

# Gingivitis Fact Sheet

## What is Gingivitis?

Gingivitis is a very common and mild form of periodontal (gum) disease that causes the gums to become red, swollen, tender and bleed easily during brushing or flossing<sup>1</sup>. If left untreated, gingivitis can lead to a more serious form of gum disease known as periodontitis that destroys the tissues supporting the teeth<sup>2</sup>.

Eighty percent of adults in the United States have some form of gum disease<sup>3</sup>. People with poor oral health habits or who smoke or chew tobacco are more likely to develop gingivitis. Additional risk factors include:<sup>4</sup>

- Diabetes
- Older age
- Decreased immunity
- Poor nutrition
- Taking certain medications, such as steroids, specific cancer medications, calcium blockers and oral contraceptives
- Pregnancy



Fortunately, gingivitis is reversible with professional dental cleanings and a proper daily oral care routine that includes brushing twice a day, regular flossing and treatment with oral care products containing stannous fluoride or cetylpyridinium chloride, such as certain Crest and Oral-B toothpastes and mouthwashes.<sup>5</sup> Good oral hygiene, a balanced diet and regular visits to the dentist are the best way to prevent the disease.

## The Biology of Gingivitis: Bacteria and Biofilms

Gingivitis starts with bacteria. Naturally occurring bacteria in the mouth react with starches and sugars in the food people eat to form plaque, an invisible, sticky layer of bacteria on the teeth and on all oral soft tissues.<sup>6</sup> This layer of bacteria, or biofilm, then releases chemicals that can damage the gums.<sup>7</sup> In fact, more than 500 bacterial strains may be found in dental plaque on the tooth surface and between the gums.<sup>8</sup>



Bacteria forming a biofilm on the gums

Brushing can remove the plaque biofilm, but it can reform within 24 hours. Plaque left on the tooth surface or between gums for over two to three days starts to harden and form tartar, a mineralized deposit which serves as a reservoir for bacteria. The presence of bacterial insults results in long-term inflammation of the gum tissue which if untreated may ultimately lead to tooth loss.<sup>9</sup>

To fight off the bacteria in plaque, the body's immune response recruits natural defenses to ward off the bacteria, resulting in redness and inflamed gums.<sup>10</sup> Recent research conducted by P&G Oral Care and the University of North Carolina School of Dentistry found that over 9,000 genes are involved in the body's response to the onset and healing process associated with gingivitis. This in-depth understanding into how gum tissue and systems in the body react to bacteria in dental plaque on a molecular level will allow scientists and dentists to better treat and prevent gum disease.

## Gingivitis and Overall Health

Advanced forms of gingivitis and gum disease have been linked to an increased risk for respiratory disease, cardiovascular disease, diabetes and pre-term birth, further supporting the link between oral health and overall health.

- Cardiovascular Disease: People with periodontal disease are nearly two times more likely to suffer from coronary artery disease than those without gum disease. Some researchers believe that oral bacteria can enter the bloodstream and attach to fatty plaques in the coronary arteries, contributing to clot formation which can trigger a heart attack.<sup>11</sup>
- Diabetes: Not only are people with diabetes more likely to have periodontal disease, the condition can also make it difficult for diabetics to control their blood sugar levels. While more research is being done on the link between gum disease and diabetes, studies have suggested that severe periodontal disease can increase blood sugar levels, putting diabetics at increased risk for complications.<sup>12</sup>
- Premature Birth - Pregnant women who have periodontal disease may be seven times more likely to have a baby that is born prematurely than women without gum disease. While more research is needed to determine how gum disease impacts pregnancy outcomes, any bacterial infection similar to periodontitis in pregnant women is cause for concern.<sup>13</sup>

For more information on gingivitis gene expression or P&G Oral Care, please visit [www.dentalcare.com](http://www.dentalcare.com).

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<sup>1</sup> [www.mayoclinic.com/health/gingivitis/DS00363](http://www.mayoclinic.com/health/gingivitis/DS00363)

<sup>2</sup> [www.nlm.nih.gov/medlineplus/ency/article/001056.htm](http://www.nlm.nih.gov/medlineplus/ency/article/001056.htm)

<sup>3</sup> [www.nlm.nih.gov/medlineplus/gumdisease.htm](http://www.nlm.nih.gov/medlineplus/gumdisease.htm)

<sup>4</sup> [www.ada.org/public/topics/periodontal\\_diseases.asp#faq](http://www.ada.org/public/topics/periodontal_diseases.asp#faq)

<sup>5</sup> [www.perio.org/consumer/gingivitis.htm](http://www.perio.org/consumer/gingivitis.htm)

<sup>6</sup> [www.mayoclinic.com/health/gingivitis/DS00363](http://www.mayoclinic.com/health/gingivitis/DS00363)

<sup>7</sup> [www.ada.org/public/topics/periodontal\\_diseases.asp#faq](http://www.ada.org/public/topics/periodontal_diseases.asp#faq)

<sup>8</sup> <http://www.dentalcarestamford.com/pdf/Denta%20Plaque%20Biofilms.pdf>

<sup>9</sup> [www.mayoclinic.com/health/gingivitis/DS00363](http://www.mayoclinic.com/health/gingivitis/DS00363)

<sup>10</sup> [www.perio.org/consumer/gingivitis.htm](http://www.perio.org/consumer/gingivitis.htm)

<sup>11</sup> [http://www.perio.org/consumer/faq\\_periodisease.htm](http://www.perio.org/consumer/faq_periodisease.htm)

<sup>12</sup> [http://www.perio.org/consumer/faq\\_periodisease.htm](http://www.perio.org/consumer/faq_periodisease.htm)

<sup>13</sup> [http://www.perio.org/consumer/faq\\_periodisease.htm](http://www.perio.org/consumer/faq_periodisease.htm)