Frequently Asked Questions on the 2018 Classification of Periodontal and Peri-Implant Diseases and Conditions

What are the primary differences between the 1999 and the 2018 classifications of periodontitis?

According to the 1999 classification, chronic and aggressive periodontitis were considered to represent different disease entities. However, research conducted since then failed to document sufficiently distinct biologic features between the two diseases; therefore, in the new classification, they have been regrouped under the single term "periodontitis." Moreover, the 1999 classification placed emphasis on disease severity and used the designations of slight, moderate, and severe periodontitis. The diagnosis could be divided into severity levels in different parts of the mouth. For example, a patient might have generalized moderate chronic periodontitis with localized severe periodontitis. Over the past several decades, however, we have confirmed that a diagnosis based on severity alone represents a one-dimensional view of a complex disease. The new classification, which introduces the concept of staging, supports a multidimensional view of periodontitis, incorporating severity, tooth loss due to periodontitis, and complexity of management of the patient's periodontal and overall oral rehabilitation needs. Staging is based on a full-mouth diagnosis; it cannot be subdivided into different severity levels. Grading incorporates additional biological dimensions of the disease, including history-based and/or anticipated rate of periodontitis progression, presence and control of risk factors, and the potential impact of periodontitis on general health. Once the stage and grade are determined, they become the "guiding stars" for difficulty of treatment, prognosis for the dentition, and expectations during maintenance therapy.

Is the intent of staging and grading to arrive at a diagnosis that will drive treatment? Why should I change to staging periodontitis? What important diagnostic information do stage and grade convey?

Staging and grading do not help the practitioner arrive at a diagnosis. A diagnosis of periodontitis is determined first, with staging and grading providing supplemental information. Staging and grading help clarify extent, severity, and complexity of the patient's condition as well as the potential rate of disease progression, predicted response to standard therapies, and potential impact on systemic health. They also encompass other aspects of periodontitis including pattern of bone loss, tooth loss, furcation status, treatment difficulty, prognosis for tooth loss, and degree of restorative difficulty and complexity.

What is meant by the consensus statement, "a periodontitis patient is a periodontitis patient for life"?

A patient who has periodontitis remains at risk for further periodontal destruction even with treatment. It is important to define a periodontitis patient as an "at-risk" individual because this patient requires a more intensive level of maintenance and evaluation than a patient who has not had periodontitis. Thus, a periodontitis patient who has been treated and is now stable should not return to a level of evaluation and maintenance identical to a patient who has never had periodontitis (i.e., annual or semi-annual exam/prophylaxis).

How does this new disease construct impact what I submit for insurance? Will third parties reimburse differently for a case if it is Stage II versus Stage III?

The AAP has met with several carriers to determine how the new classification will affect them and, more specifically, how it will affect reimbursement. Across the board, all have indicated that the classification will not affect reimbursement at this time. Insurance companies do not reimburse based on severity of disease. Third parties will still determine reimbursement based on the documentation required for the treatment rendered (i.e., probing depths, radiographs showing bone loss, etc.). The classification will affect diagnosis codes; however, these are currently not required for dental insurance reimbursement. The AAP is working with the ICD-10 Coordination and Maintenance Committee to adjust the ICD-10-CM diagnosis codes, and we are hopeful that changes will be in place in 2020.

How does a clinician arrive at the proper stage for periodontitis?

Stage I periodontitis (mild disease) patients will have probing depths ≤4 mm, CAL ≤1-2 mm, horizontal bone loss, and will require non-surgical treatment. No post-treatment tooth loss is expected, indicating the case has a good prognosis going into maintenance.

Stage II periodontitis (moderate disease) patients will have probing depths ≤5 mm, CAL ≤3-4 mm, horizontal bone loss, and will require non-surgical and surgical treatment. No post-treatment tooth loss is expected, indicating the case has a good prognosis going into maintenance.

Stage III periodontitis (severe disease) patients will have probing depths ≥6 mm, CAL ≥5 mm, and may have vertical bone loss and/or furcation involvement of Class II or III. This will require surgical and possibly regenerative treatments. There is the potential for tooth loss from 0 to 4 teeth. The complexity of implant and/or restorative treatment is increased. The patient may require multi-specialty treatment. The overall case has a fair prognosis going into maintenance.

Stage IV periodontitis (very severe disease) patients will have probing depths ≥6 mm, CAL ≥5 mm, and may have vertical bone loss and/or furcation involvement of Class II or III. Fewer than 20 teeth may be present and there is the potential for tooth loss of 5 or more teeth. Advanced surgical treatment and/or regenerative therapy may be required, including augmentation treatment to facilitate implant therapy. Very complex implant and/or restorative treatment may be needed. The patient will often require multi-specialty treatment. The overall case has a questionable prognosis going into maintenance.

How do I apply extent/distribution?

Once the stage is determined then the percentage of teeth affected by periodontitis is assessed. This provides information about how many teeth are affected by periodontitis, which is expressed as localized or generalized. It does not give information about the percentage of teeth with slight, moderate, or severe destruction. Distribution refers to affected teeth, such as first molars and/or incisors, which is a totally different type of clinical presentation that should be noted and may have treatment implications.

Can I use a stage for each quadrant or sextant like I did with a severity-based diagnosis of slight, moderate, or severe?

No. Staging is designed to give information about the whole mouth, relative to the severity and complexity. The stage will also inform the clinician of the initial difficulty and complexity of required treatment as well as expected prognosis since it provides some perspective on the individual patient's response to the disease challenge at the time of the examination.

For example, a patient in his 30s or 40s with past destruction and case complexity consistent with Stage III or IV should be considered very differently than a patient with Stage I or II disease and complexity.

Does the area with the most severe destruction determine the stage?

Yes. The staging system is designed to highlight the patient's most severe areas of destruction, which usually require more complex case management.

For example, when a patient has periodontitis with a combination of generalized mild (CAL 1-2 mm, PD ≤4 mm) to moderate destruction (CAL 3-4 mm, PD ≤5 mm) and localized severe destruction (CAL ≥5 mm, PD ≥6 mm), he/she would be given a diagnosis of Generalized Periodontitis: Stage III or possibly IV if ≥5 teeth are missing due to periodontitis.

If a patient is missing teeth due to periodontitis and the clinician must extract additional teeth due to periodontitis, do these teeth also count as being lost to periodontitis?

Yes. In the staging table, tooth loss is defined as "tooth loss due to periodontitis." Tooth loss should include those teeth planned for extraction due to periodontitis as part of active therapy.

For example, if a patient diagnosed with periodontitis had previously lost two teeth due to periodontal disease and he/she now has an additional three teeth that clearly require extraction due to periodontal destruction, those teeth planned for extraction should be included in the count of teeth "lost due to periodontitis." Thus, the patient would have five teeth lost due to periodontitis and would be classified as Stage IV.

Can the stage change for a periodontitis patient?

The stage typically does not regress or move to a lower stage. For instance, if the patient has been treated and is now clinically stable, he/she is described as having periodontal stability. If, during maintenance, sites demonstrate further clinical attachment loss, radiographic bone loss, and deeper probing depths, it becomes an unstable case of recurrent periodontitis. In this case, the stage could change to a higher level depending on the criteria, i.e., loss of more teeth due to periodontal disease, development of Class II or III furcation involvement, development of vertical defects, etc.

However, there is one exception to this rule. For instance, if the case was classified as Stage III due to the presence of a vertical defect ≥3 mm or Class II furcation involvement and those sites were successfully regenerated such that the CAL throughout the dentition is now 3-4 mm, the furcation involvement is a Class I or not clinically detectable, and probing depths are ≤5 mm, the stage could change from Stage III to Stage II.

Why do I need to utilize grading?

Grading provides the likelihood of post-treatment disease progression. It is loosely based on previous clinical studies from private practices that classified post-treatment status as Well Maintained, Downhill, or Extreme Downhill, based on the amount of post-treatment tooth loss. The designations recommended are A, B, or C, signifying slow or no progression, moderate progression, and rapid progression, respectively. The assessment is based on past progression, presence of risk factors such as diabetes and/or smoking, and the systemic impact of the periodontitis.

How should I use grading?

Only one grade is assigned to the patient. It is based on either direct or indirect evidence of the rate of disease progression and risk for future progression. Other risk factors or grade modifiers such as smoking and diabetes mellitus may also be considered for their contribution to the rate of disease progression in the present or the future.

For example, a patient with a Grade B rate of progression does not have to automatically become a C if his/her HbA1c is 7.2%, if in the judgment of the clinician the progression of the disease is not significantly impacted by this level of diabetes control. However, if the HbA1c is 9%, the impact on future attachment loss and response to therapy may be greater, which would prompt the clinician to assign a grade of C.

The same reasoning may be applied to a patient who smokes more than 10 cigarettes per day. The question to be asked is, “What impact has the patient’s smoking habit had on the current amount of attachment loss and on future loss of attachment or response to therapy?”

How might grading affect my treatment plan?

In the examples above, if a current smoker is assigned a Grade C, smoking cessation would be incorporated into the treatment plan. If the patient has diabetes mellitus, which is in moderate or poor control (HbA1c > 7%) and a Grade C is assigned, the patient will be informed that his/her level of diabetes control most likely has contributed to periodontitis. In addition, if control is not improved, there is a risk for future progression of periodontal disease. This patient would be referred to his/her physician with a request to evaluate the level of control and make adjustments for better control, if possible.

The treatment plan going forward will directly be influenced by patient compliance. More intensive maintenance therapy may be recommended as part of the treatment plan for both types of patient.

Classification at-a-Glance

2018 Classification of Periodontal and Peri-Implant Diseases and Conditions

Periodontal Health, Gingival Diseases and Conditions

- Periodontal Health and Gingival Health
- Gingivitis: Dental Biofilm-Induced
- Gingival Diseases: Non-Dental Biofilm-Induced

Periodontitis

- Necrotizing Periodontal Diseases
- Periodontitis
- Periodontitis as a Manifestation of Systemic Disease
- Periodontal Abscesses and Endodontic-Periodontal Lesions

Periodontal Manifestations of Systemic Diseases and Developmental and Acquired Conditions

- Systemic Diseases or Conditions Affecting Periodontal Supporting Tissues
- Mucogingival Deformities and Conditions
- Traumatic Occlusal Forces
- Tooth- and Prosthesis-Related Factors

Peri-Implant Diseases and Conditions

- Peri-Implant Health
- Peri-Implant Mucositis
- Peri-Implantitis
- Peri-Implant Soft and Hard Tissue Deficiencies

Staging and Grading Periodontitis

The 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions resulted in a new classification of periodontitis characterized by a multidimensional staging and grading system. The charts below provide an overview. Please visit **perio.org/2017wwdc** for the complete suite of reviews, case definition papers, and consensus reports.

PERIODONTITIS: STAGING

Staging intends to classify the severity and extent of a patient's disease based on the measurable amount of destroyed and/or damaged tissue as a result of periodontitis and to assess the specific factors that may attribute to the complexity of long-term case management.

Initial stage should be determined using clinical attachment loss (CAL). If CAL is not available, radiographic bone loss (RBL) should be used. Tooth loss due to periodontitis may modify stage definition. One or more complexity factors may shift the stage to a higher level. See **perio.org/2017wwdc** for additional information.

	Periodontitis	Stage I	Stage II	Stage III	Stage IV
Severity	**Interdental CAL** *(at site of greatest loss)*	1 – 2 mm	3 – 4 mm	≥5 mm	≥5 mm
	RBL	Coronal third (<15%)	Coronal third (15% - 33%)	Extending to middle third of root and beyond	Extending to middle third of root and beyond
	Tooth loss *(due to periodontitis)*	No tooth loss		≤4 teeth	≥5 teeth
Complexity	**Local**	• Max. probing depth ≤4 mm • Mostly horizontal bone loss	• Max. probing depth ≤5 mm • Mostly horizontal bone loss	In addition to Stage II complexity: • Probing depths ≥6 mm • Vertical bone loss ≥3 mm • Furcation involvement Class II or III • Moderate ridge defects	In addition to Stage III complexity: • Need for complex rehabilitation due to: – Masticatory dysfunction – Secondary occlusal trauma (tooth mobility degree ≥2) – Severe ridge defects – Bite collapse, drifting, flaring – < 20 remaining teeth (10 opposing pairs)
Extent and distribution	**Add to stage as descriptor**	For each stage, describe extent as: • Localized (<30% of teeth involved); • Generalized; or • Molar/incisor pattern			

PERIODONTITIS: GRADING

Grading aims to indicate the rate of periodontitis progression, responsiveness to standard therapy, and potential impact on systemic health.

Clinicians should initially assume grade B disease and seek specific evidence to shift to grade A or C.
See **perio.org/2017wwdc** for additional information.

	Progression		Grade A: Slow rate	Grade B: Moderate rate	Grade C: Rapid rate
Primary criteria *Whenever available, direct evidence should be used.*	Direct evidence of progression	Radiographic bone loss or CAL	No loss over 5 years	<2 mm over 5 years	≥2 mm over 5 years
	Indirect evidence of progression	% bone loss / age	<0.25	0.25 to 1.0	>1.0
		Case phenotype	Heavy biofilm deposits with low levels of destruction	Destruction commensurate with biofilm deposits	Destruction exceeds expectations given biofilm deposits; specific clinical patterns suggestive of periods of rapid progression and/or early onset disease
Grade modifiers	Risk factors	Smoking	Non-smoker	<10 cigarettes/day	≥10 cigarettes/day
		Diabetes	Normoglycemic/no diagnosis of diabetes	HbA1c <7.0% in patients with diabetes	HbA1c ≥7.0% in patients with diabetes

The 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions was co-presented by the American Academy of Periodontology (AAP) and the European Federation of Periodontology (EFP).

Tables from Tonetti, Greenwell, Kornman. *J Periodontol* 2018;89 (Suppl 1): S159-S172.

Three Steps to Staging and Grading a Patient

Step 1: Initial Case Overview to Assess Disease

Screen:

- Full mouth probing depths
- Full mouth radiographs
- Missing teeth

Mild to moderate periodontitis will typically be either Stage I or Stage II

Severe to very severe periodontitis will typically be either Stage III or Stage IV

Step 2: Establish Stage

For mild to moderate periodontitis (typically Stage I or Stage II):

- Confirm clinical attachment loss (CAL)
- Rule out non-periodontitis causes of CAL (e.g., cervical restorations or caries, root fractures, CAL due to traumatic causes)
- Determine maximum CAL or radiographic bone loss (RBL)
- Confirm RBL patterns

For moderate to severe periodontitis (typically Stage III or Stage IV):

- Determine maximum CAL or RBL
- Confirm RBL patterns
- Assess tooth loss due to periodontitis
- Evaluate case complexity factors (e.g., severe CAL frequency, surgical challenges)

Step 3: Establish Grade

- Calculate RBL (% of root length x 100) divided by age
- Assess risk factors (e.g., smoking, diabetes)
- Measure response to scaling and root planing and plaque control
- Assess expected rate of bone loss
- Conduct detailed risk assessment
- Account for medical and systemic inflammatory considerations

Stage descriptions drawn from Tonetti, Greenwell, Kornman. *J Periodontol* 2018;89 (Suppl 1): S159-S172.