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Damage to a crucial nerve may trigger a taste for fats, sweets in some



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updated 11/12/2008 11:41:27 AM ET

Adults who struggle with a sweet tooth or battle a lifelong craving for bacon may have something more than weak willpower to blame — at least those with a history of chronic childhood ear infections.

A series of new studies presented this month by taste and hearing experts suggests that repeated infections may damage a vital taste-sensing nerve in kids, perking a preference for rich foods and making them prone to weight gain later.

People with a serious history of childhood [ear infections](#) appear to be about 70 percent more likely to be obese than those with no history of infections, according to preliminary research at the University of Florida College of Dentistry in Gainesville.

Worse, those who suffer harm to the crucial chorda tympani nerve — which runs through the tongue, along the side of the face and behind the eardrum on its way to the brain — may not realize why they can't stay away from the small indulgences that pack on pounds.

“They simply like high-fat and high-sweet foods better,” said Linda Bartoshuk, a scientist with the McKnight Brain Institute’s Center for Taste and Smell, housed in the University of Florida’s College of Dentistry. “The more you like food, the more you weigh.”

Bartoshuk and other scientists long have known that damage to the chorda tympani nerve makes people prefer sweet, salty and high-fat foods such as butter, bacon, salted pretzels, [ice cream](#) and Oreo cookies. When the nerve doesn’t work, two other nerves take over, but people are drawn to more intense flavors and textures, she explained.

But Bartoshuk and her team discovered the apparent link between bouts of ear infections — medically known as otitis media — and obesity after analyzing voluntary surveys submitted by more than 6,500 people who attended lectures on the science of taste over several years.

Participants were asked to record basic information about age, sex, height and weight as well as the intensity of their preferences for 26 different sweet, salty and high-fat foods. They also were asked whether they’d had ear infections as children, and whether those infections

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required serious treatment such as antibiotics or tubes.

The scientists pared the responses to 2,290 people who were older than 30 and had either no history of ear infection or a moderate to severe history of infection. The others were too young to be included or had only mild histories of ear infection.

Allure of food

Overall, about 17 percent of those with moderate to severe ear infections were obese, compared to about only 10 percent of those with no infection history, a 70 percent increase. An additional 35 percent of those with histories of infection were overweight, compared to about 31 percent of those without infections, a nearly 13 percent jump.

“We found that without question those with otitis media weighed more — and in many cases a great deal more — than those without,” Bartoshuk said. “If other people experienced the same allure of food, they’d be heavy, too.”

The researchers didn't actually confirm nerve damage in the participants. Instead, they asked people attending the lectures to taste slips of tissue paper treated with a bitter chemical to test how sensitive they were to the flavor.

More than 7.2 million children under age 18 are treated each year for ear infections, according to figures from the federal Agency for Healthcare Research and Quality (AHRQ). At least 9,000 are hospitalized for otitis media and related conditions each year.

Bartoshuk theorizes that the fluid and inflammation created by ear infections put the fragile chorda tympani nerve at risk. When the infections are repeated or severe, the nerve can be permanently injured.

Her work was bolstered by other studies presented at the recent annual conference of the American Psychological Association.

- A small study showed that 110 middle-aged women with apparent taste nerve damage preferred sweet and high-fat foods — and that those women had larger waists. “They liked bacon more and ham more,” explained John E. Hayes, a researcher at the Center for Alcohol and Addiction Studies at Brown University, who led the study while at the University of Connecticut. “These people also liked alcohol more.”
- Kathleen Daly, a scientist at the Otitis Media Research Center at the University of Minnesota also found that ear infections severe enough to be treated with tubes can lead to higher [body](#) mass index in toddlers.
- Finally, an analysis of health records of nearly 14,000 children in the early- to mid-1960s showed that those who had tonsillectomies, a once-common treatment for ear infections, were at greater risk of being overweight. Children ages 6 to 11 who had their tonsils out were about 40 percent more likely to be overweight, while teen girls were about 30 percent more likely to be heavy, said Howard Hoffman, director of the epidemiology and biostatistics program for the National Institute on Deafness and Other Communication Disorders.

Hoffman said the results are telling, especially because they showed a link between taste damage and weight gain even before the current boom in childhood obesity began.

“I think what we’re trying to show is that the effect may persist,” Hoffman said.

Some ear, nose and throat experts aren't so sure. Dr. Rich Rosenfeld, chairman of the

otolaryngology department at Long Island College Hospital in Brooklyn, N.Y., said the connection between ear infections and obesity is not at all clear from this research.

"It's interesting, but I don't think it's going to change the eating habits of millions of [toddlers](#)," Rosenfeld said. [Video: Healthy choices for kids](#)

Destined to be heavy?

For parents of babies and toddlers who get frequent ear infections, the new research is worrisome. Astacia Carter, 29, a mother of two from Puyallup, Wash., said her 3-year-old daughter, Alexa, has suffered infections severe enough to require drainage tubes — and she seems to prefer sweets.

"We're keeping a close eye on her because she's got a big appetite," Carter said. "She can spot a chocolate chip cookie from a mile away."

That approach is probably a good one, said scientists who warned parents not to overreact to the preliminary research.

"This isn't destiny," noted Hayes. "You aren't automatically cursed to be overweight."

Instead, parents should understand that the infections may damage their children's ability to taste, making them slightly more likely to gravitate toward treats. Knowing that, the grown-ups can be more vigilant about setting limits.

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