

# An Overview on Gingivitis and Its Causes and Symptoms

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## Commentary

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### DESCRIPTION

Gingivitis is a non-destructive periodontal disease that produces gum inflammation. Plaque-induced gingivitis is the most prevalent form of gingivitis, and the most frequent form of periodontal disease overall, caused by bacterial biofilms (also known as plaque) adhered to tooth surfaces. The majority of cases of gingivitis are caused by plaque.

Periodontitis is invariably preceded by gingivitis, even if some cases of gingivitis never progress to periodontitis. Gingivitis can be reversed with proper oral care; but, if left untreated, gingivitis can proceed to periodontitis, a condition in which gum inflammation leads to tissue death and bone resorption around the teeth. Periodontitis can lead to tooth loss in the long run.

When the gum tissue becomes swollen and stretched over the inflamed underlying connective tissue, the stippling that is ordinarily present in the gum tissue of certain people disappears, and the gums may seem shiny. It's also possible that the buildup will emit an unpleasant stench.

When the gingiva swell, the epithelial lining of the gingival fissure becomes ulcerated, and even light brushing, and especially flossing, causes the gums to bleed more easily. According to a new study published in 2018, gingival bacteria may be linked to Alzheimer's disease. More research is needed to confirm a cause and effect relationship, according to scientists.

"In mice, researchers discovered that the bacteria *P. gingivalis*, which causes many types of gum disease, can travel from the mouth to the brain. *P. gingivalis* can also duplicate all of the symptoms of Alzheimer's disease once it enters the brain. Because plaque-induced gingivitis is by far the most common form of gingival disease, the parts that follow will focus on it.

Plaque-induced gingivitis is caused by bacterial plaque, which triggers the body's host response. This, in turn, can lead to gingival tissue destruction, which can lead to periodontal attachment apparatus destruction. Plaque collects in small spaces between teeth, gingival grooves, and plaque traps, which serve to collect and maintain plaque.

Plaque traps include restorative margins that are thick and overhanging, clasps on removable partial dentures, and calculus (tartar) that accumulates on teeth. Although the bacteria in these accumulations are small, they create compounds like degradative enzymes and toxins like Lipopolysaccharides (LPS, also known as endotoxin) or Lipoteichoic Acid (LTA) that cause inflammation in the gum tissue.

This irritation can lead to gingival expansion and subsequent development. In health, early plaque is dominated by Gram-positive cocci and rods, and it is a very basic bacterial community. The communities become more complex as plaque matures and gingivitis progresses, with increased proportions of Gram-negative rods, fusiforms, filaments, spirilla, and spirochetes.

Later experimental gingivitis research utilising culture revealed more details about the individual bacterial species found in plaque. *Fusobacterium nucleatum* subspecies polymorphum, *Lachnospiraceae* [G-2] species *HOT100*, *Lautropia* species *HOTA94*, and *Prevotella oulorum* (a *Prevotella* bacteria species) were all linked to gingivitis, while *Rothia dentocariosa* was linked to periodontal health.

More research into these species is needed, as it could lead to new therapeutic techniques for preventing periodontal disease. Gingivitis is a type of periodontitis in which there is no bone loss but there is inflammation and bleeding.

On the basis of the gingival index, each tooth is divided into four gingival units and given a score ranging from 0 to 3. The four ratings are then averaged to produce a single score for each tooth. A dentist makes the diagnosis of gingivitis, a kind of periodontal disease. Clinical assessment data obtained during a full periodontal exam is used to make the diagnosis. The thorough periodontal exam can be performed by either a certified dental hygienist or a dentist, but the dentist is responsible for data interpretation and diagnosis. The comprehensive periodontal exam includes a visual examination, a series of radiographs, gingiva probing, evaluating the extent of present or previous periodontal damage, and a thorough assessment of the patient's medical and dental histories.