

# Dental Recession Aetiology, Classification and Management

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## Abstract

**Background:** Awareness toward gingival recession as the primary presentation to dentition is still underestimated, despite the fact that gingival diseases are very commonly reported by dentists. We will review the current role of proper evaluation and understanding of the disease clinical diagnosis, and different types of management in nowadays clinical practice. Gingival recession is a common disease in the general population. The estimated prevalence in people who are 30 years and above reaches as high as 58% and only gets higher with age. It has many classifications, ranging from appearance of cemento-enamel junction (CEJ) to displacement of the gingival margins away from the CEJ, affecting one or more surfaces of the same tooth/teeth and distorting generalized or localized teeth health. **Objective:** In this review, we aim to evaluate the current clinical protocols and action toward gingival recession disease. **Methodology:** PubMed database was used for articles selection, and the following keyword were used: gingival, and recession. **Conclusion:** Gingival disease is usually asymptomatic and only noticed due to complications. Thus, the role of dentists is vital to recognize these patients in order to provide the best treatment option, and prevent further consequences. Further clinical studying for possible future change in clinical protocols for this common disease is a must.

**Keywords:** Gingival recession, periodontal attachment loss, aetiology, management

## INTRODUCTION

Gingival disease is one of the most common diseases encountered by dentists in their clinics. However, it rarely occurs that a patient visits a physician for gingival recession as the main concern since it is mostly asymptomatic. The prevalence of gingival recession of 1 mm or higher (in people who are 30 years and above) reaches higher with age. In USA, studies suggested that up to 23.8 million have at least one tooth surface with a significant gingival recession starting from 3 millimeters or more [1]. Other studies reported an average of 25% (of the dentition) which are affected by this disease in USA [1]. Thus, as a dentist, having a high clinical suspicion may be critical in diagnosing these patients to avoid any complications that may occur in late diagnosis. In this paper, we will review relevant literature, regarding the gingival recession with focus on the clinical definition, risk factors, possible etiologies, diagnosis, and different types of management.

## METHODOLOGY

PubMed database was used for articles' selection, and the following keywords were used: Gingival, and Recession. The articles were selected based on inclusion of one of the following topics: gingival recession, aetiological predictive and predisposing factors, and surgical intervention as the

inclusion criteria. The exclusion criteria were all other articles which did not have one of these topics as their primary endpoint.

## DISCUSSION

Gingival recession is defined as a displacement of the gingival margin away from the cemento-enamel junction (CEJ), or simply the appearance of cemento-enamel junction.

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This displacement can be apically (from the CEJ), and/or from the former location of the CEJ; usually as a result of restorations distorting the location. The dentist should keep in mind that gingival recession can be generalized or localized; and can be in one or more surfaces of the same tooth.

### Causes and Risk Factors

Gingival recession was attributed to tooth movement; however, recent studies established that epithelial attachment was at the same position on the tooth. Moreover, supraerupted teeth show no gingival recession, and thus other factors would explain the disease rather than teeth supereruption and movements [2]. A multifactorial causation is the culprit behind gingival recession, and can simply be divided into predisposing and precipitating factors. Precipitating factors are specified mechanisms that eventually lead to recession; predisposing factors are the ones which put the patients' gums at risk of developing recession. Precipitating factors of recession mainly include: trauma, social mal-behaviors, plaques (through inflammation) and dental treatment [1]. Trauma by hard (or excessive) brushing is reported in several studies as a risk factor due to repeated traumatic damage [2]. Moreover, habits such as smoking and mouth piercings are common causes of gingival recession [3, 4]. Commonly predisposing factors include bone dehiscence, tooth malposition, thin tissue, inadequate keratinized mucosa and frenum pull [3-5]. Thinner gingival tissue has been reported as a predisposing factor of recession; stemming from the notion that thicker tissue is more resilient after periodontal intervention (surgical and non-surgical) [6, 7]. Repeated pulling force (as occurring in normal oral motion during eating or speaking) on frenum is reported as a predisposing factor, but several studies have not been able to illicit such association [8, 9]. However, a high frenum attachment was greatly linked to the localized recession of the gums especially [10]. Nguyen-Hieu et al. suggested that a narrow width of keratinized gums, as well as teeth misalignment and maxillary teeth, are linked to gingival recession development [9].

### Diagnosis

Dentists should have a good clinical suspicion in order to diagnose a patient with gingival recession, as these patients may never realize that they have a problem in their gingiva, especially if it was generalized. Clinically, diagnosis can be done via establishing the exact location of the recession, and examining the most common site of the disease (buccal surface) are all are considered vital in diagnosis. It should be noted that buccal surface is usually the site where the most severity of the disease progression and complications (if any) is found. Nevertheless, examining other surfaces (e.g. interproximal surfaces of the teeth) is still expected from dentists to establish the overall state of the disease [11]. Late diagnosis of gingival recession is associated with increased risk of tooth loss, dentinal hypersensitivity and poor aesthetics.

### Classification

Miller's classification can help dentists to determine the best management option for patients. Miller's classification categorizes marginal tissue recession based on the extension of recession to a certain point (mucogingival junction) and attachment to bone and soft tissues (interdental area). Other factors which play a key role are malpositioning of teeth, and severe bone or soft tissue loss in the interdental area (see Table 1) [11-13]. Additionally, gingival recession can be classified clinically with the use of clinical crown height and gingival margin-papillae measurements. However, neither of the techniques are fully accurate due to the feature of gingiva having a physiological margin of 0.5 to 2 mm. Thus, deciding about each individual's original starting point of margin is very difficult. As a result, these tests do not provide perfect accuracy precision and the results are usually around 0.5 to 1 mm of the true margin [14].

**Table 1: Miller's Classification of Marginal Tissue Recession**

<b>Class I</b>	Marginal tissue recession that does not extend to the mucogingival junction.
<b>Class II</b>	Marginal tissue recession that extends to or beyond the mucogingival junction with no periodontal attachment loss (bone or soft tissue) in the interdental area.
<b>Class III</b>	Marginal tissue recession that extends to or beyond the mucogingival junction with periodontal attachment loss in the interdental area or malpositioning of teeth.
<b>Class IV</b>	Marginal tissue recession that extends to or beyond the mucogingival junction with severe bone or soft-tissue loss in the interdental area and/or severe malpositioning of teeth.

### Management

Surgical intervention is the mainstay of treatment in gingival recession. The surgical procedure would either buff the soft tissue of the inferior margin to give more root coverage, or the apical margin to achieve aesthetic favorability. For clinicians, root coverage is preferable (to aesthetics), and this does not necessarily go against patients' wishes [15, 16]. Patients' prognosis and outcomes are variable according to patients' class in Miller's classification. The use of apical margin augmentation could prevent from further recession [17]. New modalities of treatment have been suggested with promising results, such as partly deepithelialized free gingival graft (PE-FGG); however, more comprehensive studies are required in this regard [18]. Other recent procedures available for root coverage include pedicle flaps, allografts/xenografts, biologics and tissue engineering [16].

### CONCLUSION

Gingival recession is an asymptomatic disease that is mostly diagnosed in late stages due to its complications. Thus, the role of dentist is vital to recognize these patients, in order to provide the best treatment option, and prevent further consequences. Gingival recession is associated with various

risk factors. Surgical management is mainstay in treatment of gingival recession which includes buffing the soft tissue of the inferior margin and apical margin to achieve aesthetic favorability.

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