



# A new Perspective in Demonstrating the Etiological Factors of Gingival Recession



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## Abstract

Gingival recession is defined as “ the apical displacement of the marginal soft tissues (mucogingival complex) beyond the cemento-enamel junction”. Although several classification systems have been proposed to differentiate the clinical manifestations of gingival recession, no consensus is yet available regarding how to classify the causative factors that lead to gingival recession. In this paper, we introduce a new categorization system regarding the causation of gingival recession. The new system demonstrates the following categories as causative factors for gingival recession: Periodontal diseases, Anatomical factors, Minor traumatic factors, Major traumatic factors, and Shared factors. We believe that the implementation of this new categorization system would make the diagnosis and treatment plan more easier for the practitioner, whether dentist or periodontist, due to our conviction that the first step in the treatment of gingival recession is to uncover the causative factor(s), and then remove it. The implementation of this new categorization system in the syllabus of undergraduates in dental schools would be a future aim.

**Keywords:** Gingival Recession; Causative Factors; Classification; Periodontal Disease; Trauma

## Introduction

Gingival recession (GR) is defined as “ the apical displacement of the marginal soft tissues (mucogingival complex) beyond the cemento-enamel junction” [1]. The main characteristic of gingival recession is the apical migration of marginal gingiva as well as the fact that the latter is gradually displaced away from the CEJ, and in most gingival recession cases, the first mechanism responsible for causing apical gingival migration is loss of bone support offered by the alveolar bone crest, thereby exposing the root surface to the oral environment. For decades, it was believed that gingival recession was a part of human aging processes; however, all evidence supporting such a statement are quite weak. Aging might increase the possibility for the causes of gingival retraction to act, but that does not mean they are inherent to aging. Therefore, it could be stated that GR is an age-related feature but not age-dependent one. Several classifications have been proposed in literature to facilitate the diagnosis of gingival recessions [2]. They are as follows [3]: Sullivan and Atkins, Mlinek, Liu and Solt, Bengue, Miller, Smith, Nordland and Tarnow, Mahajan, Cairo et al., Rotundo et al., Ashish Kumar and Masamatti, and Prashant et al. Most of research papers related to GR pathophysiology divided the causes of this clinical manifestation into “direct causes and predisposing factors”. Others used the terms “main cause(s) and inflating causes”, or “primary causes” and “secondary causes” [4,5]. However, to date, there is no

consensus regarding a dividing system for GR causative factors. In this paper, we introduce a simple new classification system for the causation of GR.

## A New Vision of GR Pathophysiology

Our new classification system for the causation of GR depends on dividing the causative factors into five categories: namely:

- a) Periodontal diseases
- b) Anatomical factors
- c) Minor traumatic factors
- d) Major traumatic factors
- e) Shared factors

### i. Periodontal Diseases and GR

It is well established that GR could be a pathological consequence of periodontal diseases like gingivitis, chronic periodontitis, aggressive periodontitis, acute necrotizing gingivitis, and acute necrotizing periodontitis. Here, GR is due to the extension of inflammatory process to the deep supporting tissues resulting in alveolar bone loss, and therefore, recession of soft tissues (i.e. gingival recession).

### ii. Anatomical Factors

This category includes (1) malposition of teeth, like teeth rotation and buccally-situated teeth in the dental arch, (2) morphological abnormalities of teeth and/or alveolar bone, (3) abnormal frenum attachment in which the deep fibers of frenum are inserted beneath or very close to the gingival margin, (4) shallow vestibular sulcus, and (5) lack of keratinized gingiva.

### iii. Minor Traumatic Factors

Such as (1) amalgam or any kind of restorations' overhang, (2) clasps of removable dentures, (3) different components of orthodontic appliances (Brackets, elastic bands,), and (4) different types of intra-oral piercing.

### iv. Major Traumatic Factors

Including (1) traumatic toothbrush in terms of applying excessive brushing force, or the use of hard-bristled toothbrush, or both. This category also includes the (2) orthodontic tooth movements that are basically heading toward a labial (or buccal) direction with or without excessive forces that are beyond the normal balanced forces in orthodontics. Some (3) bad oral habits are also count for this category, like nails' biting, and inserting hard foreign bodies in the oral cavity with continuous irritation against gingiva. Finally, the trauma from occlusion is also included in this category.

### v. Shared Factors

Gingival recession due to shared factors takes place when at least two factors of the above-mentioned categories are

present. For instance, gingival recession on teeth caused due to periodontitis while excessive orthodontic movements in a labial direction are being applied to these teeth.

### The Clinical Implication of the New GR Etiological Factors

We believe that the implementation of the new classification of GR etiological factors could simplify the diagnosis of GR, and, therefore, make the treatment plan more clear, because we are strongly convinced that the first step in the treatment of GR is to know the causative factor(s) related to it, and thus starting to remove it/them, and then applying the correct and suitable surgical or non-surgical intervention. Further studies are needed in order to validate the new classification system.

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