IRISH BOAT SHOP

Ladies at the Helm

February Focus:

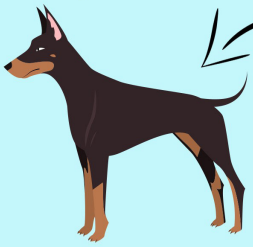
Cold Water Safety

Outline

Credit for most of this information goes to www.coldwatersafety.net.

COLD WEATHER TIPS FOR YOUR DOG

DOGS **LESS** TOLERANT OF COLD

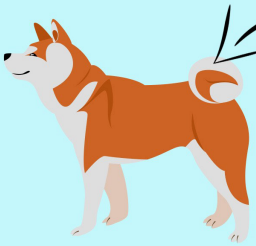


If short coat

If seek out warm spots in the house on a normal basis

Puppies, senior dogs, or dogs with a disease, like diabetes

DOGS **MORE** TOLERANT OF COLD

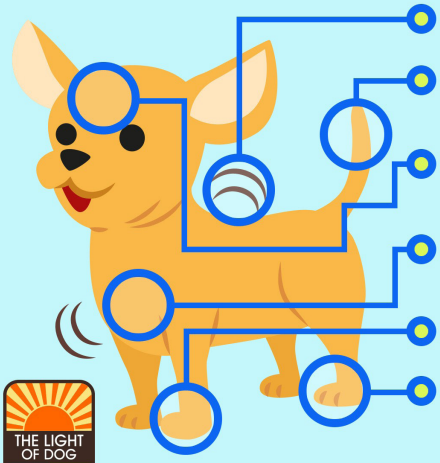


If long coat

If seek out cool tile and cool parts of the house on a normal basis

COLD WEATHER TIPS

WATCH FOR COLD INTOLERANCE SIGNALS



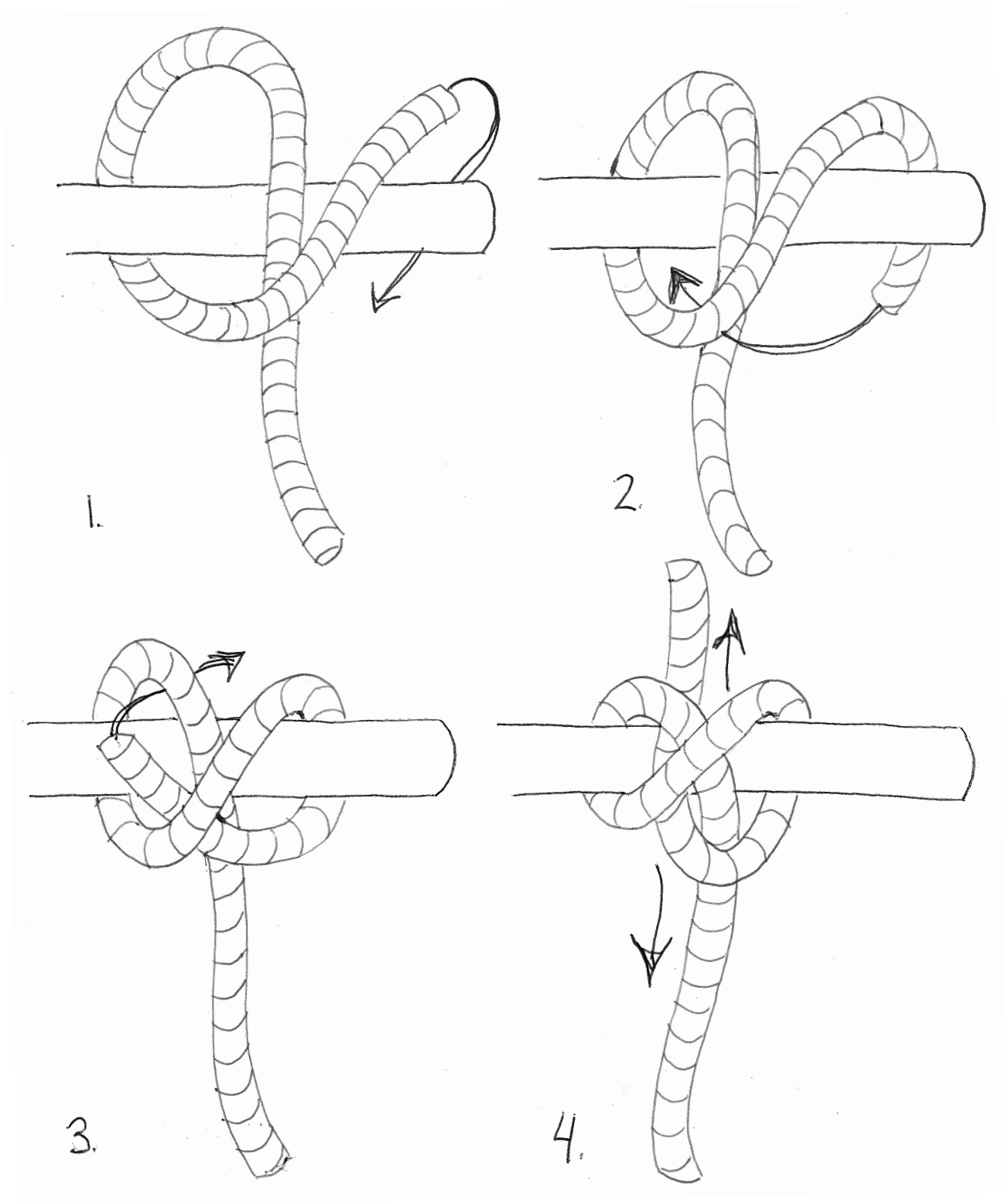
- SHIVERING
- TAIL TUCKED BETWEEN THE LEGS
- WHINING OR ANXIOUS
- RELUCTANCE TO MOVE
- LIFTING PAWS
- SNOW/ICE BUILDUP IN PAW PADS OR COAT

THE LIGHT OF DOG

www.TheLightofDog.com

- Less tolerance to windy/overcast/precipitation/snow or ice covered paths.
- Sunny and dry, but cold can be fine for many dogs.
- Stay active to stay warm.
- Be cautious walking on ice, as falls are bad for humans and dogs.
- Post walk, remove from your dog deicer chemicals that are typically used on roads and sidewalks.
- Consider using pet-safe deicers on your property to protect your pets and the others in your neighborhood.

Constrictor Knot



The **constrictor knot**, also known as the gunner's or miller's knot, is one of the most effective binding knots. Simple and secure, it is a harsh knot that can be difficult or impossible to untie once tightened.

1. Wrap the working end around the object.
2. Make an "8" passing it above the standing part.
3. Take it upwards.
4. Pull both the ends tightly to secure.

A Deadly Predator

Every year, warm air temperatures lure people into taking small boats out onto lethally cold water, where a large number of them capsize or fall in - and drown. These folks aren't stupid, or intentionally reckless, and many are good swimmers; they simply have the misfortune of falling into a exceptionally lethal and well-camouflaged trap.

Cold water is a predator - fast, powerful and deadly, with unlimited energy and no need for sleep. A predator so perfectly camouflaged that you can stand right next to it and see absolutely nothing dangerous - just a sparkling invitation to get out on the water and have some fun.

The victims are fathers and sons, mothers and daughters, grandfathers and grandmothers - none of whom expected to die when they went out that final time.

Cold water preys on the unsuspecting, the unwary, and the careless, but it also lurks offshore, waiting patiently for those with plenty of experience who don't take it seriously.

Cold water can kill you in less than a minute. It's actually so dangerous that it kills a lot of people within seconds. Thousands of people have drowned after falling into cold water and a lot of them died before they even had a chance to reach the surface.

That's a scientific and medical fact that most people have trouble understanding - because they have no personal experience actually being in cold water. When they hear or think about 50F (10C) water, it doesn't sound particularly cold - or dangerous - because they're mentally comparing it to 50F (10C) air. It's a big mistake that gets a lot of people killed each year.

You should treat any water temperature below 70F with caution.

Why Cold Water is Dangerous

Sudden Drowning
With very few exceptions, immersion in cold water is immediately life-threatening if you're not wearing thermal protection like a wetsuit or drysuit. The biggest danger is inhaling water and drowning - even if the water is flat calm and you know how to swim.

Many people considered good swimmers have drowned in cold water - even though they were within 6 feet of shore. Many canoe and kayak paddlers have drowned immediately after capsizing. In fact, many kayakers have drowned before they could even exit their boats. How is this possible?

Most cold water fatalities are drownings because cold shock causes an immediate loss of breathing control, and as you're about to find out, this involves a lot more than simply gasping for air.

Stages of Immersion
To understand why some cold water deaths happen instantly, while others take hours, you need to be familiar with the four stages of cold water immersion.

Stage 1: Cold Shock
Stage 2: Physical Incapacitation
Stage 3: Hypothermia
Stage 4: Circumrescue Collapse

Stage 1 - Cold Shock

"The sudden lowering of skin temperature on immersion in cold water represents one of the most profound stimuli that the body can encounter."
- Golden and Tipton in Essentials of Sea Survival

Translation: Short of being hit by a bus or struck by lightning, cold shock is one of the biggest jolts that your body can experience.

If you gasp underwater, you will immediately drown.

Cold shock is a lot more complicated and dangerous than just gasping for air. The instant that cold water makes contact with your skin, you will experience a number of potentially lethal shock responses. These fall into three categories:

Threat No. 1 - Loss of Breathing Control
Threat No. 2 - Heart and Blood Pressure Problems
Threat No. 3 - Mental Problems

Threat No. 1
Loss of Breathing Control
2-3 Minutes or More

During the first several minutes of cold shock, and possibly for much longer, most people find it impossible to get their breathing under control. Breathing problems include gasping, hyperventilation, difficulty holding your breath, and a scary feeling of breathlessness or suffocation.

Gasping
This isn't just a little gasp, like the kind you'd experience if somebody jumped out of a closet and scared you. It's a huge gasp that totally fills your lungs. You may experience several of these gasps in a row. If your head is underwater when you gasp, you will immediately drown, and without the support of a PFD, you will head straight for the bottom. Before cold shock was identified as the cause, this phenomenon was known as Sudden Disappearance Syndrome.

Hyperventilation
Gasping is immediately followed by hyperventilation - very rapid, out-of-control breathing. Swimming as short a distance as 6- 10 feet while hyperventilating is often impossible, even for good swimmers. When you're breathing very rapidly (like 65 times per minute) swimming strokes cannot be synchronized with respiration. The result is swimming failure. If you're not wearing a PFD, you will drown.

Hyperventilation also results in *hypocapnia*, a reduction of the level of carbon dioxide in your blood which can cause:

- Dizziness
- Faintness
- Ringing or buzzing in your ears
- Numbness of your fingers and toes
- Cramping of your hands and feet
- Reduced ability to complete simple and familiar tasks
- Loss of consciousness
- Difficulty Holding Your Breath

Cold water immersion greatly reduces the length of time that you can hold your breath. An average person's ability to hold their breath in water below 60F (15C) is one-third of what they can do in warmer water. The lower the water temperature, the greater the problem. One study of volunteers in 41F water found average breath-hold time reduced from 45 to 9.5 seconds, with one subject reduced to 0.2 seconds.

Feeling of Suffocation
Paradoxically coinciding with hyperventilation is a strong claustrophobic feeling of not being able to get enough air. This frightening sensation, which continues for up to three minutes before gradually declining, increases the potential for panic and disorganized behavior in the water and makes it much more difficult to eventually gain control of your breathing.

Threat No. 2
Heart and Blood Pressure Problems

Cold water immersion causes an instantaneous and massive increase in heart rate and blood pressure because all the blood vessels in your skin constrict in response to sudden cooling, which is far more intense in water than in air. In vulnerable individuals, this greatly increases the danger of heart failure and stroke.

Threat No. 3
Mental Problems

The moment you hit the water, cold shock causes a huge reduction in your ability to think and function. This can continue for a long time – even after you get out of the water.

Problems include:
- Disorientation
- Fear
- Panic
- Inability to think clearly
- Inability to evaluate options
- Inability to carry out a plan of action
- Freezing in place
- Failure to act
- Helplessness
- Lethargy
- If the water temperature is below 40F (5C) add Severe Pain to the list

Stage 2 - Physical Incapacitation

Physical incapacitation is another way of saying that you've become physically helpless in the water because you can no longer control your arms, legs, hands and feet. When this happens, particularly in waves, you are very likely to drown. Even with the added buoyancy of a PFD, your mouth is very close to the surface of the water.

When your muscles and nerves get cold enough, they simply stop working. This loss of muscle strength and control can happen very quickly. In very cold water, it's possible to lose the use of your hands in under a minute.

When cold water cools your muscles and nerves:
- You become progressively weaker
- You become exhausted more rapidly

- Your hands become numb and useless
- Your arms and legs stop working

What this means:

- Unable to self-rescue
- Unable to assist other people who try to help you
- Swimming failure
- Unable to position your back to the waves
- Greatly increased risk of drowning
- Swimming Failure

Swimming failure at Stage 1 (Cold Shock) results from loss of breathing control, but here in Stage 2 (Incapacitation), it's the result of muscle fatigue, loss of sensation, and loss of motor control, particularly in your arms and hands.

When your hands get too cold, the fingers also stiffen and become splayed (spread apart) which further compromises swimming ability.

Dealing with Waves
The safest position in the water is with your back facing the waves because breathing is easier and holding your breath is automatic when a wave hits you from behind.

However, keeping your back to the waves is impossible when you're incapacitated, because wave energy will naturally rotate your body until you're facing the waves head-on. In that position, your PFD also tends to direct wave splash up and into your face, making it far more likely that you will inhale water and drown.

Cold water drowning can happen immediately, but it can also take a fairly long time – a gruesome process in which small amounts of water are inhaled, over and over again, until your lungs become so waterlogged that you suffocate.

Floating Face Down
Holding your head up and keeping your face out of the water also requires effort, and recreational PFDs are not designed to prevent you from floating face-down if you become helpless or unconscious.

Rough Water Test
BoatUS tested recreational (Type III) PFDs in rough water with seas up to 4 feet. They reported that experienced lifeguards "had to work hard treading water to keep their faces clear of the waves". When simulating an unconscious victim, the testers "repeatedly sank well beneath the surface as the waves rolled over them".

Stage 3 - Hypothermia

Hypothermia means low body temperature, clinically defined as a core temperature below 95F (35C). (Your body core is basically your entire body minus your arms and legs.) It takes about thirty minutes for an adult of average size to develop hypothermia – even in freezing water. You have to survive both cold shock and incapacitation before hypothermia becomes an issue.

Drowning
As body temperature falls below 95F (35C), both mental ability and consciousness suffer, and like cold shock and incapacitation, the primary danger is drowning.

Badly Chilled vs Hypothermic
It can be very difficult to tell the difference between someone who is badly chilled from someone who has

hypothermia. Because of the physical and mental effects of cold shock and physical incapacitation, many hypothermia symptoms can be present in people who have a normal body temperature. In other words, it's quite possible for a badly chilled person to have difficulty thinking and speaking clearly,
and to also be physically incapacitated, shivering violently, and unable to use their hands.

Diagnosis
The only sure way to determine if someone has hypothermia is to measure their core body temperature, something that can't be done orally. Trying to obtain a rectal temperature in the field is both difficult and a bad idea because it's tough on the victim and a poor use of your time. From a practical standpoint, all you'll to have to guide you are the environmental circumstances and the appearance and behavior of the victim.

Regardless of whether the person is chilled or hypothermic, you're going to have a very big problem on your hands because neither situation is easy to deal with in the outdoors. Your first objective should be to stop the person from losing any more heat and getting even colder.

Not Just an Immersion Issue
You can become badly chilled or hypothermic even if you never enter the water. Whenever body heat is lost to the environment faster than you can replace it, incapacitation will be followed by hypothermia. In cold, windy, rainy weather, a person exposed to the elements can quickly become incapacitated while paddling or making camp. Again, the first things to go are your hands.

Stage 4 - Circumrescue Collapse

This phenomenon can occur just before rescue, during rescue – as the victim is removed from the water, and after rescue when the person is out of the water. Circumrescue collapse is not well understood, but appears to be related to an abrupt drop in blood pressure. It can cause unconsciousness and also heart failure.

Five Golden Rules

For over twenty-five years, paddlers have been told to "wear a wetsuit or drysuit" when paddling on cold water. There's nothing wrong with that advice, but it sure leaves a lot of questions unanswered. Cold water temperatures can vary by 40F (22C) degrees or more. What kind of gear should you get? How can you tell whether it will really keep you warm?

The 5 Golden Rules of Cold Water Safety are your roadmap through this jungle. While each rule is important in its own right, it's the combination of all five that allows you to build a strong cold water safety net. Click on the links below for detailed information:

1) Always Wear Your PFD

A PFD greatly reduces the chance of sudden drowning due to cold shock and swimming failure. With few exceptions, cold shock causes people to immediately lose control of their breathing. As a result, many of them suddenly drown – even though they can swim.

Cold water drowning can occur instantly if cold shock causes a person to gasp while their mouth is submerged. That particular phenomenon used to be called "Sudden Disappearance Syndrome", and it's worth emphasizing that you don't suddenly disappear and sink to the bottom if you are wearing a properly secured PFD.

Drowning can also occur during the first several minutes of cold shock due to swimming failure or inhaling water as a result of wave splash. If you aren't wearing a PFD, you will drown as soon as you can no longer swim or tread water.

2) Always Dress for the Water Temperature

Cold water can kill you. Not wearing thermal protection when you paddle on cold water is gambling with your life. The air temperature is irrelevant. The only thing that really matters when you fall into cold water is whether you are dressed for immersion.

Dressing for the water temperature means a lot more than simply donning a wetsuit or drysuit before you head out. It means knowing with certainty that the garments you're wearing provide enough thermal protection to keep you warm and allow you to function - physically and mentally - should you wind up in the water.

Cold water immersion is always a race against the clock, and depending on how well prepared you are, it can be a desperate race or one you can walk rather than run.

The Cold Facts

Dressing for the water temperature means:

- Wearing thermal protection like a wetsuit or drysuit so that you don't experience cold shock.
- Wearing enough thermal protection so that you remain warm, calm, and able to function – physically and mentally - while you're in the water – whatever the water temperature happens to be.
- Wearing a wetsuit that's thick enough to protect you from the cold and snug enough to work properly.
- Wearing a drysuit that doesn't leak, is not excessively burped, and has enough warm clothing underneath it to protect you from the cold.
- Wearing enough protection to keep you functioning if you have to swim or get towed to shore, and if you can't get to shore, enough protection to keep you alive long enough to be rescued. See: How long before I'm rescued?

"For the record, when I say "wearing a wetsuit", I mean a good quality, well-fitted wetsuit appropriate to the conditions one is paddling in. And that means IMMERSION. A 3mm farmer john with some polypro and an anorak when paddling the Mendocino Coast is not "wearing a wetsuit". - Andy Taylor – Comment on the Tsunami Rangers blog.

Common Excuses for Not Following Golden Rule No. 2

"I'm not going to wear a wetsuit or drysuit because":

- I'm not going to capsize.
- The water temperature is above 60F.
- I brought extra clothing and warm drinks.
- I paddle "close to shore" or in "protected waters".
- I don't plan on encountering "challenging conditions".
- They're uncomfortable and get in the way of my paddling.
- It's too expensive.
- I paddle with a group and can quickly get back in my boat.
- Air temperature + the water temperature = whatever, so it's safe.
- The air temperature is too warm and I'm worried that I'll overheat.
- The water is shallow and I can stand up if I fall out.
- I'm just going out for a quick paddle, not an expedition to the North Pole.

The Bottom Line

In nature, weather and water conditions have the potential to change with amazing speed and little or no warning. What will not change during the course of your outing is the water temperature.

The only thing that really matters when you're in the water is whether or not you're dressed for immersion.

Nobody ever plans on capsizing or getting into trouble.

None of the paddlers whose lives were lost because they failed to dress for the water temperature, ever, in their wildest dreams, planned on encountering the circumstances or conditions that killed them.

3) Field-Test Your Gear

Cold water gear is your lifeline if you capsize. Will your gear really keep you warm? How do you know? Wetsuit style, fit, and thickness are critical to your safety. So is the clothing worn under a drysuit. Does your gear work like it's supposed to? How can you find out?

Should you wear a hood? What kind of gloves work best for you? Say, for example, that you paddle on 50F water. How much time will your gear buy before you become too chilled to function? Does it interfere with a rescue or roll?

Field-testing will answer all of those questions and more. As the name implies, you test and practice with your gear "in the field" at the water temperatures you'll encounter if you capsize. That's what expert paddlers do, and it's the reason they're intimately familiar with their gear, and all of its strengths and weaknesses.

This may seem perfectly obvious, but it's surprising how many people paddle around in wetsuits, drysuits and other assorted cold water gear without ever having gotten into the water and really checked it out. Field-testing can be fun, it will open your eyes, and it will definitely build your skill and confidence as a paddler.

The Cold Facts

Valuable things you can learn from field-testing:

- Whether new gear is working properly.
- Whether you're able to use it effectively.
- Whether there are any gear-related challenges, limitations, weaknesses or problems that need to be solved.
- How much thermal protection you need at different water temperatures.
- Whether or not the system of thermal protection you own is up to the challenge of protecting you or doesn't have a prayer of keeping you warm in the water on which you're going to paddle.
- How and where to field-test

Practice with your gear in a safe location, in weather conditions and at water temperatures like the ones in which you'll be paddling. You need to know how your gear performs in those conditions and field-testing gives you the opportunity to work out any kinks in the system. Always field-test new gear.

The Bottom Line

While wearing all of your cold water gear, can you...?

- Deploy, inflate, use, and stow a paddle float
- Find the grab loop on your sprayskirt.
- Deploy use and stow a tow rope.
- Find and use the release tab on your tow rope when you're upside down.
- Attach your sprayskirt.
- Pump out your cockpit – with the skirt attached.

- Properly set up and roll.
- Effectively use a GPS, cell phone or VHF radio.
- Activate a strobe light or Personal Locator Beacon (PLB).
- Operate a clip or zipper.
- Open a box of Walker's Shortbread Cookies.
- Find and blow your whistle.
- Turn on your headlamp.
- Assemble a spare paddle.
- Open a container of flares and fire one.
- Do a boat-to-boat rescue – as rescuer and as victim.

Note: Many of these points involve making absolutely sure - through experimentation and practice - that you have sufficient manual dexterity while wearing gear - such as neoprene gloves - that protect your hands from the cold.

Make certain that you can use all your gear smoothly and effectively - even when you're under stress. That takes practice.

Although you may not own or know how to use things like a sprayskirt, strobe, pump, paddle float, tow rope or VHF radio, reading the Case Studies associated with each Golden Rule will help you appreciate how valuable gear like that can be. (http://www.coldwatersafety.org/Rule3.html)

4) Swim-Test Your Gear Every Time You Go Out

Swim-testing is like a pilot's preflight inspection - a last minute safety-check to make sure you're wearing enough thermal protection and that it's working properly.

How to Swim-Test:
- Put on your thermal protection, get in the water, and splash around.
- Sit, float, tread water, or swim - whatever works best for you.
- Hold your nose and see how it feels to get your head dunked.
- How long you stay in the water is up to you - it's your gear that you're testing.

The Cold Facts

Do I have to swim-test my gear every time I go out?

That's up to you. It's a very good idea, but no one will force you to do it.

Valuable things you can discover via swim-testing:

These mistakes really do happen. Sometimes they're amusing, sometimes they're merely unpleasant, but every once in a while - if you don't catch them before you get out on the water - they can be fatal.

- Your drysuit has a torn gasket.
- You forgot to close the "relief zipper" on your drysuit.
- You forgot to properly close the main zipper on your drysuit.
- You should have paid more attention to the instructions on how to seal your two-piece drysuit.
- All by itself, your drysuit provides about as much insulation as a shower curtain, and you need to find some nice warm stuff to wear underneath it.
- The gear you're wearing on this particular outing is totally inadequate to keep you warm in the water.

- You didn't burp your drysuit enough, so you feel like a blimp in the water.
- You burped your drysuit way too much and squashed all that fluffy pile insulation down to the thickness of a penny and now it doesn't feel warm any more.
- You were sadly mistaken when you thought that a "paddling jacket" was the same thing as a "drytop".
- Your neoprene gloves or the wrist seals on your drysuit are a wee bit too snug. They reduce the flow of warm blood to your hands - which are quickly becoming very cold.
- You need to get a neo hood, a neo hat - or both - to protect your head and neck from that chilly water.
- The 3mil farmer john & drytop combo that was just fine and dandy at 65F, is not nearly enough to keep you warm at 48F.
- The wetsuit you got on sale is too large. You're trying to compensate by wearing a thick polypro top and bottom underneath it, but whenever you move, very cold water flushes in and out, causing you to squeal like a little piggy.

What if I don't want to swim-test?

That's not a good sign. Swim-testing is no big deal when you're dressed for the water temperature. If you're unwilling to swim-test, it's usually because you're not confident that your gear will keep you warm and/or dry when you're in the water.

Reasons people give for blowing off swim-tests:

- They don't happen to have any cold water gear with them at the moment.
- Their gear is brand new and they're too nervous to try it out.
- Their nasty, old, worn-out gear is shot to hell, and they have a strong gut-feeling that it won't keep them warm - even during the swim-test.
- Their gear is just perfect for the air temperature, but way too skimpy for the water temperature.
- It's windy and cold at the launch site, and they don't want to get in the water.
- They're worried about getting cold and wet.
- The water at the put-in is so skanky with scum, oil slicks and dead fish that it takes a major commitment to just put your pretty boat in the water.
- On very rare occasions, (ultra-skanky water or a seal launch), you may find it difficult to swim-test. That's understandable. If you're already very familiar with your gear because you've thoroughly field-tested it, just double-check the zippers, seals etc. as best you can - and next time, try to pick a better launch site.

The real issue for most paddlers isn't whether they swim-test every single time they paddle, it's that they never swim-test their gear and consequently have no idea whether it's working properly and will protect them out on the water.

How to get an expert "feel" for cold water:

- Experienced cold water paddlers have a remarkable "feel" for cold water. Give them a water temperature, and they know - without even thinking about it - exactly how much protection they need to paddle safely and comfortably at that particular temperature.
- Swim-testing embeds that kind of cold water data in your brain - over and over again. You can learn a lot from that process, and the knowledge really sticks with you.
- You will develop a feel for cold water a lot faster if you make a habit of measuring the water temperature every time you swim-test. Measuring it yourself is better than hearing your buddy say "47 degrees" because you learn better by doing than by hearing.

5) Imagine the Worst That Could Happen and Plan for It

If something bad happens out on the water and you're unprepared to deal with it, you're in trouble. When you

~~make a practic~~e of thinking about everything that could possibly go wrong, you have a far more realistic outlook, and that can keep you out of trouble to begin with. Is all of this overkill? Maybe. But how many times, if ever, have you heard about incidents involving "overly prepared" paddlers.

The Cold Facts

Knowledge and Experience

The safety hurdle faced by many paddlers is that they don't have enough knowledge or experience to imagine the many things that can go wrong on even a modest outing. This places them at a huge disadvantage when trying to plan for the unexpected. What can these folks do to improve their odds?

Learn About Bad Stuff Second-Hand
A lot of people believe there's no way you can learn to climb, paddle, backpack, scuba dive, fly a plane, ride a horse, a motorcycle or whatever- just by reading about it - that the only way to really learn about that kind of stuff is by doing it. True enough, but only up to a point, and it's a very important point, because as it turns out, there's a LOT of stuff that you really don't want to learn about the hard way, by direct personal experience.

Some examples:
- Getting totally creamed when you decide to paddle out that little inlet or river mouth to just "check things out".
- Watching in horror as your kayak does a "Cleopatra's Needle" or sinks like a stone because it had no floatation. Ditto watching your kayak blow away.
- Capsizing 200 yards from shore and finding out that the guy who tried to warn you about the danger of cold water really did know what he was talking about.
- Getting swept into a tide race or blown offshore even though the TV weather report you watched in the morning said nothing about dangerous tidal currents or small craft advisories.
- Getting really and truly lost when your trusty GPS runs out of juice, breaks, malfunctions, can't get a signal – whatever – and it's getting dark, and cold and you don't have a map and compass, and even if you did, you wouldn't know how to use them.
- Floating around in the dark, shivering and watching the lights of boats and helicopters that are searching for you but having no way to signal them because you have neither flares, a waterproof flashlight, cell phone, VHF radio, or emergency strobe light.
- Getting to the take-out and realizing that Mary is missing – because she capsized 2 miles back and nobody knew it because your group didn't have a designated sweep.

I've never regretted being too vigilant, or safety conscious, or infatuated with checklists and meticulous planning, or cautious about my choice of paddling partners, but almost every single time I've made the mistake of being sloppy, lazy, or complacent about those things, it's come back, in one way or another, to bite me in the ass. - Moulton Avery

Educate Yourself

One of the best ways to expand your horizon of knowledge is by reading about bad stuff that happened to other people.

Deep Survival by Lawrence Gonzales is an excellent book that answers the question often asked after accidents: "What the hell were they thinking?

More Food for Thought

A very frequent cause of trouble in open water paddling is being overwhelmed by the wind and/or rough water. One of the worst calamities that can befall a paddler is to loose his or her boat. This can happen because it blows away, it sinks, or the paddler is unable to reenter it.

What will you do if....

- Incapacitated by cold.
- Blown out to sea by high wind.
- Paddle breaks, blows away, or is lost in rough water.
- Ankle leash breaks and boat blows away.
- Waves dump water into cockpit and boat fills with water.
- Fog rolls in - can't see anything.
- Capsize and can't get back in boat.
- You get lost.
- Cell phone and/or VHF radio lost when boat blows away.
- Hit a rock and smash hole in boat.
- Dislocate shoulder.
- Caught in thunderstorm.
- Night falls - can't see anything.
- Paddle float blows away.
- Become seasick and can't remain upright.
- Deep cut on finger.
- Exhausted - can no longer paddle.
- Lose cover to rear hatch.
- GPS unit breaks.
- Lose prescription glasses– can't see.

If at all possible critical elements should have a backup – even it the backup is to make a repair. Is that overkill? Maybe, but you don't hear about too "overly prepared" sea kayakers getting into trouble.

Checklists Are Your Friend

It's easy to forget stuff – at home, in your car, and at the take-out. Consider having a checklist for each situation.

- Leaving Home – a list of all the things you want to have with you at the put-in.
- Launching – a list of all the things you want with you on the paddle.
- Returning Home – a list of stuff that you don't want to forget at the take-out.

I've forgotten all sorts of stuff at one time or another because I got sloppy with my checklists. Among other things, I've left my VHF radio, tow rope, and swim trunks at home, forgotten to pack lunch, left my compass or headlamp in the car, and forgotten to bring my wallet, a towel, a comb, and sunscreen. I also lost a very nice paddle because I left it on a boat ramp at the take-out. - Moulton Avery

Water Temperature Safety Guide

Below 77F (25C)
Breathing begins to be affected.

This is why the official water temperature required for Olympic swimming competition is 77-82F (25-28C).

70-60F (21-15C) Dangerous
Controlling your breathing and holding your breath becomes progressively more difficult as water temperature falls as water temperature falls from 70°F to 60°F (21°C to 15°C).

True or False: You don't need thermal protection when the water temperature is above 60F (15C).
False. You should certainly be wearing a wetsuit or drysuit below 60F, however, 60F (15C) is not the temperature at which most people should start wearing thermal protection.

60-50F (15-10C) Very Dangerous/Immediately Life-threatening
Total loss of breathing control. Maximum intensity cold shock. Unable to control gasping and hyperventilation.

Fact: Cold shock is as extreme between 50-60F (10-15C) as it is at 35F (2C).
Most people who are unaccustomed to cold water will experience a maximum cold shock response somewhere between 50-60F (10-15C). For some individuals, this happens at 57F (14C), for others, the peak occurs at 52F (11C) and so on.

This means that an unprotected immersion in this temperature range will cause most people to completely lose control of their breathing – they will be gasping and hyperventilating as hard and fast as they can.

Since cold shock reaches its maximum intensity between 50-60F (10-15C), it can't get any more intense at lower water temperatures. In other words, breathing control, once completely lost, cannot be lost to a greater degree.

Below 40F (5C) Very Dangerous/Immediately Life-threatening
Total loss of breathing control. Unable to control gasping and hyperventilation. Water feels painfully cold.

Below 40F (4.5C)
Water is so painfully cold that it often feels like it's burning your skin. For many people, the notorious "ice cream headache" can be triggered simply by water touching your face. Even though cold shock is no more intense than it was between 50-60F (10-15C), the severe pain makes a desperate situation even worse because it greatly increases your psychological stress. Clear thinking becomes almost impossible.

See for Yourself

If you're in good physical shape and feeling adventurous, a very memorable way to find out about cold water is by conducting a personal experiment. First, make sure the tap water is as cold as it will get by running the faucet for a minute or two, then fill a glass and measure the temperature.

When you're feeling brave, get in the shower and turn it on full blast. No shower? No problem. Have a friend spray you with cold water from a garden hose while you're wearing a bathing suit.

Warning: Don't try this unless you're completely healthy because the shock of cold water hitting your skin will cause an immediate, and often dramatic, increase in your blood pressure and heart rate. If there's any doubt in your mind, check with your doctor

Interesting Temperatures

98.6F(37C) Normal body temperature measured with an oral thermometer.
99.6F(37.5C) Deep body or core temperature measured with a rectal thermometer.
95F(35C) For medical purposes, this is the clinical point at whichh hypothermia begins.
91F(32.7C) The temperature of your skin.
85F(29.4C) Water feels pleasantly cool rather than warm.
77-82F(25-28C) Swimming pool temperature range for Olympic competition.
70F(21C) Water feels quite cold to most people. Treat any water temperature below 70F (21C) with caution.
40F(4.4C) or lower Water is painfully cold.

Different Strokes

Most people unfamiliar with cold water find 70F (21C) to be quite cold. On the other hand, a competitive open-water swimmer who is used to swimming in 55F (13C) water will probably think that 70F (21C) doesn't feel very cold at all. What's important to your safety is how you personally respond to cold water.

Acclimation and body fat can make a significant difference in how someone responds to cold water. Acclimation is a process by which your body gradually adapts itself to cold water through repeated exposure. Through acclimation, it's possible to improve circulation to the hands during cold water immersion, and to greatly reduce or eliminate cold shock.

Body fat is an excellent insulator. Seals, whales, and other warm-blooded aquatic mammals have a lot of this insulating fat - called blubber - which enables them to keep warm while swimming in cold oceans.

Because fat provides insulation from the cold, it can delay incapacitation and hypothermia and also improve physical stamina in the water. Repeated exposure to even cool water increases the layer of fat directly under the skin surface (subcutaneous fat).

You can easily see this body fat difference by comparing the physical appearance of Olympic swimmers and runners. Swimmers have a lot of subcutaneous fat and a sleek, streamlined look. Runners have very little fat and more obvious muscle definition.

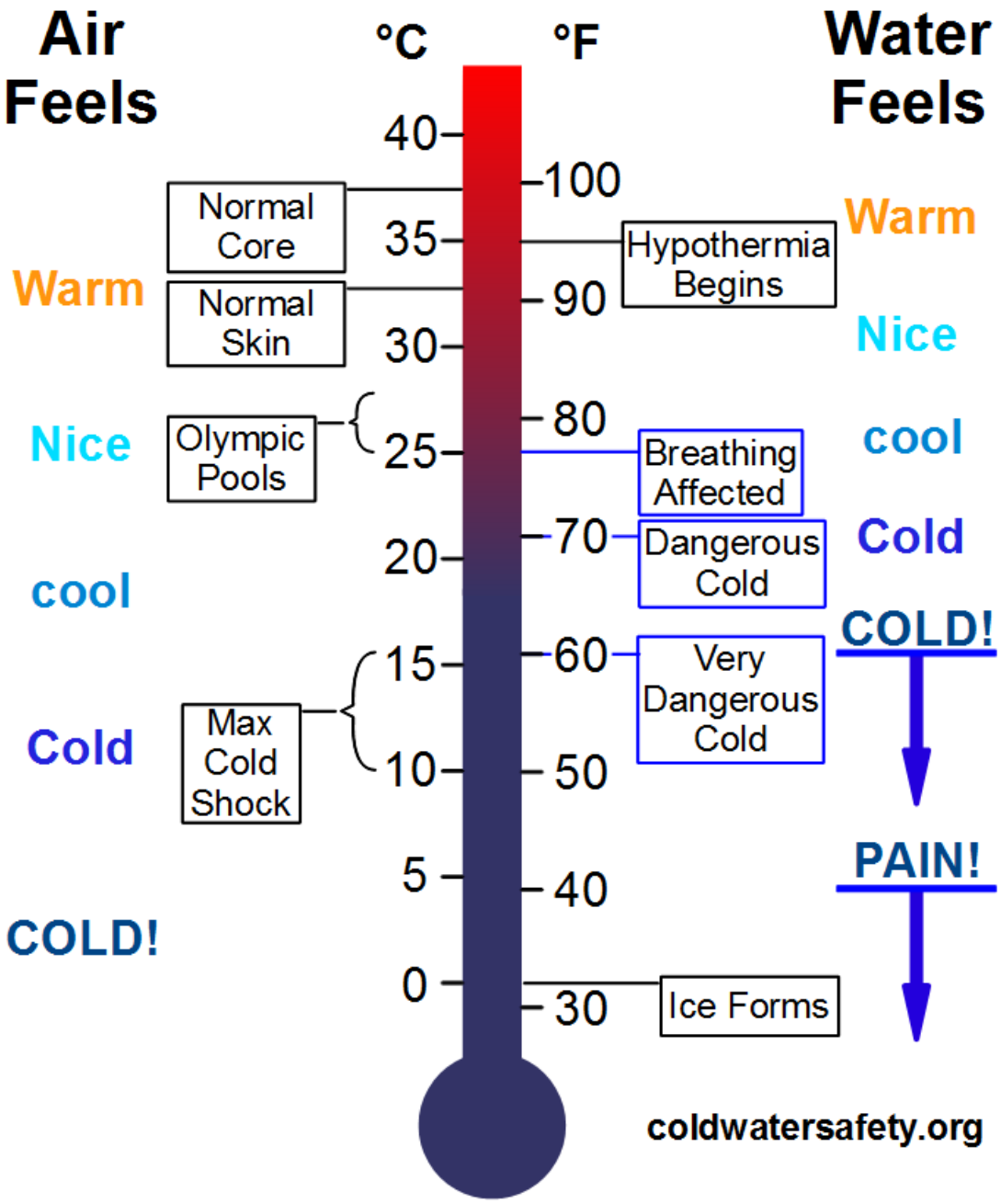
Accclimation reduces the intensity of cold shock.
Acclimation does not protect you against incapacitation, swimming failure and hypothermia.
Body fat does not reduce the intensity of cold shock.
Body fat provides insulation, slows heat loss, and delays incapacitation and hypothermia.

A Very Remarkable Swim

An excellent example of how body fat can prolong cold water survival is the remarkable case of Icelandic fisherman Gudlaugur Fridthorsson. On a cold night in March, 1984, Fridthorsson was working on a 75 foot (23 meter) commercial fishing vessel when her nets snagged on the ocean bottom and she capsized three miles off the rugged coast of Heimaey Island.

Although he wasn't a particularly good swimmer, Fridthorsson swam for six hours in 41-43F (5-6C) water before reaching shore. He was the sole survivor of the five-man crew. How in the world did he do it? In a word, he was obese. At 6'4' and 275 lbs, he had a chart-busting BMI in excess of 30. His physique was similar to a seal's.

Interesting Temperatures



USEFUL WEBSITES

Clothing/Equipment

www.coldwatersafety.org

https://paddling.com

https://www.rei.com REI co-op

Buoys monitoring weather/water conditions.

https://www.weather.gov/greatlakes/beachhazards

https://www.weather.gov/apx/ National Weather Service/Gaylord MI

https://coastwatch.glerl.noaa.gov/marobs/

www.coastwatch.msu.edu/

https://www.ndbc.noaa.gov/maps/WestGL.shtml

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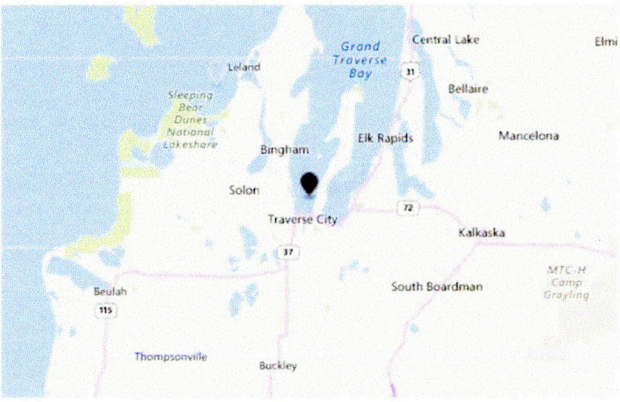
https://www.ndbc.noaa.gov/station_page.php?station=45020

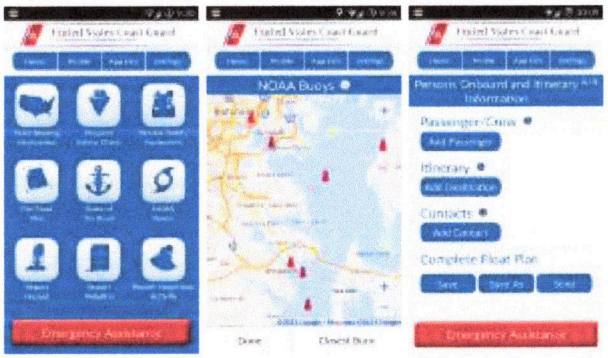
NOTE: Buoy 45020, South Traverse Bay.

Owned and maintained by Northwestern Michigan College
Moored Buoy
44.789 N 85.604 W (44°47'20" N 85°36'14" W)



The USCG Boating Safety App

- Find the latest safety regulations
- Request a vessel safety check
- Check your safety equipment
- File a float plan
- Navigation Rules
- Find the nearest NOAA buoy
- Report a hazard
- Report pollution
- Report suspicious activity
- Request emergency assistance



As the nation's recreational boating safety coordinator, the Coast Guard works to minimize loss of life, personal injury, property damage, and environmental harm. Our boating safety program involves public education programs, regulation of boat design and construction, approval of boating safety equipment, and vessel safety checks for compliance with federal and state safety requirements. The Coast Guard Mobile App supports these missions by providing the essential services and information most commonly requested by boaters.

Features of the app include: state boating information; a safety equipment checklist; free boating safety check requests; navigation rules; float plans; and calling features to report pollution or suspicious activity. When location services are enabled, users can receive the latest weather reports from the closest National Oceanic and Atmospheric Administration weather buoys as well as report the location of a hazard on the water.

The app also features an Emergency Assistance button which, with locations services enabled, will call the closest Coast Guard command center.

The Boating Safety Mobile app was not designed to replace a boater's marine VHF radio, which the Coast Guard strongly recommends all boaters have aboard their vessels. The app was mainly designed to provide additional boating safety resources for mobile device users.

The app is self-contained, so personal information is stored on the phone and is not sent to the Coast Guard unless the user chooses to send it. The Coast Guard does not track a user's location, and the app does not track a user's location unless the app is being used.

Available on the App Store

Google play