

DENTAL EROSION is a common condition in children and adults and its prevalence is increasing in recent years. It's caused by sustained direct contact between tooth surfaces and acidic substances. Loss of minerals from the enamel portion of teeth occurs once the oral environmental pH reaches the critical threshold of 5.5. On exposed root surfaces demineralization occurs at 6.2 pH. Neutral pH is 7.

Acids in the mouth originate from three main sources:

1. Acid causing bacteria
2. Things that we eat and drink
3. Gastric reflux – GERD, bulimia

Effective strategies for prevention of dental erosion:

1. Avoid or reduce frequent intake of acidic beverages, and use a straw when drinking to minimize acid contact with tooth surfaces.
2. Select beverages containing calcium, phosphate or fluoride, and rinse with water or fluoride rinse after an acid exposure.
3. Use toothpastes with a high fluoride (5000ppm) concentration to strengthen enamel surfaces.
4. Use low abrasive toothpaste (i.e. ProNamel), small amount and light brushing pressure.
5. Avoid toothbrushing immediately after an acid exposure and wait for at least 30 minutes to allow tooth surface recover from acid attacks.
6. Have a dental visit for application of fluoride varnishes and treatment of salivary hypofunction (dry mouth or saliva abnormalities).

Saliva flow and buffering capacity: When acidic substances enter the mouth, salivary glands will increase secretion and saliva flow will accelerate to clear the acids from the mouth. Since human saliva contains bicarbonates and urea, it rapidly neutralizes the acidic remnants and returns the oral pH to normal. However, many factors affect saliva flow rate and buffering capacity. There are over 1000 medications that can alter saliva's neutralizing capacity.

Saliva pH and buffering capacity can be easily tested in-office

<u>Carbonated Drinks</u>	<u>pH</u>	<u>Juice drinks</u>	<u>pH</u>	<u>Other drinks</u>	<u>pH</u>
Coke	2.7	Orange juice	3.4	Iced tea	3.0
Pepsi	2.7	Grapefruit juice	3.2	Fanta orange	2.9
7-Up	3.2-3.5	Cranberry juice	2.3-2.5	Red Bull	3.4
Sprite	2.6	Apple juice	3.4	Gatorade	3.3
Mountain Dew	3.2	Pineapple juice	3.4	Isostar	2.4-3.8
Dr. Pepper	2.9	Kiwi juice	3.6	Coffee	2.4-3.3
Lemon Nestea	3.0	Grape juice	3.4	Tea (black)	4.2
Root beer	3.0-4.0	Carrot juice	4.2	Beer	4.0-5.0
Ginger Ale	2.0-4.0	Beetroot juice	4.2	Wine	2.3-3.8

Fruits

Apples	2.9-3.5
Apricots	3.2-3.6
Blueberries	3.2-3.5
Cherries	3.2-4.7
Grapes	3.3-4.5
Grapefruits	3.0-3.5
Lemons/limes	1.8-2.4
Oranges	2.8-4.0
Peaches	3.1-4.2
Pears	3.4-4.7
Pineapples	3.3-4.1
Plums	2.8-4.6
Raspberries	2.9-3.7
Strawberries	3.0-4.2

Other Foodstuffs

Cranberry sauce	2.3
Fruit jams/jellies	3.0-4.0
Italian salad dressing	3.3
Ketchup	3.7
Mayonnaise	3.8-4.0
Mustard	3.6
Pickles	2.5-3.0
Relish	3.0
Rhubarb puree	2.8
Sauerkraut	3.1-3.7
Sour cream	4.4
Tomatoes	3.7-4.7
Fermented vegetables	3.9-5.1
Yogurt	3.8-4.2