

Vegetables may taste extremely bitter for those who inherit a certain gene, according to research by The American Heart Association.

Scientists call these people “super-tasters”. With a genetic predisposition to taste food differently, they are likely to experience extreme sensitivity to bitterness.

Scientists think this could explain why some people eat fewer - or entirely avoid - vegetables.

People with the “bitter gene” are 2.6 times more likely to eat fewer vegetables. This could make it more difficult for some to incorporate heart-healthy vegetables into their diet.

For example, dark greens like broccoli and cabbage are particularly difficult for these individuals to eat.

This is bad news for health as these kinds of veggies are often low in calories and high in fiber. The benefits they provide are important to a healthy diet, something crucial in a population with growing heart-health concerns.

What do genes have to do with it?

“Your genetics affect the way you taste, and taste is an important factor in food choice,” commented Jennifer Smith, study author and postdoctorate in cardiovascular science at the University of Kentucky School of Medicine.

In this case, the culprit is a mixture of two gene variants called AVI and PAV. Everyone receives two of these genes. About half of people get one of each, while the other half gets two copies of one or the other.

People who have both AVI and PAV are sensitive to bitter tastes while people with two copies of AVI are not. These two “taste genes” are variants of the gene called TAS2R38.

Study process

To carry out this investigation, researchers gave questionnaires to 175 people who averaged 52 in age and were 70% female.

They found that people with AVI and PAV gene variants experienced intense reactions to bitter compounds.

"We're talking a ruin-your-day level of bitter when they tasted the test compound," said Smith.

She added that people with the gene "may also react negatively to dark chocolate, coffee and sometimes beer".

What this means for the "super taster" population

Down the line, this research will be used to determine if there are certain vegetables that super-tasters accept. By finding what foods people with the gene will eat, doctors will be better equipped to make nutritional recommendations, said Smith.

In addition, food scientists are working to make certain vegetables less bitter, [said CNN](#). For instance, Brussels sprouts that we see in grocery stores today are much sweeter than those of the past.

Growers look for varieties of certain cruciferous veggies like arugula and kale which may reduce bitterness.

In that way, people who don't eat bitter vegetables might be more inclined to eat vegetables.

However, it's not just a question of making bearable tasting vegetables or findings kinds of vegetables that people won't reject. CNN spoke to University of Connecticut professor Valerie Duffy about the possibility of people with the gene eating more veggies.

"Just because somebody carries the two copies of the bitter gene doesn't mean that they can't enjoy vegetables," she was quoted as saying.

"Cooking techniques such as adding a little fat, a little bit of sweetness, strong flavors like garlic or roasting them in the oven, which brings out natural sweetness, can all enhance the overall flavor or taste of the vegetable and block the bitterness."

Researchers say that the role of genetics in taste will be important to research further as people's food preferences change. For now, identifying healthy substitutes for bitter vegetables is the goal of the research, according to Smith.

Also, finding other ways in which genes impact food choice and taste experience will be important, stresses the American Heart Association.