



Health/Science

Curbing the sweet tooth

Actually it's tongue receptors that an LI company's new tablet affects - which could help dieters, smokers

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An ingredient of a plant found in India that was used for centuries as a medicinal herb can block tasting by sweet receptors in the mouth. A Long Island company has developed a tablet that contains the ingredient in concentrated form, which can be sucked or chewed, and within less than a minute it makes all sweetness disappear for up to 30 minutes.

Why, one might ask, would someone want sweetness out of their lives, even temporarily?

George Kontonotas, president of Genotec Nutritionals Inc. in Commack, says it helps overweight people resist sugary snacks and removes the sweet taste from tobacco smoke.

He says cigarette manufacturers put at least 20 substances into cigarettes, including cloves and apple juice extract, to make smoking more palatable. When sweet receptors on the tongue cannot sense those tastes, "the true taste of tobacco is awful."

The taste-blocking effects of the active ingredient, gymnemic acid, have been known to scientists for some time, but the herbal tablet was introduced to stores in New York just last month.

"It is true that this substance blocks sweet tastes," said Lawrence Marks, director and fellow of the John B. Pierce Laboratory and professor of epidemiology and psychology at Yale University. The herbal substance, he added, "appears to be safe." But as with every substance, moderation is the key, he said.

Taste science is big business, said Danielle Reed, an associate member of the Monell Chemical Senses Center in Philadelphia. She helped identify sweet receptors in 2001. There are five families of receptors that respond to taste: sweet, bitter, salty, sour, and the new kid on the block, Reed said, savory, the stuff of MSG.

Gymnemic acid seems to impede sweetness perception by blocking the signals that go from the receptors on the tongue to the brain. People who use the tablet are temporarily "sweet-blind," said Reed, who looks for genes that contribute to taste perception.

Several plants play similar tricks on the senses. Linda Bartoshuk, a professor in the college of dentistry at the University of Florida in Gainesville, worked on an African berry called miraculin. The berry was brought back from the tropics of West Africa in the 1950s by Lloyd Beidler, a late professor of biophysics at Florida State University in Tallahassee.

At the time, the berry was thought to turn sour into sweet. But it was Bartoshuk who eventually proved that it was not sour flavor that it acted on, but all sense of taste - so that any flavor would taste sweet. People called it the Miracle Fruit, turning bland foods into sweet delicacies, but efforts to commercialize it were not successful.

Genotec Nutritionals has called its herbal preparation Sugarest. It can be found in other supplements as a diet aid to control blood sugar, said Dr. Joseph Freedman, head of research for the Long Island company. But Genotech is the first to use it in a concentrated dose to block the taste of sugar.

"People think it's a parlor trick," Freedman said. Receptors on the tongue for salty, sour and bitter are not affected. In other words, a pretzel still tastes like a pretzel.

In India, the Hindi name for gymnemic acid is gurmar, which means "sugar destroyer."