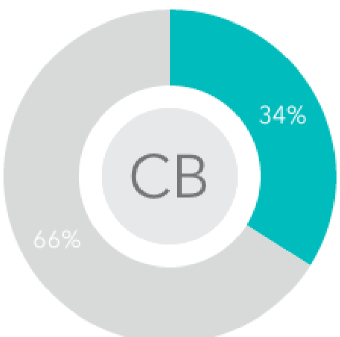
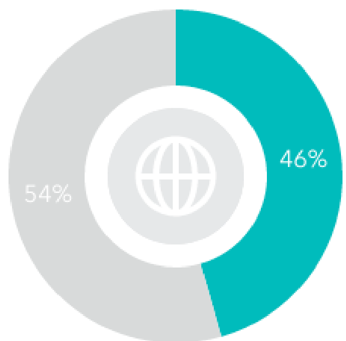
Taste

Do you have a "sweet tooth" or do you prefer salty snacks? Genes play a large role in determining your food preferences, from sweet to salty to bitter.

Cordell, you are likely to not taste certain bitter compounds.

66% of customers who are genetically similar to you do not taste certain compounds as bitter.





Your genetic likelihood	
Can taste	34%
Can't taste	66%

European ancestry customers	
46%	Can taste
54%	Can't taste

We analyzed your DNA at one genetic marker that studies have shown is associated with the ability to detect certain bitter compounds. Your prediction is based on data from 23andMe customers who consented to research and are genetically similar to you at this marker.

About Bitter Taste Perception

Some people perceive extreme bitterness when they taste certain compounds known as PROP and PTC, which are similar to compounds found in certain vegetables like broccoli or Brussels sprouts. Other people perceive these compounds as completely tasteless.

Biology

How you perceive bitter flavors depends on taste receptors on your taste buds. This variant is in a gene for one of these receptors, called TAS2R38. Variations in other taste receptor genes can also affect your perception of bitter and other flavors.

History

In the 1930s, a chemist named A. L. Fox was preparing a compound called PTC when a nearby chemist noticed bitterness in the air. Fox tasted nothing, but after asking others, the dramatic difference between bitter tasters and non-tasters was discovered.

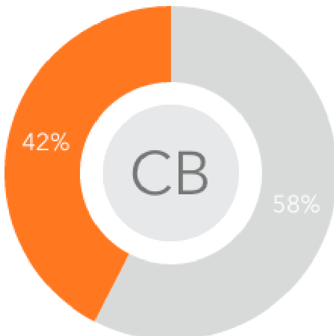
Other factors

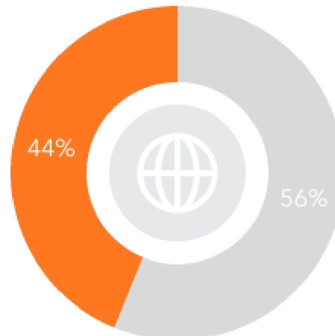
There are more interesting things to learn about the ability to perceive bitter compounds.

- Food preference >
- Variety of taste >
- Neanderthals >

You are likely to prefer salty or savory snacks.

58% of customers who are genetically similar to you prefer salty or savory snacks.





Your genetic likelihood	
Prefers salty	58%
Prefers sweet	42%

European ancestry customers	
56%	Prefers salty
44%	Prefers sweet

This prediction best applies to customers of European descent. We analyzed data from over 120,000 customers who consented to research in order to identify genetic markers associated with sweet taste preference. Our prediction is based on your genotype at 43 genetic markers as well as your age and sex.

About Sweet Taste Preference

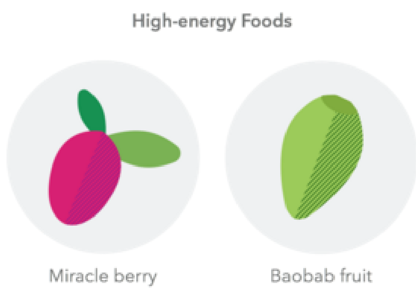
Some people tend to reach for something sweet when they have a craving, while others prefer salty or savory snacks.

Biology

Our mouths contain receptors that detect compounds associated with being sweet. But whether our brains actually perceive these tastes as pleasurable depends on both our genes as well as life experiences.

Evolution

Scientists theorize that preferences for sweet tastes evolved to encourage consumption of high-energy foods such as fruits and nectar. On the other hand, salty taste preference appears to have more of a cultural basis than an evolutionary one.



Other factors

Learn sweet facts about your taste preferences.

- Age and sex >
- Stress >
- Genetics >

Do more with your Traits results.

Help us develop more trait reports by contributing to research.

Contribute

Compare your results to your family and friends.

Compare

Join the discussion with other 23andMe customers interested in Traits.

Discuss

Ⓟ Patent Pending

Your Sense of Taste and Smell

Scientific Details

Methodology   About Your Results   References

We use two different methods to calculate your trait results.

Statistical Model

Most traits are influenced by many different factors, including genetics, lifestyle, and environment. Usually, a statistical model using many factors provides better predictions than looking at single factors by themselves. To develop our models, we first identify genetic markers associated with a trait using data from tens of thousands of 23andMe customers who have consented to research. Then, we use statistical methods to generate a "score" for that trait using your genotype at the relevant genetic markers as well as your age and sex. We predict your likelihood of having different versions of the trait based on the survey responses of 23andMe customers with similar scores. These predictions apply best to customers who are of the same ethnicity as the people whose data contributed to the model. The accuracy of these predictions varies from trait to trait.

Read more about our statistical methodology

Curated Model

For some traits, just a few genetic markers can strongly predict whether a person will have a particular version of the trait. For curated models, we first evaluate published scientific studies to identify genetic markers with well-established associations with the trait. Then, we look at genetic and survey data from tens of thousands of 23andMe customers who have consented to research. We estimate your likelihood of having different versions of the trait based on survey responses from customers who are genetically similar to you at those markers. These results apply best to customers who are of the same ethnicity as the people whose data contributed to the predictions.

About your Bitter Taste result

Your result for this trait was calculated using a **curated model**.

Variants Detected	View All Tested Markers
0	1

Marker Tested	Your Genotype*	Additional Information
A49P Gene: TAS2R38 Marker: rs713598	**Not determined**	> **Biological explanation** > **Typical vs. variant DNA sequence(s)** > **Percent of 23andMe customers with variant** > **References** [1, 3, 9, 12]

*This test cannot distinguish which copy you received from which parent. This test also cannot determine whether multiple variants, if detected, were inherited from only one parent or from both parents. This may impact how these variants are passed down.

23andMe always reports genotypes based on the 'positive' strand of the human genome reference sequence (build 37). Other sources sometimes report genotypes using the opposite strand.

About your Sweet Taste Preference result

Your result for this trait was calculated using a **statistical model**.

About the Sweet Taste Preference model

Created based on customers of ethnicity: European
Number of customers used to create: 120,000
Number of markers: 43
Area Under Curve (AUC): 0.58
Non-genetic factors: Age, Sex

Bin #	Prefers salty	Prefers sweet
1	70.56%	29.44%
2	66.30%	33.70%
3	63.65%	36.35%
4	62.38%	37.62%
5	60.60%	39.40%
6	60.17%	39.83%
7	59.49%	40.51%
8	58.22%	41.78%
9	57.60%	42.40%
10	57.21%	42.79%
11	55.99%	44.01%
12	53.65%	46.35%
13	53.93%	46.07%
14	51.75%	48.25%
15	50.90%	49.10%
16	50.17%	49.83%
17	49.32%	50.68%
18	48.41%	51.59%
19	44.16%	55.84%
20	41.45%	58.55%
Overall European	55.80%	44.20%

References

1. Bufe B et al. (2005). "The molecular basis of individual differences in phenylthiocarbamide and propylthiouracil bitterness perception." Curr Biol. 15(4):322-7.

2. Eriksson N et al. (2010). "Web-based, participant-driven studies yield novel genetic associations for common traits." PLoS Genet. 6(6):e1000993.

3. Genick UK et al. (2011). "Sensitivity of genome-wide-association signals to phenotyping strategy: the PROP-TAS2R38 taste association as a benchmark." PLoS One. 6(11):e27745.

4. Grunberg NE and Straub RO. (1992). "The role of gender and taste class in the effects of stress on eating." Health Psychol. 11(2):97-100.

5. Guo SW and Reed DR. (2001). "The genetics of phenylthiocarbamide perception." Ann Hum Biol. 28(2):111-42.

6. Hayes JE et al. (2013). "Do polymorphisms in chemosensory genes matter for human ingestive behavior?" Food Qual Prefer. 30(2):202-216.

7. Hladik CM et al. (2002). "New perspectives on taste and primate evolution: the dichotomy in gustatory coding for perception of beneficent versus noxious substances as supported by correlations among human thresholds." Am J Phys Anthropol. 117(4):342-8.

8. Keskitalo K et al. (2007). "Sweet taste preferences are partly genetically determined: identification of a trait locus on chromosome 16." Am J Clin Nutr. 86(1):55-63.

9. Kim UK et al. (2003). "Positional cloning of the human quantitative trait locus underlying taste sensitivity to phenylthiocarbamide." Science. 299(5610):1221-5.

10. Lalueza-Fox C et al. (2009). "Bitter taste perception in Neanderthals through the analysis of the TAS2R38 gene." Biol Lett. 5(6):809-11.

11. Lison M et al. (1980). "A polymorphism of the ability to smell urinary metabolites of asparagus." Br Med J. 281(6256):1676-8.

12. Mennella JA et al. (2005). "Genetic and environmental determinants of bitter perception and sweet preferences." Pediatrics. 115(2):e216-22.

13. Mennella JA et al. (2014). "Preferences for salty and sweet tastes are elevated and related to each other during childhood." PLoS One. 9(3):e92201.

14. Mitchell SC. (2001). "Food idiosyncrasies: beetroot and asparagus." Drug Metab Dispos. 29(4 Pt 2):539-43.

15. Pelchat ML et al. (2011). "Excretion and perception of a characteristic odor in urine after asparagus ingestion: a psychophysical and genetic study." Chem Senses. 36(1):9-17.

16. Wooding S et al. (2004). "Natural selection and molecular evolution in PTC, a bitter-taste receptor gene." Am J Hum Genet. 74(4):637-46.

17. Wooding S. (2006). "Phenylthiocarbamide: a 75-year adventure in genetics and natural selection." Genetics. 172(4):2015-23.