FYI: THE PAIN OF DRINKING POP

Did you know that the average person drinks hundred of gallons of soda pop in a lifetime? Whether its caffeine free or one calorie or full strength, the one thing we love is the fizz. So we asked, what is the fizz? And here's the answer in our FYI.

TAKE A BIG GULP… OR A TINY LITTLE SIP. YOU'LL STILL FEEL IT.

IT'S THE SIZZLE OF THE SODA

IT TINGLES THE TONGUE AND BURNS THE THROAT JUST A LITTLE BIT.

"For most people it's aversive or almost painful at first and then after a while they come to enjoy it."

EARL CARSTENS IS A NEUROSCIENTIS AT UC DAVIS. HE ADMITS THAT HE LOVES THE FIZZ, SO HE AND SOME COLLEAGUES SET OUT TO FIND THE ORIGIN OF THE BURN.

"It's interesting you know what's going on in the mouth. Why do we like it? What causes the tingle?

WELL EVERYBODY KNOWS IT'S THE BUBBLES!!!… RIGHT?

"Most people used to think it was the bubbles popping against the tongue that caused the tingling sensation. Carbonated drinks have gas in them, carbon dioxide. And once it gets into the tongue we think that the c02 gas is actually converted into acid, carbonic acid. And the conversion is mediated byan enzyme called carbonic anhydrase."

WITH THAT SCIENTIFIC MOUTHFUL, CARSTENS AND A TEAM OF RESEARCHERS SET OUTTO TEST THEIR IDEA. O.K. … IT MAY NOT BE ATTRACTVE … BUT IN THE NAME OF SCIENCE, LET'S CONTINUE.

ONE SIDE OF THE TONGUE, THEY APPLIED DORZOLAMIDE. THIS DRUG HELPS TO STOP CARBON DIOXIDE GAS FROM TURNING TO ACID. AND

THE RESEARCHERS SUSPRECTED IF THERE WAS NO ACID, THERE WOULD BE NO FIZZINESS. THIS DRUG BY THE WAY IS COMMONLY USED TO TREAT GLAUCOMA.

TO THE OTHER SIDE A SIMILAR TASTING PLACEBO WAS APPLIED.

“What we wanted to do was to see if we can block carbonic anhydrase on one side of the tongue by putting dorzolamide on…the idea being that if we block the conversion of c02 into carbonic acid on one side…. the other side that doesn't have dorzolamide will feel more tingly.”

LOVING FIZZ THE WAY HE DOES, EVEN PROFESSOR CARSTENS JOINED THE EXPERIMENT.

“I challenge anybody to stick their tongue into a freshly opened jar of carbonated water for 5 to 10 seconds. It's gonna be painful.”

WELL… WE TOOK THAT CHALLENGE AND… THE GOOD PROFESSOR WAS RIGHT!

“You don't normally think of drinking carbonated drinks as a painful Sensation. once the c02 is converted into carbonic acid we think that it's the acid that's actually stimulating pain receptors in the tongue…it's these pain receptors that send pain signals up to the brain to the area that's involved in sensations in the mouth.”

… AND SO IT SEEMS ITS NOT THE BUBBLES BUT THE ACID. THE FIZZ HAS A LITTLE FIRE TO IT THAT A WHOLE LOT OF PEOPLE SEEM TO ENJOY.

Remember the drug for glaucoma we told you about that actually inhibits the burning sensation of soda pop? Well it turns out that people who take that drug which is called dorzolamide find they don't like fizzy drinks much anymore…it seems they just don't taste the same without the fizz. Now you know why…