

# Medical myths for the holiday season: True, false or unproven?

December 18 2008

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Does sugar make kids hyperactive? Do we lose most of our body heat through our head? Will eating at night make you fat? Do suicides increase over the holidays? Are poinsettias toxic? Hangovers cures, do they work? These are some of the common myths that are fictitious, according to an article in the Christmas issue published on [bmj.com](http://bmj.com) today.

In a study published in the Christmas 2008 issue of the British Medical Journal, Aaron Carroll, M.D., M.S., and Rachel Vreeman, M.D., M.S., of the Indiana University School of Medicine, explore the science behind six myths commonly associated with the holidays yet relevant year-round.

-- Sugar makes kids hyperactive.

- Suicides increase over the holidays.
- Poinsettias are toxic.
- You lose most of your body heat through your head.
- Eating at night makes you fat.
- You can cure a hangover with...

These beliefs are commonly accepted as true, not only by the general public, but also by many physicians. To the surprise of the authors, who are health services researchers with the Indiana University Center for Health Policy and Professionalism Research, the Regenstrief Institute, and Indiana Children's Health Services Research, they found all six myths to be false or unsupported by medical research.

**Does sugar make kids hyperactive?** This is without a doubt false, report Dr. Vreeman and Dr. Carroll, who are both pediatricians at Riley Hospital for Children. They write that "in at least 12 double-blinded, randomized, controlled trials, scientists have examined how children react to diets containing different levels of sugar. None of these studies, not even studies looking specifically at children with attention deficit-hyperactivity disorder, could detect any differences in behavior between the children who had sugar and those who did not." This includes sugar from candy, chocolate and natural sources. Even in studies of children who were considered "sensitive" to sugar, children did not behave differently after eating sugar-full or sugar-free diets.

But what is most amazing, says Dr. Carroll, is that in studies in which parents think their children have consumed sugar, parents rate their children's behavior as more hyperactive, even if in fact no sugar was consumed. "Obviously the differences in the children's behavior were all in the parents' minds," he says.

This doesn't mean that sugar is good for children, it only means that it doesn't make them hyperactive. "There are many good reasons for

parents to restrict their children's sugar consumption, including risks for obesity and cavities," Dr. Vreeman notes.

**Does the number of suicides increase over the holidays?** The holidays can bring out the worst in people, and the stresses of family get-togethers, loneliness, and the cold, dark winter months are commonly thought to increase the number of suicides at Yule time. But studies conducted around the globe show that, while the holidays may be a difficult time for some, there is no scientific evidence to suggest a holiday peak in suicides, according to Dr. Vreeman and Dr. Carroll. Furthermore, suicides are actually more common during warm and sunny times of the year.

They emphasize that suicidal thoughts should be taken seriously at all times.

**Are poinsettias toxic?** Dr. Vreeman and Dr. Carroll found that the largest study of poinsettia "toxicity" to date involved an analysis of 849,575 plant exposures reported to the American Association of Poison Control Centers. None of the 22,793 poinsettia cases revealed significant poisoning. No one died from poinsettia exposures or ingestions, and more than 96 percent did not even require treatment in a health care facility. Another study, looking at poinsettia ingestion by rats, could not find a toxic amount of poinsettia, even at doses which would be the human equivalent of consuming 500-600 poinsettia leaves or a pound and a half of the plant's sap. Dr. Vreeman cautions, though, that you should always call a poison control center if someone eats a plant not intended for consumption.

**Do you lose most of your body heat through your head?** Both Dr. Vreeman and Dr. Carroll assumed this one was true. After all, mothers have been repeating it for decades. But, in fact, it is not true.

They believe this myth likely originated with an old military study where scientists put subjects in arctic survival suits without hats and measured their heat loss in cold temperatures. They did lose the most heat through their heads, but only because it was the only bare part of their body.

Vreeman and Carroll found that more contemporary experts say that, had this same experiment been performed with subjects wearing only swimsuits, with much of their bodies exposed, the subjects would not have lost more than 10 percent of their body heat through their heads.

"Any uncovered part of the body loses heat and will drop the core body temperature proportionally," the IU researchers note. They recommend keeping all parts of the body warm when out in the cold, but the head does not require special attention. As pediatricians, they counsel parents to dress their children appropriately for the weather year round.

**Does eating at night make you fat?** Dr. Vreeman and Dr. Carroll write that at first glance, some scientific studies seem to support this idea. But just because obesity and eating more meals at night are associated, it does not mean that one causes the other. People gain weight because they take in more calories overall than they burn up. Eating more meals, and taking in more calories makes you gain weight regardless of when calories are consumed.

The bottom line, say Dr. Vreeman and Dr. Carroll, is that the time of day or night when one eats is irrelevant. People gain weight because they take in more calories overall than they burn, regardless of when these calories are consumed.

**Can one cure a hangover with... fill in the blank?** Both Dr. Vreeman and Dr. Carroll believed that neither "hair of the dog" or any other remedy could alleviate a hangover. And they were right. They found no scientific evidence supporting any cure for alcohol hangovers. A hangover is caused by excess alcohol consumption. Thus, the most

effective way to avoid a hangover is to consume alcohol only in moderation or not at all.

Why did they do this study? "Examining common medical myths reminds us to be cognizant of when evidence supports our advice [as physicians or as parents], and when we operate based on unexamined beliefs. This was not a systematic review of either the evidence to refute these medical myths or of doctors' beliefs. Nonetheless, we applied rigorous search methodology to compile data, and evidence of the prevalence of these medical beliefs is readily available. Only by investigation, discussion, and debate can we reveal the existence of such myths and move the field of medicine forward," they write.

In 2009, St. Martin's Press will publish their book *Don't Swallow Your Gum: Myths, Half-truths, and Outright Lies About Your Body and Health*. In the meantime, don't swallow your gum.

Provided by Indiana University

Citation: Medical myths for the holiday season: True, false or unproven? (2008, December 18) retrieved 23 April 2024 from

<https://medicalxpress.com/news/2008-12-medical-myths-holiday-season-true.html>

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