

# Gingivitis

Gingivitis is a disease of the gingiva.

## Manifestations

- Redness, swelling, bleeding after sulcus probing, exudation (= increased flow of sulcal fluid), ulceration.
- Increase in probing depth without loss of attachment = fake pocket.

## Inflammation

The initial manifestation of gingivitis is **inflammation**. The gums are red and edematous. Inflammation leads to a gradual increase in the volume of the gingiva, which is first manifested by enlargement and rounding of the interdental papillae. Gradually, the *stippling* disappears and the gingiva becomes smoother. The **fake periodontal pockets** are formed.

## Bleeding

Another symptom that is typical of inflammation is **stimulated hemorrhage**. The gingiva bleeds, for example, when cleaning teeth, eating, etc. The degree of inflammation can be inferred from the intensity of bleeding (PBI - papilla bleeding index).

## Formation of ulcers

In some cases, **ulcers** may form on top of the interdental papillae, leading to tissue disintegration and, in extreme cases, complete disappearance of the papilla (**ANUG - acute necrotizing ulcerative gingivitis**). An *inverted papilla* may form, which is sunken in the opposite direction. Ulcerative changes in the gingiva may indicate some serious diseases such as leukemia or AIDS.



ANUG

## Gingival Hyperplasia

In some cases, connective tissue accumulates in the gingiva, leading to an even greater increase in gingival volume and thus accentuation of periodontal pockets.

## Classification by etiology

- Plaque-induced gingivitis only;
- Plaque-induced modified by general factors:
  - *Endocrine factors*:
    - Gingivitis at puberty (e.g., juvenile hyperplastic gingivitis);
    - Pregnancy gingivitis;
    - Gingivitis in diabetes mellitus,
  - *General disease*:
    - e.g., Gingivitis in leukemia
  - *Drug-modulated gingivitis*:
    - Gingivitis with hormonal contraceptives
    - Gingival hyperplasia (Cyclosporine A, hydantoins,  $\text{Ca}^{2+}$  channel blockers) with following inflammation.<sup>[1]</sup>



Gingivitis (teeth before and after scaling)

## Classification by progress

### Acute gingivitis

- Acute inflammation of the gingiva with redness, swelling and exudation.
- Causes: mechanical and thermal influences (persistent bacterial plaque).

### Chronic gingivitis

- Long-term clinical course;
- Manifestations: limited to the gingiva (bleeding, hyperplastic swelling...)
  - There is no loss of attachment, bone is not lost, sulcus may be deepened into a parodontal pocket;
  - Inflammatory hyperplasia leads to the formation of pseudopockets.
- Cause: microorganisms dental plaque = "dirty" gingivitis;
  - Microbiology - G+ rods and cocci predominate over G- bacteria - facultatively anaerobic predominate over purely anaerobic.

## Plaque-induced gingivitis

- Inflammation induced by dental plaque bacteria;
- Localized × Generalized form;
- May affect the entire gingiva or only the interdental papillae
- Typical chronic course;

### Histologically

round cell infiltrate. No disruption of alveolar bone, compacts.

### Prognosis

untreated may progress to parodontitis (transfer of inflammation to alveolar bone). Treated fully reversible.

### Therapy

- Chronic form: hygiene! Removal of retention sites for plaque (tartar, overhanging fillings, inadequate prosthetic work...)
- Acute form: gentle rinses with hydrogen peroxide, after calming down as in the chronic form.

## Gingivitis gravidarum (pregnancy gingivitis)

- In the sulcular fluid - increased amounts of estrogen and progesterone + increased reactivity of gingival tissue, bacterial invasion;
- Increased vascular permeability, edema, synthesis of prostaglandins and other mediators of inflammation;
- Spontaneous gingival bleeding (mainly from the 2nd trimester onwards), gingival hyperplasia (epulis gravidarum);
- The amount of plaque is not increased, its composition changes.

### Therapy

as same as for plaque-induced gingivitis.

## Pubertal gingivitis

- Hormonal imbalance, often associated with poor hygiene and excessive mouth breathing;
- Peak prevalence around age 15. More significant changes in girls.<sup>[2]</sup>
- Clinical manifestations as in pregnancy gingivitis.

### Therapy

as same as for plaque-induced gingivitis.

## Gingivitis intermenstrualis, menstrualis and climacterica

- Consequence of a change (decrease) in estrogen levels - decreased keratinization of cells;
- Loss of the natural covering of keratinized cells.

### Therapy

as same as for plaque-induced gingivitis.

## Contraceptive-induced gingivitis (pill)

- as pregnancy gingivitis, when taking high progesterone preparations.

### Therapy

as same as for plaque-induced gingivitis.

## Sources

### Related articles

- Gingiva
- Periodontium
- Parodontology

### External sources

- Klasifikace onemocnění gingivy (<https://www.fnplzen.cz/kliniky/stom/klasifikace.htm>)

### References

1. POLENÍK, Pavel. *Onemocnění gingivy* [online]. Česká parodontologická společnost (FN Plzeň), ©1999. [cit. 2011-09-12]. <<https://www.fnplzen.cz/kliniky/stom/klasifikace.htm>>.
2. MAZÁNEK, Jiří – URBAN, František. *Stomatologické repetitorium*. 1. edition. Grada Publishing a.s, 2003. pp. 456. ISBN 80-7169-824-5.

## Bibliography

- MAZÁNEK, Jiří – URBAN, František. *Stomatologické repetitorium*. 1. edition. Grada Publishing a.s, 2003. pp. 456. ISBN 80-7169-824-5.
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