

# AVOIDING HYPOTHERMIA

We spoke to the experts to prepare this best-practice guide to minimising heat loss and rewarming cold swimmers when swimming in cool water

**I**f you're an outdoor swimmer, getting cold is an occupational hazard. Feeling the tingle of cool water across your body is one of the reasons many people prefer to swim outside than in a pool. However, our bodies cool down approximately three to four times quicker in water than air, when both are at the same temperature, which means hypothermia is a danger we need to be aware of and take measures to avoid. We've consulted with experts from the RLSS, Portsmouth University and the British Long Distance Swimming Association to put together this guide to minimising heat loss in swimmers and rewarming those who do get cold.

The guidance is aimed at swimmers, swim group leaders and event organisers. It is primarily for people swimming without wetsuits but it's important to note that a wetsuit does not offer total protection against cold or hypothermia and that wetsuits come in a range of thicknesses. One expert noted that wetsuit swimmers who get too cold often need more assistance than non-wetsuit swimmers,



as the latter tend to respond quicker to the cold signals received through their skin and take action sooner.

The guidance is divided into three sections: pre-swim, swim and post-swim. In addition, we provide notes on how to recognise hypothermia, when to seek medical assistance, how rewarming works and whether or not you should use grease. As a general comment, all swimmers (wetsuit and non-wetsuit) benefit from acclimatisation and experience. It's good practice to keep a record of water

temperatures and the length (ie. time) of your swims as this will give you a better understanding of how your body responds to cold water and what precautions you need to consider. It is often good, fast swimmers with little experience of cold water who are at greatest risk.

A WETSUIT  
DOES NOT OFFER  
TOTAL PROTECTION  
AGAINST COLD OR  
HYPOTHERMIA

## STAGE 1 – LEAD-UP TO THE SWIM

### FOR SWIMMERS

#### **ENSURE YOU HAVE EATEN PROPERLY**

at least two to three hours in advance and top up with light snacks and drinks up to start of swim. What you choose to eat will be very individual but do practise whatever regime you are going to use before attempting a big swim. Trying something new on the day could make you sick, and that will increase the likelihood that you get cold.

**DO A LAND-BASED WARM UP**, primarily focused on mobility and main swimming muscles (arms, shoulders, lats, core).

**WEAR WARM CLOTHES** until last possible moment.

**CONSIDER USING GREASE** for long distance solo swims (see box for more details).

**CONSIDER WEARING TWO HATS** if event rules allow or a neoprene hat under your race cap. Wetsuit wearers can add extra layers (e.g. rash vest or thermal) beneath their wetsuit. If the event only allows one standard swimming cap, make sure it fits, as it is never satisfactory trying to put it back on mid-event. A large amount of heat is lost through the head, so consider having an accessible hat if the original is lost or torn mid-event.

If you are a non-wetsuit swimmer in a wetsuit-optional event, **TRY TO ENTER THE WATER AFTER THOSE WEARING WETSUITS** to minimise waiting time in the water before the start.

### FOR ORGANISERS

#### **PROVIDE STORAGE FOR CLOTHES**

close to the start for non-wetsuit swimmers so they can keep dressed until they need to enter the water.

#### **TRY TO GET ALL SWIMMERS INTO THE WATER AS QUICKLY AS POSSIBLE**

and encourage non-wetsuit swimmers to wait until last. Give swimmers an accurate count down to the start time (eg. 5 minutes to go, 2 minutes to go etc.).

#### **CONSIDER GIVING NON-WETSUIT SWIMMERS DIFFERENT COLOUR**

**CAPS** and asking them to use tow floats to make them easier to spot in the water. →



## ← STAGE 2 – WHILE SWIMMING

### FOR SWIMMERS

#### **GIVE YOURSELF ONE TO TWO MINUTES IN THE WATER**

before starting swimming to get over the cold water shock response but try not to delay longer than this before starting to swim.

#### **SWIM AT YOUR FASTEST**

#### **SUSTAINABLE PACE**

for the distance. This will take a bit of practice to get the balance right, as if you run out of energy before you have finished your swim, your temperature will drop very quickly. Also remember that you will fatigue more quickly in cold water, so your pace will be slower than in a heated swimming pool.

#### **MINIMISE ANY HANGING AROUND**

– eg. for nutrition stops. You should practise the best way to feed efficiently and quickly before a big swim.

#### **THINK WARM, POSITIVE THOUGHTS**

– focus on technique rather than the cold – it doesn't stop the cooling process but helps you cope with it better.

### FOR ORGANISERS

#### **ENSURE YOU HAVE AN EFFICIENT PROCESS FOR GETTING SWIMMERS INTO THE WATER**

so that the first swimmers in are not required to wait too long before the swim starts. Put non-wetsuit swimmers in last. Allow one to three minutes for swimmers to recover from any cold water shock response but then get them started quickly.

#### **OBSERVE SWIMMERS CLOSELY**

**THROUGHOUT** and watch for signs of hypothermia such as a marked decrease in speed or stroke rate, or a change of body position in the water. Remember that in extreme cases, hypothermia can result in a swimmer becoming unconscious in the water, hence the need for an immediate means of help and support.

#### **IF A SWIMMER NEEDS TO BE**

#### **REMOVED FROM THE WATER,**

ensure they are immediately wrapped in windproof garments until they can be properly dried and dressed.



## STAGE 3 – POST SWIM

### FOR SWIMMERS

#### **DON'T LINGER IN THE WATER**

but do allow yourself time to stand up gradually, to avoid falling over as the body realigns itself from a long time in the horizontal position. There is a risk of fainting if you stand up too quickly.

**HAVE A BUDDY WAITING FOR YOU** to hand you a towel and/or changing robe as soon as you leave the water.

**WRAP UP IMMEDIATELY** – use a drying robe or thick towel rather than a foil blanket. Foil blankets are not recommended for cold swimmers.

**HAVE SOME EASY-TO-PUT-ON SHOES** (eg. crocs) at the finish so you don't have to walk across stones in numb feet.

**PUT ON A WOOLLY HAT.** For speed, leave your swimming cap in place and pull the hat over the top.

**GET OUT OF THE WIND.** Ideally get inside or into a tent. Shelter behind a wall or hedge if necessary.

**REMOVE YOUR WET COSTUME AS SOON AS YOU CAN** (while still wrapped in changing robe) and towel yourself dry quickly.

**DRESS QUICKLY FROM TOP DOWN.**

This is because the most important

parts to keep warm are at the top of the body. Put on at least one more layer than you normally would for the conditions. Include warm socks and gloves.

#### **YOUR DEEP BODY TEMPERATURE WILL BE COOLER 20-30 MINUTES AFTER YOUR SWIM.**

The more you delay dressing, the more you will delay rewarming and cooler you will become before rewarming.

**DRINK SOMETHING WARM AND EAT AS SOON AS POSSIBLE.** Rewarming your body burns through a lot of calories. Replace them. You may also be dehydrated as being cold can make you pee more frequently. You will need to replace fluids too. However, sometimes after a long swim, eating needs to be done with caution as the body cannot tolerate especially solid food, and just vomits it all back, thus increasing heat loss. Warm sugary drinks are best if you can tolerate them.

**REWARM SLOWLY BY EXERCISING LIGHTLY.** This could be walking around, shivering, jogging on the spot, taking shelter in a warm (not hot) room.

### FOR ORGANISERS

**SWIMMERS (ESPECIALLY COLD SWIMMERS) MAY HAVE TROUBLE BALANCING** and walking as they leave the water, so ensure someone is on hand to help if necessary.

**ENSURE NON-WETSUIT SWIMMERS**

IF A SWIMMER  
NEEDS TO BE  
REMOVED FROM  
THE WATER,  
ENSURE THEY  
ARE IMMEDIATELY  
WRAPPED IN  
WINDPROOF  
GARMENTS

**HAVE EASY AND IMMEDIATE ACCESS TO THEIR KIT** so they can start drying and dressing as soon as they leave the water.

**SWIMMERS OFTEN FEEL FANTASTIC AS SOON AS THEY LEAVE THE WATER AND MAY NOT REALISE THEY ARE LOSING HEAT FAST.**

Encourage them to get out of the wind, and get dried and dressed quickly.

**KEEP A STOCK OF CHANGING ROBES**, towels and blankets near the finish for emergency use.

**HELPERS SHOULD HELP, AND NOT PULL OR CARRY THE SWIMMER**,

unless it is obvious they are not making progress. This can damage cold muscles and delay recovery.

**CONSIDER PROVIDING A 'RE-WARMING' TENT** if no warm, indoor space is available.

*Many thanks to the following for their assistance in writing this article:*

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## PART 2 – HYPOTHERMIA WARNING SIGNS

### WHILE SWIMMING

- Uncontrollable shivering
  - Disorientation, mental faculties slowed
  - Slurred speech
  - Marked decrease in stroke rate
  - Unexplained switching to another stroke
  - Hips and legs start sinking
  - Inability to use hands or clawed hands
  - Inability to answer simple questions coherently
  - Extreme irritability from an otherwise well-behaved swimmer
- Remember, someone who is hypothermic may be unable to recognise the symptoms themselves, so may need to be ordered out of the water by a responsible observer.

### AFTER SWIMMING

- Disorientation
- Lack of balance

- Incoherence
- Inability to look after self – for example, can't or won't get dressed.

It is normal for swimmers to shiver after swimming. It's an essential part of the rewarming process. Shivering is not for wimps. It is a good sign that the body is trying to defend its deep body temperature.

### When to seek medical attention

- If a swimmer is clearly cold and not shivering, or if shivering stops and the swimmer isn't getting warmer. This is a sign that the body has used all its energy shivering and attempts to replace it with food and drink have failed.
- If swimmer is not fully conscious and alert
- If the swimmer feels faint or dizzy
- If there is any suspicion of breathing difficulties
- If a swimmer clearly isn't rewarming
- If you have any doubts

## HOW REWARMING WORKS

Swimmers usually feel great for a minute or two after leaving the water. They should use this time to dry and dress. The body continues to cool whilst there are cool tissues conducting heat to the deep body. Once warm clothes are put on, we will start rewarming, but from the outside of the body inwards. This process produces a 'warm front' that slowly travels through the body.

Once the 'warm front' reaches the deep body then deep body temperature will start to rise. Cooling can continue for 20-30 minutes after you have swum and full rewarming can take an hour or two depending on the swimmer's physiology, their clothing and the ability to shelter from the conditions.

We strongly advise against driving for at least 30 mins post swim.

## Grease is the word

Swimmers have long been inventive with things to smear over their bodies in an attempt to keep the cold at bay. Porpoise oil, engine grease, goose fat, wool fat and Vaseline have all been tried. Current thinking among Channel swimmers is that the main benefit of grease is to prevent chafing rather than reduce heat loss. However, there is more to it than that. Research by Griffiths Pugh in the 1950s and 60s showed that every millimetre of grease applied can sustain a small increase in the skin surface temperature.

On the other hand, grease is extremely messy and difficult to remove, and often more trouble than it's worth. As the protection offered is small it shouldn't be relied upon or used to compensate for lack of cold water training or experience.