

# EFP publishes first evidence-based treatment guidelines for periodontitis

The EFP has published the first formal evidence-based guidelines for treating periodontitis in a move that will help clinicians all over the world provide the best possible treatment for their patients.

The *Treatment of Stage I-III Periodontitis – The EFP S3-level Clinical Practice Guideline* has recently been published in the *Journal of Clinical Periodontology* as an open-access supplement. It offers oral-healthcare professionals precise therapeutic pathways based on individual patient diagnoses and makes recommendations on specific interventions to treat periodontitis.

This special issue of *Perio Insight* is devoted to the Guideline, which contains 62 individual recommendations on different therapies. These recommendations are graded in terms of the strength of the evidence backing them and the degree of consensus among the experts who drew them up.

The Guideline is the product of the EFP-led Perio Workshop 2019 (also known as the XVI European Workshop on Periodontology), held in November last year in La Granja de San Ildefonso (Spain), where 90 experts from 19 countries evaluated 15 systematic reviews on different forms of periodontal therapy.



It provides evidence-based recommendations for therapy in relation to the first three stages of periodontitis, according to the new classification of periodontal and peri-implant diseases and conditions. Recommendations for therapy in relation to periodontitis stage IV, the most advanced manifestation of the disease, will be drawn up at Perio Workshop 2021 in July next year.

## Step-by-step

The Guideline approaches the treatment of periodontitis stages I, II, and III using a pre-established stepwise approach to therapy that – depending on the disease stage – should be incremental, each including different interventions.

The Guideline recommends four sequential steps to periodontal therapy:

1. Individual advice on good oral hygiene and a healthy lifestyle to reduce inflammation form the foundation for an optimal response to treatment and long-term control of the disease. This step also includes professional mechanical plaque removal (plaque and calculus/tartar).
2. Thorough professional cleaning of root surfaces below the gum line, and additional therapies if needed.
3. More complex treatments, such as surgery, may be needed in some patients.

4. Long-term supportive care to prevent relapse, with advice on healthy lifestyles, good oral hygiene, and regular check-ups that include cleaning.

"This guideline will ultimately benefit the patient who would receive the best possible treatment under its provisions," said Mariano Sanz, who chaired Perio Workshop 2019. "It will be very important for patients as, once the clinical guideline is adapted and published in each country, it will become a transparent document to which all patients can have access and they can thus demand that the treatment they receive conforms to the recommendation of this clinical practice guideline."

Iain Chapple, another of the Guideline's lead authors, said that having updated the classification of periodontal diseases, the next step was to explore the treatment of periodontitis and provide clinicians with evidence-based guidelines at the highest level (S3) "so that we could guide people on what the evidence says. This does not mean that you must practise this way, but it does tell you what the consensus is on how to implement care, accounting for the evidence."

This issue of *Perio Insight* highlights the Guideline's key recommendations and features interviews with professors Sanz and Chapple.

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# Recommendations on treatment of stage I-III periodontitis

The *Treatment of Stage I-III Periodontitis – The EFP S3-level Clinical Practice Guideline* contains 62 specific recommendations on different therapies for treating periodontitis. We reproduce here a selection of them for each step of periodontal therapy. Each recommendation includes

the grade of recommendation and the strength of consensus, using the scheme of the German Association of the Scientific Medical Societies (AWMF) and Standing Guidelines Commission, 2012.

**Strength of recommendation:** Grade A: strong recommendation – we

recommend (↑↑)/we recommend not to (↓↓); Grade B: recommendation, we suggest to (↑)/we suggest not to (↓); Grade O: open recommendation – may be considered (↔). If the group felt that evidence was not clear enough to support a recommendation, statements were formulated, including the

need (or otherwise) of additional research.

**Strength of consensus:**

Unanimous consensus (agreement of 100% of participants); strong consensus (agreement of >95%); consensus (75-95%); simple majority (50-74%); no consensus (<50%).

## STEP 1: Guiding behaviour change by motivating the patient to undertake successful removal of supragingival dental biofilm and risk-factor control.

### Recommendation 1.1: What are the adequate oral-hygiene practices of periodontitis patients in the different steps of periodontitis therapy?

We recommend that the same guidance on oral-hygiene practices to control gingival inflammation is enforced throughout all the steps of periodontal therapy including supportive periodontal care.

- Supporting literature Van der Weijden and Slot (2015)
- Grade of recommendation Grade A—↑↑

- Strength of consensus Strong consensus (3.8% of the group abstained because of potential conflict of interest [Col]).

### Recommendation 1.4: What is the efficacy of supragingival professional mechanical plaque removal (PMPR) and control of retentive factors in periodontitis therapy?

We recommend supragingival professional mechanical plaque removal (PMPR) and control of retentive factors, as part of the first step of therapy.

- Supporting literature Needleman, Nibali, and Di Iorio (2015); Trombelli, Franceschetti, and Farina (2015)
- Grade of recommendation Grade A—↑↑
- Strength of consensus Unanimous consensus (0% of the group abstained because of potential Col).

## STEP 2: Cause-related therapy, aimed at controlling (reducing/eliminating) the subgingival biofilm and calculus (subgingival instrumentation).

### Recommendation 2.3: Are treatment outcomes of subgingival instrumentation better when delivered quadrant-wise over multiple visits or as a full-mouth procedure within 24 hours?

We suggest that subgingival periodontal instrumentation can be performed with either traditional quadrant-wise or full-mouth delivery within 24 hours.

- Supporting literature Suvan et al. (2019)
- Quality of evidence Eight RCTs (n = 212) with a follow-up of ≥6 months.
- Grade of recommendation Grade B—↑

- Strength of consensus Strong consensus (3.8% of the group abstained because of potential Col).

### Recommendation 2.4: Are treatment outcomes with adjunctive application of laser superior to non-surgical subgingival instrumentation alone?

We suggest not to use lasers as adjuncts to subgingival instrumentation.

- Supporting literature Salvi et al. (2019)
- Quality of evidence Two RCTs (n = 46, wavelengths 2,780 nm and 2,940 nm) and 3 RCTs (n = 101, wavelength range 810–980 nm) with single laser application reporting 6-month outcomes. Two RCTs reported mean PPD changes.
- Grade of recommendation Grade B—↓

## STEP 3: Treating areas that do not respond adequately to the second step of therapy, to gain further access to subgingival instrumentation or aiming at regenerating or resecting lesions that add complexity to the management of periodontitis (intra-bony and furcation lesions).

### Recommendation 3.1: How effective are access flaps compared to repeated subgingival instrumentation?

In the presence of deep residual pockets (PPD ≥ 6 mm) in patients with stage III periodontitis after the first and second steps of periodontal therapy, we suggest performing access-flap surgery. In the presence of moderately deep residual pockets (4–5 mm), we suggest repeating subgingival instrumentation.

- Supporting literature Sanz-Sanchez et al. (2020)
- Quality of evidence Thirteen RCTs (500 patients) with moderate-to-high risk of bias. Five studies were restricted to pockets associated with intrabony defects. Limited number of studies presented data for quantitative analyses. High consistency of results.
- Grade of recommendation Grade B—↑
- Strength of consensus Consensus (1.4% of the group abstained because of potential Col).

### Recommendation 3.3: What is the efficacy of pocket elimination/reduction surgery in comparison with access-flap surgery?

In cases of deep (PPD ≥ 6 mm) residual pockets in patients with stage III periodontitis after an adequate second step of

## STEP 4: Supportive periodontal care, aimed at maintaining periodontal stability in all treated periodontitis patients, combining preventive and therapeutic interventions defined in the first and second steps of therapy, depending on the gingival and periodontal status of the patient's dentition.

### Recommendation 4.1: At what intervals should supportive periodontal care visits be scheduled?

We recommend that supportive periodontal care visits should be scheduled at intervals of 3 to a maximum of 12 months and ought to be tailored according to patient's risk profile and periodontal condition after active therapy.

- Supporting literature Polak et al. (2020), Ramseier et al. (2019), Sanz et al. (2015), Trombelli et al. (2020), Trombelli et al. (2015)
- Grade of recommendation Grade A—↑↑
- Strength of consensus Strong consensus (0% of the group abstained because of potential Col).

### Recommendation 4.7: What is the value of dental flossing for interdental cleaning in periodontal maintenance patients?

We do not suggest flossing as the first choice for interdental cleaning in periodontal maintenance patients.

- Supporting literature Slot et al. (2020)
- Quality of evidence Six comparisons from four RCTs (162 patients) with unclear to

**Recommendation 1.6:**  
**What is the efficacy of tobacco smoking cessation interventions in periodontal therapy?**

We recommend tobacco-smoking cessation interventions to be implemented in patients undergoing periodontal therapy.

- **Supporting literature** Ramseier et al. (2020)
- **Quality of evidence** Six prospective studies with, at least, 6-month follow-up.
- **Grade of recommendation** Grade A—↑↑
- **Strength of consensus** Unanimous consensus (1.2% of the group abstained because of potential Col).

**Recommendation 1.7:**  
**What is the efficacy of promotion of diabetes-control interventions in periodontal therapy?**

We recommend diabetes-control interventions in patients undergoing periodontitis therapy.

- **Supporting literature** Ramseier et al. (2020)
- **Quality of evidence** Two 6-month RCTs
- **Grade of recommendation** Grade A—↑↑
- **Strength of consensus** Consensus (0% of the group abstained because of potential Col).

**Recommendation 1.9:**  
**What is the efficacy of dietary counselling in periodontal therapy?**

We do not know whether dietary counselling may have a positive impact in periodontitis therapy.

- **Supporting literature** Ramseier et al. (2020)
- **Quality of evidence** Three RCTs, four prospective studies.
- **Grade of recommendation** Grade O—Statement: unclear, additional research needed.
- **Strength of consensus** Consensus (0% of the group abstained because of potential Col).

- **Strength of consensus** Simple majority (3.8% of the group abstained because of potential Col).

**Recommendation 2.7:**  
**Does the adjunctive use of probiotics improve the clinical outcome of subgingival instrumentation?**

We suggest not to use probiotics as an adjunct to subgingival instrumentation.

- **Supporting literature** Donos et al. (2019)
- **Quality of evidence** Five placebo controlled RCTs (n = 176) testing preparations containing *L. ramosus* SP1, *L. reuteri* or the combination of *S. oralis* KJ3, *S. uberis* KJ2, and *S. rattus* JH145.
- **Grade of recommendation** Grade B—↓
- **Strength of consensus** Consensus (0% of the group abstained because of potential Col).

**Recommendation 2.16:**  
**Do adjunctive systemically administered antibiotics improve the clinical outcome of subgingival instrumentation?**

**A.** Because of concerns about patient health and the impact of systemic-antibiotic use to public health, its routine use as adjunct to subgingival debridement in patients with periodontitis is **not recommended**.

**B.** The adjunctive use of specific systemic antibiotics **may be considered** for specific patient categories (e.g. generalised periodontitis stage III in young adults).

- **Supporting literature** Teughels et al. (2020)
- **Quality of evidence** RCTs (n = 28) with a double-blind, placebo-controlled, parallel design. Risk of bias was low for 20 of the studies, while seven studies had a high risk. PPD reduction at 6 months; MET + AMOX: n = 8, 867 patients. PPD reduction at 12 months; MET + AMOX: n = 7, 764 patients, MET: n = 2, 259 patients.
- A. **Grade of recommendation** Grade A—↓↓↓
- B. **Grade of recommendation** Grade O—↔↔
- A. **Strength of consensus** Consensus (0% of the group abstained because of potential Col)
- B. **Strength of consensus** Consensus (0% of the group abstained because of potential Col).

periodontal therapy, we suggest using resective periodontal surgery, yet considering the potential increase of gingival recession.

- **Supporting literature** Polak et al. (2020)
- **Quality of evidence** Nine RCTs (four could be used for the quantitative analysis). High risk of bias. Limited available data.
- **Grade of recommendation** Grade B—↑
- **Strength of consensus** Simple majority (2.6% of the group abstained because of potential Col).

**Recommendation 3.6:**  
**What is the importance of adequate self-performed oral hygiene in the context of surgical periodontal treatment?**

We recommend not to perform periodontal (including implant) surgery in patients not achieving and maintaining adequate levels of self-performed oral hygiene.

- **Supporting literature** Expert opinion
- **Grade of recommendation** Grade A—↑↑↑
- **Strength of consensus** Strong consensus (0% of the group abstained because of potential Col).

**Recommendation/statement 3.10:**  
**What is the adequate management of molars with class II and III furcation involvement and residual pockets?**

**A.** We recommend that molars with class II and III furcation involvement and residual pockets receive periodontal therapy.

**B.** Furcation involvement is no reason for extraction.

- **Supporting literature** Dommisch et al. (2020), Jepsen et al. (2019)
- **Quality of evidence** Regenerative treatment: 20 RCTs (575 patients). Resective treatment: Seven observational studies (665 patients) with low quality of evidence.
- **Grade of recommendation** A. Grade A—↑↑↑  
B. Statement
- A. **Strength of consensus** Strong consensus (1.5% of the group abstained because of potential Col)
- B. **Strength of consensus** Consensus (1.5% of the group abstained because of potential Col).

high risk of bias

- **Grade of recommendation** Grade B—↓
- **Strength of consensus** Consensus (5.6% of the group abstained because of potential Col).

**Recommendation/statement 4.11:**  
**Should adjunctive chemotherapeutics be recommended for patients in supportive periodontal care?**

**A.** The use of adjunctive antiseptics **may be considered** in periodontitis patients in supportive periodontal care in helping to control gingival inflammation, in specific cases.

**B.** We do not know whether other adjunctive agents (such as probiotics, prebiotics, anti-inflammatory agents, antioxidant micronutrients) are effective in controlling gingival inflammation in patients in supportive periodontal care.

- **Supporting literature** Figuera, Roldan et al. (2019)
- **Quality of evidence** 73 RCTs with, at least, 6-month follow-up.
- A. **Grade of recommendation** Grade O—↔↔
- There is a need to define the term of use (e.g. 6 months?). Adverse effects should be taken into account.
- B. **Grade of recommendation** Grade O—Statement: unclear, additional research needed.
- **Strength of consensus** Consensus (6.9% of the group abstained because of potential Col).

**Recommendation/statement 4.20:**  
**What is the role of physical exercise (activity), dietary counselling, or lifestyle modifications aiming at weight loss in supportive periodontal care?**

We do not know whether physical exercise (activity), dietary counselling or lifestyle modifications aiming at weight loss are relevant in supportive periodontal care.

- **Supporting literature** Ramseier et al. (2020)
- **Grade of recommendation** Grade O—Statement: unclear, additional research needed.
- **Strength of consensus** Strong consensus (0% of the group abstained because of potential Col).

# Mariano Sanz: 'Guideline will benefit both patients and professionals'

The EFP's publication of formal evidence-based guidelines for treating periodontitis represents a first in the field of dentistry which will benefit both clinicians and the patients that they treat. *Mariano Sanz*, who chaired Perio Workshop 2019, explains why this S3-level clinical practice guideline and the recommendations it provides are important.

## What is the importance of this new S3-level clinical practice guideline?

For the first time in dentistry, the European Federation of Periodontology has developed an evidence-based clinical practice guideline (level S3) for the treatment of periodontitis. Its importance lies in the fact that it has updated the scientific evidence of the efficacy of all the preventive and therapeutic procedures that are used today in periodontal therapy and has created recommendations – based on this evidence – to guide the treatment of periodontitis depending on its degree of severity (stages I, II, and III).

## What was the process for creating this guideline?

To be able to achieve this S3 level of clinical practice guide, it is necessary to carry out a very rigorous process in terms of both methodology and procedure. At the level of method, it is necessary to carry out some high-quality systematic reviews that examine all the scientific evidence of each of the preventive and therapeutic procedures that we use in periodontology. These systematic reviews and their respective meta-analyses have been published together with the clinical practice guideline in the special edition of the *Journal of Clinical Periodontology* (July 2020).

The procedure for creating the guideline was developed at the meeting of the European Workshop in Periodontology (Perio Workshop 2019) that took place in November last year in La Granja de San Ildefonso, near Segovia in Spain. This meeting, co-ordinated by a leading European specialist in the development of clinical guides (Dr Ina Kopp), brought together not only experts

in periodontology but also representatives of European entities linked to periodontology and to periodontal treatment (stakeholders).

During this workshop, the recommendations of the guideline were developed using a rigorous methodology (GRADE), which takes into account not only the scientific evidence provided by the systematic reviews, but also evaluates each individual recommendation, its applicability, its possible side effects, the cost-benefit relationship, and so on. This procedure ends with voting on each of the recommendations, and the degree of agreement reached is detailed.

## How was the experience of Perio Workshop 2019 different from that of traditional workshops?

As mentioned above, the process was very different, above all by including not only the group of experts but also the group of specialists in clinical-guideline methodology and the stakeholders who represent all those entities that will be affected – directly or indirectly – by the application of this guideline in clinical practice.

## What does this guideline mean for dental professionals?

Now the guideline has been published by the European Federation of Periodontology, its adoption or adaptation must be made at the national level, and it is the national societies of periodontology that are members of the EFP which will carry out the process, which once again is something that is highly protocolled. At the moment, the Spanish, German, and British societies are finishing this process in their

respective countries and, once adapted, the guideline will be promoted at the national level – not only among professionals, but also to patients and other interested parties, so that they become the protocols of treatment for patients with periodontitis, as happens with the official clinical guidelines in most medical specialities.

## What does it mean for patients?

It will be very important for patients, as once the clinical guideline is adapted and published in each country, it will become a transparent document to which all patients can have access and can thus demand that the treatment they receive conforms to the recommendation of this clinical practice guideline.

## The guideline just published covers stages I-III of periodontitis, and stage IV will be tackled in the next Perio Workshop in July 2021. Why was it not possible to create a single S3 guideline for all the stages at last year's workshop?

Stage IV periodontitis presents the same degree of severity as stage III but with the major difference that in stage IV there is the loss of a greater number of teeth, which brings with it a series of functional and aesthetic changes that require – in addition to periodontal treatment – the anatomical and functional rehabilitation of the lost dentition. Thus, from the point of view of periodontal treatment, the recommendations will be the same as those defined in the recently published clinical guideline. But it will specifically contain all the multidisciplinary procedures aimed at restoring the teeth and the functionality lost as a result of periodontitis.



↑ Mariano Sanz at Perio Workshop 2019.

So it will include prosthetic, orthodontic, and dental-implant treatments, which will mean that the experts and stakeholders who participate in this new workshop will need to be different and will represent these specialities responsible for the multidisciplinary treatment, although the methodology will be the same.

Mariano Sanz is professor and chair of periodontology at the Complutense University of Madrid in Spain. Since 2005, he has chaired the ETEP research group on the aetiology and therapy of periodontal diseases, whose main lines of investigation are oral microbiology, bacteria-host interactions, and antimicrobial approaches to the treatment of gingivitis and periodontitis. Prof Sanz is co-chair of the EFP's workshop committee and has served the EFP as president (1993-1994) and secretary general (1998-2005). He has also been president of the Osteology Foundation. An associate editor of the *Journal of Clinical Periodontology* and *Evidence-Based Dental Practice*, he is a member of the editorial boards of other scientific journals.

# Iain Chapple: 'We might think that we know how to treat periodontitis, but what does the evidence say?'



↑ Iain Chapple at Perio Workshop 2019.

**In 2018 we had the new classification of periodontal and peri-implant diseases and conditions, and now two years later we have these guidelines on periodontal therapy. What is the path between the new classification and these guidelines?**

The link relates to timeliness more than anything else. The new classification system was a superb exercise and something we desperately needed because the evidence had changed so much since the 1989 system. And some fundamental changes in thinking emerged from that 2017 workshop.

The classification was informed by experiences of the model for tumour diagnosis, with stages and grades. But there are big differences between tumours and periodontitis, principally that if someone has a tumour, it can be cured and after five years they become a cancer survivor rather than a cancer patient. But periodontitis cannot be cured – it is a long-term chronic condition and the risk of its recurrence in somebody who has developed the condition is always there unless they are well maintained.

It is also important to understand that classification and diagnosis are linked but also distinct concepts. You first diagnose the disease, and with periodontal tissues this is very simple: it is either health,

A natural development from the new classification of periodontal diseases, the EFP S3-level clinical practice guideline offers clear recommendations to practitioners on therapies for treating periodontitis and explains the evidence base for each one. Iain Chapple, one of its lead authors, explains how the guideline was created and explores some of the key recommendations and controversies.

gingivitis, or periodontitis. That's the diagnosis. What the classification does is add detail and greater granularity on the extent, severity, and the rate of progression of the disease, and so on.

With a diagnostic and a classification system in place, the next question is "how do you treat it?" We might think that we know how to treat periodontitis, but what does the evidence say? In perio we like to think that we have more evidence than most other disciplines in dentistry – and there is indeed a great deal of evidence – but sometimes when you look deeply at the evidence base there is not as much as you think!

That is why we decided that we needed to put these evidence-based guidelines together and to do it at the highest level – the S3 Clinical Practice Guideline (S3CPG) level – so that we could guide people on what the evidence says. This does not mean that you must practise this way, but it does tell you what the consensus is on how to implement care, accounting for the evidence.

**Could you explain the S3-level process?**

There are three different levels in clinical practice guidelines. S1 is the basic level, which is where a bunch of experts gets together and decides what they think is the evidence but without external stakeholders involved. S2 guidelines require a structured consensus process or a systematic review of the literature. S3 brings it all together. There are systematic reviews, an international

expert group, and external stakeholders. At the workshop, we had 10 representatives from relevant scientific societies and organisations in European dentistry<sup>1</sup>. They enrich the discussion because they are not so close to the discipline. Finally, you have moderators and, in our case, it was Ina Kopp, who is the European expert on clinical practice guidelines. What you have is a managed process underpinned by the evidence. Importantly, all delegates have to make declarations of interest, which are recorded, and individuals with potential conflicts do not vote on those specific recommendations.

**How structured is the guideline in terms of the four steps that are recommended and the strength of the recommendations on specific therapies?**

There were 15 systematic reviews that underpinned the discussion and four working groups, which each had specific recommendations to address. It was clear that the guideline needed to involve steps and what we created was a four-step process:

1. Preventive advice, risk assessment, behavioural change.
2. Cause-related therapy – managing the risk factors, removing the biofilm and plaque-retaining factors with non-surgical periodontal therapy.
3. Re-evaluation of the second stage of treatment, which may need to be repeated, and surgery (resective, access-

flap, or regenerative) may be required.

4. Once the definitive stage of treatment has been undertaken, the final step is about maintenance and supportive treatment to keep everything stable.

In terms of strength of recommendation, the evidence is graded using an internationally accepted system, the German Association of the Scientific Medical Societies (AWMF) & Standing Guidelines Commission, 2012.

Sometimes the recommendation is not necessarily based only on the evidence. You need to consider other factors. You might get a better treatment outcome with one approach, but it might cost the patient a lot of money or there might be environmental risks in undertaking that type of intervention. So, you need to think about these other factors, not only the evidence.

**What about the strength of the consensus?**

There was a vote by the entire plenary. Two things are important to bear in mind. First, in formal guidelines there can be no conflicts of interests, so if we had any affiliation or had received lecture fees from a company, then we had to abstain on particular recommendations where that company's products might be relevant. This is really important. Second, the workshop that drew up the guidelines needed to be completely independent, so we could not have any companies sponsoring the event.

In terms of the strength of consensus, there are five levels: unanimous consensus (100%), a strong consensus (more than 95% but less than 100%), consensus (75-95%), majority view (50-74%), no consensus (less than 50%).

### The recommendations are for periodontitis stages I, II, and III. But what about stage IV?

Stage IV is all about complicating factors, so it is not really about periodontal disease but about the rehabilitation of the patient. It is an incredibly broad area which is why we will have an entire workshop looking just at stage IV – Perio Workshop 2021, in July 2021 – which will explore the complicating factors and how we manage them according to the severity of the disease and the associated comorbidities. You could argue that if you were just looking at treatment of periodontitis, stage III and stage IV are managed the same way, but if you include “periodontal rehabilitation” after periodontal stability has been achieved, then we need a separate workshop for that rehab aspect.

### These guidelines will be useful for periodontists but how useful are they for general dentists?

It is important to understand the difference between efficacy and effectiveness. We found that the vast majority of perio research comprises controlled clinical studies in academic environments and, as such, they are efficacy studies. It is not always clear whether they will naturally translate into a high-street practice, so there are limitations to the recommendations. This is something which – as periodontists, as researchers, and as clinicians – we need to address, and we need to start reproducing some of this research in a primary-care practice environment.

What the recommendations offer general dentists is flexibility and they have a menu of treatment options for the patient that depend on the patient’s wishes (most

importantly), on the clinical outcomes, and also the skill and training of the operator and the availability of specialists to refer to if you are unable to undertake the treatment in general practice.

In the UK, we have three levels of complexity for a periodontitis patient. Level 1 is treatment that can be done in general dental practice. Level 2 is for more advanced disease (up to stage III, grade B) and can be performed by people who may have done a one-year masters or equivalent experience, but who do not have formal specialist training, while Level 3 is undertaken by specialists or consultants who have done a full three- to five-year training.

### Turning to one of the controversial topics, where do we stand with the use of systemic antibiotics in subgingival instrumentation?

This is a really difficult one. There is evidence for beneficial effects of systemic antibiotics. But until recently there were not any studies that had been conducted sufficiently

long enough to know if those effects were sustainable. Another question with systemic antibiotics is about the size of the clinical effect and, for me, the critical one is about the nature of these antibiotic studies, which researched therapy with or without adjunctive antibiotics. But in the real world of practice, you would generally revisit the non-responding sites and re-instrument them and then review again rather than move straight to antibiotics. And when you do that, the number of non-responding sites reduces.

Why would I give a systemic drug when I have a site-specific non-response and everywhere else has responded well? Sometimes you can justify that, and sometimes you can’t. In some types of patient, there are certain bugs that we can measure and test for which we cannot eliminate with non-surgical therapy. You may need to use adjunctive antibiotics in those cases.

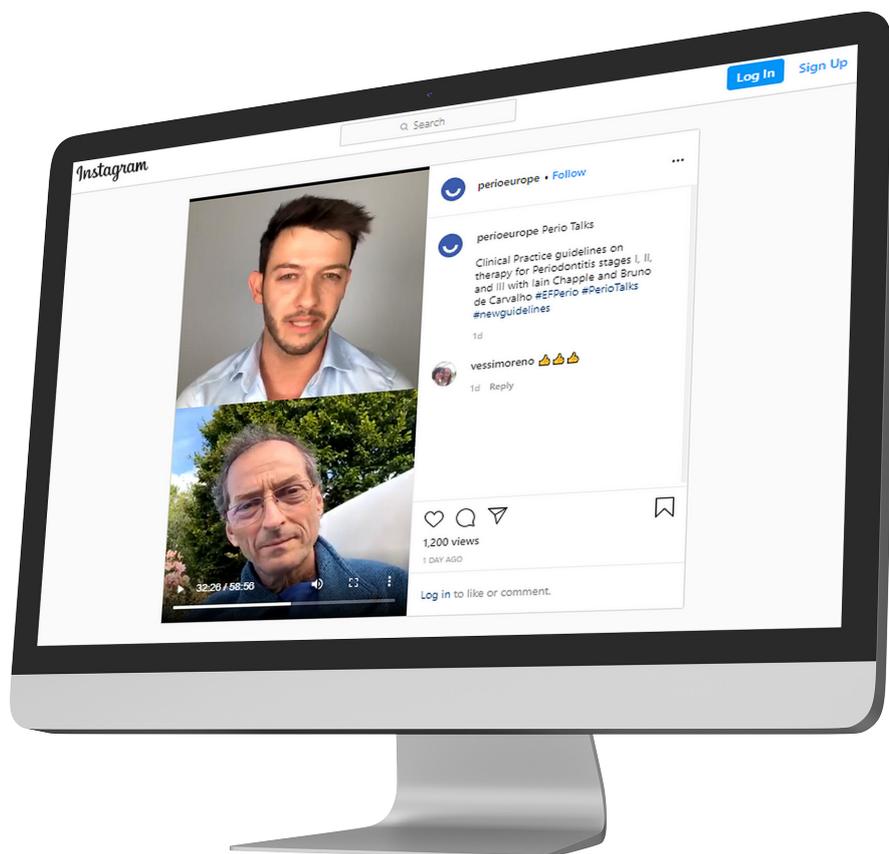
The recommendation in the guideline is against using systemic antibiotics. But the

reason for that was not the evidence, it was antimicrobial stewardship. There were very few studies that had gone beyond 12 months and there was not much data out there on the side-effects and long-term development of resistance to antibiotics. That does not mean that in select and specific cases you should not use them.

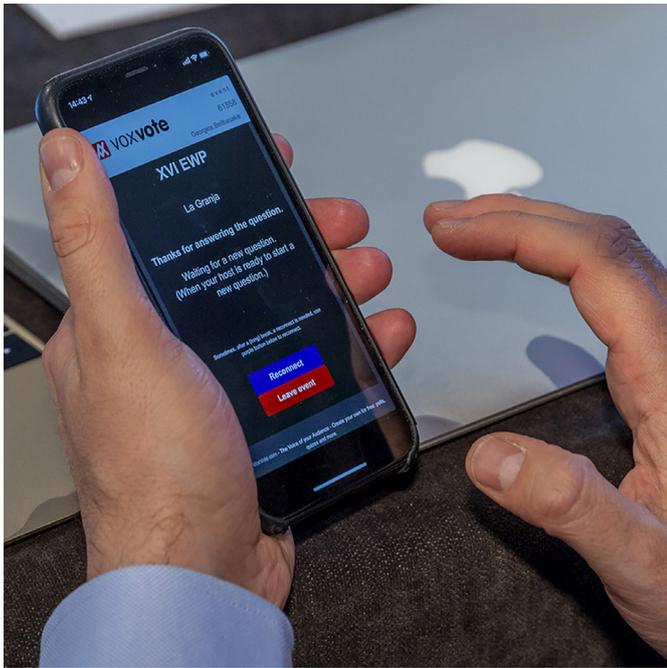
What is really important here is whether it is appropriate for a general dentist to make a decision on using a systemic antibiotic if they have not undergone a specialist training and understand the detail, the literature, and the research that we have just been discussing relating to specific cases where antibiotics may be needed. Well, no, it is not appropriate – so you should refer to a specialist and they will make a better informed and environmentally safer decision. I think it is important who makes that decision.

### What about lasers? Why is the recommendation not to use them?

Lasers were difficult, because on the one hand they are



📌 Bruno De Carvalho and Iain Chapple, EFP Perio Talks on July 14.



Recommendations were voted on using a special mobile application.

wavelength dependent and lasers have different wavelengths that address different aspects of treatment. I think we all hope that there is a wavelength out there that will be perfect for undertaking periodontal therapy. It was not possible to come out with a strong recommendation in favour of lasers because of the heterogeneity of the way the studies had been done. We needed more evidence.

So, on the use of lasers as an adjunct to subgingival instrumentation, we ended up with a negative Grade-B recommendation with a simple majority. Just because there is a negative recommendation does not mean the treatment does not work. What it means is that the current state of evidence does not allow a positive recommendation. And there are other factors such as the cost of lasers

that has to be transmitted to the patient and also the effect size in efficacy studies that may not use the protocols employed in general practice.

An important point is that these guidelines will need updating in a few years and some of these recommendations will change because there will be more evidence.

#### Why is it not possible to make recommendations to patients in terms of nutrition and physical exercise?

This is an area close to my heart. The bottom line is that we do not have enough research evidence yet to be able to make a recommendation. But that will not stop me from saying to a patient that there are various lifestyle changes that we think will help and for me nutrition is an important one and exercise is an important one. And while

there may not be a sufficient evidence base today, I suspect that there will be in the near future.

#### What will be the process for implementing the guideline?

I think from the very start we knew that the implementation would have to be country-specific because of different healthcare systems, different funding systems, different challenges, and the fact that in many countries there are not even specialists recognised in perio. The next step is what we call an "adoption"<sup>2</sup> process, where you update the evidence and adopt or adapt each recommendation at a national level rather than the supra-national level at which these S3 guidelines were developed.

So, the British, the German, and the Spanish societies got together and reviewed the systematic reviews and updated the evidence. And that updated evidence was presented along with the original recommendations to the national society and then the national society decided for each recommendation whether to simply adopt it or whether to adapt it because something had changed or because it would not work in its healthcare system.

The British Society of Periodontology has just completed this process and in its version, 90-95% of the recommendations were just adopted. The Spanish and German societies are now going through this process.

What is important with the national adoption process is that you have the right stakeholders there. In the UK, we had our Department of Health, which funds dentistry

and the General Dental Council, which is the competent body that regulates dentists. We had many other key stakeholders involved.

Once this has been done at a national level, it is a question of training and getting the message out via social media and through any kind of suitable educational forum.

*This article is based on the EFP Perio Talks conversation between Iain Chapple and Bruno De Carvalho on July 14. EFP Perio Talks is a new series of monthly live educational sessions on the EFP's Instagram page (@perioeurope) in which leading periodontists discuss key topics in periodontal science and clinical practice.*

Iain Chapple is professor of periodontology and head of the School of Dentistry at the University of Birmingham in the UK. He served as EFP secretary general from 2016 to 2019 and was previously the federation's treasurer (2007-13), co-organiser of Perio Workshop, chair of the scientific advisory committee and editor of *JCP Digest* (2013-2016). He is a former scientific editor of the *British Dental Journal*, former associated editor of the *Journal of Periodontal Research*, and currently associate editor of the *Journal of Clinical Periodontology and Periodontology* 2000. In 2018, he was awarded the International Association for Dental Research's Distinguished Scientist in Periodontal Research award.

<sup>1</sup>The European Federation of Conservative Dentistry, the European Association of Dental Public Health, the European Society for Endodontology, the European Prosthodontic Association, the Council of European Dentists, the European Dental Hygienists' Federation, the European Dental Students' Association, and the Platform for Better Oral Health.

<sup>2</sup>Adaptation, Adoption, De Novo Development (ADOLOPMENT), part of the Grading of Recommendations: Assessment, Development, and Evaluation (GRADE).

# Latest research

## Journal of Clinical Periodontology

### Clarifications on use of new classification of periodontitis

Providing clarification on the new classification of periodontal disease, a guest editorial in the *Journal of Clinical Periodontology* describes: (1) how to apply the extent criterion to the defined stage of the disease and (2) how to calculate tooth loss caused by of periodontitis in stage III and IV cases with evident hopeless teeth.

The new classification has raised questions about the specific criteria for "extent" in the staging process. The authors support the criteria defined in the new classification consensus publication, which states that the extent should be described *after* determining the stage. For each stage, extent is described as localised [ $<30\%$  of teeth involved], generalised, or molar/incisor pattern. Assessment of extent after the stage has been determined describes the percentage of teeth at the stage-defining severity level. It conveys meaningful information to the clinician because it depicts the percentage of teeth that are severely affected and may likely require treatment of higher complexity.

The other question concerns whether to consider existing teeth with an evident hopeless prognosis as teeth lost because of periodontitis. To distinguish between periodontitis stages III and IV, the authors support the inclusion of evidently hopeless teeth. They add that it is important to define appropriately what is a hopeless (or irrational to treat) tooth, and offer the definition that evident hopeless teeth are those in which the attachment loss approximates the apex of the root circumferentially, in combination with a high degree (degree III) of tooth hypermobility.

Authors: Mariano Sanz, Panos N. Papapanou, Maurizio S. Tonetti, Henry Greenwell, Kenneth Kornman.

Full article: <https://doi.org/10.1111/jcpe.13286>

### Treatment of periodontitis reduces systemic inflammation in type-2 diabetes

Diabetes and periodontitis together appear to increase systemic inflammation, but there is evidence of reductions following periodontal treatment.

Adults with type 2-diabetes ( $n=83$ ) and without diabetes (controls,  $n=75$ ) were recruited, and participants with periodontitis received periodontal treatment and 12 months' follow-up. Biomarkers for periodontal inflammation and serum markers of inflammation and diabetes control were measured. Structural equation modelling was used to evaluate periodontal treatment effects on oral and systemic inflammation.

Periodontal treatment resulted in significant improvements in clinical status and reductions

in gingival crevicular fluid biomarkers from baseline to month 12. Structural equation modelling identified that, at baseline, individuals with diabetes and periodontitis had significantly higher systemic inflammation than non-diabetic controls with periodontitis ( $\Delta=0.20, p=.002$ ), with no significant differences between groups for oral inflammation. There was a greater reduction in systemic inflammation following periodontal treatment in individuals with diabetes and periodontitis compared to those with periodontitis but not diabetes. ( $\Delta=-0.25, p=.01$ ).

Authors: Philip M. Preshaw, John J. Taylor, Katrin M. Jaedicke, Marko De Jager, Jan Willem Bikker, Wieke Selten, Susan M. Bissett, Kerry M. Whall, Rachel van de Merwe, Aisha Areibi, Paiboon Jitprasertwong, Rana Al-Shahwani, Jolanta Weaver, Roy Taylor, Rebecca R. Wassall.

Full article: <https://doi.org/10.1111/jcpe.13274>

### Vital root resection in severely furcation-involved maxillary molars: Outcomes after up to seven years

A novel therapeutic approach for the treatment of furcation-involved maxillary molars by vital root resection resulted in restored periodontal health and preserved tooth vitality over a period of three to seven years.

Eleven patients with 15 maxillary molars affected by double/triple class II ( $n=10$ ) or single/double class III ( $n=5$ ) furcation defects and advanced vertical bone loss around one root participated. Teeth were treated with deep pulpotomy using a calcium silicate-based cement. After four weeks, the affected roots were removed by periodontal microsurgery and processed for histological evaluation of the pulp. All patients were enrolled into a supportive periodontal-care programme.

All teeth remained sensitive to pulp testing. After one year and between three and seven years of follow-up, probing depth was  $\leq 5$  mm at all resected teeth and furcation status was much improved. Neither increasing mobility nor clinical or radiographic signs of periapical pathology were observed. Histologic sections revealed a functional dentin-pulp complex. All patients were pleased with the result of their therapy.

This case series demonstrates the possibility of maintaining severely furcation-involved molars by vital root resection for up to seven years. Root-canal therapy and its associated costs and complications can thus be avoided.

Authors: Karin Jepsen, Eva Dommisch, Søren Jepsen, Henrik Dommisch.

Full article: <https://doi.org/10.1111/jcpe.13306>

## EFP full-member societies

-  **Austria** Österreichische Gesellschaft für Parodontologie
-  **Belgium** Société Belge de Parodontologie / Belgische Vereniging voor Parodontologie
-  **Croatia** Hrvatsko Parodontološko Društvo
-  **Czech Republic** Česká Parodontologická Společnost
-  **Denmark** Dansk Parodontologisk Selskab
-  **Finland** Suomen Hammaslääkäri-seura Apollonia
-  **France** Société Française de Parodontologie et d'Implantologie Orale
-  **Germany** Deutsche Gesellschaft für Parodontologie
-  **Greece** Ελληνική Πериδοοντολογική Εταιρεία
-  **Hungary** Magyar Parodontológiai Társaság
-  **Ireland** Irish Society of Periodontology
-  **Israel** Israeli Society of Periodontology and Osseointegration
-  **Italy** Società Italiana di Parodontologia e Implantologia
-  **Lithuania** Lietuvos Periodontolog Draugija
-  **Netherlands** Nederlandse Vereniging voor Parodontologie
-  **Norway** Norsk periodontist forening
-  **Poland** Polskie Towarzystwo Periodontologiczne
-  **Portugal** Sociedade Portuguesa de Periodontologia e Implantes
-  **Romania** Societatea de Parodontologie din Romania
-  **Serbia** Udruzenje Parodontologa Srbije
-  **Slovenia** Združenje za ustne bolezni, parodontologijo in stomatološko implantologijo
-  **Spain** Sociedad Española de Periodoncia y Osteointegración
-  **Sweden** Svensk förening för Parodontologi och Implantologi
-  **Switzerland** Société Suisse de Parodontologie / Schweizerisch Gesellschaft für Parodontologie / Società Svizzera di Parodontologia
-  **Turkey** Türk Periodontoloji Derneği
-  **United Kingdom** British Society of Periodontology

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-  **Morocco** Société Marocaine de Parodontologie et d'Implantologie
-  **Russia** Российской Пародонтологической Ассоциации
-  **Ukraine** Асоціація лікарів-пародонтологів України

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-  **Brazil** Sociedade Brasileira de Periodontologia
-  **Lebanon** Lebanese Society of Periodontology
-  **Mexico** Asociación Mexicana de Periodontología
-  **Taiwan** Taiwan Academy of Periodontology