

Science Fair Log Book

Topic Ideas:

How does stress affect your body temperature?

Does age affect your taste bud sensitivity?

Can you relight a candle without a new match?

(December 29, 2024)

References

What I learned from this source that will help me:

<https://www.uhhospitals.org>

- As you get older your taste buds become more sensitive

<https://medlineplus.gov>

- Your taste buds decrease

<https://www.mayoclinic.org>

- You can't really stop the loss of taste and smell. It comes naturally as you grow older.

(December 28, 2024)

Introduction

Have you ever wondered why your grandpa or grandma always say that chocolate is too sweet for them when you offer or oranges are too sour?

Well the reason for that is their taste buds. Everyone knows that usually when you age, you start to lose some of your senses. Like old people have to get hearing aids because their ears don't work as well, or they have to get glasses because they can't see very far. But does that also apply for taste too? Studies show that as you get older, not only do you lose some of your taste buds but they also get smaller as well. And because of that, older people can't taste as vibrant as a kid. Today I am going to tell you about the 5/6 different taste groups: Sweet, sour, bitter, salty, and umami or savory.

Question

Does Age Affect Taste Bud Sensitivity? I want to figure this out to tell everybody to take care of your health in your youth so that in the future you won't have so many gadgets to just live a normal life. I will be conducting a series of experiments on the different ages trying the 5 different taste groups and then filling out a survey to compare and contrast how each of them react to different tastes.

Background Research

First of all, every project has to start with background research. Background research helps you get information on your topic before doing it. This gives you an understanding on your topic. Without background research it would be hard to know what your project is about. This is why it is one of the most important parts of the scientific method. My project also needs background research as well. Before I start my experiment I need to know more about the 5 basic taste groups. Because if I don't know exactly what I'm looking for in the surveys when I give them, then my experiment won't be as scientifically accurate as it could be.

(December 29, 2024)

Sweet

One of the most common favorite tastes among kids is sweet stuff. Things like chocolate (kitkat, smarties, m&ms), candy (rockets, lollipops, nerds), and syrups (honey, maple syrup) are very attractive to the eyes of most kids. Research shows that in 2004, Canadians 1 year and older would eat 110 grams (26 teaspoons) of overall sugars on an average daily basis. Which is approximately 20% of their total energy intake. Sugars are a carbohydrate that is mainly found in fruit, milk, and

vegetables. When you taste something sweet it activates your sweet receptors, letting you taste it.

Sour

If your not a huge fan of sweets, then you definitely would like sour stuff! Sourness can either be loved by people, or be hated. Sour candies are very popular, because they bring a tangy twist to your average sweets. When people tried to make sour candies, they originally came up with sour fruits. Ancient Greeks used pomegranate, limes, lemons, and even vinegar to try and make some overly sweet treats just right.

Bitter

Was there ever a time when you were a little kid and you saw your mom or dads morning coffee and you thought it looked good? So you decide to give it a taste and find out it tastes horrible, like it doesn't have any sugar in it at all. Well that taste is called bitter. People -usually kids- hate the bitter taste. Things like coffee, mustard, and grapefruits have a very bitter taste. The bitter flavor is like a sharp, pungent, flavor. Some

adults actually like that flavor, that's why you might see people drinking black coffee, meaning without any sugar or cream.

Salty

Have you ever played the sugar, salt spoon game, and you got the salt? And that salty, disgusting flavor got to you and you just want to spit it out. That's what a very salty flavor is. The salty flavor can be described as bitter or tangy in a savory way. When you taste salt the ion channels on the cells in our body which are sensitive to salt particles that are very small. But they're big enough to let the small sodium and chloride ions through. But not a lot else including most dissolved salts.

Umami/Savory

While sour treats and sweet confections are delicious, there's one taste group that no one can dislike: Savory. Umami or savory foods basically make up the 5 main food groups. Have you ever had cupcakes for dinner, or lemons? No, because real nourishing foods like pasta, chicken, or lasagna all have something in common. They're all savory. The savory flavor is like a meatish type flavor that everyone likes.

Hypothesis

Every science project has a hypothesis. A hypothesis is a guess, or an estimation on what the outcome of your project will be. After researching on my project I have to make a hypothesis. My hypothesis is that if age affects taste bud sensitivity, then older people will taste less vibrant and have more controlled, collected answers than a child, because as you get older, you lose your taste buds and they also contract. The reason why I think this is because older people's taste buds are old as well and they can't taste as well as a 5 year old kid's newly developed taste buds.

(January 12, 2025)

Variables and Hypothesis

Independent/Responding variable: How the different ages react to the 5 divergent taste groups.

Dependent/Manipulated variable: The different ages.

Controlled: Type of things they will be tasting, Gender (2 tests for boys and 2 for girls), all samples will be liquids, same questions will be asked, temperature of the samples (room temperature).

Analysis

Results (Average)

(0-10)

Sweet: 9-10, Enjoyed: 6-7

Sour: 9-10, Enjoyed: 2-3

Bitter: 9-10, Enjoyed: 3-4

Salty: 10, Enjoyed: 1

Umami: 9-10, Enjoyed: 6-7

(11-20)

Sweet: 5-6, Enjoyed: 6-7

Sour: 7-8, Enjoyed: 4-5

Bitter: 5-6, Enjoyed: 2-3

Salty: 3-4, Enjoyed: 6-7

Umami: 6-7, Enjoyed: 7-8

(21-30)

Sweet: 8-9, Enjoyed: 5-6
Sour: 6-7, Enjoyed: 4-5
Bitter: 8-9, Enjoyed: 2-3
Salty: 5-6, Enjoyed: 6-7
Umami: 7-8, Enjoyed: 3-4

(31-40)

Sweet: 7-8, Enjoyed: 8-9
Sour: 7-8, Enjoyed: 3-4
Bitter: 8-9, Enjoyed: 5-6
Salty: 4-5, Enjoyed: 4-5
Umami: 6-7, Enjoyed: 4-5

Sources of Error

One source of error that most likely occurred in this project was that everybody has different preferences. Meaning everyone has different likes and dislikes, for example if one person really likes sweet stuff but they don't like spicy food, and someone their own age really likes spicy stuff but hates sweet stuff then they'll answer differently on the survey.

Conclusion

In conclusion older people do taste less vibrantly and have more control and kids have more enthusiastic and animated tastes and answers. The difference was actually astounding. Older people's answers varied dramatically between themselves though too. Kids basically had the same answers on some of them, but adults had very different answers especially in bitter, and sour. My hypothesis was correct in the end and older people's taste buds do get duller, and contract as well as they lose some of them. Next time you offer your mom or dad ice cream and they refuse now you know they're not being rude, they just have different taste buds than you!