

## Four... or more tastes?

### SWEET, SOUR, SALTY, BITTER

Do you know how many tastes there are? It may seem like a boring question, but in fact the number of basic tastes has changed over the course of history. At the end of the 19<sup>th</sup> century, most scientific discourses put forward 4 tastes: **sweet**, **sour**, **salty** and **bitter**.



**SWEET**



**SOUR**



**SALTY**



**BITTER**



**UMAMI**

We are all familiar with ingredients that produce these tastes.

Ordinary sugar – sucrose – gives cakes their sweet taste. Table salt extracted from the sea or salt mines and added to the food we cook, makes it taste salty. Lemon juice and vinegar make salad dressings taste sharp. The caffeine in coffee makes it taste bitter.

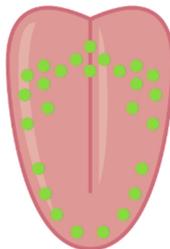
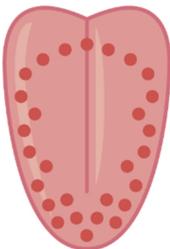


**SWEET**



**BITTER**

The areas of the tongue sensitive to these 4 tastes have also been subject to much debate. For a long time, researchers believed that each taste was registered by a specific area of the tongue. Today we talk about a continuum – the basic tastes can be perceived at different places on the tongue to a greater or lesser extent.



For example, bitterness is perceived more intensely at the back of the tongue, while sweet food is best perceived at the tip of the tongue.

### UMAMI

In 1908, Japanese scientist Kikunae Ikeda put forward a fifth basic taste known as **umami**, which means ‘tasty’ in Japanese.

**Keywords > Umami: tasty in Japanese**

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Umami corresponds to the chemical molecule he had isolated. This was sodium glutamate, which is found in numerous Asian dishes. Umami became the fifth basic taste as of 1980.

## DO NOT CONFUSE TASTE AND AROMA

There is a particularly intense debate around the 'fatty' taste, but it still has not been added to the list of five basic tastes. The hypothesis is that fat is recognised by its unctuous texture and aroma rather than its taste.

In everyday language, we tend to talk of a strawberry or vanilla 'flavour'. These sensations are due to olfactory experiences. When you chew food, it gives off volatile molecules which are conveyed through the mouth towards the nose. So strictly speaking, we should actually talk about a strawberry 'aroma' and say that strawberries have a 'sweet' taste.

## TRIGEMINAL SENSATIONS

We also experience what are known as 'trigeminal' sensations – refreshing, spicy or burning. These are also chemical perceptions coming from certain molecules such as the capsaicin in peppers.

These sensations are conveyed by the trigeminal nerve to the brain. It connects to the oral and nasal cavities and beneath the skin on the face and a part of the eye. This is why chilli peppers may cause a burning sensation in the mouth, why pepper sometimes makes us want to sneeze and onions make us cry.

## Four... or more tastes?

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Fill in the missing word: sweet, salty, sour...

- intense
- bitter
- rough

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Sweet, salty, bitter and sour are...

- aromas
- tastes
- flavours

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Is there a fifth basic taste?

- Yes
- No

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What is the fifth basic taste called?

- Gurido
- Aketo
- Umami

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Where was umami discovered?

- China
- Japan
- Indonesia

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The intensity of a taste varies between different parts of the tongue.

- True
- False

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Where is bitterness perceived the most intensely?

- On the tip of the tongue
- On the back of the tongue

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When we talk about the flavour of food, we are referring to its...

- taste
- quality
- aroma

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Refreshing, hot and spicy are...

- trigeminal sensations
- trigremlin sensations
- trigentle sensations

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Which of these foodstuffs makes us feel like sneezing?

- Chilli
- Pepper
- Onions

## Answers

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Fill in the missing word: sweet, salty, sour...

- intense**  
*Wrong! That's not the right answer.*
- bitter**  
*Well done! That is correct!*
- rough**  
*Wrong! Try again!*

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Sweet, salty, bitter and sour are...

- aromas**  
*Wrong! Your tongue does not perceive aromas.*
- tastes**  
*Well done! Your tongue perceives the basic tastes.*
- flavours**  
*Wrong! That's not the right answer.*

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Is there a fifth basic taste?

- Yes**  
*Well done! The fifth basic taste was discovered in 1908.*
- No**  
*Wrong! There are actually five basic tastes!*

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What is the fifth basic taste called?

- Gurido**  
*Wrong! Try again!*
- Aketo**  
*Wrong! Try again!*
- Umami**  
*Well done! That's right. It means tasty in Japanese.*

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Where was umami discovered?

- China**  
*Wrong! Try again!*
- Japan**  
*Well done! This is why this basic taste has an exotic name.*
- Indonesia**  
*Wrong! That's not the right answer.*

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The intensity of a taste varies between different parts of the tongue.

- True**  
*Well done! That's right!*
- False**  
*Wrong! Try again!*

---

Where is bitterness perceived the most intensely?

- On the tip of the tongue**  
*Wrong! Try again!*
- On the back of the tongue**  
*Well done! That's right!*

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When we talk about the flavour of food, we are referring to its...

- taste**  
*Wrong! Sweet, bitter, etc. are basic tastes.*
- quality**  
*Wrong! That's not the right answer.*
- aroma**  
*Well done! When we talk about a strawberry flavour, we are referring to an olfactory experience. We should really talk about a strawberry aroma.*

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Refreshing, hot and spicy are...

- trigeminal sensations**  
*Well done! These sensations are transmitted by the trigeminal nerve.*
- trigremilin sensations**  
*Wrong! Try again!*
- trigentle sensations**  
*Wrong! That's not quite right.*

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Which of these foodstuffs makes us feel like sneezing?

- Chilli**  
*Wrong! Chilli pepper produces a burning sensation.*
- Pepper**  
*Well done! That's right!*
- Onions**  
*Wrong! Onions often make us cry.*