Research shows some people don't taste salt like others

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John Hayes, assistant professor of food science at Penn State and lead investigator of the study.

(PhysOrg.com) -- Low-salt foods may be harder for some people to like than others, according to a newly published study by a researcher in Penn State's College of Agricultural Sciences. The research indicates that genetics influence some of the difference in the levels of salt we like to eat.

Those conclusions are important because recent, well-publicized efforts to reduce the salt content in food have left many people struggling to accept fare that simply doesn't taste as good to them as it does to others, pointed out John Hayes, assistant professor of food science, who was lead investigator of the study.

Published in the latest edition of *Physiology & Behavior*, "Explaining

variability in sodium intake through oral sensory phenotype, salt sensation and liking" was a collaboration between Hayes and University of Connecticut professor Valerie Duffy. The research involved 87 carefully screened participants who sampled salty foods such as broth, chips and pretzels, on multiple occasions, spread out over weeks.

Test subjects were 45 men and 42 women, reportedly healthy, ranging in age from 20 to 40 years. The sample was composed of individuals who were not actively modifying their dietary intake and did not smoke cigarettes. They rated the intensity of taste on a commonly used scientific scale, ranging from barely detectable to strongest sensation of any kind.

"Most of us like the taste of salt. However, some individuals eat more salt, both because they like the taste of saltiness more and also because it is needed to block other unpleasant tastes in food," said Hayes. "Supertasters, people who experience tastes more intensely, consume more salt than do nontasters. Snack foods have saltiness as their primary flavor, and at least for these foods, more is better, so the supertasters seem to like them more."

However, "supertasters" also need higher levels of salt to block unpleasant bitter tastes in foods such as cheese, Hayes noted. "For example, cheese is a wonderful blend of dairy flavors from fermented milk, but also bitter tastes from ripening that are blocked by salt," he said. "A supertaster finds low-salt cheese unpleasant because the bitterness is too pronounced."

Hayes cited research done more than 75 years ago by a chemist named Fox and a geneticist named Blakeslee showing that individuals differ in their ability to taste certain chemicals. As a result, Hayes explained, we know that there is a wide range in taste acuity, and this variation is as normal as variations in eye and hair color.

"Some people, called supertasters, describe bitter compounds as being extremely bitter, while others, called nontasters, find these same bitter compounds to be tasteless or only weakly bitter," he said.

"Response to bitter compounds is one of many ways to identify biological differences in food preference because supertasting is not limited to bitterness. Individuals who experience more bitterness also perceive more saltiness in table salt, more sweetness from table sugar, more burn from chili peppers and more tingle from carbonated drinks."

Supertasters live in a neon food world, Hayes said; nontasters, on the other extreme, live in a pastel food world.

"Interestingly, nontasters may be more likely to add salt to foods at the table because they need more salt to reach the same level of perceived saltiness as a supertaster," he said. "However, most of the salt we consume comes from salt added to processed foods and not from the salt shaker."

This new research increases understanding of salt preference and consumption. Diets high in salt can increase the risk of high blood pressure and stroke. That's why public health experts and food companies are working together on ways to help consumers lower salt intakes through foods that are enjoyable to eat.

Currently, U.S. citizens consume two to three times the amount of salt recommended for good health. Hayes advises consumers to lower their salt intake by reading the food label and looking for products that contain fewer than 480 mg. of sodium per serving.

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