How to make a Periodontal Diagnosis

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The diagnostic criterion which determines the diagnosis (gingivitis or periodontitis) is the presence of bone loss, **not the BPE or the 6PPC.** *(Basic Periodontal Examination / 6 Point Pocket Chart).*

Gingivitis is subdivided based on the amount of Bleeding on Probing. This will distinguish between gingival health, localised gingivitis and generalised gingivitis.

A patient's periodontitis diagnosis is categorised based on the pattern of bone loss, extent, and rate of bone loss. The stability of the disease and risk factors associated should also be noted.

This file will guide you through how to make a periodontal diagnosis, for the most common periodontal diseases including gingivitis and periodontitis.

Guidelines for making a Periodontal diagnosis:

The current guidance to reach a diagnosis includes carrying out a full history, clinical and radiographic examination, whilst gaining as much information as possible for evidence of previous periodontal disease. Through a thorough history and clinical examination, you can understand from an early stage if this is a periodontitis patient or not! Indications of previous periodontal disease include searching for signs of bone loss which can be assessed clinically through interdental recession or shown radiographically.

The diagnostic criterion which determines the diagnosis (gingivitis or periodontitis) is the presence of bone loss, **not the BPE or the 6PPC.** It is as simple as if there is bone loss, the patient has periodontitis. Hence, the radiographs are an integral part of periodontal diagnosis. Once it has been established bone loss has occurred, the extent and pattern of the bone loss is analysed. This will determine if the bone loss is localised, generalised or shows a molar-incisor pattern.

If a patient shows bone loss which only affects <30% of the teeth the diagnosis is ***Localised periodontitis***

If a patient shows bone loss which affects ≥30% of the teeth the diagnosis is ***Generalised periodontitis***

If a patient shows molar-incisor pattern of bone loss, where the bone loss is localised only to these teeth the diagnosis is ***Periodontitis with a molar-incisor pattern.*** *This was previously termed localised aggressive periodontitis*

Once the type of periodontitis is determined, the patient must be staged and graded to give the full diagnosis. The **stage** refers to the **severity** of the disease, whereas the **grade** refers to the **rate** it is progressing at.

The Stage is worked out based on the amount of bone loss, in the worst site in the mouth, and then scored I-IV which indicate the stages mild to very severe respectively. This is indicated by the level of the bone crest in relation to the part of the root in the worst affected tooth.

Stage I *= <15% bone loss relative to the root length or <2mm attachment loss from the CEJ*
Stage I is indicative of the early stage of periodontitis

Stage II *= Bone loss up the coronal third of the root*
Stage II is indicative of the moderate stage of periodontitis

Stage III *= Bone loss up to the Middle third of the root*
Stage III is indicative of the severe stage of periodontitis

Stage IV *= Bone loss up to the apical third of the root*
Stage IV is therefore indicative of very severe stages of periodontitis

The Grade is worked out my dividing the percentage of bone loss in the worst site in the mouth, by the patients age. This will give a number which will correspond to a Grade.

Grade A *= < 0.25*
Grade A is indicative of a slow progression rate

Grade B *= 0.25 – 1.0*
Grade B is indicative of a moderate progression rate

Grade C *= > 1.0*
Grade C is indicative of a rapid progression rate

To highlight the importance of understanding how the grading works, let's say you have 3 patients with 40% bone loss. Patient 1 is 30 years old, patient 2 is 50 years old and patient 3 is 90 years old. These examples will show how age impacts their grade.

Patient	Calculation	Grade
Patient 1 (30 years of age)	40/30 = 1.33	Grade C
Patient 2 (50 years of age)	40/50 = 0.80	Grade B
Patient 3 (90 years of age)	40/90 = 0.44	Grade B

The patient is then given an assessment of their current periodontal status. This means that if a patient is stable, it should be reflected here.
The ***standards for stabilisation*** include-

Currently Stable	BoP <10%PPD ≤ 4mmNo BoP at 4mm sites
Currently in Remission	BoP ≥ 10%PPD ≤ 4mm No BoP at 4mm sites
Currently Unstable	Pocket depth ≥ 5mm Pocket depth ≥ 4mm with BoP

The ***risks factors are then assessed.*** This means if the patient is a smoker or has uncontrolled diabetes this should be listed as the risk associated.

Example diagnosis – Periodontitis, Stage, Grade, Stability and Risk Factor(s)
Localised periodontitis, Stage II, Grade C, Currently Unstable, Risks include poorly controlled diabetes

As shown, radiographs are an essential tool to allow the clinician to make a periodontal diagnosis. If the exposure cannot be justified, CAL loss can be used to give the grade and stage. However, there are not very many cases where radiographs would not be indicated. Formulation of periodontal diagnosis especially when there is evidence of previous history of periodontal disease remains a legitimate justification for radiographic exposure.

As reflected throughout this file so far, the majority of periodontitis diagnosis relies on the radiographs. The next stages for these patients include carrying out a 6PPC, BoP, and pocket depth. These investigations allow for the disease to be monitored.

Periodontal management pathways based on the BPE scores

Management of BPEs 0-2

BPEs of 0-2 indicate that the pocketing is <3.5mm. For a BPE of 0-2 the patient must also display no evidence of interdental recession or radiographic bone loss.

If a patient fits this diagnostic criterion then the patient is diagnosed as clinically healthy (BoP<10%) or a gingivitis patient (BoP ≥10). Consequently, a Bleeding on Probing (BoP) score is required.

If BoP is <10% = a patient is diagnosed with Clinical Gingival Health

If BoP is 10-30% = a patient is diagnosed with Localised Gingivitis

If BoP is >30% = a patient is diagnosed with Generalised Gingivitis

If there are plaque retentive factors present, such as overhanging fillings, these should be noted.

Treatment for BPE’s 0-2

Oral Hygiene Instruction
Diet advice
Bleeding indices
Plaque indices
Removal of plaque retentive factors (if necessary)
Supragingival scaling (if necessary)
Review

<u>Management of BPEs 3</u>

BPEs of 3, are slightly more complex. A BPE score of 3 in a sextant indicates the presence of pocketing between 3.5 to 5.5mm. This increased pocket depth however, does not necessarily mean that the patient has periodontitis. An increased pocket depth(s) could be due to the presence of pseudopockets or false pocketing. False pocketing can occur for example in patients with severe oedematous gingivae (swollen gums) or medication induced gingival enlargement (Calcium channel blockers, Ciclosporin and Phenytoin are common examples of medications linked to gingival enlargement).

Therefore, the BSP flowchart suggests that for patients with BPE score of 3, we should carry out any necessary radiographs that may be indicated to assess for bone loss, followed by initial periodontal therapy. It hasn’t yet been clarified exactly what initial periodontal therapy includes, but typically clinicians have described it as a supragingival scale. This is then advised to be reviewed in 3 months through a 6PPC, not a BPE! If the pocket is >4mm remains, or there is evidence of bone loss the code 4 management pathway should be followed. If the pocket is <4mm or shows no evidence of bone loss, the code 0-2 management pathway should be followed.

<u>Management of BPEs 4</u>

The code 4 pathway has many steps. This pathway should be followed for all patients with BPE’s of 4, and/or evidence of previous periodontal disease, or for patients with BPE code 3 who despite the initial periodontal therapy they still have remaining pockets of ≥4mm.

This pathway includes radiographic assessment, and a full mouth 6PPC. This is where the diagnosis for the type of periodontal disease is made.

REMEMBER:

If a patient shows evidence of interdental recession or radiographic bone loss attributable to periodontitis (and not for example due to an extracted tooth), then the patient is a periodontitis patient. The next stage includes carrying out a BPE screening, and this patient can take any scores from 0-4 per sextant. However, even if you may have not found a BPE code 4, **you should still follow the code 4 management pathway.** This is because periodontitis is a chronic, lifelong disease; therefore, despite evidence of its progression ceasing or stabilising (for example a BPE of 0), the damage is irreversible meaning that the patient will always be a periodontitis patient, therefore the code 4 management pathway should always be followed for this patient.

Treatment for BPEs of 4

Oral Hygiene Instruction
Diet advice
6PPC

This is used to monitor the pocket depth and CAL. The aim for treatment is to gain CAL and reduce pocket depth as this will make the pockets cleansable. If this is not achieved, surgical treatment for periodontal disease could be indicated.

Bleeding indices
Plaque indices
Removal of plaque retentive factors (if necessary)
Supragingival scaling (if necessary)
Root surface debridement
6PPC
Surgical management
Antimicrobials

Antibiotics can be used locally or systemically to treat periodontal disease. However, their use and the evidence for their use is limited.

Implementing the 2018 Classification of Periodontal Diseases to Reach a Diagnosis in Clinical Practice

History, examination and screening for periodontal disease
including BPE and assessment of historic periodontitis (interdental recession)

Code 0 / 1 / 2
with no obvious evidence of interdental recession

- <10% bleeding on probing → **Clinical Gingival Health**
- 10-30% bleeding on probing → **Localised Gingivitis**
- >30% bleeding on probing → **Generalised Gingivitis**

Diagnosis should also include a comment on plaque retentive factors where a BPE code 2 is present

Code 3
with no obvious evidence of interdental recession

Appropriate radiographic assessment

Initial periodontal therapy and review in 3 months with localised 6-point pocket chart in involved sextant(s)

- No pockets ≥4mm and no radiographic evidence of bone loss due to periodontitis
  continue with code 0/1/2 pathway
- Pockets ≥4mm remain and/or radiographic evidence of bone loss due to periodontitis
  continue with code 4 pathway

Code 4
and/or obvious evidence of interdental recession

Appropriate radiographic assessment

Full periodontal assessment (including detailed 6-point pocket chart)

- Molar-incisor pattern → **Periodontitis Molar-Incisor Pattern**
- <30% of teeth → **Localised Periodontitis**
- ≥30% of teeth → **Generalised Periodontitis**

Staging and grading, current disease status and risk factor assessment
(PTO)

Staging

Grading

Radiographic Assessment
(periapicals or OPG/DPT)
if not clinically justified or if bitewings only available use CAL or bone loss from CEJ

Staging: Interproximal bone loss
(use worst site of bone loss due to periodontitis)

- <15% (or <2mm attachment loss from CEJ) → **Stage I** (Early/Mild)
- Coronal third of root → **Stage II** (Moderate)
- Mid third of root → **Stage III** (Severe)
- Apical third of root → **Stage IV** (Very Severe)

Grading: % bone loss ÷ patient age
(use worst site of bone loss due to periodontitis)

- < 0.25 → **Grade A** (Slow rate of progression)
- 0.25 – 1.0 → **Grade B** (Moderate rate of progression)
- > 1.0 → **Grade C** (Rapid rate of progression)

Assessment of Current Periodontitis Status

Currently Stable
BoP <10%
PPD ≤4mm
No BoP at 4mm sites

Currently in Remission
BoP ≥10%
PPD ≤4mm
No BoP at 4mm sites

Currently Unstable
PPD ≥5mm or
PPD ≥4mm & BoP

Risk Factor Assessment

For example:
- Smoking, including cigarettes/day
- Sub-optimally controlled diabetes

Diagnosis Statement: Extent – Periodontitis – Stage – Grade – Stability – Risk Factors
e.g.: Generalised Periodontitis Stage 3 Grade B – Currently Unstable – Risk(s): Smoker 15/day