

Why do sour sweets make your mouth pucker?

From the sweeties.net wiki

Bite into a really sour sweet and your face screws up, your eyes squeeze and your mouth fills with saliva. It is not just a reaction to a strong flavour. Your body is responding to acid, and it has a clever way of doing it.

Sour means acid

Sourness is the taste of acidity. Every acid releases hydrogen ions, tiny charged particles that are the key part of what makes something acidic, and your tongue senses those as sour. Fruit such as lemons, limes and oranges, and fermented foods such as vinegar and yoghurt, are sour for this reason.

Sour sweets get their sourness from added acids. Citric acid and malic acid are the usual ones, and some sour sweets are rolled in sour sanding, a mix of sugar with citric, tartaric and malic acids: see [what is citric acid in sweets?](#) and [what is malic acid in sweets?](#)

Not all acids are equally sour. Scientists rate sourness against dilute hydrochloric acid, which has a score of 1. Tartaric acid scores 0.7, citric acid 0.46, and carbonic acid, the acid in fizzy drinks, just 0.06. Malic acid is sourer than citric acid, which is why it is used in very sour sweets.

How your tongue senses it

Sour taste is picked up by a small group of cells, called Type III taste cells, found in every taste bud. The hydrogen ions from an acid flow straight into these cells through a channel called otopenin 1, or OTOP1. The channel was identified in 2018 by a team led by Emily Liman at the University of Southern California, who narrowed about 40 candidate genes down to this one.

As the positive charge flows in, the cell fires and sends a signal to the brain that you read as sour. The same sour cells also sense the carbon dioxide in fizzy drinks and sherbet: see [why do fizzy sweets fizz on your tongue?](#)

The same channel turned up in another sweet story in 2023. Liman's team found that ammonium chloride, the salt in Nordic salty liquorice, is a strong activator of OTOP1, and suggested the taste of ammonium chloride could count as a sixth basic taste.

Why your mouth puckers

Along with the pucker comes a rush of saliva, and that part has a clear purpose. When something acidic enters your mouth, your salivary glands go into high gear and flood it with saliva, to neutralise the acid and protect the enamel on your teeth.

That protection matters, because acids really can harm teeth. Long term or repeated consumption of citric acid may cause erosion of tooth enamel, and some very sour sweets made with malic acid carry a warning that eating too many can irritate your mouth.

Why children love it

Children show a greater enjoyment of sour flavours than adults, and sour sweets made with citric acid or malic acid are common.

Earn rewards on sweeties.net

Earn loyalty points on every order. Free to join.

+100 pts

Create your free account

Welcome bonus + earn on every order.



100 pts = 1 tree

Plant a tree in Scotland

Pledge points to our reforestation partner.



sweeties.net · Tunbridge Wells, Kent · hello@sweeties.net · 3-click cancel at sweeties.net/cancel/