

# **Section 4**

# **Periodontal (Gum) Disease**

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## **Periodontal Disease, What Is It?**

Periodontal disease is an infection of the gums and other supporting structures of the teeth. It starts as gingivitis (inflamed gums) which if not treated may lead to periodontitis which can lead to tooth and bone loss. A common name for periodontal disease is gum disease.

### **Cause**

- 1 Periodontal disease is linked to plaque accumulation
- 1 These deposits can be above or below the gum line
- 1 Plaque can harden and form calculus
- 1 Bacteria in plaque produces toxins (by-products) which irritate gum tissue
- 1 Gums can be more sensitive to these toxins during puberty and pregnancy due to hormonal change and due to other medical conditions

### **Gingivitis**

- 1 Earliest form of inflammation of periodontal tissues may or may not lead to periodontitis
- 1 Includes red, swollen and bleeding gums
- 1 Gingivitis is preventable through proper diet, regular dental visits and daily oral hygiene (i.e. brushing, flossing, massaging, etc.)
- 1 Gingivitis is reversible with good oral hygiene practices

### **Periodontitis**

- 1 Signs are loss of healthy tone, blunt papillae between teeth, swelling
- 1 Is not usually reversible
- 1 Is a more intensive form of inflammation of periodontal tissues
- 1 Plaque, calculus and pus may form around the tooth
- 1 The space between the tooth and gum, called the pocket, becomes infected/inflamed
- 1 Pockets contain numerous bacteria-producing toxins which destroy the periodontal ligament and bone (supporting the tooth)
- 1 Can lead to loss of involved teeth

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### Signs of Periodontal Disease

- 1 Loss of tone of the gums
- 1 Bad breath
- 1 Bleeding, red swollen gums
- 1 Pus
- 1 Detachment of gum from teeth
- 1 Mobile teeth
- 1 Mouth pain
- 1 Bad taste in the mouth
- 1 Tender gums
- 1 Gum recession
- 1 Change in position of teeth/movement of teeth
- 1 Blunt papillae

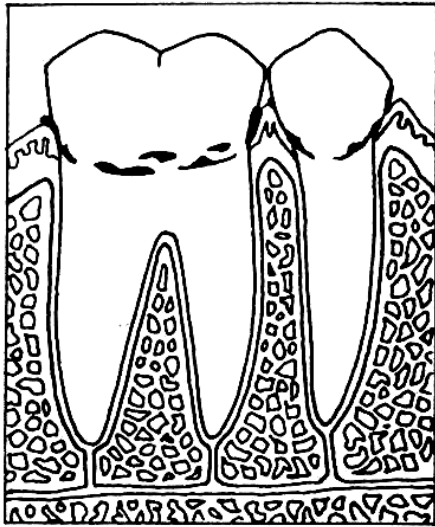
### Risk Factors

1. Dental plaque and calculus accumulation (tartar).  
Leads to more of a web for bacteria and toxins to accumulate thereby increasing risk of the disease.
2. Age
3. Smoking Link  
A link exists between smoking and periodontal disease
4. Diabetes  
Periodontal disease can be more prevalent and severe in diabetic patients
5. Malocclusion  
Crowded teeth may be more prone to accumulation of dental plaque and hence periodontal involvement.
6. Pregnancy  
Hormonal changes make gums more susceptible to infection.

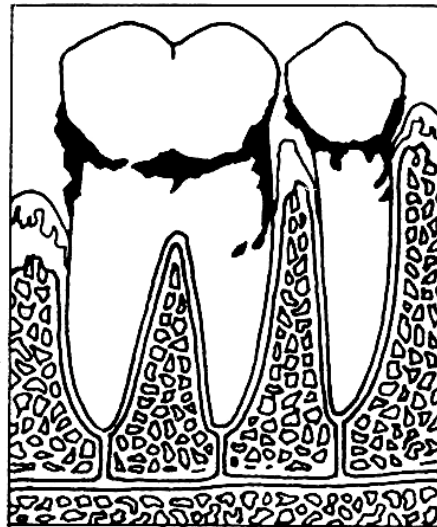
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## Progress of Periodontal Disease

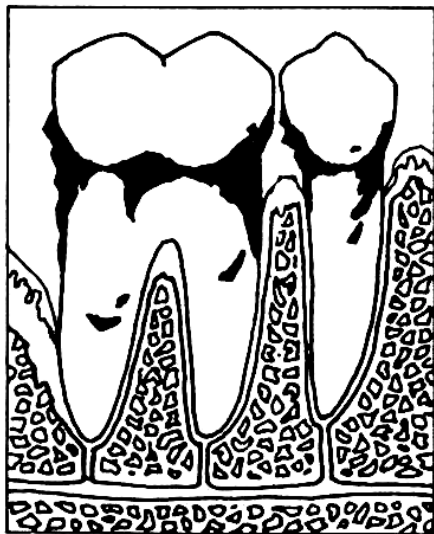
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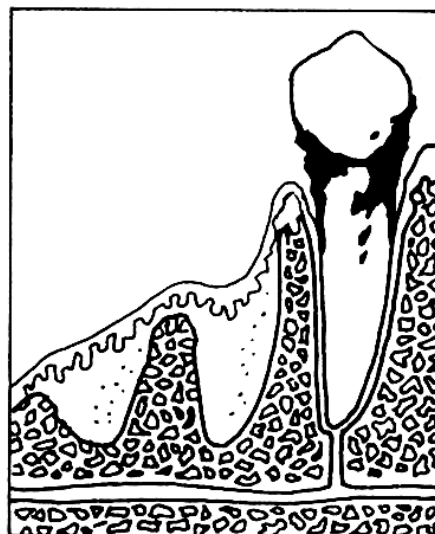
Bacterial secretions irritate the gingiva (gums).



Pockets form between teeth and gingiva.



Destruction of bone and gingiva progresses.



Finally, a tooth is lost.

## **Other Types of Periodontal Disease**

### **Localized Juvenile Periodontitis**

- < Early onset in adolescents and young adults
- < Usually shows no signs of gingivitis
- < Severe bone loss in six year molars and front teeth
- < Affects females and blacks more often
- < Unknown cause
- < Could be genetic

### **Acute Necrotizing Ulcerative Gingivitis (ANUG)**

#### *also called Trench Mouth*

- < Often attacks college students and young adults under physical and emotional stress. So named because of frequency among armed forces personnel.
- < Also seen in cancer and AIDS patients (immune deficiency disorder)
- < Onset B necrotic lesions in gums can cause a lot of pain, foul odour, profuse bleeding of gums
- < Usually the individual gets a fever and swelling of lymph nodes
- < Treatment includes cleaning, oral hygiene and a course of antibiotics

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**Prevention of Periodontal Disease**

**Self-Care**

- 1 Don't smoke
- 1 Oral rinses of chlorhexidene (an antibacterial agent) and use of anti-calculus toothpaste shows some signs of promise

**Daily Good Oral Hygiene**

- 1 Includes brushing and flossing
- 1 Other specialized types of oral hygiene may include Waterpik, electric toothbrushes, inter-dental stimulation, floss threaders, etc.

**Professional Care**

**Regular Visits to Your Dental Team (includes the dentist and hygienist)**

- 1 Removal of calculus is essential
- 1 Good dentistry as in cavity repair, crowns, tooth replacement (bridges and partials) are essential
- 1 Proper alignment of teeth is also important for preventing gum disease (an orthodontist may be involved here)

**A Well-Balanced Diet**

- 1 A well-balanced diet is essential for maintaining healthy gums and teeth (refer to Nutrition section)
- 1 Reduce added sugar (e.g. pop, candy) intake, frequency and type of sugars eaten B plaque thrives on sugar

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### Did You Know?

- 1 According to some estimates seventy-five percent of adults over thirty may suffer from some degree of gum disease
- 1 Most people do not even know they have it because it is painless until the very late stages
- 1 Periodontal diseases are the most prevalent adult infectious diseases

Gum diseases are now considered a risk factor for cardiovascular disease (heart attack and stroke), premature births, low birth weight babies, pneumonia and other respiratory diseases and diabetes.

If periodontal diseases do not respond to these preventative measures, the patient is referred to a specialist called a periodontist. More radical therapy (i.e. surgery or root planing of cementum) may be necessary.

### Gum Disease and Heart Attacks: A Connection

#### Introduction

Suppose you could prevent a heart attack with a 2-minute, no-sweat exercise that could be performed anywhere. Would you be interested? Researchers believe that the connection between heart attacks (medically termed myocardial infarction) and periodontal diseases are so convincing that flossing your teeth might actually be an exercise that saves your life.

#### From Plaque to Attack

Plaque, a neutral enough term, is actually a sticky film on the teeth made up almost entirely of colonies of bacteria. While the mouth usually maintains the proper balance of bacteria for our safety, the food we eat is broken down into sugars and starches, which encourage bacteria to thrive. If these bacteria are not removed consistently by brushing and flossing, the results will be bacterial plaque that hardens into tartar. Tartar cannot be removed with brushing and flossing. Eventually these bacteria inflame the gums causing gingivitis or the more severe gum disease known as periodontitis, in which the jawbone is resorbed and teeth may be lost. Although it may seem unlikely that an infection in the mouth may result in heart disease, there are several possible links that may explain this association.

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For example, it is well known that if a person has gum disease, oral bacteria will enter the blood stream even after chewing or tooth brushing. When bacteria from inflamed gum tissue enter the bloodstream they trigger platelets (tiny disc-shaped clotting cells) to gather around them in a clump, and possibly settle on injured tissue such as a replaced heart valve or a damaged blood vessel. This clump of oral bacteria can then infect and obstruct blood vessels.

A heart attack happens when a clot/clump lodges in a coronary artery restricting oxygen blood flow to the point of heart muscle damage (tissue death). Further, when these bacteria enter the blood stream, they can trigger the liver to produce proteins, which in turn can exaggerate heart damage. *In fact, there are other infections in the body, including respiratory infection caused by Chlamydia pneumonia, gastric ulcers caused by Helicobacteria, and cytomegalovirus infections, which have been associated with an increased risk of heart disease.*

### **Recent Research**

Previous studies have already shown a strong relationship between myocardial infarction and periodontal diseases. The results, thus far, have been impressive. In a study reported by the Journal of Periodontology, patients were found to have a 50% increased risk for heart disease if they also had periodontitis.

A study of Pima Indians, relatively few of whom smoke, was performed by researchers at the University of Buffalo and showed that individuals who had periodontitis were almost three times more likely to have heart attacks than those who did not have periodontal disease. This study is important because it illustrates that people who do not smoke or use tobacco products have an increased risk of heart disease if they also have gum disease.

### **A Significant Connection**

Cardiovascular disease is the leading cause of death in most developed countries and periodontal disease is one of the most common infections in humans, affecting as many as one third of those over 50. Even if periodontal diseases have only a modest effect on increasing the risk of heart attack, their prevalence may make a significant contribution to the risk for heart disease in the population as a whole.

Therefore, while all the information is not available, many clinicians feel that infections do play a role in heart disease and may explain some of the risk that is not accounted for by other factors including high cholesterol, smoking, diabetes, homocysteine levels, being overweight, and living a sedentary lifestyle. Certainly total management of patients who are candidates for heart disease must encompass all risk factors. Infection, including gum infection, is another possible area for consideration. Preventing gum disease from occurring, or treating it early if it has occurred, will help save your smile and may also decrease your risk for heart disease.