There’s no question that regular brushing, flossing and dental checkups can keep your mouth healthy. But if you fall short on your hygiene routine, can gum disease actually set you up for heart disease?
More than 80% of Americans are living with periodontal or gum disease, which often goes undiagnosed.

This may be because the patient's teeth feel fine, so he/she avoids going to the dentist, and visits to the physician rarely focus on oral health.

According to Delta Dental, however, there is now evidence of two specific links between oral health and heart disease.

First, recent studies show that if you have gum disease in a moderate or advanced stage, you're at greater risk for heart disease than someone with healthy gums.

And second, your oral health can provide doctors with warning signs for a range of diseases and conditions, including those in the heart.
Having gum disease **increases the risk of a first heart attack by 28%**, according to a 2016 study by the Karolinska University Hospital in Sweden.


Although the findings indicate a **strong link between gum disease and heart disease**, it’s still unclear whether one actually causes the other, says the American Heart Association.

The two conditions have some of the **same risk factors**, including smoking, poor nutrition and diabetes.

Researchers believe that **inflammation** caused by periodontal disease may be responsible for the connection.
Experts in periodontology and cardiology recently reviewed more than 120 published medical studies, position papers, and other data on the heart and dental health link. They developed a consensus report, published simultaneously in the Journal of Periodontology and the American Journal of Cardiology.

The aim of the paper was to give cardiologists, periodontists, and other health professionals a better understanding of the links between gum disease and heart disease.

A review of several published studies finds that gum disease is, by itself, a risk factor for coronary artery disease.
Oral Health = Heart Health

Analysis of the large National Health and Nutrition Examination Survey (NHANES) found that gum disease is an important risk factor for **diseases of the blood vessels and the arteries that supply the brain, especially strokes involving insufficient blood or oxygen to the brain.**

Data from another study of more than 50,000 people found that those with fewer teeth and more gum disease had a higher risk of stroke.

Oral Health = Heart Health

Some studies have uncovered no association between gum disease and stroke.

Other research found a **direct link between clogged arteries in the legs and gum disease.**

**Bacteria** found in both health problems are similar.

The bacteria we find in **gum disease** we also find in **blood vessels** that are going through atherosclerosis - deposition of plaques of fatty material on their inner walls.
Oral Health = Heart Health

Oral health and heart disease are connected by the spread of bacteria – and other germs – from your mouth to other parts of your body through the blood stream.

When these bacteria reach the heart, they can attach themselves to any damaged area and cause inflammation.

This can result in illnesses such as endocarditis, an infection of the inner lining of the heart, according to Mayo Clinic.

Oral Health = Heart Health

Other cardiovascular conditions such as atherosclerosis (clogged arteries) and stroke have also been linked to inflammation caused by oral bacteria, according to the American Heart Association.
**Oral Health = Heart Health**

- **Inflammation** is another common denominator for between heart disease and gum disease.
- When people have moderate to severe gum disease, their levels of **C-reactive protein (CRP)**, a protein that rises during whole-body inflammation, increase.
- CRP levels are also used to assess a person's risk of a heart attack.

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**Oral Health = Heart Health**

- **C-reactive protein (CRP)** is a substance produced by the liver that increases in the presence of inflammation in the body.
- An elevated **C-reactive protein** level is identified with blood tests and is considered a non-specific “marker” for disease.
- A C-reactive protein (CRP) test can help doctors determine your risk for heart disease or stroke.
- A Harvard study found CRP to be **more effective** than cholesterol at predicting coronary issues in women.
The Physicians’ Health Study found that among nearly 15,000 healthy adult men, a high level of CRP was associated with a risk of heart attack that was **three times higher than average**.

According to the Cleveland Clinic, the Harvard Women’s Health Study showed that high CRP levels were more predictive of coronary conditions in women than were high cholesterol levels.

High cholesterol is a more commonly cited risk factor. The Jackson Heart Study found that hs-CRP is associated with type 2 diabetes in African-Americans.

According to the Cleveland Clinic, a reading of **less than 1 mg/L indicates you’re at low risk** of cardiovascular disease.

A reading between **1 and 2.9 mg/L means you’re at intermediate risk**.

A reading **greater than 3 mg/L means you’re at high risk for cardiovascular disease**.

A reading above 10 mg/L may indicate a need for further testing to determine the cause of **severe inflammation in your body**.
The joint report also made these recommendations:

- Dentists should tell patients with moderate to severe gum disease that they may have an increased risk for heart and blood vessel problems.
- People who have moderate to severe gum disease and a known risk factor for heart disease, such as smoking, should consider getting a medical evaluation if it's been one year or longer since their last one.

Physicians and dentists should work together to focus on reducing heart disease risk and ensuring good periodontal care for patients with heart disease and gum disease.

Patients with heart disease who also have signs or symptoms of gum disease (but have not yet been diagnosed with it) or a high CRP level should get a periodontal evaluation.
Patients with chronic gum conditions such as *gingivitis* or advanced *periodontal disease* have the *highest risk for heart disease* caused by poor oral health, particularly if it remains undiagnosed and unmanaged.

The bacteria that are associated with gum infection are in the mouth and can enter the blood stream, where they *attach to the blood vessels* and increase your risk to cardiovascular disease.

Even if you don't have noticeable gum inflammation, however, *inadequate oral hygiene and accumulated plaque puts you at risk for gum disease.*
According to the American Association of Periodontology (AAP), you may have gum disease, even if it's in its early stages, if:

- Your gums are red, swollen and sore to the touch.
- Your gums bleed when you eat, brush or floss.
- You see pus or other signs of infection around the gums and teeth.
- Your gums look as if they are "pulling away" from the teeth.

You frequently have bad breath or notice a bad taste in your mouth.

Some of your teeth are loose, or feel as if they are moving away from the other teeth.
Eating for Oral Health

- The **foods you choose** and **how often** you eat them can affect your general health and the health of your teeth and gums, too.
- If you consume **too many sugar-filled** sodas, sweetened fruit drinks or non-nutritious snacks, you could be at risk for tooth decay.
- Tooth decay happens when **plaque come into contact with sugar in the mouth, causing acid to attack the teeth.**

Eating for Oral Health

- Foods that contain sugars of any kind can contribute to tooth decay.
Eating for Oral Health

- **Limit the number of snacks** you eat. If you do snack, choose something that is healthy like fruit or vegetables or a piece of low-fat cheese.
- Foods that are eaten as part of a meal cause less harm to teeth than eating lots of snacks throughout the day, because **more saliva is released during a meal**.
- Saliva helps wash foods from the mouth and lessens the effects of acids, which can harm teeth and cause cavities.

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Eating for Oral Health

- If your diet lacks certain nutrients, it may be more difficult for tissues in your mouth to resist infection.
- This may contribute to gum disease.
- Severe gum disease is a major cause of tooth loss in adults.
- Researchers believe that the disease progresses faster and is potentially more severe in people with **poor nutrition**.
Sports drinks
They sound healthy, but sugar is a top ingredient for many sports and energy drinks
The American Academy of Pediatrics says sports drinks can be helpful for **young athletes engaged in prolonged, vigorous physical activities, but unnecessary in most cases.**
Unnecessary for most exercisers, no matter age
Check the label to make sure your drink of choice is low in sugar or drink water.

Hard candy
While these hard candies seem harmless, eat too many and the constant exposure to sugar can be harmful to your teeth.
Hard candies also put your teeth at risk because in addition to being full of sugar, they can also trigger a dental emergency such as a broken or chipped tooth.
Foods That Damage Teeth

Ice
Many people think ice is good for their teeth. It’s made of water, after all, and doesn’t contain any sugar or other additives.
But chewing on hard substances can leave your teeth vulnerable to a dental emergency and damage enamel.
Break the habit and enjoy water in its liquid form.

Foods That Damage Teeth

Citrus
Frequent exposures to acidic foods can erode enamel, making teeth more susceptible to decay over time.
So even though a squeeze of lemon or lime can turn a simple glass of water into a fun beverage, it's not always the best choice for your mouth.
Citric fruits and juices can also irritate mouth sores.
Foods That Damage Teeth

- **Coffee/Tea**
  In their natural form, coffee and tea can be healthy beverage choices.
  Unfortunately too many people can’t resist adding sugar.
  Caffeinated coffee and tea can also dry out your mouth.
  Frequent drinks of coffee and tea may also stain your teeth.
  If you do consume, make sure to drink plenty of water and try to keep the add-ons to a minimum.

- **Sticky foods**
  Many people put dried fruit at the top of the list.
  But many dried fruits are sticky.
  Sticky foods can damage your teeth since they tend to stay on the teeth longer than other types of food.
  If you find yourself eating dried fruits or trail mix often, make sure to rinse with water after and to brush and floss carefully.
Foods That Damage Teeth

- Potato chips
  - potato chips are filled with starch, which tends to get trapped in your teeth.
  - Take extra care when you floss that day to remove all the food particles that can lead to plaque build-up.

Foods That Damage Teeth

- Soda
  - When you sip sugary drinks for long periods of time, plaque bacteria use that sugar to produce acids that attack your enamel, the hard surface of your tooth.
  - Most carbonated soft drinks, including diet soda, are acidic and therefore, bad for your teeth.
  - Caffeinated beverages, such as colas can also dry out your mouth.
  - If you do consume soft drinks, try to drink alongside a cup of water.
Alcohol causes dehydration and dry mouth. People who drink excessively may find their saliva flow is reduced over time, which can lead to tooth decay and other oral infections such as gum disease. Heavy alcohol use also increases your risk for mouth cancer.

Tooth decay happens when plaque come into contact with sugar in the mouth, causing acid to attack the teeth. Research shows that some foods can counter the effects of acid attacks on the teeth:

- **Cheese/Dairy Products**
- **Nuts**
- **Sugar Free gum**, especially gum sweetened with xylitol
- **Fresh Vegetables/Fruits**
Sugar Free Gum

- Chewing gum containing the sugar alcohol xylitol after meals may decrease your risk of forming cavities.
- Xylitol increases saliva production and prevents the bacteria in your mouth from producing the acids that cause cavities.
- But don’t go overboard, because even if sugar alcohols won’t harm your teeth, they can cause gas and bloating.

Xylitol

- Xylitol is a five-carbon sugar alcohol compound.
- Sugar alcohols are neither sugar nor alcohol.
- They are carbohydrates that resemble sugar, but without the harmful effects of sugar.
- They can occur naturally in plants or can be manufactured from sugar and starches.
- Xylitol is not an artificial sweetener, but a crystalline carbohydrate which looks very much like sugar.
- It is a natural dental antidote for sugar.
- It can be derived from fibrous parts of plants, vegetables, and berry-type fruits such as strawberries and raspberries.
Most of our dietary carbohydrates are based on a six-carbon monosaccharide unit, such as fructose and glucose. These units can be linked together and multiply. Streptococcus mutans bacteria utilize these units as a food source. They excrete waste, which produce plaque biofilm that can ultimately lead to tooth decay.

Xylitol, on the other hand, with its unique five-carbon structure is very stable and does not link together with other sugars. It is not a good food source for Strep mutans bacteria. Instead, xylitol blocks its harmful effects and builds protective factors.
Water, Water is the best beverage for maintaining your oral health. Helps to flush bacteria from the mouth

Milk, and other dairy products such as cheese and yogurt, are low in sugar, which is a good thing for your dental health. Plus, they contain protein and are full of calcium, which can help to strengthen your teeth.
Foods that are good for your teeth

- Fruits and veggies
  - Fruits and veggies are an important part of any balanced diet, and they are also good for your teeth.
  - Since they are high in water and fiber, they help to balance the sugars they contain and help to clean your teeth.
  - Chewing also helps to stimulate saliva production, which washes harmful acids and food particles away from your teeth.

- Nuts
  - Nuts contain protein and minerals important for overall health.
  - In addition, nuts that are low in carbohydrates don’t add to your risk of cavities.
  - Tooth decay is caused by acid-producing bacteria that are activated by carbs/sugar.
  - Another benefit is that chewing nuts stimulates saliva production, which can reduce your risk for tooth decay.
## Foods that are good for your teeth

- **Probiotics**
  - Probiotics may help to decrease gingivitis and plaque; bacteria in fermented foods might *suppress the growth of pathogens* in the oral cavity.
  - One study showed that consuming *fermented dairy* like yogurt was associated with less periodontal diseases.

## Foods that are good for your teeth

- **Foods rich in anthocyanins**
  - Cranberries and other plant foods rich in anthocyanins (such as blueberries, red cabbage, eggplant peel, black rice, and raspberries) may *prevent the attachment and colonization of pathogens* on teeth
Foods that are good for your teeth

- **Green tea**
  - Polyphenols have been known to **reduce bacteria and toxic products of bacteria** in the mouth.
  - Both black and green tea also tends to be rich in natural fluoride

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Foods that are good for your teeth

- **Eat some raw, crunchy fruits and vegetables every day.**
  - Raw veggies clean your teeth to a degree (apples, carrots, bell peppers, etc).
  - Eating an apple as dessert after lunch will help to remove material that has adhered to the surface of your teeth.
  - Plus, **apples contain naturally occurring xylitol.**
Remember

Invest in your smile – you wear it EVERY DAY!