

## Open Water Health & Safety Risk Assessments Guidelines

A risk assessment is an examination of the possible risks and hazards that could occur and cause harm. Clubs and sports organisations have a duty of care to their paid staff, volunteers and athletes. The Management of Health and Safety at Work Regulations also places a duty on employers to assess risk to those who may be affected by their activities which includes staff and volunteers. This document and templates should be used in conjunction with [Scottish Swimming Open Water Swimming Back to the Water COVID-19 Guidance](#).

In pool facilities there are Pool Safety Operating Procedures (PSOP) in place which are made up of Normal Operating Procedures and the Emergency Action Plans (NOP & EAP) which the facility operator legally has to have in place. For open water the SOP (Safety Operating Procedures) should be in place if swimming in an operated venue. However if swimming outwith a sports facility the club needs to have their own procedures. It is worth checking that any necessary or helpful information from these documents is factored into the risk assessment to ensure it is as accurate and relevant as possible. Facility operators will also have risk assessments that cover the activities that happen within their facility. If so, it is essential to check with them to see if any duplication of work can be avoided, whether the assessments agree and whether there are any hazards that you were otherwise unaware of. Risk assessment is best carried out as a “team” exercise.

Some activities a club may need to consider completing a risk assessment for, are detailed below. This is not an exhaustive list and all clubs and venues will have slightly different requirements.

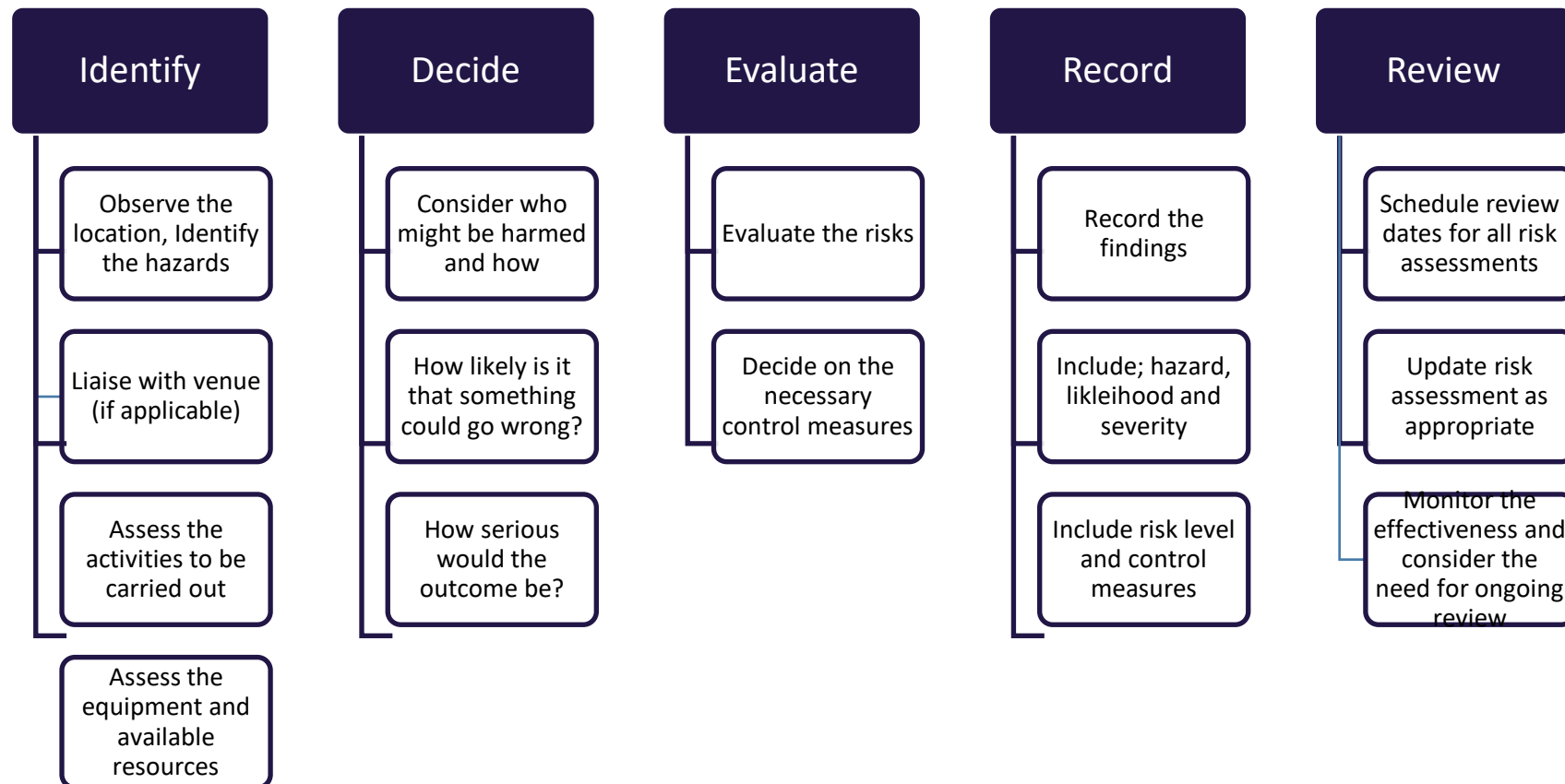


## Definitions

<b>Hazard</b>	Something that has the potential to cause harm
<b>Risk</b>	The likelihood that the Hazard will cause harm
<b>Control Measure</b>	The things put in place to reduce the risk
<b>Likelihood</b>	Is the state of being probable or chance of a threat occurring
<b>Severity</b>	Describes the highest level of damage possible when an accident occurs from a particular hazard

## Stages of a risk assessment

There are five component stages to conducting a risk assessment:





## Guide to terminology

LR	SR	RR
Likelihood rating	Severity rating	Risk rating = (LR x SR)

## Risk matrix (Open Water)

Likelihood	Very likely	5	10	15	20	25
	likely	4	8	12	16	20
	Fairly likely	3	6	9	12	15
	Unlikely	2	4	6	8	10
	Very Unlikely	1	2	3	4	5
		Insignificant	Minor	Moderate	Major	Catastrophic
		<b>Severity</b>				

## Risk Rating & Corresponding action

Risk Rating (P x I)	Action
15-25	<b>Stop Activity</b> , take immediate action
8-12	<b>Action required</b> , improve situation and review immediately
3-6	<b>Monitor</b> , look to improve immediately or if there is a significant change
1-2	<b>No Action required</b> , but ensure controls are maintained and reviewed

# Guide to completing Risk assessment

## Step 1

- Detail what the hazard is

## Step 2

- Detail who may be harmed by the hazard

## Step 3

- Detail how the people identified in step 2 could be harmed

## Step 4

- Detail any steps/equipment/actions that have already been put in place to control the risk of the hazard hurting people

## Step 5

- Identify the Likelihood of the hazard hurting people and then Identify the severity of injury the person is likely to sustain from the hazard
- Multiply the likelihood factor and the severity factor to establish the risk rating and then using the risk rating table identify what level of action is required for the hazard

## Step 6

- Detail any additional control measures that could be put in place to reduce the hazard

## Step 7

- Detail who is responsible for actioning the additional control measures

## Step 8

- Detail when the additional control measures should be put in place by

## Controlling risks

When identifying additional control measures to reduce the level of risk that the hazard has of hurting people, consider the following points:

### Eliminate the Hazard

- The most effective method of controlling risk is to eliminate the hazard
- Identify whether this is possible, but also consider whether this is practical

### Reduce the Hazard

- Consider ways to reduce the hazard
- Consider whether alternative options are realistic and achievable

### Prevent people coming into contact with the hazard

- Consider how you can reduce the number of people coming into contact with the hazard

### Introduce a safe system of work

- Set out a standard of how the activity should be conducted as safely as possible
- Ensure there is awareness and set a standard of behaviour

### Provide personal protective equipment

- Provide PPE to the people involved in the task
- Check what staff require to use PPE through Covid-19 (RLSS [Hyperlink](#))

Eliminating the hazard is the most suitable option and providing PPE is the weakest option but sometimes the only option available. If working within a facility be sure to work with them where possible to identify solutions. The environment of open water swimming creates its own challenges that need to be overcome to help reduce the risk involved.

## Open Water Swimming Session/Venue Details

Club Name:		Session Venue:		
Venue Address:			Name of assessor	
			Club Role	
Venue Grid Reference:			Date of Assessment	
Venue Description			Who is at risk	Estimated Numbers
			Junior Swimmers	
			Adult Swimmers	
			Safety Crew	
			Team Staff	
			Parent/Guardians	
Nearest Hospital with A&E			Access arrangement for emergency vehicles	
Safety Support	Type	Number	Type	Number
	Spotters		Motorised Rescue craft	
	Kayak/Canoe		Safety Rep	
	SUP		Coach	
	Fist aiders			
Additional Information				







## Guide to terminology

LR	SR	RR
Likelihood rating	Severity rating	Risk rating = (LR x SR)

## Risk matrix (Open Water)

Likelihood	Very likely	5	10	15	20	25
	likely	4	8	12	16	20
	Fairly likely	3	6	9	12	15
	Unlikely	2	4	6	8	10
	Very Unlikely	1	2	3	4	5
		Insignificant	Minor	Moderate	Major	Catastrophic
		<b>Severity</b>				

## Risk Rating & corresponding action

Risk Rating (P x I)	Action
15-25	<b>Stop Activity</b> , take immediate action
8-12	<b>Action required</b> , improve situation and review immediately
3-6	<b>Monitor</b> , look to improve immediately or if there is a significant change
1-2	<b>No Action required</b> , but ensure controls are maintained and reviewed

# Appendix 1

Each waterway has its own hazards.. This is not an exhaustive list but will give you guidance on generic hazards; you still need to do site visits to establish site-specific hazards.

## Lochs/Lakes

- Water temperatures can change from the shallow to deeper sections,
- Be aware of other water users.
- Entry & Exit points can have underfoot hazards
- Can have risk of Weil's disease

## Lochans

- Same as lochs plus mainly found in remote locations, think what would happen if something went wrong?
- Due to location, beware of water temperature, as this can be colder.
- Due to location be aware of body temperature prior to entering the water this may be high
- Associated with large amounts of reeds in which swimmers can become entangled
- Can have risk of Weil's disease

## Rivers

- Can have strong currents, varying depths,
- Other users including fisherman - using boats or on banks/ standing in shallows
- Depending on rain, the conditions/currents will change with river height.
- It is important to workout safe entry and exit points on rivers. These could be different and water depths could vary between entry/exit.
- Can have risk of Weil's disease

## Reservoirs

- Check if it is safe to swim and swimming is permitted,
- Be aware the water temperatures can vary, there can also be under currents and the depths can change quickly.
- Check there is not an air curtain being used as this causes negative buoyancy and is not safe to swim in. (Carron Valley Reservoir is an example of this)
- Can have risk of Weil's disease

## Sea/Coastal/Sea Lochs

- Understand the tides,
- Get local knowledge regarding safety,
- Check water quality and visibility.
- There can be strong currents including rip tides that can take swimmers out of their depth quickly
- Tides can take swimmers off course quickly
- Be aware and respect local wildlife including jellyfish

## Ponds

- Can be smaller and stagnant
- Be aware of water quality and water visibility,
- Think about location, is there a risk of pollution from fertilisers/pesticides from run off from fields
- Can have leeches.
- Can have risk of Weil's disease

## Canals

- Check if you are allowed to swim in the canal. Many have no swimming rules due to safety.
- Canals can have hidden dangers under the water you may not be able to see.
- There is higher risk of water rats, which can cause Weil's disease.
- There can be a pull in the water from the opening and closing of locks

Be aware of other users who may not be able to see swimmers

## Appendix 2

### Open Water Specific Hazards & Risks

Open Water training comes with its own challenges as the conditions are always changing and there are not the safety structures in place that are present in indoor facilities. Things clubs need to be aware of and think about when completing an open water risk assessment and organising an open water swim session are, among others:

#### WATER QUALITY & TEMPERATURE

Water quality should be tested regularly test should be for a minimum for coliforms please see Open Water Hive group for example labs for testing

If any swimmer is ill after swimming training should stop until a new water test can be carried out

Visual checks of water should be done prior to every session. Visual checks: look for water clarity, signs of algae, does the water smell

Water temperature should be taken prior to the start of a session

Water Temperature should be taken at 3 points on the swimmers' route, not at the edge where the water may be shallow and therefore warmer

Do not swim under 14C

#### ENTRY & EXIT POINTS

The point where swimmers enter & exit the water (this may not be same place)

Check for suitability of the surface underfoot

Check for algae or other hazards that can make underfoot slippery

Check for trip hazards e.g. rocks under the water and warn swimmers

Check for any sharp objects including stones, broken glass, fishing hooks etc.

Swimmers should always enter feet first

#### SWIM ROUTE

Swimmers should swim where possible parallel with the shore

Swimmers should be in sight of club spotters at all times

Swims around Islands should not be undertaken without on water safety presence

Be aware of coach's position on shore and is it stable and safe?

#### TYPE OF WATERWAY

A waterway is the type of water where a session takes place

Each waterway has its own specific risk -please see appendix 1 for guidance

Ideally swim sessions should be at a venue where swim sessions are part of their activity programme

#### EQUIPMENT CONSIDERATIONS

Water Temperature 14C to 18C: wetsuits should be worn

Water Temperatures 18-20C: wetsuits should be optional depending on swimmer experience & air temperature

Water Temperature over 20C: wetsuits should not be worn

Check what PPE staff require to use through Covid-19 (RLSS Hyperlink)

Tow floats are a good way for land spotters to see swimmers. They can also come with a drink bottle pocket. For ease of spotting, all should have tow floats or none.

Brightly coloured swimming caps are essential as it is easier to spot swimmers

Ear plugs can help prevent swimmer disorientation when exiting the water and reducing the risk of surfer's ear (please be aware this might impact on communication on swimmers)

## **SAFETY COVER**

On Shore there needs to be at least one qualified first aider with the correct PPE

On water, ideally there should be both powered & non-powered safety cover (boats, kayak, stand up paddleboard (SUP), etc.)

Safety cover using kayaks/SUPs must be provided by experienced competent users that can safely bring swimmers back to shore if required

Power boats should be manned by qualified personnel (RYA powerboat level 2)

Ratio swimmers to safety crew 1 to 5 & should be no more than 50m from safety personnel

Shore spotters should be fit and able to assist swimmer if required and competent in using throw bag

Lifeguards should be used, (there is an open water lifeguard qualification). Pool lifeguards would need to have open water experience

Do not use personnel in more than one capacity or else you will need to evacuate the water if the person is busy on another task.

Even with a small party (less than five) you will need a Coach, Safety Representative and a First Aider.

## **WEATHER**

Open water swimming conditions change rapidly with the weather. Be prepared, check the forecast for the area

Heavy rainfall can cause rivers to flow faster, loch heights change, water visibility reduces.

Water run-off can increase issues with water quality

Thunder & Lightning: there needs to be safety plan in place to evacuate swimmers if there is an electrical storm.

Swimming must not be allowed during an electrical storm

Wind - If there are white caps on the waves then the session must be reviewed/cancelled

Be aware wind can add an extra element of cold due to the wind chill factor (pre swim, during swim & post swim)

Team staff are open to the elements, so dress appropriately for the weather

## **OTHER WATER USERS**

Be aware of other water users when conducting sessions. They all have their own risks Kayaks, paddle boarders, windsurfers, surfers, rowers, sailing boats and power boats, etc. may not be able to see swimmers until it's too late, tow floats help reduce this risk but it's better to keep well clear of them.

Boats should not cross the line of the swimmers

Other swimmers i.e. not your club swimmers, can cause confusion for land support not recognizing who their swimmers are, avoid if possible

An alpha flag is the internationally-recognised warning to other water users that there is a person in the water who has been thrown from watercraft

## **CHECK IN/CHECK OUT SYSTEM**

A system needs to be in place to register swimmers in and out of the water. This can be wrist bands, registers, bag drop off and collection.

If swimmer exits the water at a point other than the agreed exit, a process for recording this needs to be in place

Swimmers may be given a number so they can be recognised if there is an incident. This can be done by numbering caps, marker pen on hand, number tags attached to tow float belt, etc.

## Appendix 3

Below is an explanation of the terminology used within this document and other hazards you need to be aware of:

### Hypothermia

- Occurs when the body loses heat faster than it can produce it and deep body temperature falls below 35C(95 F). It can be life threatening.
- It is often caused by exposure to cold air and/or immersion in cold water. Swimmers are at increased risk if they are also exhausted or dehydrated. Once the swimmer is out of the water, their deep body temperature will continue to cool.
- When swimmers stop swimming, such as to receive instructions from coaches, they will chill rapidly. Avoid swimmers stopping for more than a moment or two.
- Hypothermia can cause the swimmer to become very focussed on completing. However, once they have completed, they can become very disorientated

### Signs and symptoms of hypothermia

- Changes in stroke pattern
- Uncontrollable Shivering
- Cold Skin
- Possibly Blue lips
- Slurred Speech
- Slow, Shallow breathing
- Weak Pulse
- Clumsiness or lack of communication
- Drowsiness or very low energy
- Confusion or memory loss
- Loss of consciousness

### Treatment

#### DO

- Hypothermia is dangerous and unpredictable. Avoid it altogether if possible.
- Avoid it by pulling swimmers out if they display any of the above listed signs and symptoms or if they say they are too cold
- Dry the swimmer quickly and put a warm hat on them
- Get them out their wetsuit (which is why wearing a swimsuit is important) into warm clothes including hat & gloves. Wetsuits will keep the swimmer cold
- If the swimmer can walk, find a place for them to shelter in a car with the heater running
- If you can move about, keep moving on your feet to help your body warm up
- Have a warm (not hot) sweet drink (but you should not drink anything alcoholic)
- If you are with a swimmer who is showing signs of hypothermia and they do not improve very rapidly or symptoms worsen or if they become unconscious call an ambulance immediately

## DON'T

- Do not use foil blanket on a cold swimmer as this will retain the cold and reflect any heat away from the body
- Do not leave a hypothermic swimmer in their wetsuit because it does the same thing
- Do not stay out in the open in an unsheltered area
- Do not drink Alcohol
- Do not rub or massage the skin – this will draw the blood to the extremities and will increase heat loss
- Don't give them hot water bottles to put on skin – This can cause burns and or draw the blood to the extremities again aiding in heat loss
- Do not allow a hypothermic swimmer to drive

## River Considerations/Terminology

- Current flow of the water - from timid to turbulent. Current is usually slower along the inside bend of a river, faster along the outside bend. Also current is faster on the surface.
- Rapids are water flowing over an obstruction, causing turbulence, most often formed by boulders just below the surface.
- Eddies are water rushing around obstacles, circulating downstream, towards shore, often in a reverse current. Current flows to fill the void created by flow of water.
- Drop – water-dropping straight down – a waterfall is a classic example.
- Stopper – where the water flows over a drop, the water just below the drop can rotate in such a way that it keeps the swimmer submerged. These are very dangerous.
- Entrapments – anything that can snag/hold one underwater, from the force of water preventing them from swimming free (as in an eddy or stopper) or clothing/items becoming snagged on the obstruction (branches, rock points, etc.).
- Dams – are man-made structures. These must not be swam over or near. Dams and dam-like structures (weirs, spillways, ledges) come in a variety of sizes but all form an obstruction completely across a river. A stopper occurs at the downstream base of these structures.
- Bridges. – The bases of these structures can create eddies, collect debris and cause the current to react in unpredictable ways.
- Traffic wake - boats using the river can create a wake which churns up water and can be dangerous to small craft or swimmers.

## Sea Considerations/Terminology

- Tidal flow – the alternate rising and falling of the sea. There is High tide, Low tide and slack water
- High tide - the term used when the tide is fully in. When the tide is coming in it can cut you off, especially if there are rocky outcrops or sandbanks. A high tide can cover up potential hazards that are usually visible at low tide. Low tide is the term used when the tide is fully out. Low tides will reveal potential hazards such as rocks, sandbars, seaweed etc. or make them shallower. Changes in the flow of water can cause rip currents to happen.

- Spring tides - (full moon, new moon) have the biggest difference in water heights and have stronger currents. They occur every two weeks.
- Neap tides - have the least difference between water heights meaning less water moving. They occur every two weeks.
- Slack tides - happen the hour before and after a high or low tide is known as 'slack' tide, this generally means there is less water moving and weaker currents.  
Depending on where you are in the country, tides can vary in length; it is important to have local knowledge. During slack water, rip currents can be at their strongest. As a guide, swimming at slack water will be easiest and there is likely to be less water movement to take you off course.
- Tide heights and timings vary around the country and change every day, this is due to tidal flow caused by the gravitation force of the moon.
- A rip current - a strong, localised, and narrow current of water, which moves directly away from the shore, cutting through the lines of breaking waves like a river running out to sea. A rip current is strongest and fastest nearest the surface of the water. Rip currents can be hazardous to people in the water, even to strong swimmers.

## **Blue Green Algae is a form of bacteria called cyanobacteria**

- This prehistoric bacterium grows in slow moving or still water. It can survive in all kinds of conditions and tolerate incredible environmental stresses. A "bloom" is when blue-green algae reproduce. Blooms like warm temperatures and lots of sunlight. The presence of nutrients in the water, such as phosphorus and nitrogen, speeds up the reproduction process, blooms and scum can have the appearance of paint, jelly, small clumps or lots of green or bluish green specks in the water and tend to rise to the surface during calm weather conditions. Scum colour varies because algal pigments differ between species, depending on the nutrient supply, light intensity and age of the bloom. Scums may be blue-green, grey-green, greenish-brown or occasionally reddish-brown. The persistence of scums also depends on which species are present. Some form quickly on calm days, but are rapidly dispersed if wind and wave action increases.

## **Weil's disease**

Leptospirosis, also called Weil's disease, is an infection you can catch from animals. Weil's Disease is spread in the urine of infected animals – most commonly rats, mice, cows, pigs and dogs. You can catch it if soil or freshwater (such as from a river, canal or lake) containing infected urine gets in your mouth, eyes or a cut – usually during activities like kayaking, outdoor swimming or fishing. Weil's disease symptoms including – a very high temperature, or feeling hot and shivery, a headache, feeling and being sick, aching muscles & joints, red eye and loss of appetite

The initial symptoms of Weil's disease are very similar to COVID-19. If you show any symptoms of Weil's disease, contact NHS24 immediately and let them know you have been swimming in open water. Do not go to your GP unless NHS24 tells you to, since you could have COVID-19 rather than Weil's Disease.



## Underfoot conditions

Swimmers need to consider the conditions under foot on swim entry and exit points. Things to think about and be aware of

- Stability: is ground stable? e.g., pebbles move, you can sink in sand.
- Changing water depth – be aware of drop offs, where the water goes from shallow to deep quickly
- Slippery –slipways, stones natural entry point can have algae growth that can be very slippery and unsafe to walk on especially if you're cold
- Is there a risk of broken glass or sharp objects in stones or sand? (you can wear footwear and attach to tow float)
- Is it rocky where you are entering? Even a few rocks can easily cause a trip hazard again especially if you're cold on exiting the water

## Under Water Hazards

- Swimming in open water is not the same as swimming in the pool where there are no or limited hazards within the water.
- Due to many factors, you may not be able to see what is under the surface of the water.
- There could be hidden hazards under the water. These are objects (mainly discarded objects) that have been dumped in rivers, canal, lochs etc.
- Swimmers can become entangled, trapped or injured by them; examples could be glass bottles, shopping trolleys, bikes, garden waste and fallen trees.
- When deciding where to swim it is important to assess the likelihood of objects hidden under the surface and whether it is a good choice to swim in this spot.

## Cold Water Shock

- This is the body's involuntary response to being suddenly or unexpectedly immersed into cold water (most commonly but not exclusively around 15°C or colder). It
- Any temperature below 15°C is defined as cold water and can seriously affect your breathing and capability to move. However, the susceptibility varies from person to person.
- Heart rate can also increase. As a result the heart has to work harder and your blood pressure goes up. Cold water shock can therefore cause heart attacks, even in the relatively young and healthy.
- The sudden cooling of the skin by cold water can also cause an involuntary gasp for breath.
- Breathing rates can change uncontrollably, sometimes increasing as much as tenfold. Other affects can be "ice cream head" pain when first putting your head in the water as the cold sensitive nerves of the face and palate go into shock. This can cause dizziness when getting out of the water following a swim.
- All these responses contribute to a feeling of panic, increasing the chance of inhaling water directly into the lungs.
- For more information <https://vimeo.com/427683058>

## After Drop

- Can occur some minutes after a cold swim which brings the onset of deep shivering
- The effect of cooled peripheral blood returning to the core and or the warm core rewarming the periphery.

Once out of the water it is important to get your wetsuit off, dry off and put warm clothes on quickly as even out of the water, your body temperature can drop

## Appendix 4

The list below is some of the equipment that is required or may be considered, that will help swimmers and team staff when taking part in open water swimming.

### Swimming Wetsuit

- Swimmers should be encouraged to swim in swimming specific wetsuits
- Swim specific wetsuits are made with swimming in mind and put the swimmer in a natural swimming position (make strokes other than front crawl more difficult), they have more flexibility around the shoulders and help to insulate swimmers
- Wearing a wetsuit is good practice
- Wetsuit worn the correct way round (not back to front)
- Ensure the wetsuit fits snugly – particularly around the neck where a good seal helps prevent excess water entering the suit
- There is a comfortable fit from crotch to shoulder so that arm reach and flexibility are not restricted
- Correct length in arm and legs without excess material being gathered up
- Badly-fitting wetsuits will increase drag and should be avoided

### Tow Float

- Brightly coloured inflatable bag that attaches to swimmer's waist.
- Increases swimmer visibility to other water users and for safety.
- Come in different colours and sizes some have a pocket on the front for a drinks bottle
- Can be purchased online at most swim shops or open water specialists

### Brightly coloured swimming cap

- Will help with being seen by other water users & safety team and should be used
- Neoprene swim caps help you to stay warm (these are not allowed during events)

### Goggles

- Dark coloured/mirror goggles can reduce visibility when swimming open water
- Clear or polarised lenses will help swimmers see more clearly when swimming outside

### Ear Plugs

- Help to prevent disorientation after swimming
- Help reduce risk of surfer's ear
- Many different types available. Swimmers need to get what works for them if they choose to use them

### Footwear

- be aware of hidden dangers underfoot on entry & exit from water
- Neoprene swim socks can be worn to protect feet and to help with warmth (however not allowed in events)

### Clothing pre & post swim

- Windproof, warm clothing for post swim recovery this must include hat & may include gloves

- You can purchase warm windproof, waterproof changing robes You can get poncho towels which help privacy whilst changing and some shelter from the wind
- Warm onesie is also good to have for ease of changing into and out of after swimming

### **Changing and storage**

- Round mat to stand on to get changed helps protect feet and pulls together to transport wet kit in
- Waterproof bag
- If there are no facilities to store kit, waterproof rucksack or duffle bags are good to protect dry warm clothes
- Black bin bag with swimmers name and kit bag inside works well. If you give every swimmer one, you could use these to count the swimmers
- Garden plastic trug works well for keeping kit safe and changing mats make good lids to protect kit

### **Anti-Chaffing**

- Swimmers necks can be chaffed due to rubbing from their wetsuit,
- Anti-chaff sticks can be purchased these are specifically made for swimmers/triathletes to help prevent chaffing
- Please note that Vaseline works well for this purpose for swimmers not wearing wetsuits. It is not recommended with wetsuits as it causes neoprene to decompose

### **Cars or Other Place to Warm Swimmers**

If you need to get a swimmer warm fast, no quantity of warm towels and blankets are going to help fast enough. Normally you should have one or more warm cars or a warm room to heat them up in, currently due to COVID-19 each swimmer should go into their own/parents car to warm up or a warm room once facilities can open depending on Government advice.