

COLD WATER KILLER

Reality of hypothermia is more dire than its myths

DR. HOWARD DONNER HAS SPENT DECADES

studying how physical trauma in the wilderness affects the human body. Donner, co-author of *A Field Guide to Wilderness Medicine*, was the medical officer for the Denali Medical Research Project, a member of the 1997 Nova Expedition, and was a medical operations consultant for NASA for five years. He was a river guide for eight years including three on the Grand Canyon and still refuses to move out of the guide seat on wilderness medicine raft trips every spring.

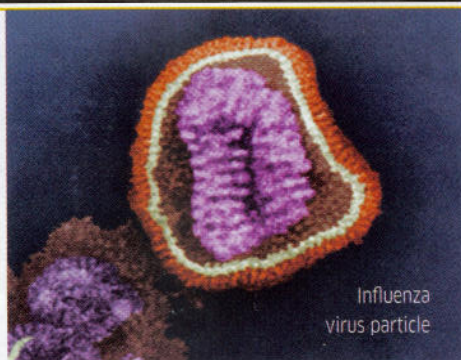
THE FIVE-MINUTE MYTH: "I hear a lot of [whitewater rafting] guides say, 'The water is cold, you can get hypothermia in five minutes if you go in,' and this normally isn't true. Hypothermia has a definition and that specifically has to do with core temperatures. The question is, Does core temperature drop below 95 degrees [the definition of hypothermia], and the answer is probably not. However, I know what it's like to have cold people on a raft—their energy stores are depleted, their teeth are chattering, and they have already taken a swim. This is a dangerous situation, they are already on the edge—some of those could tip the scale. But a normo-thermic [normal body temperature] person can probably survive in 0 degree C, 32 degree F, freezing water for an hour, in 50 degree F water it is closer to two to three hours. The majority of studies support this."

WHAT ACTUALLY KILLS PEOPLE: "The understated killer, and what most guides call hypothermia, are really the effects of local neuro-muscular cooling—when muscles in your arms and legs cool. That is why paddlers have problems when they swim. You could be Michael Phelps, but in 50-degree water you wouldn't be able to swim more effectively than anybody else. You can't grab ropes, ferry across rivers, and get to eddies, so you'd get bashed on rocks, pushed into hydraulics, and you'd drown.

People can locally cool to the point where they can't adequately protect their airways, the swimmer's jaw, face, and mouth become so cold they can no longer protect their airways. You'll hear people involved say they died of hypothermia—but often they are drowning for the previous reasons discussed. If they could maintain oxygenation, excluding trauma, they would probably survive the swim. It is their inability to protect their airways that killed them, not hypothermia."

COOLING RATES: "Most of the studies have been done in still water, and this bothers me because I am a guide and I know heat loss is different in moving rivers. Moving water creates increased convective heat loss. The same issues that create heat loss in wind create it in moving water. In flatwater, assuming the person is not moving, i.e. floating with a lifejacket, you have a boundary layer of warm water next to your skin which reduces heat loss into the ambient water. In a river, there is nothing you can do to reduce convection, but this is important in a cold ocean or a lake scenario."

THE SIGNIFICANCE: "If a client on your raft is cold, you need to deal with it. If someone is cold and can't ferry, tread, swim to the edge, they can't defend themselves—they are the ones who are going to drown. Long before true hypothermia occurs, swimmers are feeling the effects of local neuromuscular cooling, which can be deadly because people are getting bashed on rocks flushed and slowly taking in water. That is why lifejackets are so important. It's a good idea to start [your trip] comfortably warm—you want plenty of heat reserves when you start your trip. I'm not suggesting anyone becomes cavalier about hypothermia regarding the effects of cold while paddling. Clearly hypothermia can kill people, but typically during the first half hour of an immersion scenario, true 'hypothermia' is not the biggest danger."



Influenza virus particle

IMMUNITY NOW! Don't let this sneezing season derail your goals

IF YOU'RE THE AMBITIOUS TYPE—AND UNLESS

you're in denial or riddled with false modesty—you know who you are. You impress co-workers with tales of riding 30,000 vertical feet at Stevens Pass, followed by an afternoon run of the Skykomish River. You never slow down, you never stop astonishing mortals, and two weeks later, you never get over that nasty cold virus. Ever thought about toning down your exercise routine?

An article on www.sportsmedicine.com lists these factors as suppressants to your immune system: old age, smoking, stress, poor nutrition, fatigue, and (get this) over training. That could be why you're as sickly as a mayo-slurping chain smoker, sport.

Here are some ways to reduce your bug magnetism this cold and flu season:

- If you feel a cold coming on, stay home and watch reruns of *Family Guy*.
- Give yourself more recovery days (flatwater workouts don't count) to allow your immune system time to reload.
- Check your resting heart rate. If it's higher than usual, stick to a light paddle session.
- If you have mild symptoms and no fever, a light workout can actually boost your immunity.
- Leave the bar early and get eight hours of Zs. In fact, avoid the bar for better results.
- Boost your immune system through diet. Although some experts say there is no scientific link between food and immunity, lean beef (or poultry), oysters, shiitake and maitake mushrooms, sweet potatoes (squash, pumpkin will do), carrots, yogurt, and tea are often cited as immunity boosters. Donuts are not, Homer.