fallen overboard. Discuss the theme and think about the answers as a crew and what you can learn.

The theme is split up in 4 categories:

- ALARM
- RESCUE MATERIAL
- GETTING THE PERSON OUT OF THE WATER
- FIRST AID

After every category, some tips and examples are mentioned to help guide the conversation.

Good luck!

Person Overboard - ALARM

1. When a person goes overboard, notify emergency services immediately. How do you notify the emergency services and what information do you need to communicate?
2. Act fast. Getting someone out of the water takes more time than you might think. What are the things you need to do?



1. How and what information needed:

2. What to do?



1. How and what information needed:

E.g.: VHF via radar post (on the Rhine), VHF via Lock (German canals), mobile phone, ...

Name of barge, position, your own name, what happened, position of the person, condition of the person (unconscious, wearing a life-jacket, communicative), when did the person fall into the water, how and where can emergency services get to the person (jetty, road alongside the water).

2. What to do?

Throw lifebuoy with light and lifeline, point to the person to help you keep him in sight, call out reassuring messages, put the lifeboat overboard and get ready to pick up the person, press the *person overboard* button, ...

1. What materials do you have on board and how do you use it?
2. Is all material directly available? Is it also available e.g. in canals (dismantled rescue boat cranes)?



1. Materials on board:

2. Materials not available and how to handle this:



1. Materials on board

Rescue boat, life buoy, ropes, other floating devices.

Also discuss where the materials are located and how to use them.

2. Materials not available and how to handle this:

Make sure you put rescue boat back in order when low bridge is passed.

Perform regular checks on life-saving materials.

Execute regular emergency exercises.

Person Overboard – GETTING THE PERSON OUT OF THE WATER

1. How can you get the person out of the water? Can you bring the person to the barge or to the shore? Which way is easier?
2. Maybe you fell overboard once or you witnessed a POB situation. Share your experiences with each other.



1. How to get a person out of the water:
2. What were some lessons learned?



1. How to get a person out of the water:

Maybe it is easier to drag the person to the shore and get him out of the water there, instead of trying to get him on board (of the rescue boat). For example, 2 persons get into the rescue boat: 1 person holds the POB and the other person drives the boat to the shore, there, both crewmembers can get the person out of the water.

Keep the person in a horizontal position as much as possible.

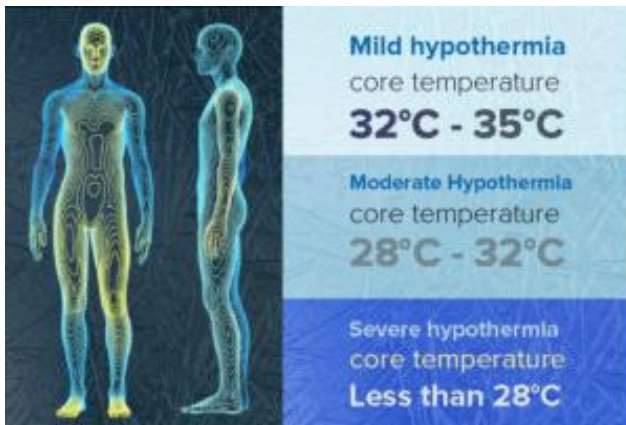
Other ways?

2. What were some lessons learned?

... share your stories or stories you might have heard or read about.

1. How do you recognize hypothermia?

2. What do you need to do when you get a person out of the water?



1. What does hypothermia look like?

2. How to perform First-Aid:



1. What does hypothermia look like?

Remove the victim horizontally from the water as much as possible, try to get the person warm by placing a hat, blankets, any other material. Don't give the person alcohol!

A-B-C: Airway clear – Breathe (resuscitate) – Circulation

Go through the slides from the STC-KNRM on hypothermia below.

2. How to perform First-Aid:

See slides from the STC-KNRM on hypothermia below.

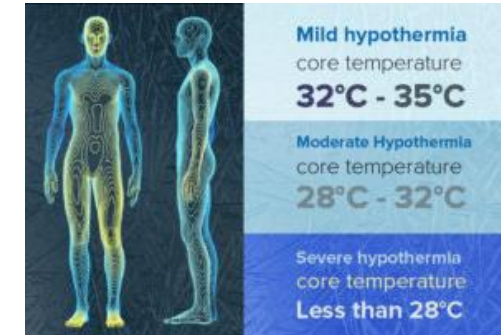
HYPOTHERMIA

European inland barging safety program

- Definition – Hypothermia – What is it? & what does it do?
- Are all POB incidents similar?
- How much time do you have?
- Heat Exchange – Information on Body Heat
- Recovery of the victim

What is Hypothermia?

Hypothermia is a condition in which a person's **central** body temperature has dropped to such an extent that normal metabolism is compromised. Hypothermia begins when the body temperature drops below **35 °C**.



HYPOTHERMIA DUE TO FALLING IN WATER, THE EFFECTS & RESPONSES !



Immediate

COLD SHOCK can occur for very cold water (<6°C)

The features of cold shock are:

- uncontrolled breathing and
- possible heart failure



1Min – 2hrs

Body Heat Loss

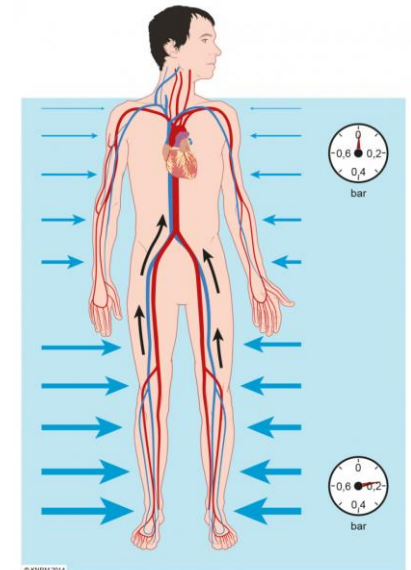
The rate at which the body can lose heat depends on various factors in the surrounding.



2hrs-10hrs

Hydrostatic Pressure Drop

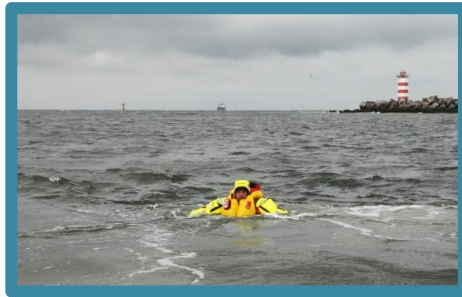
In the case of a person under water, the water exerts external pressure on the body. Deeper in the water, the pressure is higher than at the surface.



Are all POB incidents similar?

In Falling-in-the-water related accidents, two main groups of victims can be distinguished:

A. People who are partially submerged and can still breathe as their head remains above the water



The life-threatening problem with the people who have fallen in the water is the gradual onset of Hypothermia.

B. People who have their head submerged under the water surface



The life-threatening problem with the people who have fallen **UNDER** water is the immediate onset of oxygen starvation.

Wearing your lifejacket correctly will ensure that you will tip over onto your back. Even if you are unconscious, your head will stay above water! If you do not wear it correctly and remove the clips, you may end up turning over onto your stomach.

The assistance to both groups differs, because the consequences of the different events are different.

How much time do you have?

There is no law on the chances of survival in water. The table below is a very rough estimate.

The actual survival time depends on many factors such as physique, amount of fat, use of alcohol or medication, clothing, sex, wind speed, wave heights, physical and mental condition

Watertemperature	Wetsuit	Clothed	Swimwear
0°C	15 min	9 min	2 min
5°C	3 hours	1 hour	30 min
10°C	9 hours	3 hours	1 hour
15°C	12 hours	5 hours	2 hours
20°C	15 hours	8 hours	4 hours

Source: <https://www.knrm.nl/images/downloads/Onderkoeling.pdf>

In hypothermia, the body stops functioning. The heartbeat and breathing stop. This causes, in the first place, a state of apparent death which can be reversed with the correct resuscitation and warming up. Stopping breathing can, in an extreme case, prevent the victim from drowning.

EVAPORATION

- Evaporation of the sweat fluid or water vapor during breathing extracts heat from the body.
- During hypothermia in water, evaporation is less important. Wind, moisture and cold all have an effect on the heat exchange of the body.

Humans have different mechanisms for exchanging heat or cold with the environment.

Hypothermia is usually caused by a combination of multiple mechanisms

CURRENT

- If the wind blows, or one sits on a fast-moving boat, one loses more heat.
- The lower the outside temperature, the greater the effect of the windchill factor on the cooling.

CONDUCTION

- In the water, a drowning person cools down four times faster than in the air.
- A wet drowning person will therefore have more heat losses than a drowning person who has dried out.

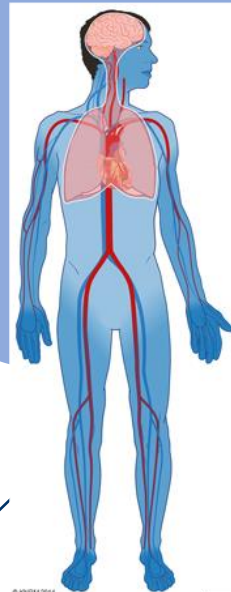
How quickly a person cools down depends on many factors, such as:

- Temperature of the water and air
- Wave action and current, Wind speed
- Personal factors (physique, age, clothing)
 - Fully or partially in the water
 - Active movement (heat generation)

RADIATION

- In a cold environment, all uncovered body parts lose a lot of heat due to radiation.

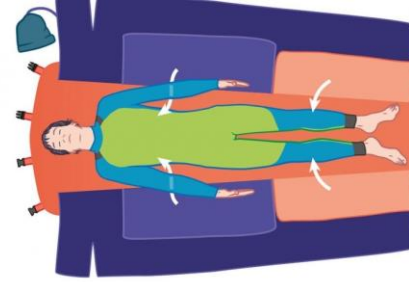
HEAT EXCHANGE FROM HUMAN BODY



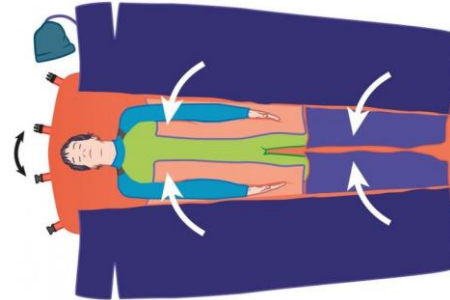
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The drowning person who still show signs of life: A-B-C present

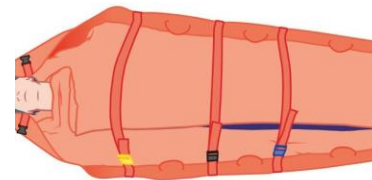
- Usually, the situation of the drowning human being is not such that there is an acute life-threatening situation. It is then wise to take the necessary time for a careful horizontal rescue of a drowning in the water. With every drowning person floating in the water who has signs of life, there is no great haste to remove the drowning person from the water. It is best to remove the drowning person from the water slowly, carefully and horizontally.
- The longer a person has been in the water, the colder the water and the worse off the victim is, the more attempts must be made to carry out a horizontal rescue. On the other hand, one does not have to be afraid of the effects of the hydrostatic pressure drop if a drowning in the water has been in the water for less than 20 minutes.



The KNRM has a hypothermia stretcher at its disposal for the treatment of supercooled victims. This stretcher is based on a slightly stiff plastic bottom with four handles on both sides, from which the stretcher can be lifted.



Furthermore, this stretcher consists of 4 insulating blankets that are attached to the stretcher with Velcro: 2 large blankets to pack the body's torso and 2 smaller blankets for the arms. When packing a victim, care should be taken to ensure that the arms are kept separate from the torso by these smaller blankets.



The stretcher is also provided with a hat, which is attached to the stretcher. Since a lot of heat is dissipated through the head, it is important to put the hat on the head of each hypothermic victim. If the victim is well packed, the stretcher can be folded shut and secured by means of the four straps.