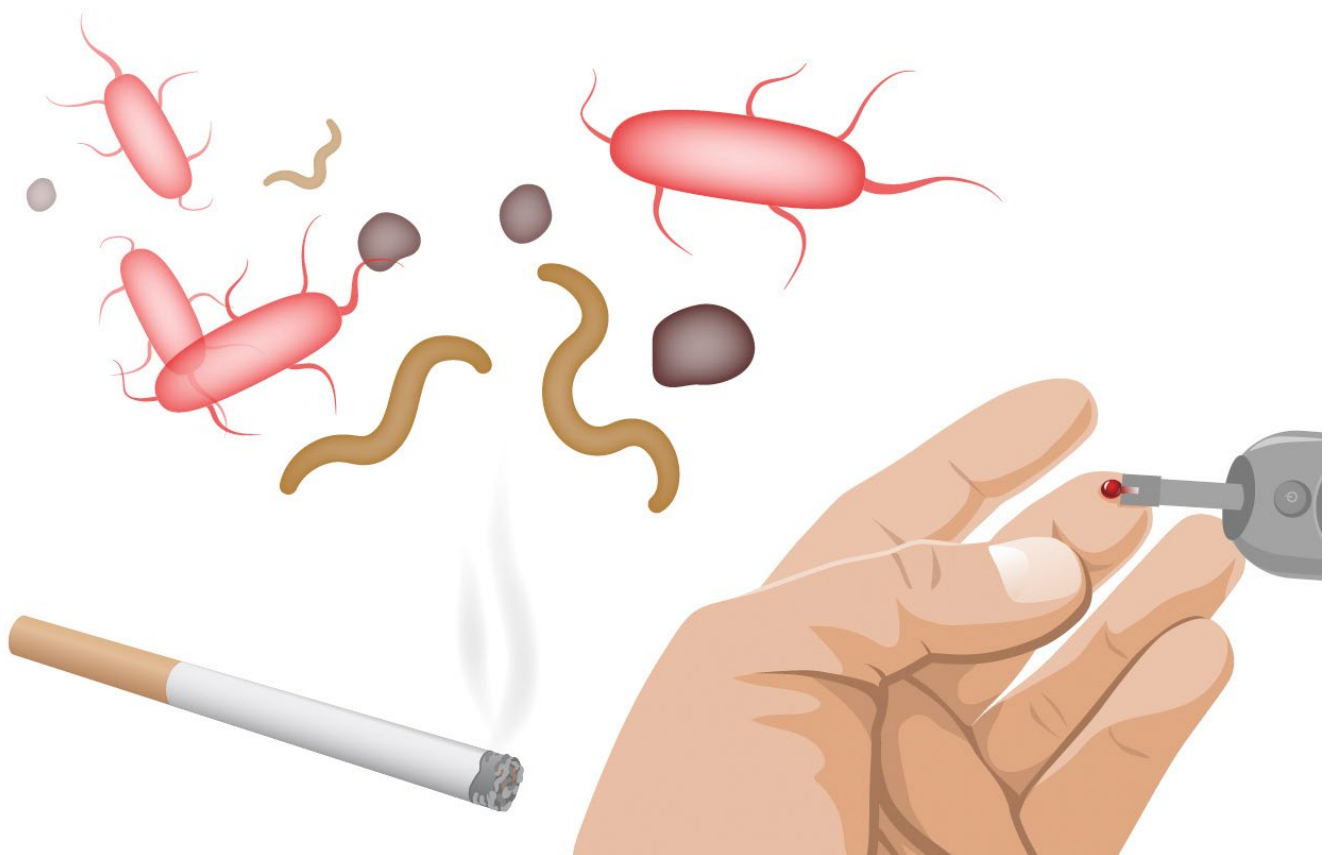


# Section 2 – Causes of periodontitis



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## Legal notice

The website [www.periodontal-health.com](http://www.periodontal-health.com) is an information platform about the causes, consequences, diagnosis, treatment, and prevention of periodontitis. The contents were created in media dissertations for a doctorate at the University of Bern.

### Media dissertations under the supervision of

PD Dr. Christoph A. Ramseier

MAS Periodontology SSO, EFP

Periodontology Clinic, Dental Clinics of the University of Bern

### Content created by

Dr. Zoe Wojahn, MDM

PD Dr. Christoph A. Ramseier, MAS

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### Illustrations

Bernadette Rawyler

Scientific Illustrator

Department of Multimedia, Dental Clinics of the University of Bern

### Correspondence address

PD Dr. med. dent. Christoph A. Ramseier, MAS

Dental Clinics of the University of Bern

Periodontology Clinic

Freiburgstrasse 7

CH-3010 Bern

Tel. +41 31 632 25 89

E-Mail: [christoph.ramseier@zmk.unibe.ch](mailto:christoph.ramseier@zmk.unibe.ch)

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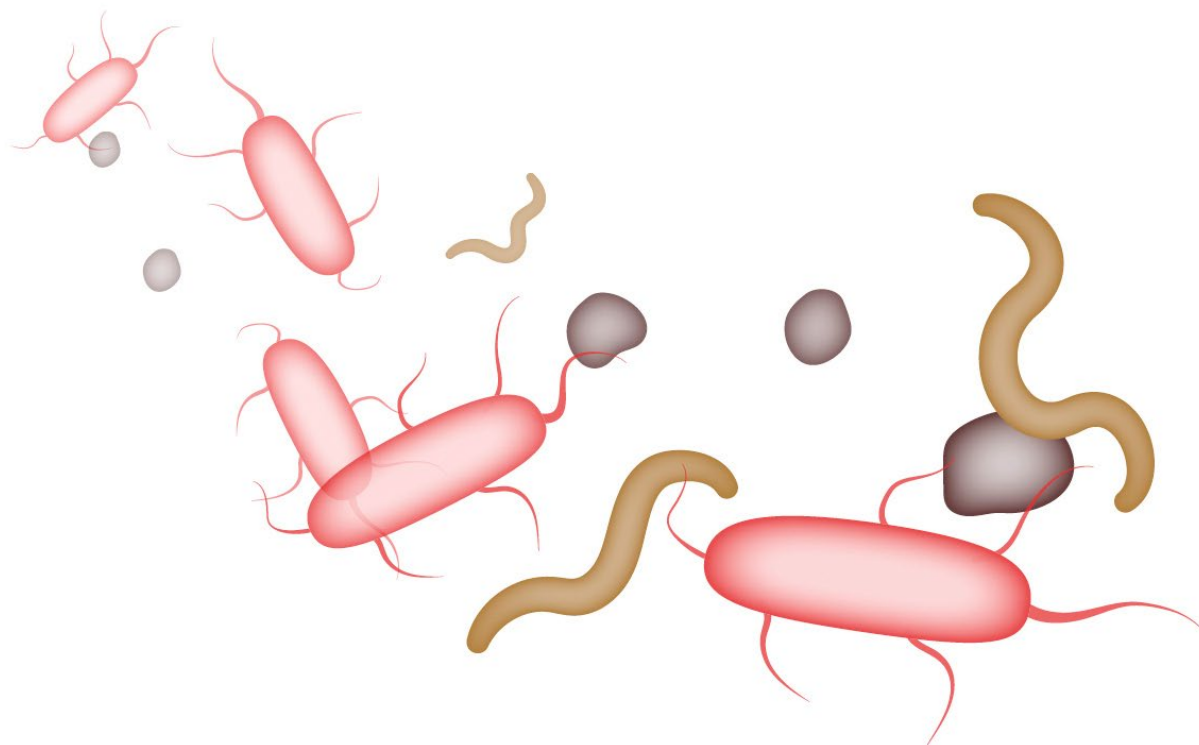
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## Section 2 – Causes of periodontitis

### 2.1 Bacterial plaque (dental plaque, biofilm)

**Bacterial plaque (dental plaque, biofilm) is the major cause of gum inflammation (gingivitis). Some bacteria can further promote the development of periodontitis.**



Gingivitis and periodontitis are caused by bacteria that build up on the surface of teeth. This coating is also called dental plaque or biofilm. When oral hygiene is inadequate, bacteria can multiply quickly. While most kinds of bacteria are harmless for a healthy person, some kinds – even in small numbers – can cause serious infections.

If bacterial plaque is not removed from the teeth regularly, the gum reacts with an inflammation after just a few days. The gum becomes red, swollen, and bleeds at the slightest stimulation, for example when using dental floss. However, when the teeth are cleaned with regular oral hygiene at home, these signs of inflammation go away within a few days.

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### Experimental gingivitis

In a historical study in the 1960s by Loe et al., students of dentistry were asked to refrain from oral hygiene at home for 21 days.

In regular follow-up examinations, several parameters were recorded that could document gingival health: plaque index, gingivitis index, and microbiological samples.

Around two weeks after the start of the study, both dental plaque and clinical symptoms of inflammation (gingivitis) were observed.

Interestingly – and this is what made the study famous – after restarting regular oral hygiene at home, all symptoms of inflammation were reversed until the gums returned to their original condition.

This proved the causal relationship between dental plaque and the development of gingivitis

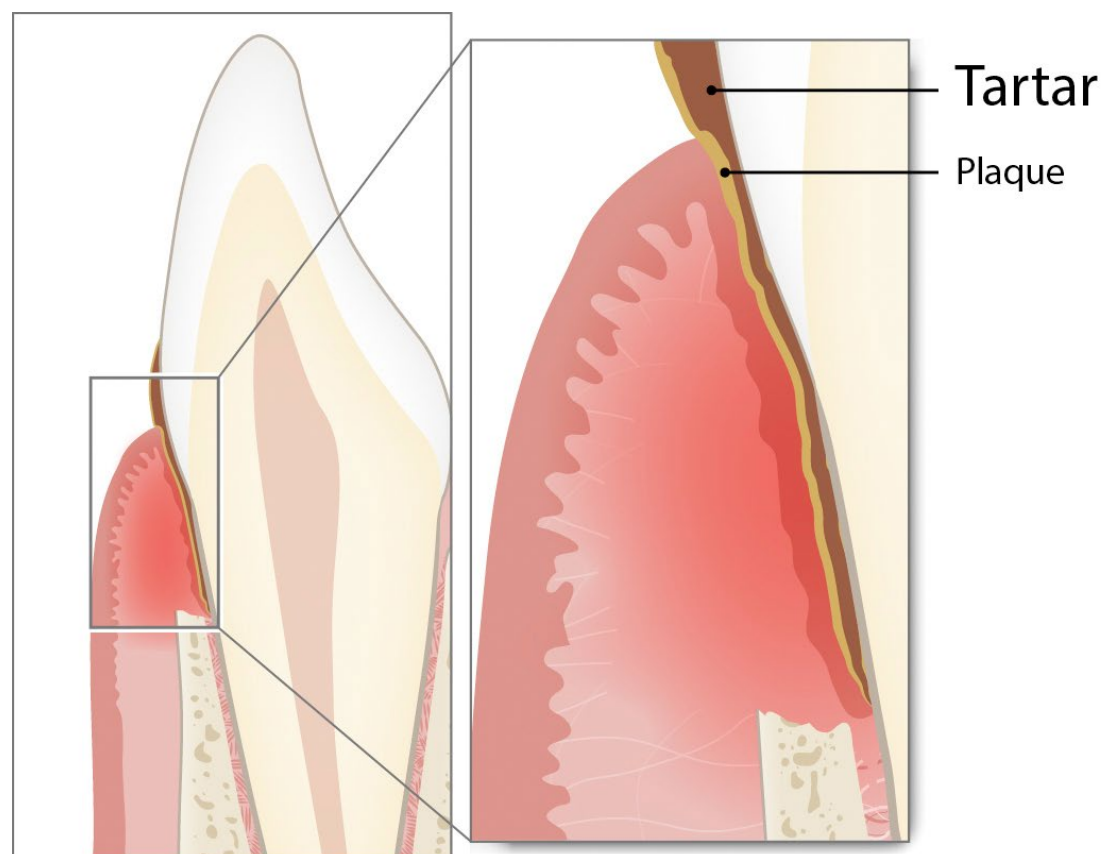
#### References or external links

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### 2.2 Tartar

**Tartar is calcified dental plaque that can form below or above the gum line. Tartar must be removed professionally on a regular basis.**



Dental plaque can calcify (mineralize) to tartar. All tooth surfaces can be affected by tartar. The root surfaces at places with gum pockets in particular are very often affected.

The surface of tartar is rough and therefore becomes colonized with bacteria over and over again. This is why the formation of tartar should be prevented by regular good oral hygiene at home.

However, already existing tartar cannot be removed by oral hygiene at home. This makes regular checkups in a dental practice with professional teeth cleaning indispensable.

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### 2.3 Smoking

**Smoking reduces the resistance of the gums to harmful bacteria. Smokers have more gum problems and lose more teeth than ex-smokers or non-smokers.**



Smoking is not just bad for your general health. In addition to the lungs and cardiovascular system, the gums are also greatly affected by smoking.

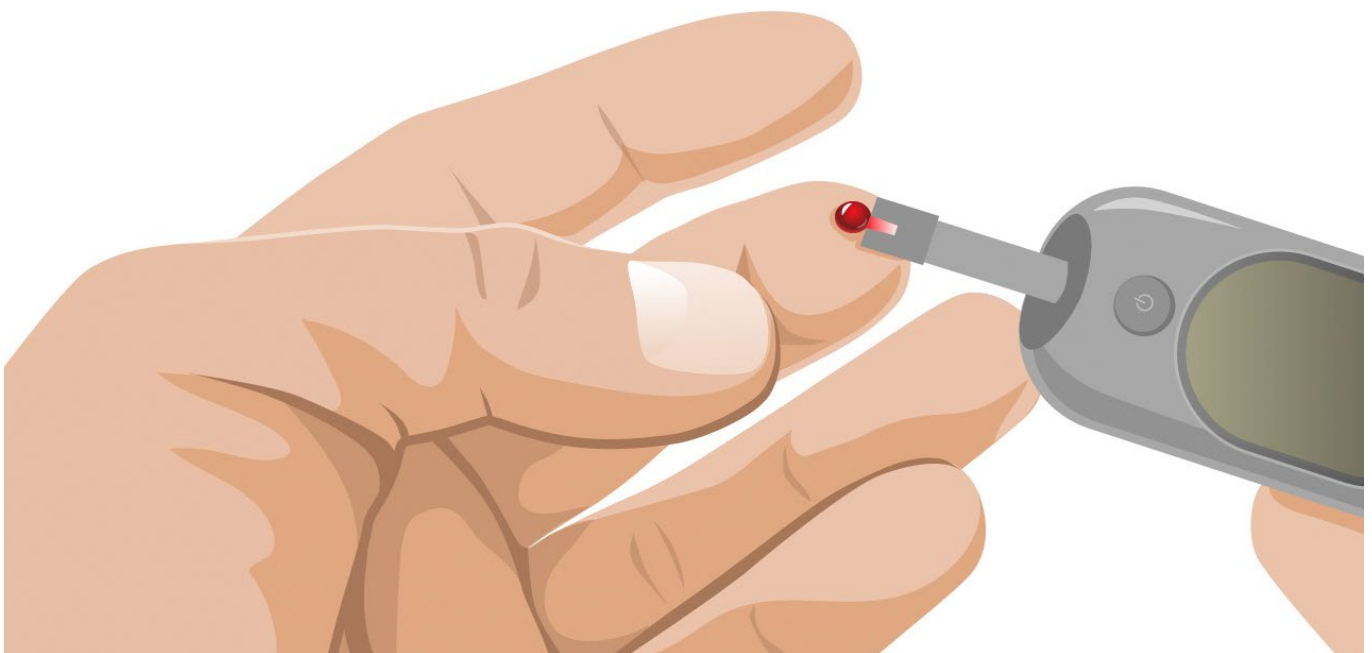
Even with very good oral hygiene at home, smokers experience greater bone loss in the jaw. This is why smokers are more likely to develop gum pockets and have a greater number of harmful bacteria. Smokers also do not respond to gum treatment as well as non-smokers. Smokers thus have a considerably higher risk of losing their teeth sooner than non-smokers.

In ex-smokers, the condition of the gums can be improved after just a few years and with good professional care. Just one year after quitting, former smokers respond to treatment better than patients who still smoke.

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### 2.4 Systemic diseases (e.g. type 2 diabetes)

**Diabetics whose blood sugar is not managed have a higher risk of developing periodontitis. And patients with periodontitis have a higher risk for diabetes. Investigation of both diseases is necessary.**



Periodontitis and diabetes have a reciprocal effect on one another. Diabetics whose blood sugar is not managed have a higher risk of developing periodontitis and conversely, patients with periodontitis have a higher risk for diabetes. On the other hand, diabetics with well managed blood sugar levels do not have a higher risk for periodontitis. Interestingly enough, the treatment of one disease has a positive effect on the treatment of the other. This makes it indispensable to have diabetics examined by a dentist and patients with periodontitis be tested for diabetes by their doctor.

The information about periodontitis and diabetes and especially the importance of early detection must become more widely known. Unfortunately, very few people are aware of this correlation and currently, only around half of diabetics even know that they have this disease.

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### 2.5 Diet

**The effect of an unhealthy diet on gums is often underestimated. The consequence is a high risk of developing both diabetes and periodontitis itself.**



An unhealthy diet increases the tendency for inflammation of the gums. This leads in both gingivitis and periodontitis to more swelling at the gum line and increased loss of the tooth anchoring up to premature tooth loss.

An unhealthy diet also increases the risk of diabetes, which can further exacerbate the general condition. Diabetics not only have a higher risk of developing periodontitis, they also do not respond as well to the necessary gum treatment.



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### 2.6 Stress

**Stress reduces the gum's resistance to harmful bacteria. Those who are under mental stress therefore have a higher risk of developing periodontitis.**



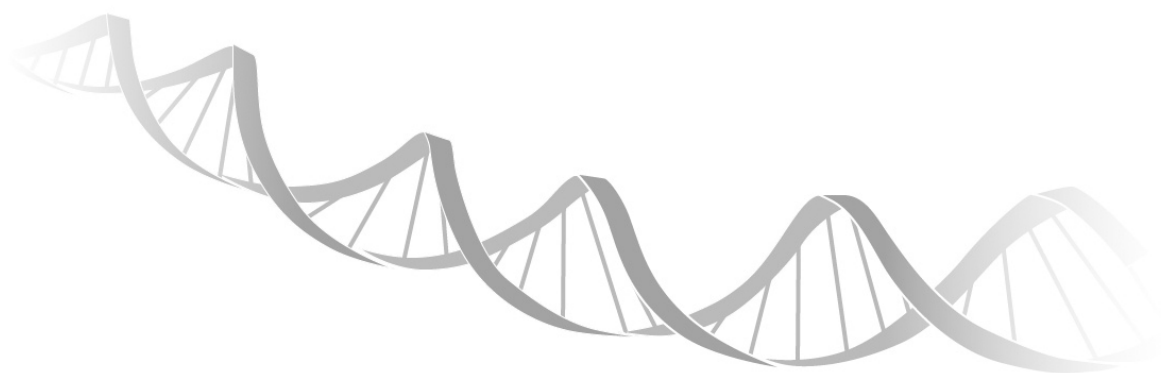
The effect of mental stress on gums is often underestimated, resulting in a greater risk of periodontitis.

Mental stress lowers the resistance of the gums to harmful bacteria. Those affected have a weak immune system and more severe gum disease. And affected individuals spend less time on their daily oral hygiene at home. The resulting greater bacterial load compounds the unfavorable effect on the already compromised immune system.

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### 2.7 Genetic disposition

**Due to differences in genetics, the immune system in periodontitis against harmful bacteria may vary. As a result, the condition can be different from person to person.**



Gingivitis and periodontitis are caused by bacteria that build up on the surfaces of the teeth. In the immune defense against these bacteria in the inflamed gums, endogenous proteins are released that damage the anchoring structure of the tooth and cause it to break down.

The way the immune system reacts to harmful bacteria can differ from person to person due to genetic differences. This is why not all persons develop the same symptoms of periodontitis, even if they practice inadequate oral hygiene at home over a long period.

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### 2.8 Age

**Due to the duration of the chronic disease, the consequences of periodontitis often do not become severe until old or very old age.**



Periodontitis can start at the age of 18 in rare cases – in very rare cases even in adolescence. However, most of those affected do not develop it until age 35. Because the disease usually progresses slowly, those affected do not detect the first problems until much later – sometimes when it is already too late.

Periodontitis that is left untreated or with inadequate professional treatment continues to progress. In old age, the consequences become even worse due to the duration of the disease: more bone loss, more tooth loss, diabetes that is more difficult to manage, or more cardiovascular disease.



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