

~**HYPOTHERMIA**~ IS LATIN for "low body temperature," and happens when your body loses more heat than it can make. It causes loss of judgment, impairs concentration, and decreases blood flow to your extremities. Next, your hands and arms stop working well: Not recommended while riding.

Poor judgment is an early symptom of hypothermia, making it tough for you to recognize there's a problem, which then may progress to loss of coordination, strength and concentration—a potentially lethal combination.

Preventing hypothermia is much easier and safer than reversing it. Here's how you lose heat: Convection is heat that's picked up by the air. When Mother Nature blows on you when it's cold out, it's called "windchill," which cools you faster than just the temperature would suggest.

**Evaporation** cools you, too: So stay dry. "Cold and wet" is the opposite of "warm and dry." Riding in cold rain when unprepared can be lethal.

**Radiation** causes you to lose heat constantly if your clothes are cooler than your skin. And if you have a fever, you'll lose body heat a lot faster. Remember that, if you ever need to ride when you're ill.

**Conduction** happens when you're in contact with a colder surface. A good base layer like polypropylene helps prevent this, since it acts as a good insulator, even when damp.

Your body can get heat either from within or from the outside. Your metabolism and your muscles create heat: Shivering is your body's way of turning up the "idle" on your muscles to increase heat production. Although shivering helps, using big muscles makes more heat. If you're cold, stop, do some squats, step up and down on a curb, or take a short brisk walk.

You can also "import" heat from the outside. Electric clothing is a great way to ride safely and more comfortably in the cold. But remember that a cold wind on the outside of your electric vest will carry that heat away: A windproof layer is vital.

To reduce losses, think of how you're losing your heat. Clothing keeps heat in: Lady Godiva was not ready for a winter ride. Leather or textile riding suits minimize convective heat loss, especially on an unfaired bike. If you've never worn leather or windproof textile pants along with your jacket, you'll be astonished at how they'll extend your comfort range.

Insulation prevents conductive losses as temperatures drop. Zip-in insulating liners help, as does a fleece jacket under the windproof shell. An electric vest or jacket can provide you with great amounts of heat, allowing you to be comfortable and safe in below-freezing temperatures. Long underwear keeps warm air next to your skin, cutting convection, radiation, evaporation and conduction losses.

Polypropylene is an ideal material for cold weather riding, both next to the skin and when used for layering. It insulates well when damp, unlike cotton, and

# Hypothermia

—by flash gordon, md—

## WIND CHILL TABLE

Ambient Temp	Wind Speed (miles per hour)							
	5	10	15	20	25	30	35	40
50F	48	40	36	32	30	28	27	26
40F	37	28	22	18	16	13	11	10
30F	27	16	9	4	0	-2	-4	-6
20F	16	4	-5	-10	-15	-18	-20	-21
10F	6	-9	-18	-25	-29	-33	-35	-37
0F	-5	-21	-36	-39	-44	-48	-49	-53
-10F	-15	-33	-45	-53	-59	-63	-67	-69
-20F	-26	-46	-58	-67	-74	-79	-82	-85
-30F	-36	-58	-72	-82	-87	-94	-98	-102



A simple set of plastic handguards will go a long way toward helping to keep you warm.

it wicks moisture away. Stopping for gas and going inside might make you sweat when dressed for the cold. Sweaty cotton is cold. Polypropylene keeps you warm.

I've skied in a snowstorm (not good riding conditions) wearing a polypropylene fleece jacket without a waterproof shell. At lunch, I found the fleece was literally soaking wet. I wrung cups of water out of it, but I was warm. That same fleece jacket lives in my tankbag on most trips, and is comfy around a campfire or in a restaurant.

Handguards in front of handgrips help a lot, since your hands lose heat fast in the wind. And once you've experienced electric handgrips, they become more of a necessity than a luxury. They add heat to your body through your hands. Good gloves are critical in cold weather, since your hands and fingers act like radiator fins. In a pinch, a pair of cheap dishwashing gloves worn over your riding gloves can help a lot—they'll keep the wind off your hands, reducing convective loss. Snowmobile-type hand covers make cold weather rides safer and more comfortable, and are now being made specifically for motorcycling.

Even your engine heat can help prevent hypothermia—my BMW twins' jugs warm my feet. In a pinch, you can warm your hands on the engine—but be sure to wear gloves, avoid the exhaust pipes, and be extra careful. It would be safest to stop the bike if you decide to warm up using the engine, since you don't have as much control if one of your hands is against the engine block.

In a pinch, wrapping newspaper around your legs and chest under your clothes helps. I got caught in the fog in Mendocino, on the Northern California coast one summer in 1978. It was cold. Dishwashing gloves and newspapers saved my... umm...heat.

Food is vital to keeping warm: You need calories to heat your body. But a big meal diverts blood from your extremities to your gut. Snacking or several smaller meals is a good way to keep up your caloric intake.

You need water to maintain your blood volume. When dehydrated, blood gets diverted to your core from your extremities, which get weaker and uncoordinated. Watch your urine—if it's dark yellow, you need to drink more water.

Treating mild hypothermia is easy. Stop, get into a warm place, and have something hot to drink. Walk around, using your big leg muscles. Don't ride until you're warmer and aren't shivering. And if you're really cold, and it's getting dark, and you don't have the right gear—stop. A motel room is a lot cheaper than a hospital room.

Doc Gordon's book "**Blood, Sweat and Gears: Ramblings on Motorcycling and Medicine**" is available from Whitehorse Press, (800) 531-1133, or through his website at [www.docflash.com](http://www.docflash.com)