

Mom Was Right: Cold Winter May Put You in the Hospital



By Alex Berezow, PhD — July 5, 2017



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It's hard to admit that mom's nagging was correct more often than not. When she warned us that going outside in the cold would make us sick, she wasn't just being an overprotective helicopter parent. She was actually right.

Two years ago, a [study](#) [2] in *PNAS* showed that rhinoviruses* -- a very common cause of the common cold -- likes to grow in nasal passages. The reason is that, being exposed to the environment, the nose is colder than other parts of the body. Lower temperatures are beneficial to infectious microbes because our immune system does not perform well. For instance, when cold, our innate immune system produces less interferon, an important anti-viral defense molecule. Thus, viruses can infect us when our defenses are down.

That study provided a plausible biological mechanism to explain the folk wisdom that cold weather makes us sick. But is it really true? An epidemiological study provides further supporting evidence that, indeed, cold weather is bad for us.

A new paper in the *Journal of Public Health*, published by Oxford Academic, examined hospital admission rates in Suffolk County, UK in the winter (defined as December to March) from 2003/04 to 2012/13. The author, Stephen Patterson, correlated average temperature with hospital admission rates. He found that during cold winters, hospital admission rates increased by roughly 2%; emergency admission rates increased by 3% to 5%.

Because Mr. Patterson examined all-cause hospital admissions, it cannot be concluded that the increase was due only to respiratory infections. There are seasonal variations in deaths due to cardiovascular disease and accidents, and the frequency of these outcomes is also likely to differ

between cold and warm winters. For instance, we should expect more elderly people to fall down in colder winters due to ice.

Mr. Patterson's research is helpful for at least two reasons. First, public health officials and hospitals, particularly emergency departments, should be put on notice when unusually cold weather is forecasted. Second, this paper should provoke more research into the health effects of cold weather, which as Dr. Patterson indicated, are not as well studied as the health effects of hot weather.

On a separate but related note, any models that attempt to estimate the effect of climate change on human health should take data like this into account. More heat waves may be bad for our health, but fewer cold winters would be beneficial.

*Note: "Rhin" comes from the ancient Greek word for "nose," so a *rhinovirus* is literally a "nose virus."

Source ^[3]: Stephen Patterson. "Do hospital admission rates increase in colder winters? A decadal analysis from an eastern county in England." *J Public Health (Oxf)* 1-8. Published: 5-Jul-2017. doi: 10.1093/pubmed/fox076

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[2]

http://www.realclearscience.com/journal_club/2015/01/05/mom_was_right_catching_cold_in_the_cold_109008.html

[3] <https://academic.oup.com/jpubhealth/article-abstract/doi/10.1093/pubmed/fox076/3924915/Do-hospital-admission-rates-increase-in-colder>