







## Examination of the gingiva

	Normal appearance	Changes in disease clinical appearance	Causes for changes
Color	<ul style="list-style-type: none"> <li>➤ Uniformly pale pink.</li> <li>➤ Variations in pigmentation related to complexion race.</li> </ul>	<p><b>Acute:</b> bright red</p>	<p><b>Inflammation:</b> capillary dilation increased blood flow.</p>
		<ul style="list-style-type: none"> <li>➤ <b>Chronic:</b> bluish pink, bluish red.</li> <li>➤ Pink.</li> </ul>	<p>Vessels engorged. Blood flow sluggish. Venous return impaired. Increased fibrosis.</p>
		<p><b>Attached gingiva:</b> color changes may extend to the mucogingival line.</p>	<p>Deepening of pocket, mucogingival involvement.</p>

Size	<ul style="list-style-type: none"> <li>• Not enlarged</li> </ul>	Enlarged	<ul style="list-style-type: none"> <li>- <b>Edematous:</b> inflammatory fluid cellular exudate hemorrhage.</li> <li>- <b>Fibrotic:</b> new collagen fibers.</li> </ul>
Shape	<ul style="list-style-type: none"> <li>• Marginal gingiva: knife-edge, flat.</li> <li>• Follows a curved line about the tooth.</li> </ul>	<b>Marginal gingiva:</b> <ul style="list-style-type: none"> <li>•Rounded</li> <li>•Rolled</li> <li>•Bulbous</li> </ul>	<b>Inflammatory changes:</b> edema or fibrosis
	<b>Papillae:</b> 1- Normal contact: papilla is pointed and pyramidal fills the interproximal area. 2- Space (diastema) between teeth: gingiva is flat or saddle-shaped.	<b>Papillae:</b> <ul style="list-style-type: none"> <li>•Bulbous</li> <li>•Flattened</li> <li>•Blunted</li> <li>•Cratered</li> </ul>	Bulbous with gingival enlargement
Consistency	Firm, resilient. Attached gingiva firmly bound down.	<ul style="list-style-type: none"> <li>•Soft, spongy, dents readily when pressed with probe,</li> <li>•Red color, smooth shiny surface, loss of stippling bleeding on probing.</li> </ul> <ul style="list-style-type: none"> <li>•Firm resist probe pressure, pink color stippling bleed in depth of pocket</li> </ul>	<ul style="list-style-type: none"> <li><b>Edematous:</b> fluid between cells in connective tissue.</li> </ul> <ul style="list-style-type: none"> <li><b>Fibrotic collagen fibers</b></li> </ul>

	Normal appearance	Changes in disease clinical appearance	Causes for changes
Surface texture	<ul style="list-style-type: none"> <li>• <b>Free gingiva:</b> smooth.</li> <li>• <b>-Attached gingiva:</b> stippled.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Acute condition:</b> loss of stippling with smooth, shiny gingiva.</li> <li>• <b>Chronic:</b> hard, firm, with stippling, sometimes heavier than normal.</li> </ul>	Inflammatory changes in the connective tissue, edema, cellular infiltration. Fibrosis
Position of gingival margin	<b>Fully erupted tooth:</b> margin is 1-2 mm above cemento enamel junction at or slightly below the enamel contour.	<ul style="list-style-type: none"> <li>• <b>Enlarged gingiva:</b> margin is higher on the tooth, above normal pocket deepened.</li> <li>• <b>Recession:</b> margin is more apical; root surface is exposed.</li> </ul>	<ul style="list-style-type: none"> <li>• Edematous or fibrotic.</li> <li>• Junctional epithelium has migrated along the root; gingival margin follows.</li> </ul>
Position of junctional epithelium	<p><b>Fully erupted tooth:</b> the junctional epithelium is at the cemento enamel junction.</p> <p><b>During eruption:</b> along the enamel surface.</p>	Position, determined by use of probe, is on the root surface.	Apical migration of the epithelium along the root.

<p><b>Mucogingival lines</b></p>	<p>Make clear demarcation between the pink, stipple, attached gingiva and the darker alveolar mucosa with smooth shiny surface.</p>	<p><b>No attached gingiva</b></p> <ol style="list-style-type: none"> <li>1. Color changes may extend full height of the gingiva; mucogingival line obliterated.</li> <li>2. Probing reveals that the bottom of the pocket extends into mucosa.</li> <li>3. Frenal pull may displace the gingival margin from the tooth.</li> </ol>	<ul style="list-style-type: none"> <li>•Deepening of the pocket</li> <li>•Apical migration of the junctional epithelium</li> <li>•Attached gingival decreases with pocket deepening.</li> <li>•Inflammation extends into alveolar mucosa.</li> </ul>
<p><b>Bleeding</b></p>	<p>No spontaneous bleeding or upon probing.</p>	<ul style="list-style-type: none"> <li>•Spontaneous bleeding.</li> <li>•Bleeding on probing: bleeding near margin in acute condition, bleeding deep in pocket in chronic condition.</li> </ul>	<p>Degeneration of the sulcular epithelium ulceration</p>
			<p>Blood vessels engorged tissue edematous.</p>
<p><b>Exudate</b></p>	<p>No exudate on pressure.</p>	<ul style="list-style-type: none"> <li>•White fluid, pus, visible on digital pressure.</li> <li>•Amount not related to pocket depth.</li> </ul>	<ul style="list-style-type: none"> <li>•Inflammation in the connective tissue</li> <li>•Excessive accumulation of white blood cells with serum and tissue fluid makes up the exudate (pus).</li> </ul>

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plaque and gingival index



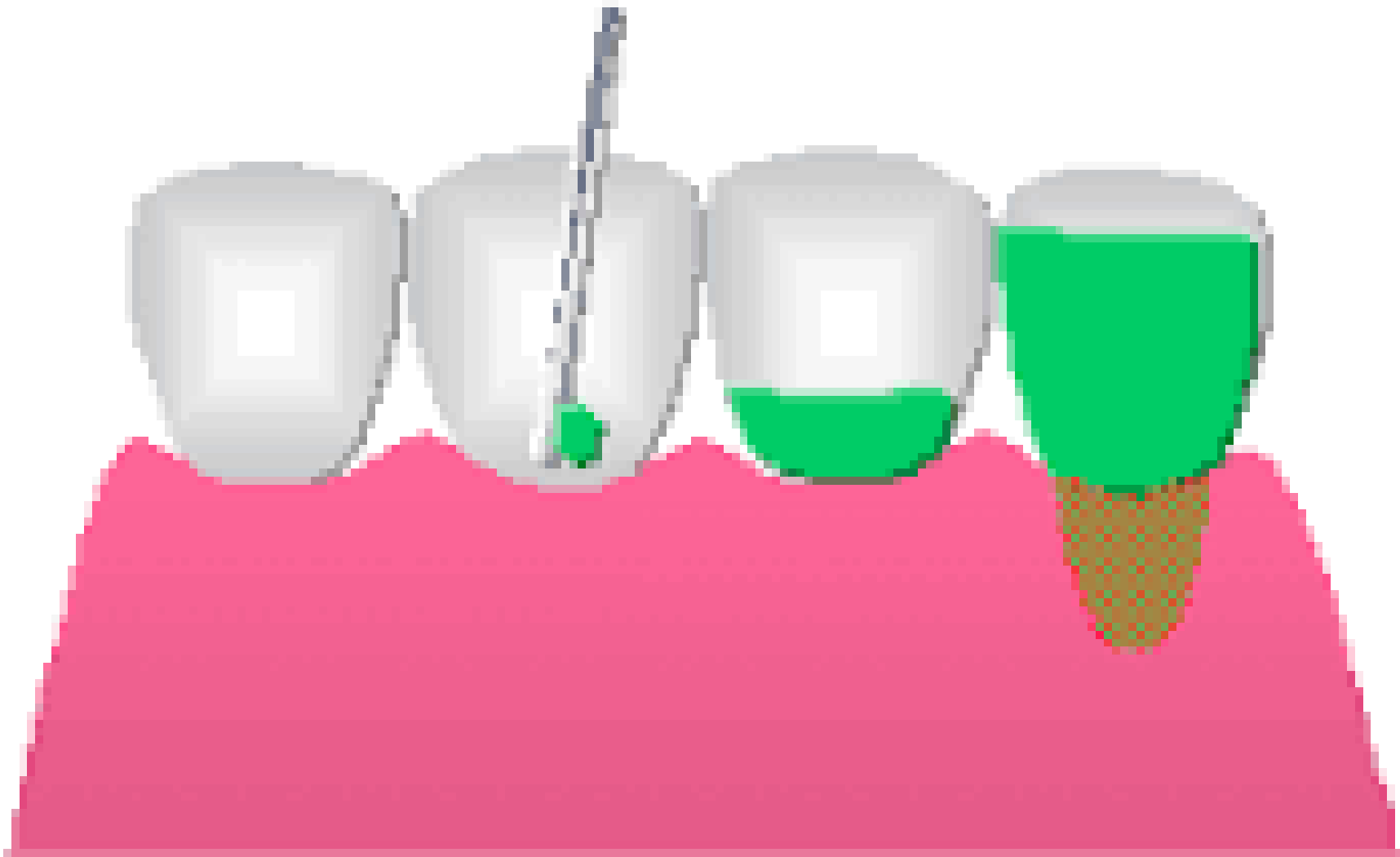
<b>Score</b>	<b>Criteria</b>
0	No plaque.
1	A film of plaque adhering to the free gingival margin and adjacent area of the tooth which may be seen by using the sample on the tooth surface.
2	Moderate accumulation of soft deposits within the gingival pocket, or the tooth and gingival margin which may be seen with the naked eye.
3	Abundance of soft matter within the gingival pocket and/or on the tooth and gingival margin.

0

1

2

3



<b>Appearance</b>	<b>Bleeding</b>	<b>Inflammation</b>	<b>Points</b>
Normal	No bleeding	None	0
Slight change in color and mild edema with slight change in texture	No bleeding	Mild	1
Redness, hypertrophy, edema and glazing	Bleeding on probing/pressure	Moderate	2
Marked redness, hypertrophy, edema, ulceration	Spontaneous bleeding	Severe	3

# Gingival Bleeding Caused by Local Factors

Contributing factors to plaque retention that may lead to gingivitis include:

- ▶ anatomic and developmental tooth variations,
- ▶ caries
- ▶ frenum pull
- ▶ malpositioned teeth
- ▶ mouth breathing
- ▶ overhangs
- ▶ partial dentures
- ▶ lack of attached gingiva, and recession
- ▶ orthodontic treatment
- ▶ fixed retainers were associated with increased plaque retention and increased bleeding on probing

- ▶ In gingival inflammation, histopathologic alterations that result in abnormal gingival bleeding include dilation and engorgement of the capillaries and thinning or ulceration of the sulcular epithelium .
- ▶ Because the capillaries are engorged and closer to the surface, and the thinned, degenerated epithelium is less protective, stimuli that are normally innocuous cause rupture of the capillaries and gingival bleeding.

- ▶ Acute episodes of gingival bleeding are caused by injury and can occur spontaneously in gingival disease.
- ▶ Laceration of the gingiva by toothbrush bristles during aggressive tooth brushing or by sharp pieces of hard food can cause gingival bleeding even in the absence of gingival disease.
- ▶ Gingival burns from hot foods or chemicals increase the ease of gingival bleeding.

- ▶ Spontaneous bleeding or bleeding on slight provocation can occur in acute necrotizing ulcerative gingivitis.
- ▶ In this condition, engorged blood vessels in the inflamed connective tissue are exposed by ulceration of the necrotic surface epithelium.

## Gingival Bleeding Associated with Systemic Changes

Hemorrhagic disorders in which abnormal gingival bleeding is encountered include:

1. vascular abnormalities (vitamin C deficiency or allergy )
2. platelet disorders (thrombocytopenic purpura), hypoprothrombinemia (vitamin K deficiency), other coagulation defects (hemophilia, leukemia), deficient platelet thromboplastic factor (PF3) resulting from uremia, multiple myeloma .
3. The effects of hormonal replacement therapy, oral contraceptives, pregnancy, and the menstrual cycle are also reported to affect gingival bleeding.



Diseases that increase melanin pigmentation include the following:

- ▶ *Addison's disease* is caused by adrenal dysfunction and produces isolated patches of discoloration varying from bluish black to brown.
- ▶ *Peutz-Jeghers syndrome* produces intestinal polyposis and melanin pigmentation in the oral mucosa and lips.
- ▶ *Albright's syndrome (polyostotic fibrous dysplasia)* .
- ▶ *von Recklinghausen's disease (neurofibromatosis)* produce areas of oral melanin pigmentation.











