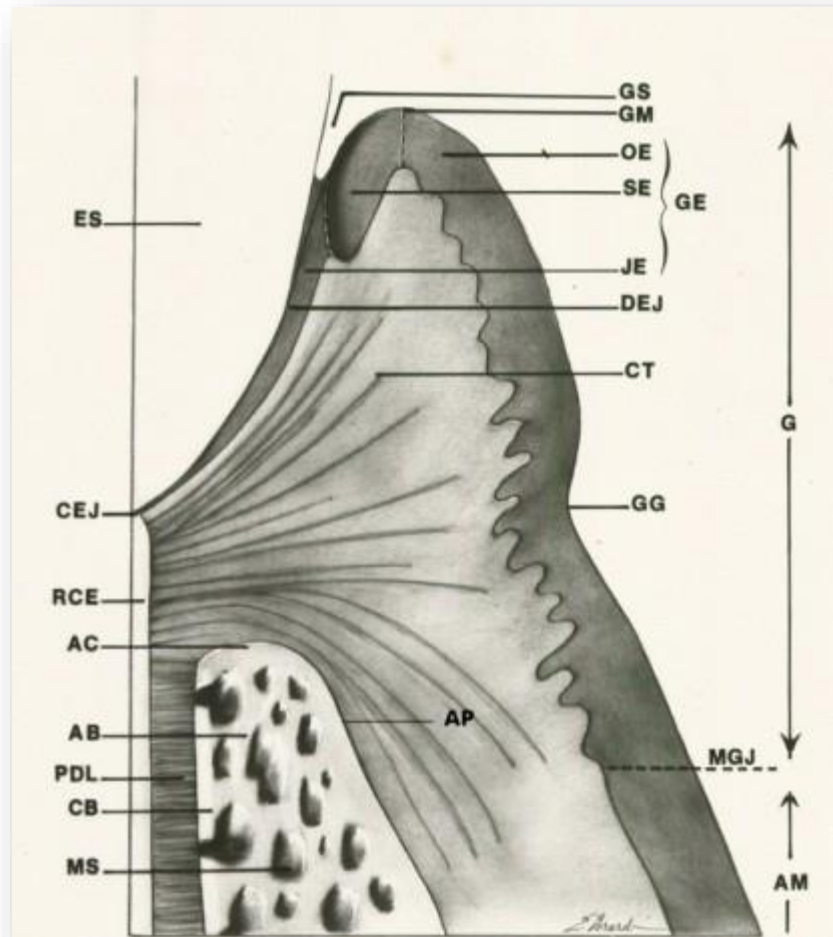


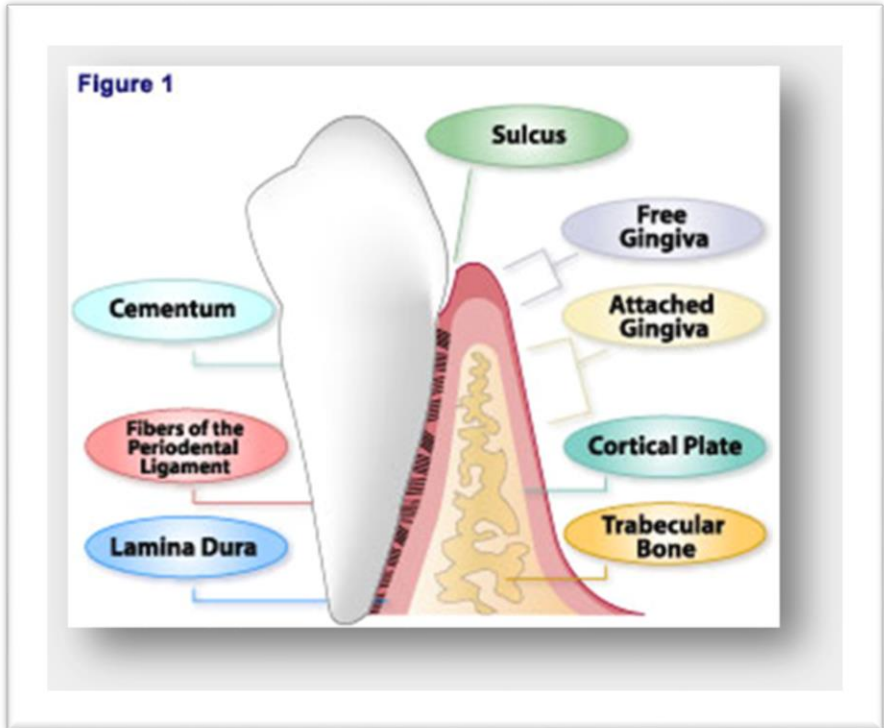
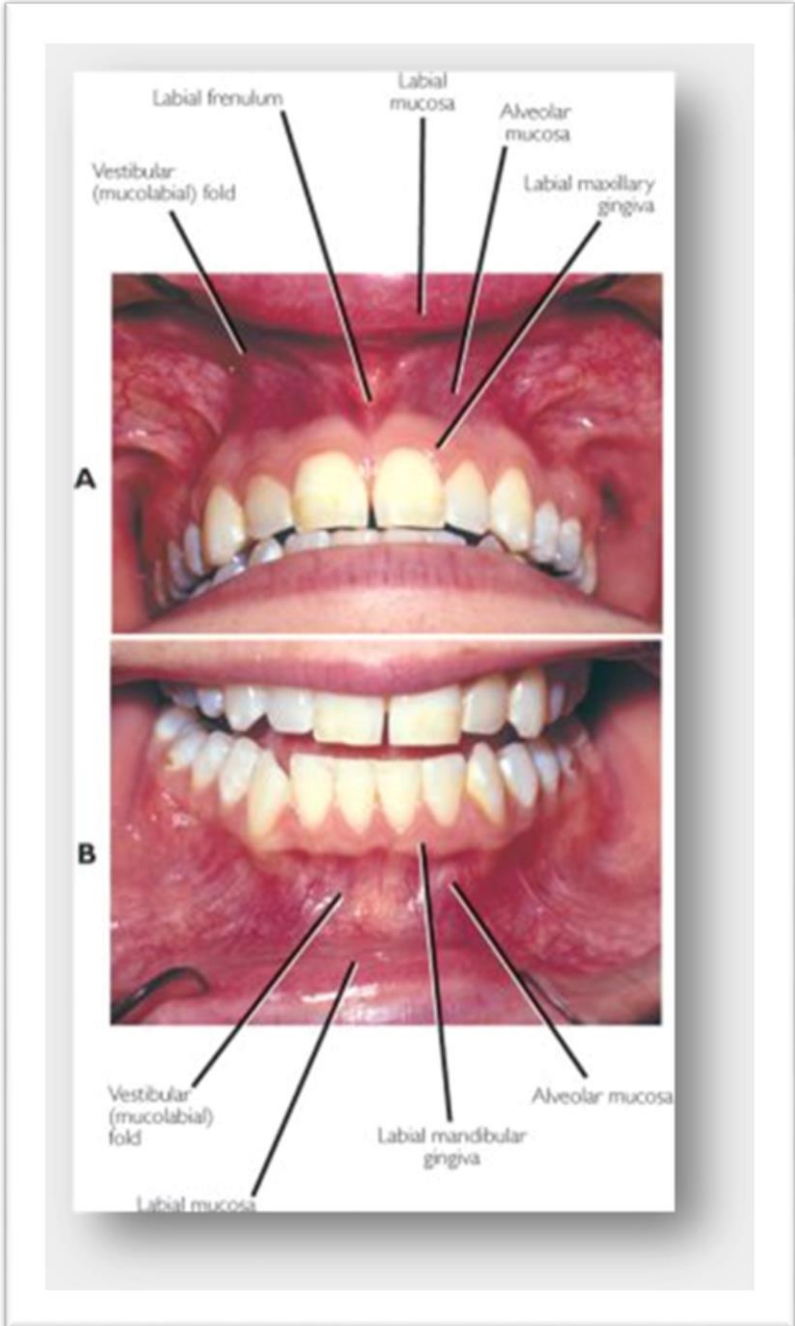
# PERIODONTAL DISEASE

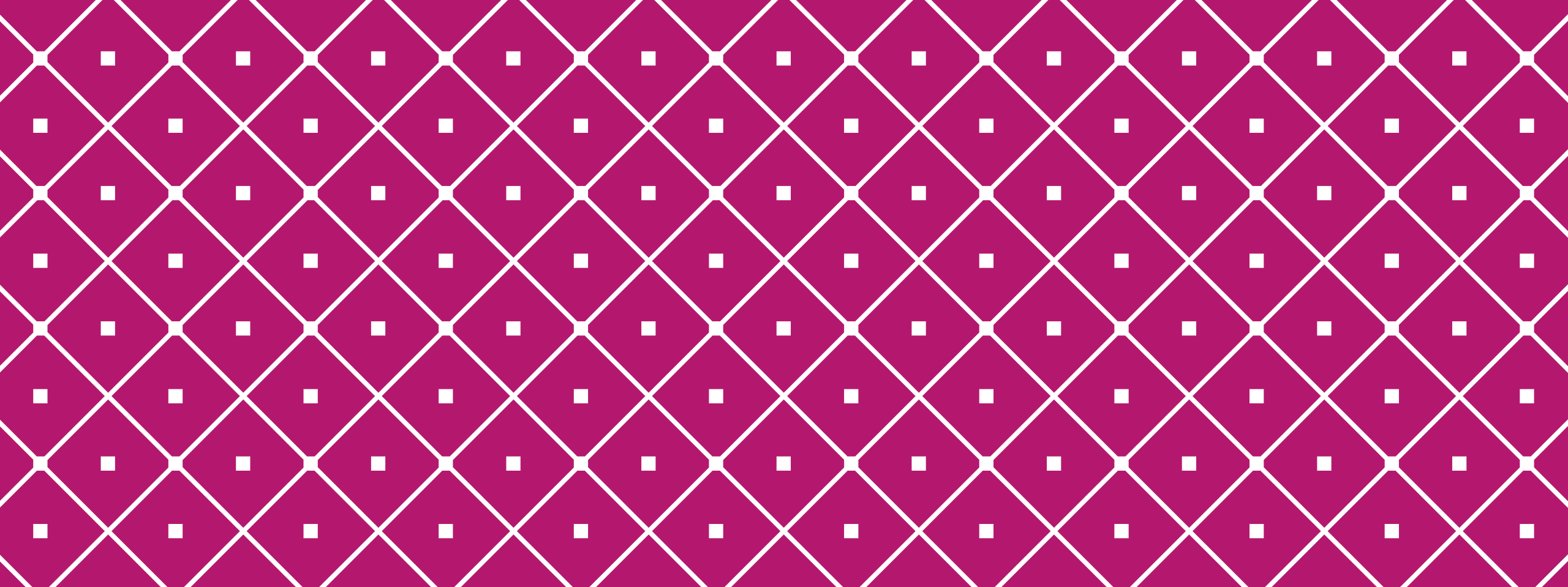
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# THE PERIODONTIUM



**AB**, alveolar bone; **AC**, alveolar crest; **AM**, alveolar mucosa; **AP**, alveolar process; **CB**, compact bone of alveolar bone proper; **CEJ**, cemento-enamel junction; **CT**, connective tissue; **DEJ**, dentino-enamel junction; **ES**, enamel space; **G**, gingiva; **GE**, gingival epithelium; **GG**, gingival groove; **GM**, gingival margin; **GS**, gingival sulcus; **JE**, junctional epithelium; **MGJ**, mucogingival junction; **MS**, marrow space; **OE**, oral epithelium; **PDL**, periodontal ligament; **RCE**, radicular (root) cementum; **SE**, sulcular epithelium;





# TYPES

# CHRONIC PERIODONTAL DISEASE

**Chronic periodontitis** (a.k.a. adult periodontitis) is the most frequent type of periodontitis and is characterized by pocket formation and slowly progressing gum recession.

The condition may first appear in adolescence due to poor oral hygiene but in most cases it is after mid-30s when the clinical symptoms become significant. If chronic periodontitis symptoms are ignored, the loss of bone and gum tissue will lead to tooth loss.

It can be further divided into 3 stages; **early, moderate and advanced stage.**

# EARLY PERIODONTAL DISEASE

Periodontitis is the more dangerous form of periodontal disease. Infection and inflammation has spread to the bone supporting the teeth. When gum disease has progressed to the periodontitis stage, the supporting bone and fibers that hold the teeth in place start to get irreversibly damaged. The stages of periodontitis are defined as early, moderate, and advanced. The main factor for the classification to a certain stage of the disease is the degree of destruction of the supporting bone.

In the initial stage of periodontitis plaque bacteria continue to penetrate deeper between the teeth and gums. The environment becomes suitable for the establishment of anaerobic bacteria under the gums. Gingival pockets are formed below the gumline.

Greater inflammation and swelling of the gums

Gums begin to separate from teeth below the cemento-enamel junction

Gum bleeding when probing or brushing

**Pocket depth up to 4mm**

Infection reaches bone - Slight bone loss

Unpleasant breath or taste

Subgingival accumulation of plaque and calculus

**Treatment of early periodontitis includes tooth scaling and root planing accompanied by improved oral hygiene. Despite the bone damage, the amount of bone loss in this stage of periodontal disease is minor so that usually no additional treatment is required.**

# MODERATE PERIODONTAL DISEASE

The surrounding connective tissues and alveolar bone become seriously infected. Bacterial toxins and the body's enzymes fighting the infection break down the bone and connective tissue that hold teeth in place. First signs of tooth mobility appear due to bone loss.

Moderate Periodontitis

Gums recession – teeth appear longer

Root surface exposed - sensitivity - root decay

Persistent bad breath

Bleeding gums

**Pocket depth of 5-6mm**

Moderate bone loss (20 - 50%)

Periodontal abscesses may develop

Teeth may begin to loosen, drift and look separated

Moderate periodontitis is one of the most critical stages of periodontal disease, because some 'damage control' is yet possible before the condition reaches a phase when teeth can not be saved. Surgical treatments of gum disease can stop the progress of the disease but the damage is not reversible.

# ADVANCED PERIODONTITIS

This final stage of periodontal disease is characterized by severe infection, loosening teeth and tooth loss.

Constant bad breath and bad taste

Spontaneous gums bleeding

Sensitive teeth due to exposed roots

**Pocket depth over 7mm**

Pus drainage in the mouth due to periodontal abscesses

Severe bone loss (more than 50%)

Teeth drifting out of place

Teeth become loose or fall out

Teeth become so mobile and the bone loss so severe that in many cases they can not be saved and have to be extracted. In other cases, teeth extraction is necessary in order to clear the infection. The advanced stage of periodontitis can be reached in some cases without intense visible alerting symptoms despite the severe underlying bone damage.

Extensive periodontal gum surgery that includes soft and hard tissue grafting are necessary in a treatment effort to save the affected teeth. Unfortunately the prognosis is not good if the condition has reached to this advanced stages of periodontal disease.



# AGGRESSIVE PERIODONTAL DISEASE

Aggressive periodontitis (a.k.a. early onset periodontitis) is a dangerous type of periodontal disease that can cause tooth loss in a short period of time. Common symptoms are the fast increase in the depth of periodontal pockets and the rapid loss of bone structure.

Sometimes the condition is localized affecting one or no more than 3 teeth in patients with good oral health. Generalized aggressive periodontitis affecting the whole mouth requires immediate treatment to prevent extensive tooth loss. Genetic factors and immune deficiencies are considered as causes of aggressive periodontitis in addition to the microbial etiology of gum disease.

Depending on the age when the condition first appears it used to be classified as:

- **Pre-puberty AP** is a rare type of periodontal disease found in children less than 12 years old that can cause the loss of primary and/or permanent teeth. The disease is usually related to genetic disorders and may appear with the eruption of the first primary teeth.
- **Juvenile periodontitis** begins at puberty and is defined by severe bone loss commonly limited around the first molars and incisors. It is more aggressive than other types of periodontal disease causing very rapid vertical bone loss across the teeth roots. Juvenile periodontitis is usually asymptomatic without the usual symptoms of gum disease such as gums inflammation or gum bleeding.
- **Rapidly progressive periodontitis** occurs in the early 20s to mid-30s. Severe inflammation and rapid bone and connective tissue loss occur, and tooth loss is possible within a year of onset.

The goal of treatment in aggressive periodontitis is to fight the microbial etiology and (if possible) the contributing risk factors. Treatment methods are similar to those used for chronic periodontitis, including oral hygiene, tooth scaling and root planing, and periodontal gum surgery if needed.

# PERIO AND SYSTEMIC DISEASES

Periodontitis as a manifestation of systemic diseases is more often associated with younger age patients. Systemic conditions such as heart disease, leukemia, respiratory disease, and diabetes or disorders such as Down syndrome are associated with this form of periodontal disease.

**A medical examination is required in cases of early-onset periodontitis to identify the presence of any systemic disease that might have triggered the periodontal disease.**

# ANUG

Acute Necrotizing Ulcerative Gingivitis (ANUG) is a severe and painful type of periodontal disease, which causes deep ulcerations of the gingival tissues. The condition is usually triggered by poor oral hygiene and poor nutrition. If left without treatment, the bacterial infection can lead to the necrosis of gum tissues and may spread to other areas of the body.

**Acute Necrotizing Ulcerative Gingivitis is a much more severe condition than normal gingivitis, causing open gum sores and finally the death of the gum tissue.**

# CONTINUED

**Pregnancy gingivitis** is one of the most common dental problems during pregnancy. The condition is directly associated with the hormonal changes in the body of pregnant women.

**Pericoronitis** is a common dental problem of the gums in young adults at the age of 17-24 when the wisdom teeth normally erupt (break through the gum) in the mouth. It is a painful inflammation caused by the infection of the soft gingival tissues (gums) over or around a partially erupted tooth, most often a wisdom tooth.

**Periodontal-endodontic lesions** are another type of periodontitis that is related with infected hard tooth tissues except of the gums. In this condition an infection from a decayed tooth root may spread to the adjacent bone and gum tissues creating deep pockets around the tooth and leading to bone loss.

**Desquamative gingivitis** - one of the most painful but rare types of periodontal disease is a condition called desquamative gingivitis. The outer layers of the gums separate from the underlying tissue and peel away, exposing the inner layers and causing acute pain. This type of gum is more common in women after menopause.

# TYPES OF CEMENTUM

Cementum may be found both on the root as well as the crowns of teeth. It may also vary in its structure. Some forms of cementum may be **cellular**, while others are **not**. Some have a fibrillar collagenous matrix, while others do not.

Cementum may be classified in the following ways:

**Radicular cementum:** The cementum that is found on the root surface.

**Coronal cementum:** The cementum that forms on the enamel covering the crown.

**Cellular cementum:** Cementum containing cementocytes in lacunae within the cementum matrix.

**Acellular cementum:** Cementum without any cells in its matrix.

**Fibrillar cementum:** Cementum with a matrix that contains well-defined fibrils of type I collagen.

**Afibrillar cementum:** Cementum that has a matrix devoid of detectable type I collagen fibrils. Instead, the matrix tends to have a fine, granular consistency.

# BONE GRAFTING

There are several types of bone grafts that can be used:

**Autografts** are bone grafts taken from the patient's own body.

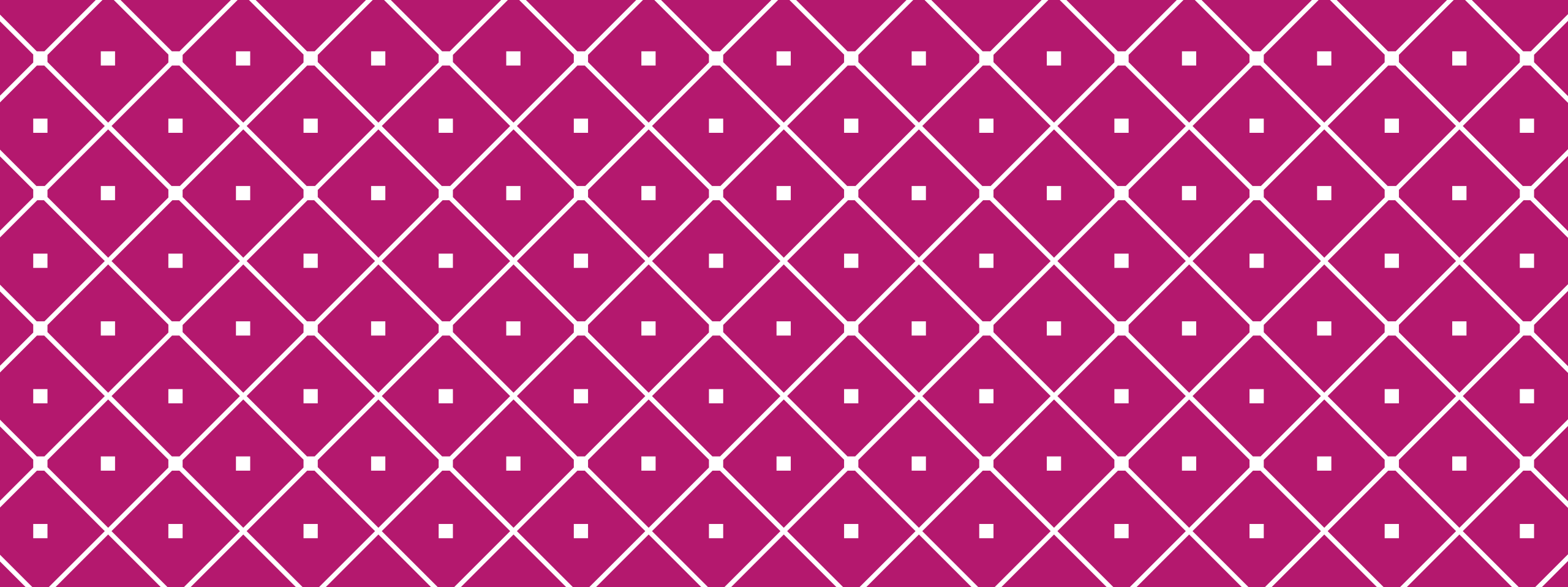
**Autogenous** bone grafting is always the first choice for the dentist because autografts give the best results amongst all types of bone grafts. That's because the patient's own bone marrow contains live cells that help continue bone growth and speed up the healing process. The disadvantage is that a second surgical site is needed where the bone graft will be taken from.

**Allografts** are human bone grafts taken from another person and usually provided by bone banks. This type of bone grafts provide an alternative for patients who want to avoid the surgical procedure required for taking the autografts, or when very large blocks of bone are needed.

**Alloplasts** make use of synthetic materials for bone formation.

**Xenografts** are bone grafts from other species, usually from bovine (cow) or porcine (pig) origin.

If an autograft will be used, a first surgery to harvest the bone graft is performed first. After numbing the area, an incision is made in the gums to expose the jaw bone. The gums are folded back and bone graft material is then placed in the area of the bone loss.



# IN CONCLUSION

# CHRONIC AND AGGRESSIVE

## Chronic Periodontitis

- A. Localized
- B. Generalized

## Aggressive Periodontitis

- A. Localized
- B. Generalized



# PERIO - SYSTEMIC

## **Periodontitis as a Manifestation of Systemic Diseases**

Associated with hematological disorders

- Acquired neutropenia
- Leukemia's
- Other

# NECROTIZING

## **Necrotizing Periodontal Diseases**

- A. Necrotizing ulcerative gingivitis (NUG)
- B. Necrotizing ulcerative periodontitis (NUP)

## **Abscesses of the Periodontium**

- A. Gingival abscess
- B. Periodontal abscess
- C. Pericoronal abscess

## **Periodontitis Associated With Endodontic Lesions**

- A. Combined periodontics-endodontic lesions

# DEVELOPMENTAL OR ACQUIRED

## **Developmental or Acquired Deformities and Conditions**

Localized tooth-related factors that modify or predispose to plaque-induced gingival diseases/periodontitis

- 1. Tooth anatomic factors
- 2. Dental restorations/appliances
- 3. Root fractures
- 4. Cervical root resorption and cemental tears

# CONTINUED

## **C. Mucogingival deformities and conditions on edentulous ridges**

- 1. Vertical and/or horizontal ridge deficiency
- 2. Lack of gingiva/keratinized tissue
- 3. Gingival/soft tissue enlargement
- 4. Aberrant frenum/muscle position
- 5. Decreased vestibular depth
- 6. Abnormal color

## **Occlusal trauma**

- 1. Primary occlusal trauma
- 2. Secondary occlusal trauma

# NEED MORE PERIO?

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You can [click here](#) to see the full recording with questions/answers and 96 slides of periodontal FUN 😊

PERIODONTAL DISEASE  
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