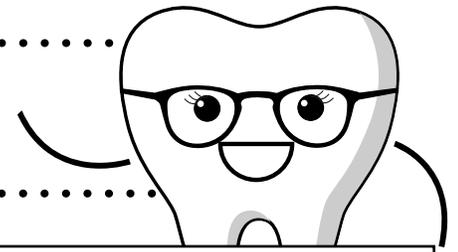


# THE ENAMEL 'EGG'PERIMENT



## PURPOSE

Demonstrate to students how acid from sugary foods and drinks interacts with tooth's enamel to cause cavities.

## SUPPLIES

- 2 Hard boiled eggs
- 2 Clear plastic cups with lids
- Vinegar
- Fluoride rinse
- 48 Hours

## BEFORE THE EXPERIMENT

- Explain to students the importance of eating healthy: have them name healthy foods and drinks.
- Explain why milk and water are better for their teeth than sodas and sugary drinks.
- Have them name some sweet foods and talk about the common ingredients in those foods - sugar.
- Talk about the importance of brushing and flossing everyday.
- Explain what enamel is and how it protects the insides of your teeth. (*Enamel is the hard outer coating of teeth.*)
- Explain what fluoride is, what it does, what it is in and how it protects your teeth from the effects of acid. (*Fluoride helps to speed up the remineralization process for optimal enamel (tooth) health and lower the risk of cavities by protecting against cavity causing bacteria and acids.*)
- Draw comparisons between the egg and teeth. (Hard shell protecting soft insides, similar materials made of calcium, white and absorbent, etc.)

## EXPLAIN THE EXPERIMENT

You will have two hard boiled eggs:

**Egg 1.** Represents teeth that are properly taken care of and have the protection provided by fluoride from toothpaste and mouthwash. It has been soaked over night in the fluoride rinse.

**Egg 2.** The other egg will be a plain hard boiled egg -unprotected- representing what happens when we do not follow the proper steps of our oral health routine.

## PERFORM THE EXPERIMENT

1. Place each hard boiled egg in their own clear cup and fill it with white vinegar.
2. Cover the top of the container. Explain that covering the cup is sort of like leaving the mouth closed without brushing.
3. After a few seconds: Ask students to compare the two eggs-

**Egg 1.** The protected egg will have no bubbles, or very few bubbles forming on the outside of the shell. (The longer the egg is soaked in fluoride rinse, the less bubbles you will see)

**Egg 2.** The unprotected egg will begin to form bubbles on the exterior within seconds as the acid begins to attack the shell.

## EXPLANATION OF RESULTS

The bubbles forming on the shell represents the chemical reaction that occurs between the acid formed in our mouths, from foods and sugars, and the enamel of our teeth.

Eventually, both eggs will begin to form bubbles. Explain to students how the fluoride delayed the effect of the vinegar on the shell the same way brushing, flossing, and rinsing your teeth delays that process in your mouth. This demonstrates the importance of routine dental care. Even though the egg was protected originally, the acid found its way through to attack the shell, and the same will happen to your teeth if you do not brush twice a day for two minutes, and floss daily. Reserve one egg and vinegar container to observe over one to two days.

## AFTER 1-2 DAYS

Remove the cover from the container and drain the vinegar. Allow your students to touch the egg. The shell should be soft and rubbery, if not completely dissolved.

When a tooth decays the enamel becomes soft just like the shell. That is one of the ways dentists can recognize a cavity.