

Inability to Taste a Bitter Compound Linked to Obesity

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(PhysOrg.com) -- Whether or not you can taste a bitter compound called 6-n-propylthiouracil (or PROP) may help Professor Beverly Tepper identify your risk for becoming obese and/or developing cardiovascular disease.

Tepper is a professor in the Food Science Department at Rutgers' School of Environmental and Biological Sciences, and she's an American Heart Association-funded researcher. She recently received a Grant-in-Aid, which supports the most innovative, meritorious research projects of independent investigators, for a study entitled "Bitter Taste Phenotype, Diet and [Obesity](#) in Women."

The long-term goal of this work is to better understand how a common [genetic trait](#), the ability to taste PROP, might be linked via excess energy

intake to obesity and the risk of cardiovascular disease in women,” said Tepper, a Boston native who earned her master’s and Ph.D. degrees at Tufts University. She has worked at Rutgers since 1989.

Tepper’s research is examining whether the ability to taste PROP plays a role in how much and what kinds of foods you eat. This information may ultimately help physicians use PROP as a screening tool to identify individuals at risk for excessive weight gain due to dietary causes. This is significant, as obesity is a [heart disease risk](#) factor.

For this three-year study, Tepper’s first step is to determine a subject’s ability to taste PROP by giving them a piece of paper embedded with the compound. Participants are divided into three groups:

- If you’re a super-taster, you’re sensitive to PROP and your expression will give it away. You won’t be able to hide how hideous the PROP tastes to you.
- On the other hand, if you’re a non-taster, the PROP will simply taste like a piece of paper. You may wonder what the super-tasters are all worked up about.
- There’s also a middle category, identified as medium tasters.

About 25 percent of Caucasians are non-tasters; 50 percent are medium tasters; and 25 percent are super-tasters.

“We know from our previous studies that non-tasters tend to be heavier,” Tepper said. “But laboratories haven’t been able to demonstrate a difference in calorie or fat intake. Part of the issue is that it’s been self-reported, which tends to be biased. So we designed this study to bring people into the lab, where we can effectively measure what they’re eating.”

In Tepper’s sensory evaluation lab at Rutgers, participants are exposed to

a buffet-style eating situation. Tepper tracks how many calories the participants consume, as well as the types of food they choose. She also looks at whether non-tasters consume more added fats (i.e., salad dressings, mayonnaise) than medium- and super-tasters.

“I submitted this work to the American Heart Association because I want to understand the factors that influence body weight and obesity in women, since these are major [risk factors](#) for heart disease,” Tepper said. “If we had a relatively simple method to identify people who are at risk for obesity, that would be a major advance.”

Provided by Rutgers, The State University of New Jersey

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