


VOICE OF THE EXPERTS:

## 9 FACTORS INFLUENCING TASTE PERCEPTION



Do you ever wonder why your food tastes different some days than others? From an individual's age to the temperature of the food or drink, there are many factors that can alter taste perception. Considering these variables is a crucial step when evaluating and developing new products as it helps to ensure accurate sensory and benchtop tasting results.

Read on to learn the 9 key factors of taste perception from Katie Buss, Principal Scientist - Sensory, and Ashley Rakow, Senior Scientist II, and find out how you can develop a crave-worthy product for your consumer.



“ We're really using all of our senses when we're tasting. While you may think you're just engaging taste — aroma, texture, appearance, and sound impact our ability to describe the overall taste experience. ”

KATIE BUSS, PRINCIPAL SCIENTIST - SENSORY

There's more to taste than meets the tongue —

*Let's take a look at the factors influencing taste perception.*



### 1. AGE

As you age, taste discrimination tends to decrease. Around age 45, taste buds begin to degenerate, and in your late 50s, taste loss becomes apparent, with sour perception less affected than the other tastes. In fact, in the elderly, taste thresholds for sweet, salt and bitter are 2.5 times higher than in younger consumers. To put in perspective, at age 20 or 30, you might only need one teaspoon of sugar in your coffee, and at age 75 you may need three teaspoons of sugar to get the same perceived sweetness.

### 2. HUNGER

Whether you're overly hungry or satiated, your preference and discrimination abilities are often compromised. Hunger affects how food tastes by making consumers more sensitive to sweetness and saltiness, meaning those foods and beverages will often taste more impactful. This can be a downfall of many dieters as they reach for sweet or salty foods which may not be the healthiest options. Bitterness perception, however, is not affected by hunger.

### 3. MEAL TIMING & CHOICE

Meal timing and choice also plays a role in taste perception. Depending on the meal, sensitivity is reduced for between one and four hours after eating or drinking. For example, a spicy/hot meal such as enchiladas will have a greater effect than a bland meal such as oatmeal and milk.

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### 4. SMOKING

Smoking can damage nerve endings responsible for our sense of smell and taste. When smoking, taste buds come in contact with chemical compounds that decrease the taste buds' ability to register salty, sweet, sour and bitter tastes. But in as few as 2 days after quitting, these nerves begin to heal and a person may experience that their sense of smell and taste is stronger than before.

### 5. TASTE EXPERIENCES


Consumer taste experiences that are influenced by genetics, location, cultural differences, commonly consumed flavors, dishes and more can impact taste perception. Due to this, you may be more sensitive to certain tastes and flavors than another individual.

**Some consumers taste certain flavors, food and beverages much more strongly than others. These 'supertasters' generally have a different genetic makeup with more tastebuds and receptors than the average person. This makes them often more sensitive to bitter flavors specifically.**

### 6. HEALTH STATUS

The status of your health and a variety of health conditions from the common cold to pregnancy, anorexia and more can also impact your taste. When suffering from a cold, individuals frequently complain that they have lost their sense of taste. In reality, they have lost their sense of smell. Obstruction of air passages reduces olfactory perception, a key component of how we taste.

During pregnancy, nearly two-thirds of women experience changes in taste. Pregnant women have also been found to have a reduced sensitivity to salty tastes, which may be the body's way of ensuring increased salt intake during pregnancy. In addition, people with cancer and anorexia have reduced taste sensitivity as the result of their compromised physical condition. Cancer patients have reported that taste changes return to normal after treatment is completed.

A close-up photograph of a woman with dark hair, seen in profile from the nose down, holding a cupcake with white frosting and a nut on top. She is looking down at the cupcake with a slight smile, appearing to be smelling it. The background is softly blurred.

“ Identifying a flavor, or its nuances, has more to do with the aroma and our nose than what we perceive as taste on our palate. Research shows that around 80% of what we taste actually comes from smell. ”

ASHLEY RAKOW, SENIOR SCIENTIST II

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### 7. TEMPERATURE

Taste buds can be impacted by both high and low temperatures. Increasing temperature appears to increase the response to sweetness and decrease it to saltiness and bitterness. Decreasing temperature appears to increase the response to bitterness and decrease the response to sourness.

### 8. ADAPTATION

Adapting to taste reduces sensory acuity, or how sensitive a person is to a certain taste, thus preventing you from detecting differences between stimuli. Therefore, the order in which you taste samples during a sensory test is important. Tasting a strong sample, then a weak one results in adaptation. The opposite order, first weak then strong, should not affect taste sensitivity. With short waits between samples (three minutes or so), most effects of adaptation should dissipate. There are almost no issues when two stimuli have different taste qualities.

### 9. TASTE MEDIUM

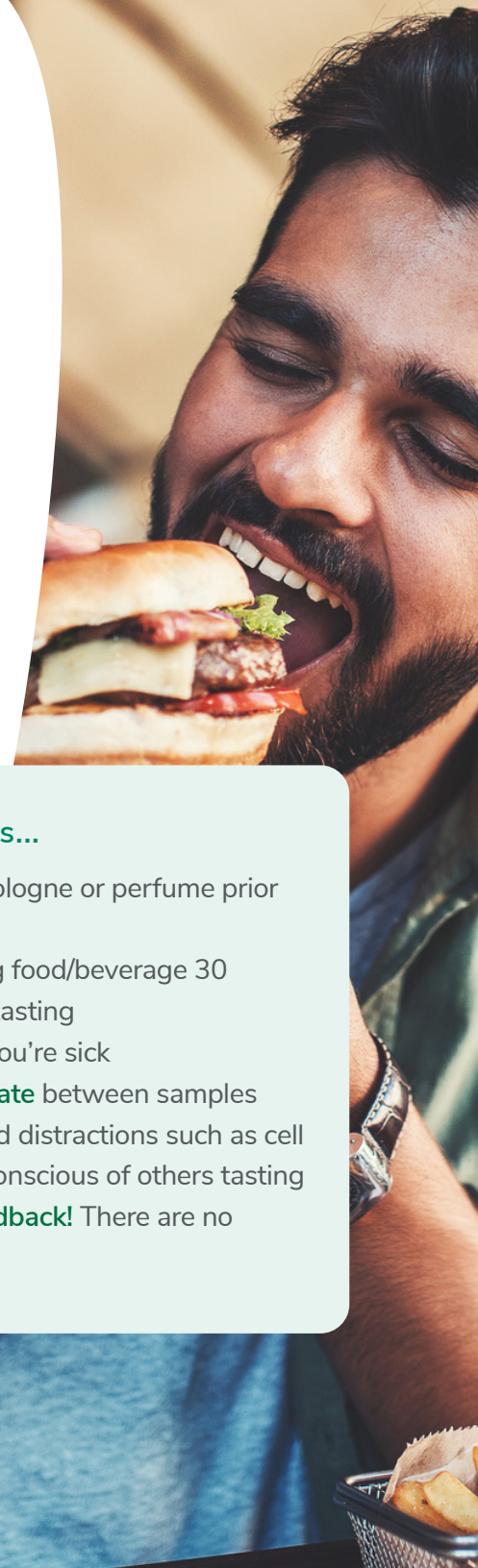
The medium in which you are tasting plays a role in how you taste. In fact, the taste buds can only detect flavors that are dissolved with moisture. You cannot taste a dry substance with a dry tongue. And generally, increased viscosity reduces tastes sensitivity, meaning it's easiest to detect tastes in liquid state, harder in foams and more difficult in gels. This explains why water is the best medium for sensitivity tests.

“Taste experience varies from person to person. Ensuring you have reliable and robust sensory results is important for product development. Your flavor partner can help guide you when considering these factors.”

KATIE BUSS, PRINCIPAL SCIENTIST - SENSORY

### A few tasting tips...

- **Avoid** wearing cologne or perfume prior to tasting
- **Avoid** consuming food/beverage 30 minutes prior to tasting
- **Avoid** tasting if you're sick
- **Cleanse your palate** between samples
- **Be Present!** Avoid distractions such as cell phones and be conscious of others tasting
- **Give specific feedback!** There are no wrong answers



Our flavor and product development experts can help you find the solution that works best for your product. From concept to manufacturing, we're here every step of the way. Reach out for more or request a sample today!

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