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Tips for saving your fingertips: How to survive ultra-cold temperatures

U-M doctor raised in the U.P. offers winter frostbite advice

Posted by (<http://uofmhealthblogs.org/author/admin/>) on January 27, 2014 (<http://uofmhealthblogs.org/general/tips-saving-fingertips-survive-ultra-cold-temperatures/10886/>)

Dr. Brad Uren, M.D., FACEP, hails from the third-snowiest city in the country – Hancock (<http://www.cityofhancock.com/>), on the Keweenaw Peninsula of Michigan's Upper Peninsula.

Down here in Ann Arbor, he tends to frostbitten fingers and toes as an emergency physician at the U-M Health System's adult emergency department.

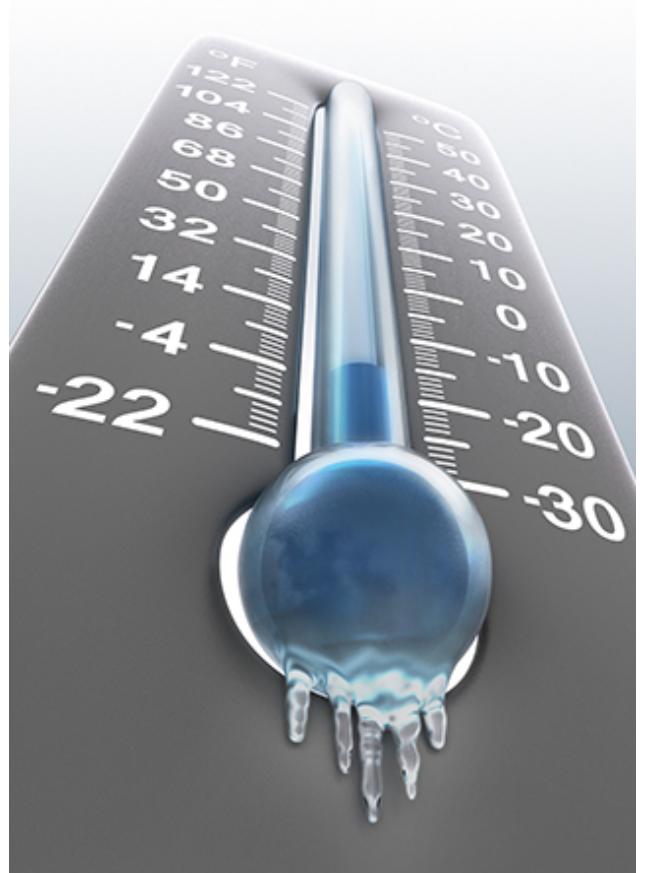
Just in time for this week's ultra-cold deep-freeze across Michigan and the rest of the upper Midwest, he shares some key tips.

Q: So how fast can someone get frostbite in this weather?

A: It all depends on both the temperature and the wind speed, which is what combine to produce a wind chill factor, or the temperature you feel on any skin exposed to the elements.

When the wind chill is anywhere from 0 to minus 10 degrees, it takes about 30 minutes for the average person to get frostbite on exposed skin. But when it dips below minus 20, frostbite can set in after just 10 minutes. And when the wind chills are lower than minus 30, it takes just five minutes before you see frostbite.

The CDC has a great chart showing this:



(<http://uofmhealthblogs.org/wp-content/uploads/2014/01/cold-thermometersm.jpg>)

The cold & wind this week will make it feel like minus 20 to minus 35 degrees out in southeast Michigan

How long will it take to get frostbite on exposed skin?

Wind Chill Factor

Wind Speed (mph)	Actual Air Temperature °F								
	40°	30°	20°	10°	0°	-10°	-20°	-30°	-40°
10	34	21	9	-4	-16	-28	-41	-53	-66
20	30	17	4	-9	-22	-35	-48	-61	-74
30	28	15	1	-12	-26	-39	-53	-67	-80
40	27	13	-1	-15	-29	-43	-57	-71	-84
50	26	12	-3	-17	-31	-45	-60	-74	-88
60	25	10	-4	-19	-33	-48	-62	-76	-91

Frostbite times:

30 minutes 10 minutes 5 minutes

(<http://www.bt.cdc.gov/disasters/winter/duringstorm/outdoorsafety.asp>)

Courtesy Centers for Disease Control & Prevention

Q: So when it's as cold as it is this week, should people cover every inch of skin when they head out?

A: If they're going to be outside for anything more than a few minutes, yes, you should limit the amount of any skin that's exposed to the wind and cold. This is the time to use a scarf to cover your face, or a ski mask. Frostbite can happen quickly on the face.

Q: Could someone die from this cold?

A: Yes, death from hypothermia can occur in ultra-cold conditions like this, depending on both the degree to which someone is exposed to the cold and the amount of heat they're losing. People who are in wet clothing lose heat faster, for example. It can start with shivering but rapidly lead to confusion, change in consciousness and death.

Q: Are there any people who have a higher risk of cold-related problems?

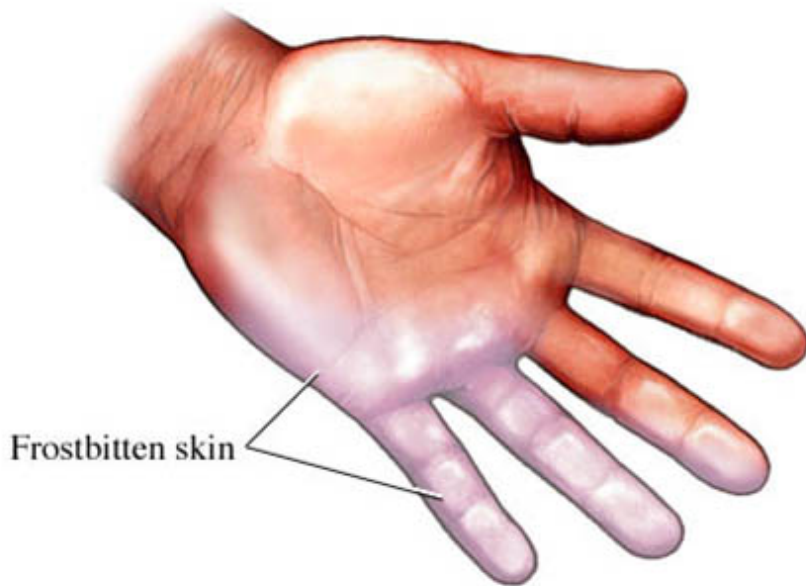
A: Yes, children and the elderly are just generally more susceptible to the effects of very cold weather, but there are also medications that can make you more vulnerable – if you take prescription drugs, ask your doctor or pharmacist if what you're taking can have this effect.

People who have reduced sensation in their hands, feet and other areas of the body — for example people with diabetes – can also be more at risk, because they can't feel the symptoms of cold-related damage as well.

Q: What about people whose work is outdoors, or who want to get outdoors for recreation?A: They can do this safely, as long as they take precautions and heed any warning signs of cold-related problems. Lots of layered clothing, protection of all skin, and avoiding exertion and sweating which can speed heat loss, are all important. If they need to use bare hands at all while outside, they need to be especially conscious of when to stop and warm up.

Q: So what signs should make you stop and head inside?

A: Tingling and an uncomfortable cold sensation, plus a change in color, are the biggest warning signs. Don't wait – if you start to feel these, get to a warm place. I've never treated a patient in the emergency department who thought they had actually stayed out past a safe point – they all thought they could beat it and could handle just a few more minutes. What's worse, progressing frostbite can numb the skin, making you unaware of the ongoing injury. If it feels too cold, if you're feeling discomfort of any kind, listen to your body and get inside.



This is weather we aren't familiar with, even for someone like me who was raised in a cold climate. When the temperatures and wind chills are this low, you can get so much colder so much faster. Don't end up being my patient!

Take the next step:

- Learn about [staying safe and healthy during cold weather from the CDC.](#)

(<http://uofmhealthblogs.org/wp-content/uploads/2014/01/frostbitten-skin.jpg>)

An illustration of the discoloration that can occur with frostbite

(<http://www.bt.cdc.gov/disasters/winter/duringstorm/outdoorsafety.asp>)

- Learn about [frostbite on UofMHealth.org.](http://www.uofmhealth.org/health-library/colde#aa54016) (<http://www.uofmhealth.org/health-library/colde#aa54016>)
- Read an [NBC news story about extreme temperatures featuring Dr. Uren.](http://usnews.nbcnews.com/_news/2014/01/27/22468739-at-risk-in-just-5-minutes-one-doctors-advice-on-the-extreme-cold) (http://usnews.nbcnews.com/_news/2014/01/27/22468739-at-risk-in-just-5-minutes-one-doctors-advice-on-the-extreme-cold)



(http://uofmhealthblogs.org/wp-content/uploads/2013/10/new_logos_180x1806.png) For more than 160 years, the [University of Michigan Health System](http://www.uofmhealth.org) (<http://www.uofmhealth.org>) has been a national leader in advanced patient care, innovative research to improve human health and comprehensive education of physicians and medical scientists. The three U-M hospitals have been recognized numerous times for excellence in patient care, including a #1 ranking in Michigan and national rankings in many specialty areas by U.S. News & World Report.

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