

THE PERFECT PAIR: MILK AND CHOCOLATE CHIP COOKIES

No one can deny that there is nothing better than the dunking of a warm chocolate chip cookie into a cold glass of milk. Whether the first person to do this knew it or not, this pair has been scientifically designed to enhance the texture and flavor of the cookie. This is due in part to chemical additives called emulsifiers. Emulsifiers help two liquids that don't naturally mix together, disperse within each other. Think oil and water. Milk and chocolate both contain these emulsifiers. This week's handout explains why the pairing of these two products not only enhances the enjoyment but also are protective for the mouth!

MILK

Milk is an emulsion of oil in water. Milk is the dispersion of milk fat particles and protein particles (casein) in a continuous phase of water, lactose, whey proteins and minerals. Without this emulsion the fat particles would float to the top, similar to oils in nut butters, and would not have the characteristic liquid pour.



CHOCOLATE CHIP COOKIES

Chocolate is an emulsion of water in oil. Chocolate is the combination of water and cocoa powder in cocoa butter and oil. These two substances typically don't mix, but because of a chemical called phospholipids, which acts as the emulsifier, create the solid and creamy texture we have come to expect from chocolate.

No emulsifier

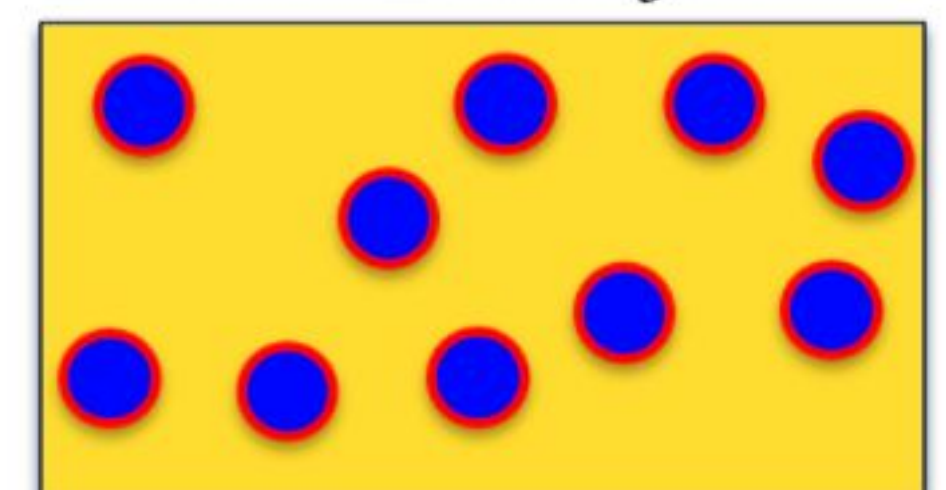


The emulsion will break down quickly

WHEN CONSUMED TOGETHER....

Again, both milk and chocolate contain emulsifiers. When they interact and hit your tongue, the emulsifiers in the milk helps smooth out the chocolate providing a perfect crispy-to-creamy ratio. Without the milk, the cookie will taste too gritty and crunchy and it may take longer to achieve that perfect cookie consistency. Milk also calms down the intense sweetness in the chocolate that may not be as pleasing.

With Emulsifier



The emulsion takes a longer amount of time to break down



MORE THAN JUST FLAVOR

Beyond providing a perfect flavor combination in your mouth, milk and cookies actually help protect your mouth as well. As we have discussed before, consuming treats like cookies create an acidic environment in the mouth which causes demineralization of the teeth. However, milk contains lots of these minerals - like calcium, phosphorus and magnesium - which help keep teeth strong. Milk also contains casein (protein) that can create a protective film on the tooth surface protecting them against the harmful acidic environment caused by bacteria in the mouth. So next time your child grabs a cookie, make sure they have a nice cold glass of milk with it!

Created by Jillian Kaye, MS, RDN in association with Bright Healthy Smiles