



## NEWER CLASSIFICATION OF PERIODONTAL AND PERI- IMPLANT DISEASES AND CONDITIONS- A CRITICAL REVIEW

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### ABSTRACT

Classification of the disease helps to the diagnosis, prognosis and treatment of particular disease. Different classification of periodontal diseases were proposed by different authors. 1999 classification of periodontal disease was accepted among the periodontology community, although it had disadvantages. All these disadvantages led to development of newer classification of periodontal disease which was co-sponsored by the American Academy of Periodontology (AAP) and the European Federation of Periodontology (EFP). This review summarized the newer classification, advantages/modification and disadvantages of the newer classification.

**KEYWORDS :** classification, diagnosis, gingiva, Periodontum, occlusion, peri-implant disease

### Introduction:

Classification is nothing but systematic arrangement of classes or groups based on perceived common characteristics. It helps in the diagnosis, prognosis and treatment planning of the disease. It helps to understand the etiology, pathology of disease. Most importantly, it helps to communicate among clinicians, researchers, educators, students, epidemiologists and public health workers. Unfortunately, 1999 classification<sup>1</sup> of periodontal disease and conditions had some drawbacks regards overlapping nature of criteria of disease, also created some confusion among clinicians to diagnosis the case properly. Another drawback, it did not elaborate the effect of risk factors (eg.Smoking, Diabetes etc.).Peri-implant health/ Conditions were not included in the 1999 classification as Periodontal disease and Peri implant diseases shared almost same microbial profile. The classification did not give clue regards correct treatment plan as it depended on correct diagnosis of the disease. All these difficulties led to improvement of 1999 classification which was co-sponsored by the American Academy of Periodontology (AAP) and the European Federation of Periodontology (EFP). An organizing committee from AAP and EFP published 19 review papers and 4 Consensus reports which covered relevant areas in periodontology and Implantology, including the untouched areas of 1999 classification of periodontal disease.

### NEW CLASSIFICATION OF PERIODONTAL AND PERI-IMPLANT DISEASES AND CONDITIONS (WORLDWORKSHOP 2017)2

- I. Periodontal Diseases and Conditions
- II. Peri-Implant Diseases and Conditions

#### I. Periodontal Diseases and Conditions

1. Periodontal Health, Gingival Diseases and Conditions
2. Periodontitis
3. Other Conditions Affecting the Periodontium

#### 1. Periodontal Health, Gingival Diseases and Conditions

- i. Periodontal Health and Gingival Health
- ii. Gingivitis: Dental Biofilm Induced
- iii. Gingival Diseases: Non-Dental Biofilm-Induced

#### 1. PERIODONTAL HEALTH, GINGIVAL DISEASES AND CONDITIONS

##### i) Periodontal Health and Gingival Health

- A. Clinical gingival health on an intact periodontium
- B. Clinical gingival health on a reduced periodontium
  - A. Stable periodontitis patient
  - B. Non-periodontitis patient

##### ii) Gingivitis: Dental Biofilm Induced

- A. Associated with dental biofilm alone
- B. Mediated by Systemic or local risk factors
- C. Drug-influenced gingival enlargement

##### iii. Gingival Diseases: Non-Dental Biofilm-Induced

- A) Genetic/developmental disorders
- B) Specific infections
- C) Inflammatory and immune conditions
- D) Reactive processes
- E) Neoplasms
- F) Endocrine, nutritional & metabolic diseases
- G) Traumatic lesions
- H) Gingival pigmentation

### 2. PERIODONTITIS

#### i. Necrotizing Periodontal Diseases

- A) Necrotizing Gingivitis
- B) Necrotizing Periodontitis
- C) Necrotizing Stomatitis

#### ii) Periodontitis

- A) Stages: Based on Severity and Complexity of Management
  - Stage I: Initial Periodontitis
  - Stage II: Moderate Periodontitis
  - Stage III: Severe Periodontitis with potential for additional tooth loss
  - Stage IV: Severe Periodontitis with potential for loss of the dentition
- B) Extent and distribution: Localized, generalized, molar - incisor distribution
- C) **Grades:** Evidence or risk of rapid progression, anticipated treatment response
  - a) Grade A: Slow rate of progression
  - b) Grade B: Moderate rate of progression
  - c) Grade C: Rapid rate of progression

#### iii) Periodontitis as Manifestation of Systemic Diseases

Classification of these conditions should be based on the primary systemic disease according to the International Statistical Classification of Diseases and Related Health Problems (ICD) codes

### 3. PERIODONTITIS AS A MANIFESTATION OF SYSTEMIC DISEASES AND DEVELOPMENTAL AND ACQUIRED CONDITIONS.

#### i) Systemic diseases or conditions affecting the periodontal supporting tissues

- ii) Other Periodontal Conditions
  - A) Periodontal Abscesses
  - B) Endodontic-Periodontal Lesions

#### iii) Mucogingival Deformities and Conditions around teeth

- A) Gingival phenotype
- B) Gingival/soft tissue recession
- C) Lack of keratinised gingiva`
- D) Decreased vestibular depth

- E) Aberrant frenum/muscle position
- F) Gingival excess
- G) Abnormal color
- H) Condition of the exposed root surface

#### iv) Traumatic Occlusal Forces

- A) Primary occlusal trauma
- B) Secondary occlusal trauma
- C) Orthodontic forces

#### v) Prosthesis and tooth-related factors that modify or predispose to plaque-induced diseases/periodontitis

- A) Localized tooth-related factors
- B) Localized dental prosthesis-related factors

### II) PERI-IMPLANT DISEASES AND CONDITIONS

1. Peri-implant health
2. Peri-implant mucositis
3. Periimplantitis
4. Periimplant soft & hard tissue deficiencies

#### Key changes from 1999 classification:

- I. Newer classification was proposed based on ICD ( International classification of Diseases)
- II. Gingival health condition is added in the newer classification. A previous successfully treated periodontitis was considered as gingival health with reduced periodontum.
- III. Necrotizing periodontal diseases of bacterial origin added in non-plaque induced gingival conditions. Linear gingival erythema was removed in fungal diseases. Viral diseases were elaborated extensively in newer classification. Gingival pigmentation like drug induced gingival pigmentation, amalgam tattoo etc., was introduced in newer classification.
- IV. Aggressive and Chronic Periodontitis terms were removed and categorized under a single category "Periodontitis"
- V. Newer classification system based on multidimensional staging and grading system
- VI. Staging is largely not only depends on severity but also depends the complexity of the disease management. Clinical attachment loss (CAL) determines the staging of the disease. If the CAL is not available, Radiographic bone loss (RBL) should be used. Tooth loss due to periodontitis alters the staging of the periodontal disease. Stage I, II are Mild and Moderate. Stage III, IV are Severe and Extremely severe.
- VII. Grading of Periodontal disease provides the progression rate of disease, the response to treatment of periodontal disease and the effect of systemic health on periodontal disease. Only Smoking and Diabetes are considered potential risk factors that alters the staging of periodontal disease. Grading includes three levels(grade A – low risk, grade B – moderate risk, grade C – high risk for progression)
- VIII. Periodontitis is considered as localised if <30% of the teeth are involved and generalized when >30% teeth are involved.
- IX. Those systemic disorders, those result in the early onset of severe periodontitis classified based on the primary systemic disease. It quoted as "Periodontitis as a Manifestation of Systemic Disease". Example, Periodontitis as a manifestation of Papillon Lefèvre Syndrome.
- X. Other Systemic conditions affect the periodontal apparatus independent of dental plaque induced periodontitis are considered as "Systemic Diseases or Conditions Affecting the Periodontal Supporting Tissues" Examples: Neoplastic diseases of Periodontum
- XI. Inter proximal attachment loss, incorporate of the assessment of root and cement-enamel junction decides the treatment of gingival recession.
- XII. The Periodontal biotype was replaced by Periodontal phenotype.
- XIII. Traumatic occlusal force, replacing the term excessive occlusal forces. There is insufficient evidence to prove occlusal trauma progress the clinical attachment level (CAL).

- XIV. The prosthesis- related factors expanded in the newer classification. Biological width assess through histology .Other methods like transgingival probing assess supra crestal attachment. Hence Biological width term was replaced with supracrestal attachment.
- XV. Clinical procedures involved in the fabrication of indirect restorations was added because the new data indicates that these procedures may cause recession & loss of clinical attachment.
- XVI. A new classification of Peri-implant health, Peri-implant mucositis and Periimplantitis was added the newer classification.

#### Disadvantages of Newer classification:

1. The classification is very extensive and more complicated than 1999 classification and the time will decide how it will be helpful to the general dentist and Periodontist to choose optimal treatment plan to the patient.

#### References:

1. Armitage GC. Development of a classification system for periodontal diseases and conditions. *Ann Periodontol.* 1999; 4:1–6.
2. Caton, Armitage, Berglundh et al. A new classification scheme for periodontal and peri-implant diseases and conditions – Introduction and key changes from the 1999 classification. *J Clin Periodontol.* 2018; 45(Suppl 20):S1-S8