Sip Smarter

Abstract

My mom always tries to limit what kind of drinks that me and my brother can have. Every now and then she will let us have some juice, but for the most part we are stuck with water. BORING!!! She always says that juice, soda, etc. are bad for your teeth. So, I wanted to put that to the test. I saw online that eggshells are the closest thing to a tooth enamel. Tooth enamel keeps your teeth safe from cavities. I researched that you could put eggs in different drinks to see which one would do the most damage to your teeth. So I hard-boiled 5 eggs and put them into different types of drinks. I kept them there for two days and then I took them out. I saw that some of the drinks damaged the eggs. I learned to watch what I drink because it can have an everlasting effect.

Big Question

What drink will do the most damage to your teeth?

Research

- Very acidic drinks weaken your tooth enamel. Weakened enamel can give you cavities and damage your gums
- People may find that drinking acidic and sugary drinks weakens the enamel which causes sensitivity and pain.
- Most energy drinks have a pH level of 3.0 which is very acidic. There is research showing that a level of 5.5 pH your tooth enamel starts to get softer and can even cause your teeth to rot.
- pH levels tell you how acidic or basic your drink is. The higher the pH level, the more basic (better) your drink is for you. The lower the pH level, the more acidic (worse) your drink is. Drinking water is more basic and soda is more acidic.

Hypothesis

Monster energy drink will do the most damage to your teeth because Monster is more acidic than most drinks.

Materials

- 5 hard boiled eggs
- 5 clear plastic cups
- Plastic wrap
- Rubber bands
- Coffee
- Water
- Monster energy
- Dr.Pepper
- Hawaiian Punch
- A toothbrush
- Toothpaste
- pH strips
- Paper plates
- Measuring cups

Procedure

I will be using different drinks to test my hypothesis such as water, Dr.Pepper, Monster, coffee, and Hawaiian Punch. I will be using hard boiled eggs that are the same type and size. I will put 1 cup of each drink in different clear cups. Then I will place a egg in each cup. I will put plastic wrap and a rubber band over the cup to keep stuff out. After 2 days of being in th refrigerator I will take them out of the cup. I will write down the color and texture of each egg. Then, I will try to brush off any stains with a toothbrush and toothpaste. I will also be measuring the acidity of each drink with pH strips before the experiment.

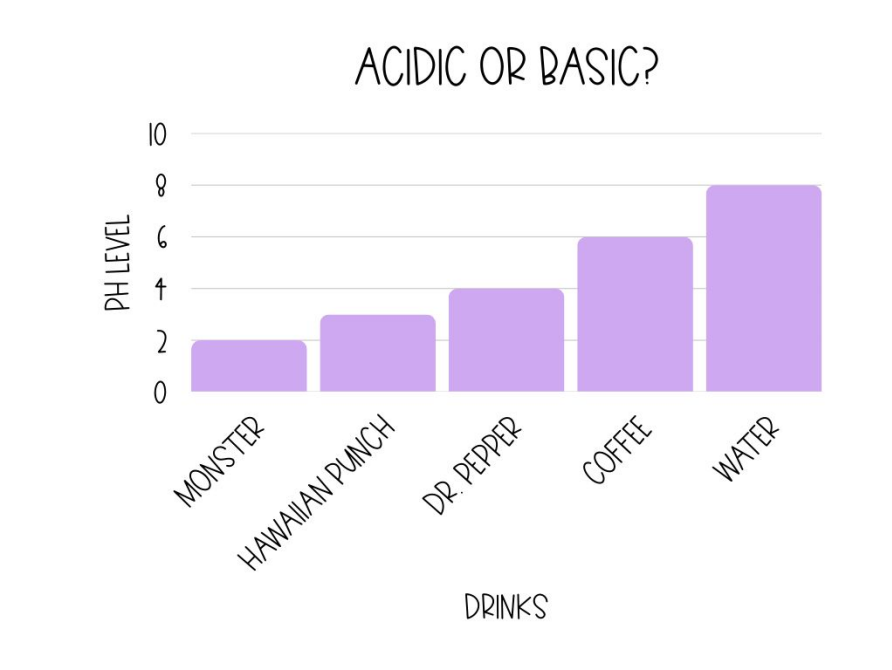
Variables

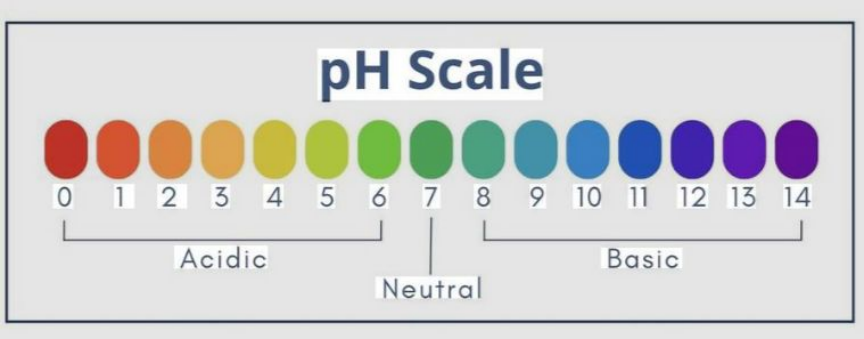
- The controlled variable is I will be using the same kind of eggs, cups, and keeping them in the same amount of liquid. They will also be in the same refrigerator for the same amount of time.
- The changing variable is the type of drinks I put each egg in.

Observations

Drinks	**Color before brushing**	**Color after brushing**	**Texture**
Water (pH level: 8)	No change still white	No change still white	No change
Dr. Pepper (pH level: 4)	A shade of dark brown	The part I brushed turned tan	No change
Hawaiian Punch (pH level: 3)	The egg is red	Turned a tint of pink	Slimy red coating that comes off
Coffee (pH level: 6)	Light tan/ brown	Color lighten up a little bit	No change
Monster (ph level: 2)	Brown in color	Turned a off white color	Slimy and bubbly coating. The shell is bumpy. Reminds me of a golf ball

Graphs/Data


ACIDIC OR BASIC?
PH LEVEL
10
8
6
4
2
0
MONSTER
HAWAIIAN PUNCH
DR. PEPPER
COFFEE
WATER
DRINKS


pH Scale
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Acidic
Neutral
Basic

Monster 2
Hawaiian Punch 3
Dr. P 4
Coffee 6
water 8

HAWAIIAN PUNCH
Instant Coffee
Dr Pepper
(23)

Coffee
Hawaiian Punch
Monster

Before Brushing

Monster

Water

Hawaiian Punch

Dr. Pepper

Coffee

After Brushing

Monster

Water

Hawaiian Punch

Dr.Pepper

Coffee

Conclusion

Although the egg in the Monster energy drink was not the most stained it was however the most damaged. The Monster energy drink seemed to have eaten away at the eggshell leaving it bumpy in texture. My hypothesis was correct because the egg in the Monster energy drink was the most damaged out of all of the other eggs. If I could change one thing about my project I would keep the eggs in for a longer amount of time to see if any of the other drinks would have done more damage.