

Scientific evidence reveals that the brain perceives taste with all senses

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Dr. Alfredo Fontanini looks at slides of the gustatory cortex, the part of the brain that mediates the perception of taste. Credit: Stony Brook University

The phrase "it looks so good you can almost taste it" may actually be scientifically proven based on the findings of a new study by Stony

Brook University researchers that explored how the brain processes stimuli predicting taste. They discovered that the gustatory cortex, the part of the brain that mediates the conscious perception of taste, relies on all the senses to anticipate taste. The overall results, published early online in eLife, change the way neuroscientists think about the role of the gustatory cortex.

"We found that the gustatory cortex receives information from all the senses, not just [taste](#)," said Alfredo Fontanini, MD, PhD, Associate Professor in the Department of Neurobiology and Behavior, a co-author of the study along with Roberto Vincis, a [postdoctoral fellow](#) in the department. He summarized that "Not all the non-gustatory stimuli are equally effective in activating the gustatory cortex, those that can easily be linked to taste tend to recruit more neurons. Olfaction is particularly effective."

In the paper, titled "Associative learning changes cross-modal representations in the gustatory cortex," the investigators concluded that the gustatory cortex' ability to represent stimuli of multiple modalities is greatly boosted by learning that they can predict taste.

Provided by Stony Brook University

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