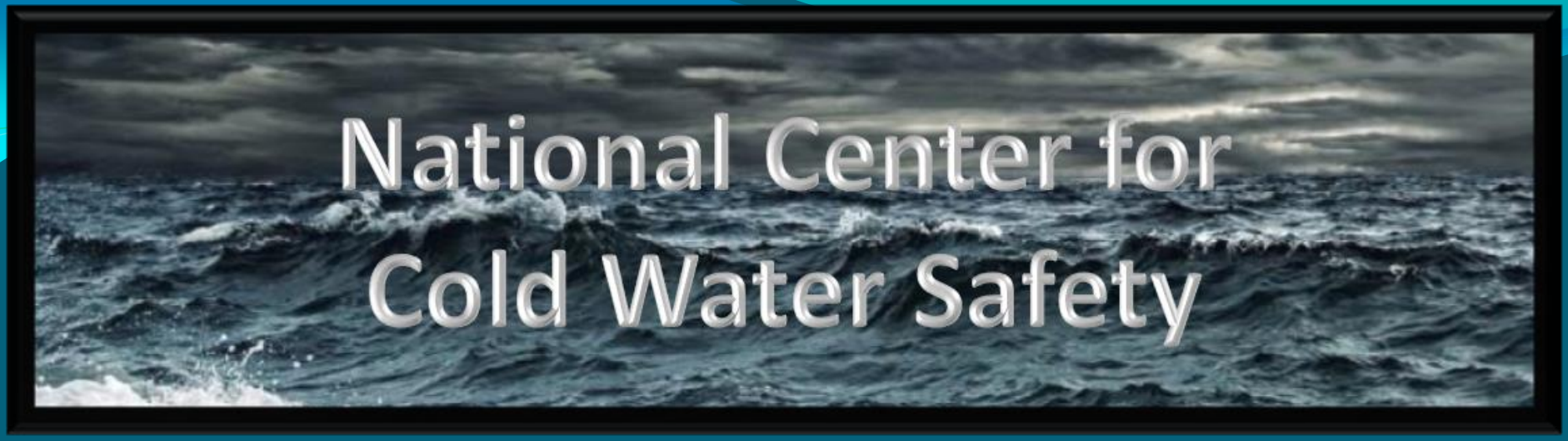

OOPS Cold Water Safety Talk

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www.coldwatersafety.org

Safety Perspective

Capsizing in cold water without thermal protection kills more people than any other hazard in paddlesports.

It's a Critical safety issue.

Even With a Wetsuit or Drysuit

Paddling on Cold Water is Dangerous

The Colder the Water

The Greater the Danger

What is Cold Water?

Water that's cold enough to threaten your life

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

Basic Temperatures

99.6F Core Temperature
98.6F Oral Temperature
95F Medical Hypothermia
91F Skin Temperature
85F Water Feels Cool
77-82F Olympic Pool Temp
76F Breathing Affected

Basic Temperatures

70F Water Feels Cold
70F USCG Definition of Cold Water
60F ACA Definition of Cold Water
40F Immersion is Very Painful
32F Fresh Water Freezes
28F Salt Water Freezes

Four Stages of Immersion

1) Cold Shock – Happens Immediately

2) Incapacitation – Happens Quickly

3) Hypothermia – Takes about 30 min

4) Circumrescue Collapse

Cold Shock Explained – In One Paragraph

“Cold shock … um, that’s when you gasp, isn’t it?”

“Yes, sort of, but it’s not a little gasp, like someone startled you, it’s full-lung inflations, usually multiple times in a row, and totally out of your control. And if your mouth happens to be underwater when you gasp, it’s usually fatal. And right after the gasps, you have hyperventilation - rapid, uncontrolled breathing which creates all sorts of additional problems. Also, you won’t be able to hold your breath and you’ll feel like you’re suffocating. In addition to increasing your odds of suddenly drowning from inhaling water, this loss of breathing control causes swimming failure, and without the support of a PFD or something you can use as flotation, you’ll sink and immediately drown. Your heart rate and blood pressure also go through the roof, so hopefully there’ s no weakness in that system. There’s also a huge reduction in your ability to think and function, to call for help, or to get back in your kayak - and this mental confusion can continue for a long time - even after you get out of the water. So yeah, it’s a lot more than just a gasp.

What is Maximum-Intensity Cold Shock?

Total loss of breathing control.

Gasping and hyperventilating as hard and fast as you can.

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Cold shock reaches maximum intensity

Between 50F - 60F

Cold Water Perspective

Immersion in 40F water is more painful and disorienting.

But loss of breathing control is no more intense than it was at 50F

The 1-10-1 Immersion Myth

Invented by Gordon Giesbrecht, a cold water researcher and popularized by the Cold Water Boot Camp video.

It's inaccurate, and it's Not Supported by either science or practical experience.

Undermines cold water safety by understating the danger.

Cold Shock

The 1-10-1 Myth says you have

“1 minute to get your breathing under control”

You DON'T

You actually have

ZERO control over your breathing for 1 - 5+ minutes.

What Is Incapacitation?

When cold muscles and numb hands make you helpless in the water.

Colder Water = Faster Incapacitation

Small bodies cool faster than large ones.

A thin person cools faster than a heavier person.
Children cool faster than adults.

Incapacitation

The 1-10-1 Myth says you have

"10 minutes of useful physical activity"

You DON'T

For Example: Giesbrecht was completely incapacitated after only 8 minutes in 32F water. He was completely helpless in the water and had to be "pulled out".

Incapacitation

Begins the moment you hit the water.

It is always a race against the clock.

Time is NOT on your side

Thermal protection only delays the process.

How much time will your protection buy you?

Drysuit or Wetsuit

Wetsuits are fine. Drysuits are fine too.

Before we had drysuits we used wetsuits.

My drysuit is a couple years old. I love it. My wetsuit is 34 years old and it still works fine.

Neoprene thickness determines warmth

Your wetsuit must be thick enough to protect you and snug enough to prevent water from flushing in and out.

What Is Swimming Failure?

Swimming requires coordination of breathing and strokes.

With Cold Shock:
You can't swim because you can't control your breathing.

With Incapacitation:
You can't swim because your arms and legs stop working.

Wave Turning and Slow Drowning

Incapacitation – Your Hands

Even though you're wearing a $1,200 drysuit with fleece under it.

You can lose the use of your bare hands in minutes.

What's that like?

Imagine doing anything with boxing gloves on your hands.

Rescue / Attach Spray Skirt / Operate VHF / Hold Your Paddle

Mittens are Warmer than Gloves

Pogies Are Bare Hands Waiting To Happen

If You Use Pogies

Wear Neo Gloves Underneath Them

Protect Your Head and Neck

- Brain Freeze / Ice Cream Headache
-
-
- Earache / Surfer's Ear
-
-
- Vertigo – Disorientation & Loss of Balance
-

Bad Choice for Cold Water Paddling

Neoprene Rocks!

Winter Surfer – North Shore, Lake Superior
Air = 10F / Water = 35F

Protecting Your Head and Neck


NEO COMBO
BALACLAVA + HOOD

What Does Thermal Protection Do?

- Eliminates Cold Shock
- Protects against Ice Cream Headache
- Delays Incapacitation and Hypothermia
- Protects Your Ears
- Eliminates Vertigo
- Protects Your Hands
-
- It Buys You Time
-
-

What Is Hypothermia?

Core (Deep Body) Temperature Below 95F

It takes about 30 minutes for hypothermia to develop in an “average” adult, even in freezing water.

Hands and feet become cold long before shivering develops.

Shivering begins long before hypothermia.

Building Your Cold Water Safety Net

Five Golden Rules

Practical

Based on Science & Real-World Experience

Easy to Follow

Five Golden Rules

1) Always Wear Your PFD

2) Always Dress for The Water Temperature - No Exceptions!

3) Field-Test Your Gear

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

5) Prepare For The Worst That Can Happen

What Does Dressing For The Water Temperature Mean?

It means wearing enough protection to keep you warm and functioning - physically and mentally - long enough to rescue yourself - or to be rescued by others.

In my experience, most people UNDERDRESS for the water temperature.

They DON'T wear enough protection.

Trip Organizer Question

How can YOU tell if your participants are "dressed for the water temperature"?

How can THEY tell if they are?

Swim-Test at the Put-In

What Does Swim-Testing Mean?

Measure the water temperature.

Get in the water and splash around.

See how it feels. Think about it.

Will you be warm enough if you fall in?

By itself, a drysuit provides as much insulation as a shower curtain.

Are You Wearing Enough Underneath It?

Will you be chilled and shook up after a 5 minute rescue? Or will you be fine?

“Gear In The Hatch” Myth

You have to wear your protection in order to be protected.

Warm drinks and clothes in your hatch don't cut it.

They are NOT a substitute for wearing your protection.

I carry pile and contractor garbage bags in my hatch - for other people, not for myself.

Burping Drysuits – Pros and Cons

Improves Mobility

Compresses Insulation

Reduces Warmth

Wear enough insulation to counteract burping

A Little Overburped

What Does Field-Testing Mean?

Does Your Gear Work As Advertised?

Is It GTS?

Can You Use It Effectively?

Are There Any Problems That Need To Be Solved?

Some Examples

Your new drysuit isn't warm enough.

Your reliable roll is suddenly GONE.

Your hands are too cold.

Can't feel sprayskirt grab loop with neo mittens.

Can't operate phone or VHF radio.

PRO TIPS

Attach Essential Gear To Yourself or Your PFD

VHF Radio / Cell Phone / Strobe Light / PLB / Whistle / Flares

If you learn to roll …

Roll every single time you go out

Rain or Shine / Winter or Summer

There is no other way to maintain your edge

Practice for the conditions in which you paddle

Solo Rescue Practice in 42F Water

Your Cold Water Safety Resource

www.coldwatersafety.org

Includes 20 Case Histories
With Lessons Learned

Respect Cold Water

Paddle Safely

Have Fun