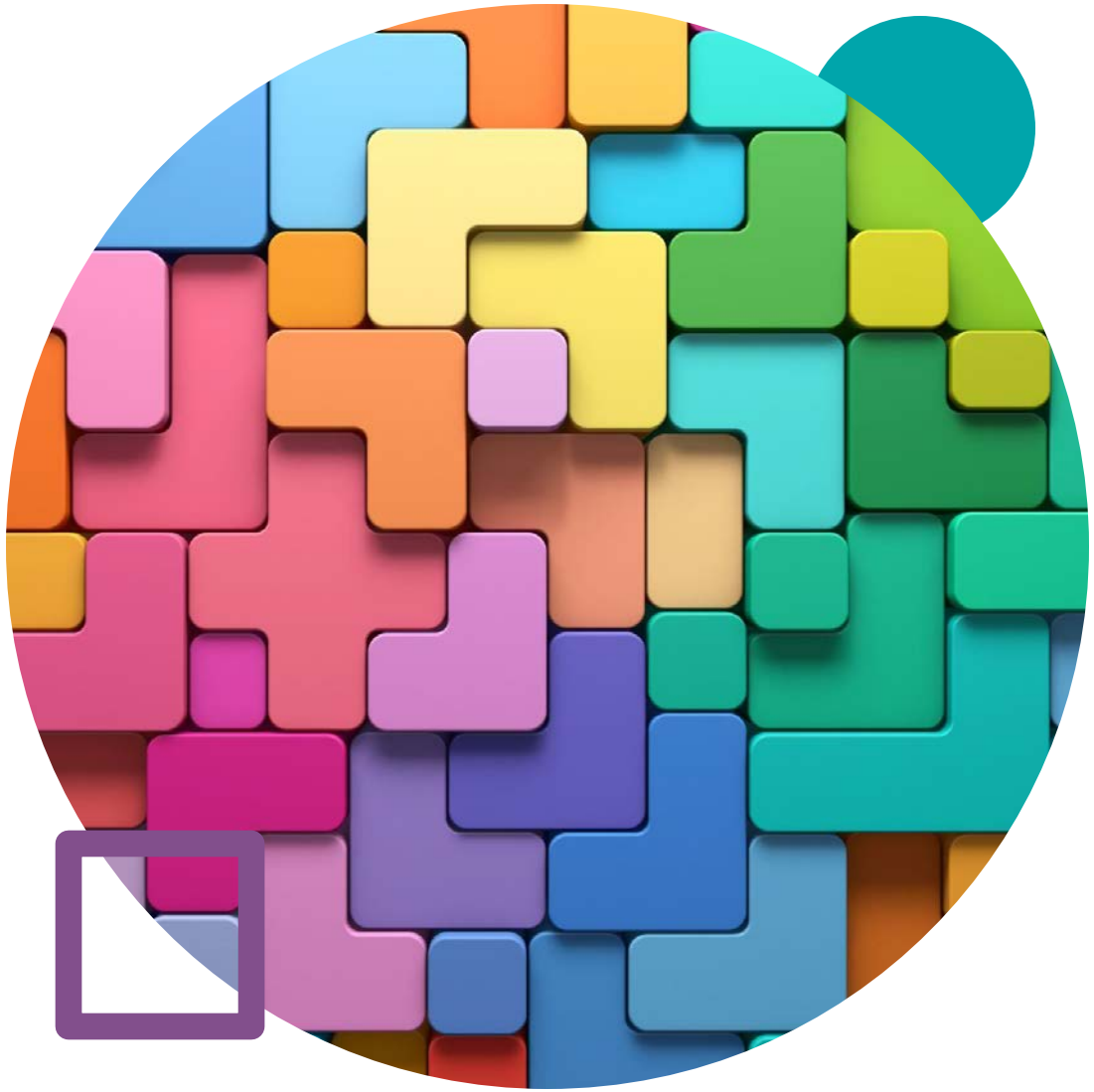
The critical intersection: managing periodontitis in patients with uncontrolled diabetes.



Natalia de Campos Kajimoto, DDS, Ms, PhD
Assistant Professor - Department of Periodontics
UT Health San Antonio

Kathryn Gabel, DDS
Resident II - Department of Periodontics
UT Health San Antonio

Objectives

- Understand the most updated factors that contribute to the periodontal disease and diabetes pathogenesis, therapy, and prophylaxis
- Identify specific/complementary therapeutic solutions required when periodontal disease and diabetes occur in association
- Evaluate a clinical case to determine best practices and outcomes in patients with periodontitis and uncontrolled diabetes

Outline

1. Introduction
2. Diabetes and Periodontitis prevalence
3. Uncontrolled Diabetes as risk for Periodontitis
4. Periodontitis as a risk for diabetes
5. Management of patients with uncontrolled Diabetes and Periodontitis
6. Conclusions
7. Take home message
8. Clinical case

Dental Science has strong and consistent evidence that systemic illnesses are linked to periodontal disease...

Diabetes mellitus (DM)

- Complex disease that includes several **metabolic dysfunctions** caused by **long-term state of hyperglycemia**
- The hyperglycemia status is generally a consequence of **decreased insulin secretion and action**
- Associated with changes in the large and small blood vessels
- Appears to modify proprieties of macrophage cells (decreased respond to bacterial infections and wound healing)

DeFronzo et al., 2015; Yi Shi, 2017; Kosiborod et al., 2018; Jepsen et al., 2020; Tan, 2020; Cole et al., 2020; Penlioglou et al., 2021; Paunica et al., 2023

The World Health Organization estimates that by 2030, diabetes will affect almost 10% of adults worldwide (439 million)

American Diabetes Association®

ABOUT DIABETES

Statistics About Diabetes

- **Prevalence:** In 2021, 38.4 million Americans, or 11.6% of the population, had diabetes
- **Diagnosed and undiagnosed:** Of the 38.4 million adults with diabetes, 29.7 million were diagnosed, and 8.7 million were undiagnosed
- **New cases:** 1.2 million Americans are diagnosed with diabetes every year
- **Prediabetes:** In 2021, 97.6 million Americans aged 18 and older had prediabetes

American Diabetes Association.
Connected for Life

The Burden of Diabetes in Texas

Diabetes is an epidemic in the United States. According to the Centers for Disease Control and Prevention (CDC), over 37 million Americans have diabetes and face its devastating consequences. What's true nationwide is also true in Texas.

Texas's diabetes epidemic:

- Approximately **2,758,942 people in Texas**, or 12.3% of the adult population, **have diagnosed diabetes**.
- An additional **621,000 people in Texas have diabetes but don't know it**, greatly increasing their health risk.
- There are **7,142,000 people in Texas**, 34% of the adult population, who have **prediabetes** with blood glucose levels that are higher than normal but not yet high enough to be diagnosed as diabetes.
- **Every year** an estimated **177,174 people in Texas** are diagnosed with diabetes.

Diagnosed diabetes costs an estimated $25.6 billion in Texas each year.

The serious complications include heart disease, stroke, amputation, end-stage kidney disease, blindness—and death.

Diabetes is expensive:

People with diabetes have **medical expenses approximately 2.3 times higher** than those who do not have diabetes.

- Total **direct medical expenses** for diagnosed diabetes in Texas were estimated at **$18.9 billion in 2017.**
- In addition, another **$6.7 billion** was spent on **indirect costs** from lost productivity due to diabetes.

Improving lives, preventing diabetes and finding a cure:

In 2023, the **National Institute of Diabetes and Digestive and Kidney Diseases** at the National Institutes of Health invested **$15,999,776** in diabetes-related research projects in Texas.

The **Division of Diabetes Translation** at the CDC provided **$1,492,848** in diabetes prevention and educational grants in Texas in 2021.

Sources include:

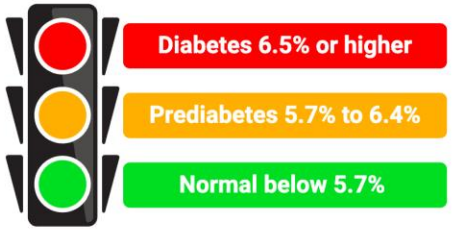
- Diabetes Prevalence: 2020 state diagnosed diabetes prevalence, cdc.gov/diabetes/data; 2017 state undiagnosed diabetes prevalence, Dall et al., "The Economic Burden of Elevated Blood Glucose Levels in 2017", Diabetes Care, September 2019, vol. 42.
- Diabetes Incidence: National Diabetes Statistics Report—2022, cdc.gov/diabetes/data/statistics-report/index.html
- Cost: American Diabetes Association, "Economic Costs of Diabetes in the U.S. in 2017", Diabetes Care, May 2018.
- Research expenditures: 2023 NIDDK funding, report.nih.gov/award/index.cfm; 2021 CDC diabetes funding, fundingprofiles.cdc.gov/FundingProfiles/FundingQuery

Criteria for the diagnosis of diabetes in nonpregnant individuals

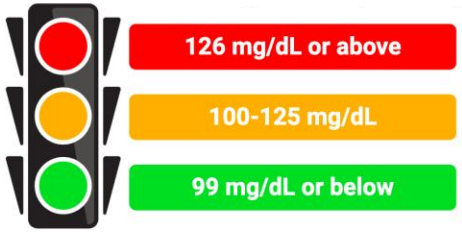
https://diabetesjournals.org/care/article/47/Supplement_1/S20/153954/2-Diagnosis-and-Classification-of-Diabetes (American Diabetes Association)

Glucose meter (Glucometer)

A1C criteria



Fast plasma glucose criteria (FPG)



2-hour glucose value (2-h PG or OGTT)

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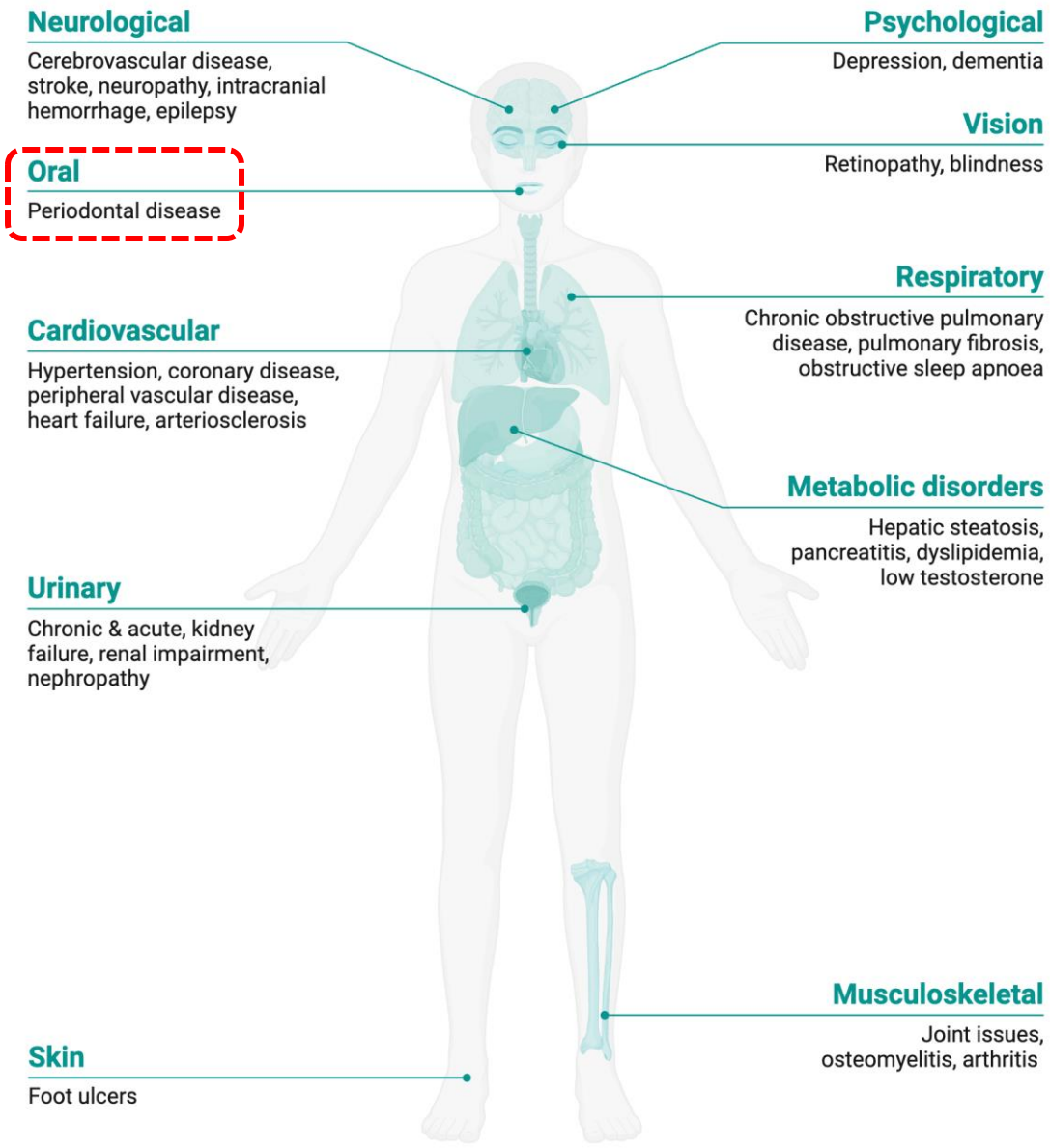
Diabetes Associated Comorbidities



Eke et al., 2020; Nibali et al., 2022

Created in BioRender.com

Periodontal diseases are the most common chronic inflammatory conditions of humans worldwide

FDI World Dental Federation, 2018

ADA American Dental Association
America's leading advocate for oral health

CDC Oral Health
EXPLORE TOPICS

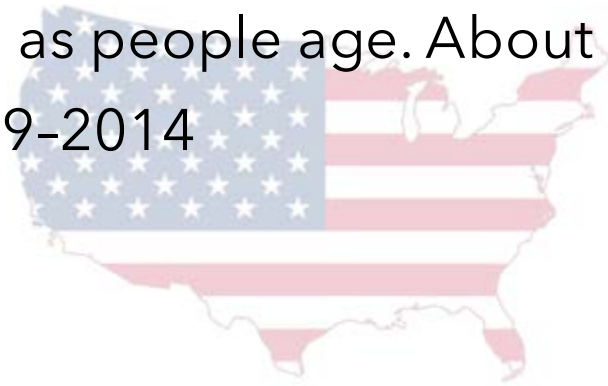
Periodontal Disease

May 15, 2024

THE AMERICAN ACADEMY OF PERIODONTOLOGY
AAP
COOPERATE·ADVANCE

Prevalence:

- AAP warns of a significant public health problem
- Roughly 42 percent of all dentate U.S. adults 30 years of age or older have periodontitis
- About 4 in 10 U.S. adults 30 years or older had a mild, moderate, or severe level of periodontitis in 2009–2014
- Periodontitis is more common as people age. About 60% of adults 65 years or older had periodontitis in 2009–2014



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.

Periodontitis Complications

Image Source Wikimedia

Accepted: 11 April 2017
DOI: 10.1111/jcpe.12732

WILEY Journal of Clinical Periodontology

Impact of the global burden of periodontal diseases on health, nutrition and wellbeing of mankind: A call for global action

Maurizio S. Tonetti[1,2] | Søren Jepsen[3] | Lijian Jin[2] | Joan Otomo-Corgel[4]

[1]European Research Group on Periodontology, ERGOPerio, Genova, Italy
[2]Department of Periodontology, Faculty of Dentistry, The University of Hong Kong, Hong Kong SAR, China
[3]Department of Periodontology, University of Bonn, Bonn, Germany
[4]Department of Periodontology, University of California Los Angeles, Los Angeles, CA, USA

Correspondence
Maurizio Tonetti, Prince Philip Dental Hospital, Hong Kong, SAR, China.
Email: tonetti@hku.hk

Abstract

Background: The global burden of periodontal diseases remains high. Population growth trends, changes in risk factors and improved tooth retention will increase the socio-economic burden of periodontitis that is responsible for 3.5 million years lived with disability, 54 billion USD/year in lost productivity and a major portion of the 442 billion USD/year cost for oral diseases.

Methods: In the context of the Milan World Exhibition 2015 "Feeding the Planet, Energy for Life," a green paper was developed and offered for global consultation by the European Federation of Periodontology. The final draft was endorsed by professional organizations around the world and is presented to stakeholders as a call for global action.

Results: Specific actions for the public, policymakers, educators and professional organizations have been identified in the areas of prevention, detection and care. These actions align public interest and knowledge, need for self-care, professional intervention and policies to the best scientific evidence to proactively promote periodontal health and effectively manage the global burden of periodontal diseases, in accordance with WHO/UN priorities and strategies for tackling common non-communicable diseases via the Common Risk Factor Approach.

Conclusions: A strong and coherent body of evidence allows identification of actionable preventive, diagnostic and therapeutic strategies to effectively promote periodontal health and general wellbeing, and better manage the socio-economic consequences. Action requires consideration of the specific national scenarios.

KEYWORDS
diagnosis, periodontal diseases, periodontitis, prevention, public health policy, risk factors, treatment

A draft of this paper has been circulated as a green paper for stakeholder consultation by the European Federation of Periodontology. It has been endorsed by the European Federation of Periodontology, the Asian Pacific Society of Periodontology, the Ibero-Panamerican Society of Periodontics and the International Academy of Periodontology as well as the following national learned societies of Periodontology: Argentinian Society of Periodontology, Australian & New Zealand Academy of Periodontists, Australian Society of Periodontology, Austrian Society of Periodontology, Azerbaijan Society of Periodontology, Belgian Society of Periodontology, Brazilian Society of Periodontology, British Society of Periodontology, Chilean Periodontology Society, Chinese Society of Periodontology, Croatian Society of Periodontology, Danish Society of Periodontology, Dutch Society of Periodontology, Finnish Society of Periodontology, French Society of Periodontology and Implantology, German Society of Periodontology, Hellenic Society of Periodontology, Hong Kong Society of Periodontology and Implant Dentistry, Hungarian Society of Periodontology, Indian Society of Periodontology, Indonesian Society of Periodontology, Irish Society of Periodontology, Israeli Society of Periodontology & Osseointegration, Italian Society of Periodontology and Implant Dentistry, Japanese Academy of Clinical Periodontology, Japanese Society of Periodontology, Korean Academy of Periodontology, Lithuanian Association of Periodontology, Malaysian Society of Periodontology, Moroccan Society of Periodontology, Nepalese Society of Periodontology and Oral Implantology, Norwegian Society of Periodontology, Philippine Society of Periodontology, Polish Society of Periodontology, Portuguese Periodontology and Implants Society, Romanian Society of Periodontology, Russian Association of Periodontists, Serbian Society of Periodontology, Society of Periodontology (Singapore), Slovenian Society of Periodontology, Spanish Society of Periodontology, Swiss Society of Periodontology, Swedish Society of Periodontology, Taiwan Academy of Periodontology, Turkish Society of Periodontology, Ukrainian Society of Periodontists. This paper is supported by The American Academy of Periodontology.

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Image source: ttps://www.pinterest.com/pin/626211523158629704/

Why should Periodontitis trigger the development or worsening of diabetes?

Why should Periodontitis trigger the development or worsening of diabetes?

Dental Campus Case Picture

Macedon Ranges Laser Therapy

Graziani & Tonetti, 2012

Bacteremia

	Chewing	Brushing	Scaling
Periodontitis	20%	10%	75%
Gingivitis	0%	0%	20%
Healthy controls	0%	0%	10%

Forner et al., 2006

Severe periodontitis slightly elevate blood sugar levels (glycemia) and increase A_1C levels in patients WITHOUT diabetes

EFP – European Federation of Periodontology 2013

Epidemiology/Health Services Research
ORIGINAL ARTICLE

Periodontal Status and A1C Change

Longitudinal results from the Study of Health in Pomerania (SHIP)

RYAN T. DEMMER, PHD[1]
MOÏSE DESVARIEUX, MD, PHD[1,2,3]
BIRTE HOLTFRETER, PHD[4]
DAVID R. JACOBS, JR., PHD[5]
HENRI WALLASCHOFSKI, MD[6]
MATTHIAS NAUCK, MD[6]
HENRY VÖLZKE, MD[7]
THOMAS KOCHER, DDS, PHD[4]

Diabetes Care 33:1037–1043, 2010

Periodontal disease was associated with 5-year A1C progression

Accepted: 22 October 2017
DOI: 10.1111/jcpe.12837

SYSTEMATIC REVIEW

WILEY Journal of Clinical Periodontology

A systematic review and meta-analysis of epidemiologic observational evidence on the effect of periodontitis on diabetes

An update of the EFP-AAP review

Filippo Graziani[1,2] | Stefano Gennai[1,2] | Anna Solini[1,2,3] | Morena Petrini[1,2]

Individuals affected by **periodontitis** showed a **higher chance to develop type 2 diabetes** when compared to non-affected ones

Systemic Inflammation

J Clin Periodontol 2007; 34: 931–937 doi: 10.1111/j.1600-051X.2007.01133.x

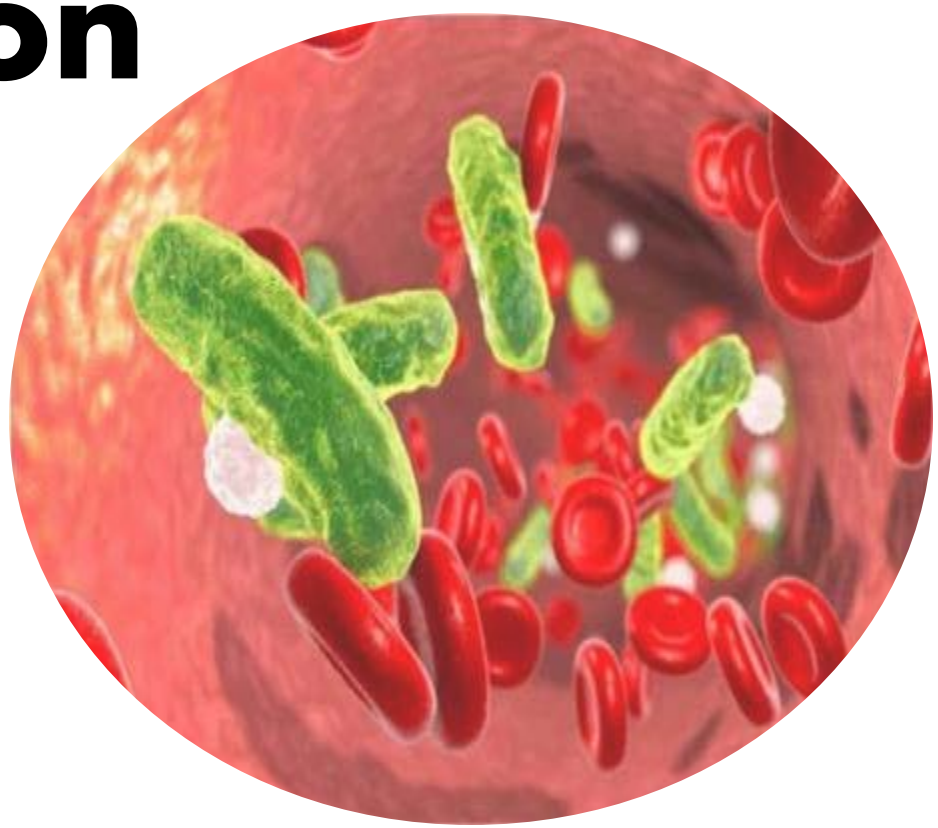
Journal of Clinical Periodontology

Severe periodontitis is associated with systemic inflammation and a dysmetabolic status: a case–control study

Luigi Nibali[1,*], Francesco D'Aiuto[1,*], Gareth Griffiths[1,2], Kalpesh Patel[1], Jean Suvan[1] and Maurizio S. Tonetti[3]

[1]Periodontology Unit, Eastman Dental Institute and Hospital, University College London, London, UK; [2]Department of Adult Dental Care, School of Clinical Dentistry, Sheffield, UK; [3]European Research Group on Periodontology (ERGOPerio), Berne, Switzerland

Nibali L, D'Aiuto F, Griffiths G, Patel K, Suvan J, Tonetti MS. Severe periodontitis is associated with systemic inflammation and a dysmetabolic status: a case–control study. J Clin Periodontal 2007; 34: 931–937. doi: 10.1111/j.1600-051X.2007.01133.x.



- 302 patients with severe periodontitis and 183 healthy controls - blood sample were collected
- Periodontitis subjects exhibited: a low-grade systemic inflammation - increased white cell counts, dyslipidemia and higher low-density lipoprotein cholesterol and increased non-fasting serum glucose levels when compared with controls

Systemic Inflammation

J Clin Periodontol 2007; 34: 931–937 doi: 10.1111/j.1600-051X.2007.01133.x

Journal of Clinical Periodontology

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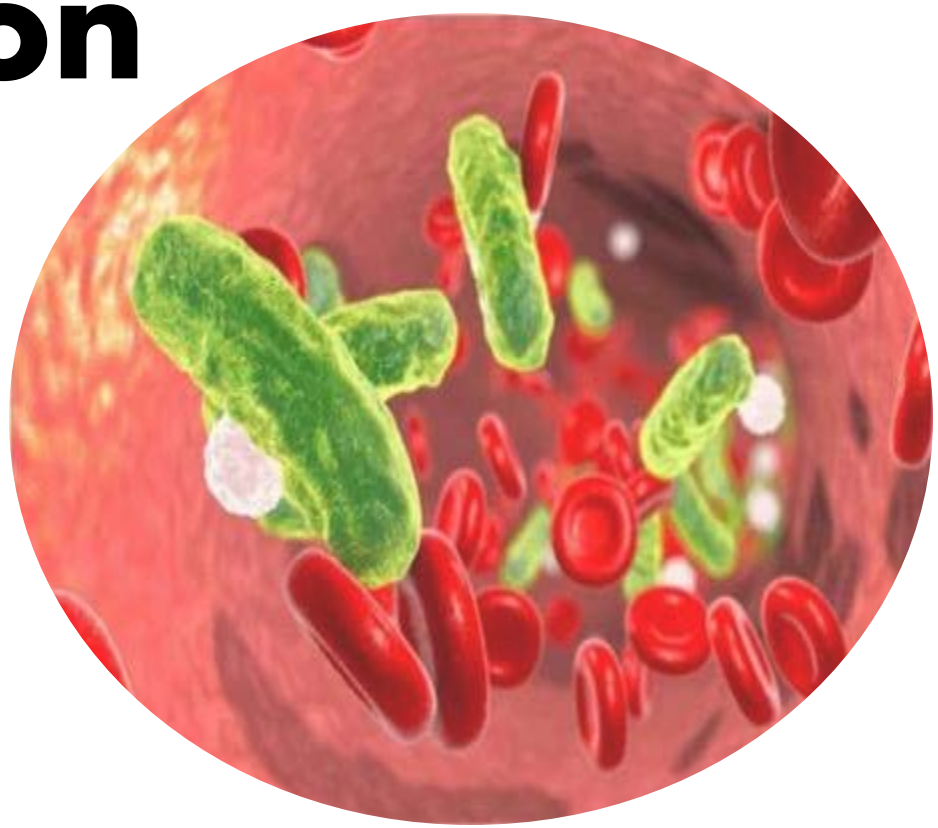
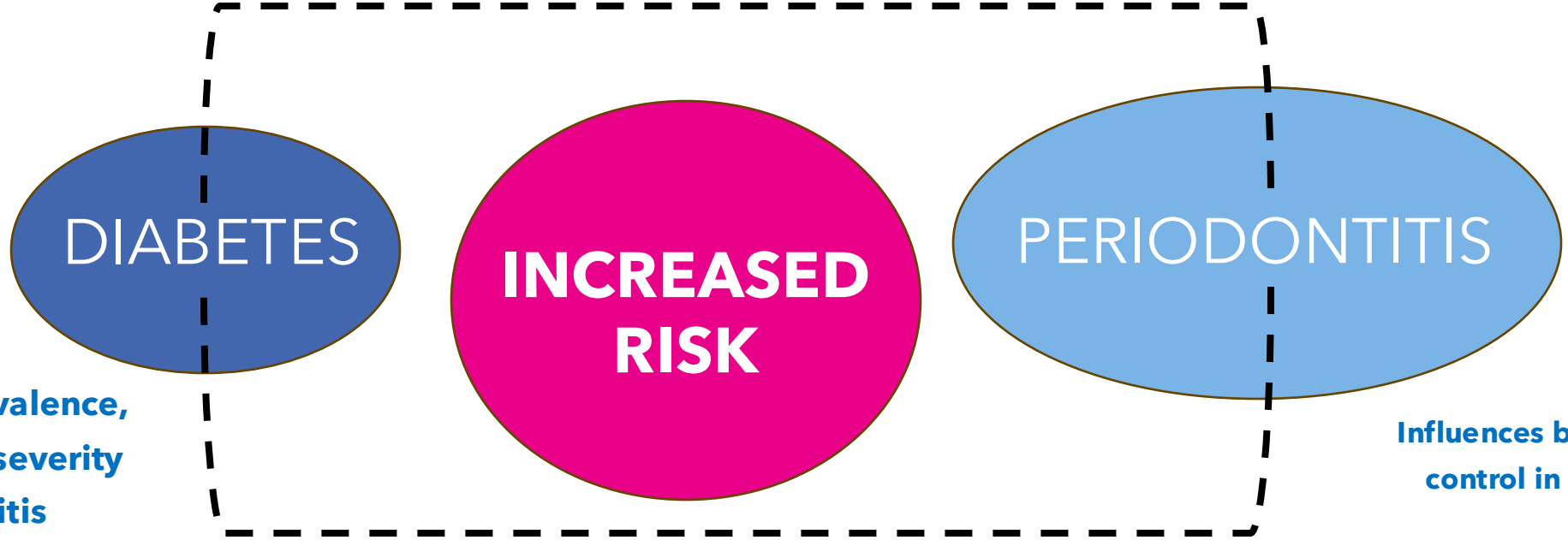


- Conclusion: possible link between severe generalized periodontitis, systemic inflammation and a dysmetabolic state

Interrelation between Diabetes and Periodontal Disease



Increased levels of pro-inflammatory factors in the gingiva of patient with poorly controlled diabetes suggest the existence of biological pathway that may aggravate periodontitis

European Federation of Periodontology; Eke et al., 2020; Nibali et al., 2022

Uncontrolled Diabetes and Periodontitis

- Patients with uncontrolled diabetes have **2-3 times higher risk** of developing **periodontitis**
- **Greater risk** for severe periodontitis, diminished salivary flow and burning mouth or tongue
- Uncontrolled type 2 DM: **increase in 4 times the risk** of progressive alveolar bone loss compared to healthy individuals
- **Greater tooth loss** in uncontrolled diabetes

Preshaw & Bisset, 2019; Zheng et al., 2021; Paunica et al., 2023; Taylor et al., 1998; AAP position paper, 1999; Demmer et al., 2012

What is the biological rationale that links diabetes and periodontitis?

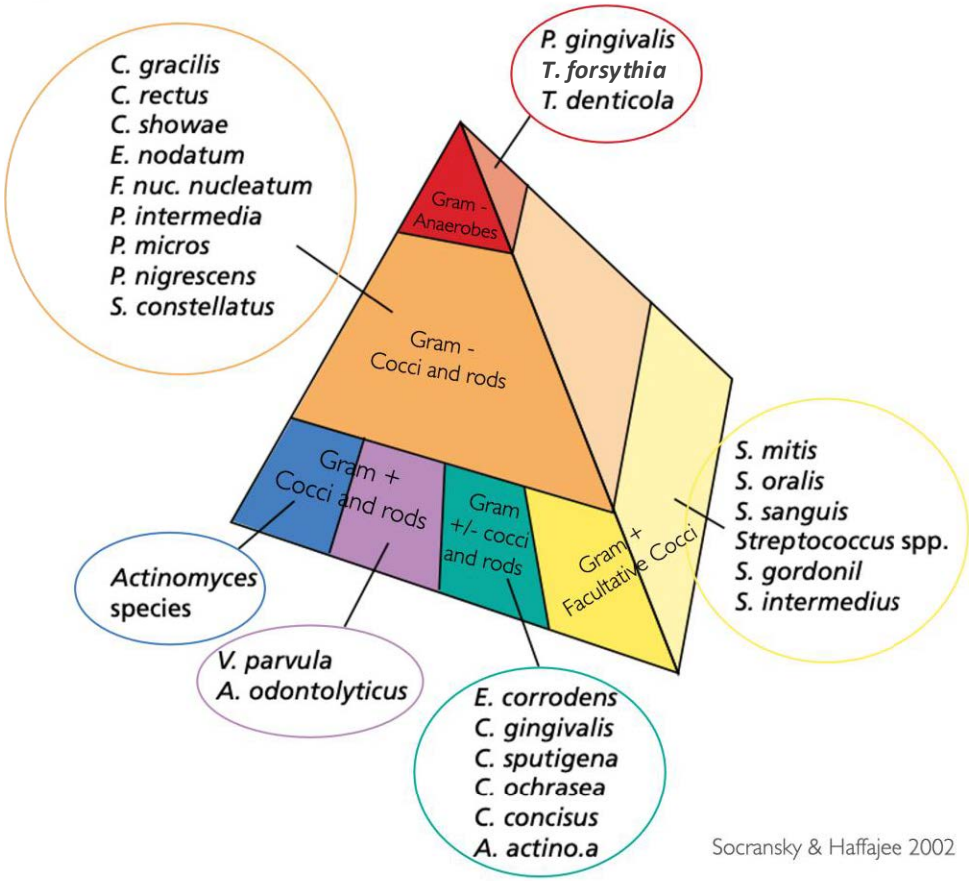
Evidence suggest:

- Enhanced susceptibility to periodontal disease in diabetes appears to be primarily driven by an altered host response to the bacterial challenge
- **Difference in microbial composition** in patients with diabetes
- **Shift in microbial composition** in patients with poorly controlled diabetes

Polak & Shapira, 2018

Microrganisms

- Uncontrolled DM and periodontitis: increased periodontopathogens - **red complex species**.
- Predominant pathogens in subgingival plaque: *Prevotella intermedia*, *Campylobacter rectus*, and *Porphyromonas gingivalis* (Type 2 DM)



AAP position paper, 1999

Periodontal treatment in patients with diabetes

Diabetes and Periodontal Treatment

- Controlled human studies: **periodontal treatment reduces** circulating C-reactive protein **(CRP)** and tumor necrosis factor-alfa **(TNF-α)** levels in patients with diabetes (active role in inflammation)
- Periodontal treatment may help to **improve glucose control**
- Subjects with periodontitis and diabetes receiving periodontal treatment do incur in **lower medical costs each year**

Sonnenschein, 2016; Polak & Shapira, 2018; Quadri et al., 2020; Genco & Borgnakke, 2020; Paunica et al., 2023

Cochrane Database of Systematic Reviews | Review - Intervention

Treatment of periodontitis for glycaemic control in people with diabetes mellitus

Terry C Simpson, Janet E Clarkson, Helen V Worthington, Laura MacDonald, Jo C Weldon, Ian Needleman, Zipporah Iheozor-Ejiofor, Sarah H Wild, Ambrina Qureshi, Andrew Walker, Veena A Patel, Dwayne Boyers, Joshua Twigg
Authors' declarations of interest

Version published: 14 April 2022 Version history
https://doi.org/10.1002/14651858.CD004714.pub4

- 35 studies
- 3249 subjects perio T2DM
- HbA1C reductions following periodontal therapy:

- 0.43% at 3-4 months
- 0.3% at 6 months
- 0.5% at 12 months

Check for updates

Received: 23 February 2022 | Revised: 17 November 2022 | Accepted: 11 December 2022

DOI: 10.1111/jcpe.13760

ORIGINAL ARTICLE

Journal of Clinical Periodontology WILEY

Acute-phase response following one-stage full-mouth versus quadrant non-surgical periodontal treatment in subjects with comorbid type 2 diabetes: A randomized clinical trial

Filippo Graziani[1,2] | Stefano Gennai[1,2] | Crystal Marruganti[1,2,3] | Marina Peric[1,2] | Lorenzo Ghiadoni[4] | Urska Marhl[1,2] | Morena Petrini[1,5]

- 40 subjects affected by periodontitis and T2DM (controlled and uncontrolled)
- Full mouth: higher C-reactive protein – 24 h after SRP

One stage full-mouth non-surgical treatment results in systemic inflammation at 24h

Check for updates

Received: 23 February 2022 | Revised: 17 November 2022 | Accepted: 11 December 2022

DOI: 10.1111/jcpe.13760

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Acute-phase response following one-stage full-mouth versus quadrant non-surgical periodontal treatment in subjects with comorbid type 2 diabetes: A randomized clinical trial

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- Both treatments resulted in a 3-month reduction of Hb1AC
- Quadrant non-surgical therapy significantly improved the absolute change in HbA1c from baseline to day 90 when compared to one-stage full-mouth

Quadrant treatment is indicated in subjects affected by periodontitis and type 2 diabetes.

- Quadrant conventional non-surgical periodontal treatment has shown not to alter systemic inflammation when compared to full-mouth approach
- It appears that the length of clinical sessions may be related to the post-operative systemic inflammation
- It was speculated that longer sessions would lead to increased bacteremia

Graziani et al., 2015; Graziani et al., 2023

Does the presence of diabetes reduce the outcomes of periodontal treatment in subjects affected by Periodontitis and Diabetes?

Periodontal Treatment Outcomes x Diabetes

- Long-term effect: supportive periodontal treatment – the progression of periodontitis was significantly greater among patients with uncontrolled diabetes (mean HbA1c=9.1%) than those with controlled diabetes (mean HbA1c=6.1%) and in subjects without diabetes

Genco & Borgnakke, 2020

Dental Therapy – General Considerations

- The initial dental therapy for patients with DM, as with all patients, must be directed towards control of acute oral infections
- Establish communication with the patient's physician - plan developed to obtain control of blood glucose levels
- Advanced periodontal disease may increase insulin resistance and contribute to a worsening of the diabetic state
- Poorly controlled DM patients have a more rapid recurrence of deep pockets and a less favorable long-term response to periodontal treatment

AAP position paper, 1999

Dental Therapy – Timing of the treatment

- Patients with well-controlled DM can be treated similarly to non-diabetic patients for most routine dental needs
- Procedures should be short, atraumatic, and as stress-free as possible
- Early morning appointments are often preferred
- Patients should be instructed to take their medications as prescribed, and to eat a normal breakfast before dental appointments to prevent hypoglycemia
- Dentist must be aware of the risk for hypoglycemia during the dental appointment

AAP position paper, 1999

Dental Therapy – Antibiotic Use

- Antibiotics are not necessary for routine dental procedures

in diabetic individuals, but may be considered in the presence of overt oral infections due to the potential for lower host resistance and delayed wound healing in DM patients.

AAP position paper, 1999

Conclusion

- Diabetes and Periodontitis are epidemic in the United States
- The link between diabetes and periodontitis is due to alteration of oral microbiota and host response
- Diabetes increases the prevalence, progression and severity of Periodontitis
- Periodontitis influences the blood sugar control in Diabetes
- The impact is related to the level of fluctuations of glycaemia (when diabetes is controlled there is no enhanced prevalence and severity)

Take Home Message

- Dentists see subjects more often than doctors
- If a patient has periodontal disease and DM, non-surgical periodontal treatment should be performed without delay

Thank you!

Dent Echo Case Presentation

Kathryn Gabel, DDS
UTHSCSA 2nd Year Periodontics
November 21, 2024

Objectives:

1. Identify clinical characteristics of uncontrolled diabetes.
2. Explore non-surgical adjuncts to periodontal therapy.
3. Review literature which guides our treatment decisions.

A.H.

A.H.

- 46 y/o female presents to Grad Perio from screening clinic for evaluation of periodontal disease
- CC: “I go to the dental hygienist every 3 months and my teeth are still falling out.”
- Med Hx: Type 2 Diabetes (last A1c 8.1%), Depression
- Medications: Farxiga
- Allergies: Sulfa Drugs, Penicillin, Hand Sanitizer, Latex, Metformin, Prednisone
- Social Hx: None
- BG: 220 mg/dl

A.H.

L

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Plaque																																
Facial	M																															M
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Bleed														B	B	B				B	B	B	B	B	B			B	B	B	B	B	B

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PD		4	3	6	6	2	4	3	2	3	3	3	3	3	3	4	4	2	2	2	1	2	2	1	2	2	1	2	2	1	2	3	2	3	3	2	4	3	2	3			
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Plaque																																										
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Rec		0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	1	1	-1	0	-1	-1	0	-1	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1			
Attach		5	1	4	4	1	2	3	1	2	2	1	1	1	1	1	6	3	3	2	2	2	2	2	2	2	2	2	2	0	1	2	0	1	1	1	3	1	0	2			

Summary of Findings

Localized vertical defects

Generalized mild to moderate horizontal bone loss

Minimal plaque and calculus

Periodontal abscess #8

Hopeless teeth #8, 15, 31

Disease Control

- 4 quadrants ScRP
- Extraction #8, 15, 31
- Interim Maxillary Partial or Essix Retainer

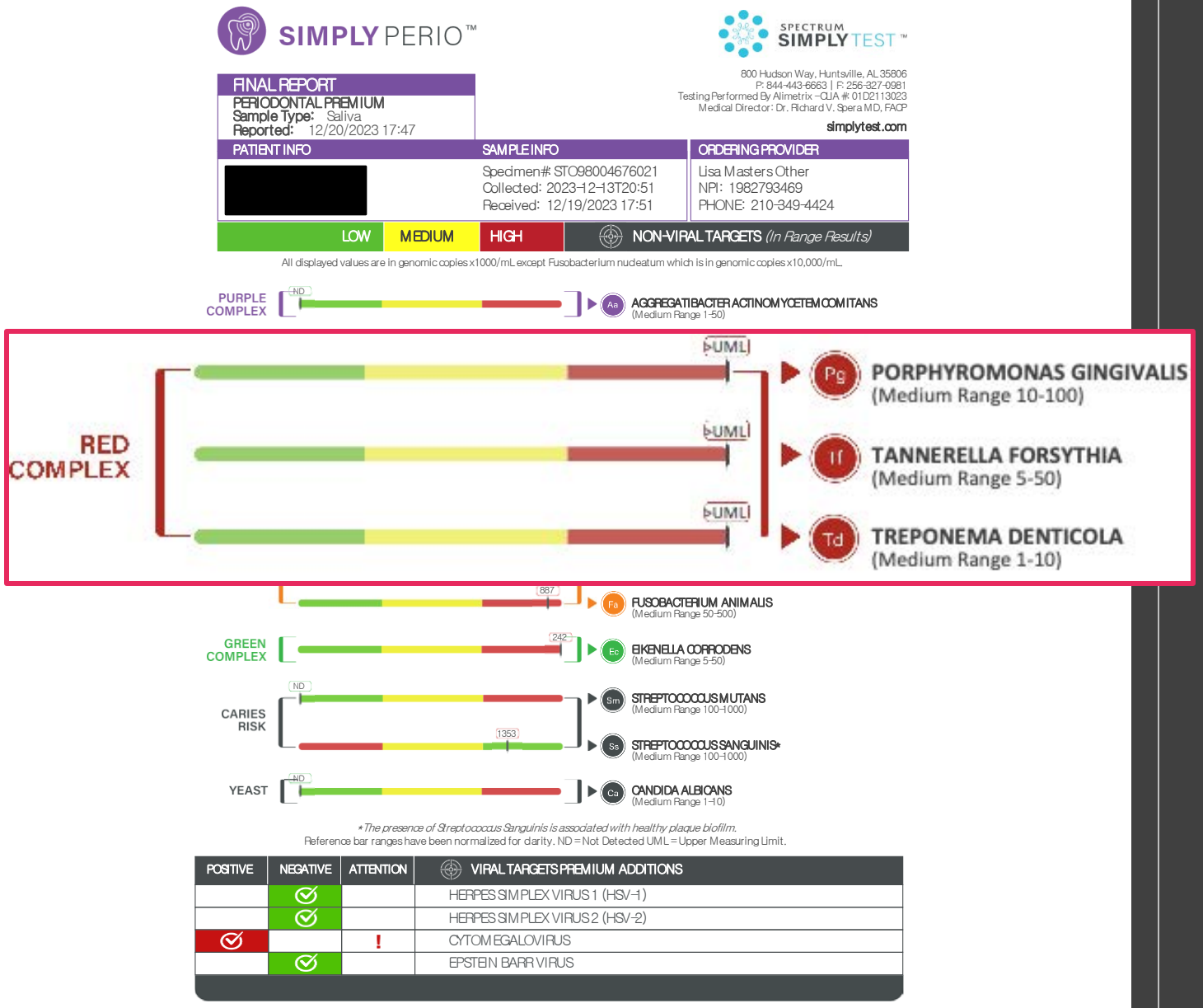
BUT WHAT IF THE PATIENT DENIES SURGICAL TREATMENT?

Accepted

- 4 quadrants ScRP
- Extraction #15
- Maintenance

Declined

- Extraction #8 and 31



Salivary Testing

- High levels of red complex bacteria
  - P. gingivalis
  - T. denticola
  - T. forsythia
- High levels of *F. nucleatum* and *F. animalis*
- Rx: Metronidazole 500mg tid x 7 days
  - Targets gram-negative anaerobic bacteria

Effect of scaling and root planing on the composition of the human subgingival microbial flora

T Mousquès, M A Listgarten, R W Phillips

PMID: 6445976 DOI: 10.1111/j.1600-0765.1980.tb00268.x

The results indicated that a single session of scaling and root planing is capable of disturbing the proportions of certain bacterial forms in the subgingival periodontal flora, and that it may require approximately 42 days for the proportions to return to baseline levels. Probing depth was significantly decreased by the debridement throughout most of the 90-day experimental period. The proportion of coccoid cells was negatively correlated with both GI and P1I scores, while the percentage of spirochetes was positively correlated with GI and P1I scores as well as probing depth measurements.

Maintenance of healed periodontal pockets after a single episode of root planing

J Caton, M Proye, A Polson

PMID: 6750073 DOI: 10.1902/jop.1982.53.7.420

The substantial improvement in gingival health which was noted during the initial 4 weeks after a single episode of root planing[10] appeared to be maintained from 4 to 16 weeks. The analyses of variance done on all pockets, and the subset of pockets ≥4 mm demonstrated that the

In a previous investigation, the initial (4 weeks) healing response of periodontal pockets after a single episode of subgingival root planing was characterized by a substantial decrease in bleeding after probing, and pocket depth reduction due to gingival recession and gain of clinical attachment.[10] The results of the present study, which documented the clinical behavior of these healed pockets for a further 3 months, indicated that these beneficial changes were maintained in the presence of relatively low levels of supragingival plaque. This finding supports the 3 to 4 month prophylaxis frequency for maintenance of periodontal health,[15] and indicates that longer intervals may be appropriate for patients able to maintain good plaque control. Pocket healing after a single episode of root planing in the present study was strikingly similar to previous reports employing repeated instrumentation,[16, 19] which indicates that a single session of root planing may be as efficacious as repeated episodes.

Before Initial Therapy

After Initial Therapy

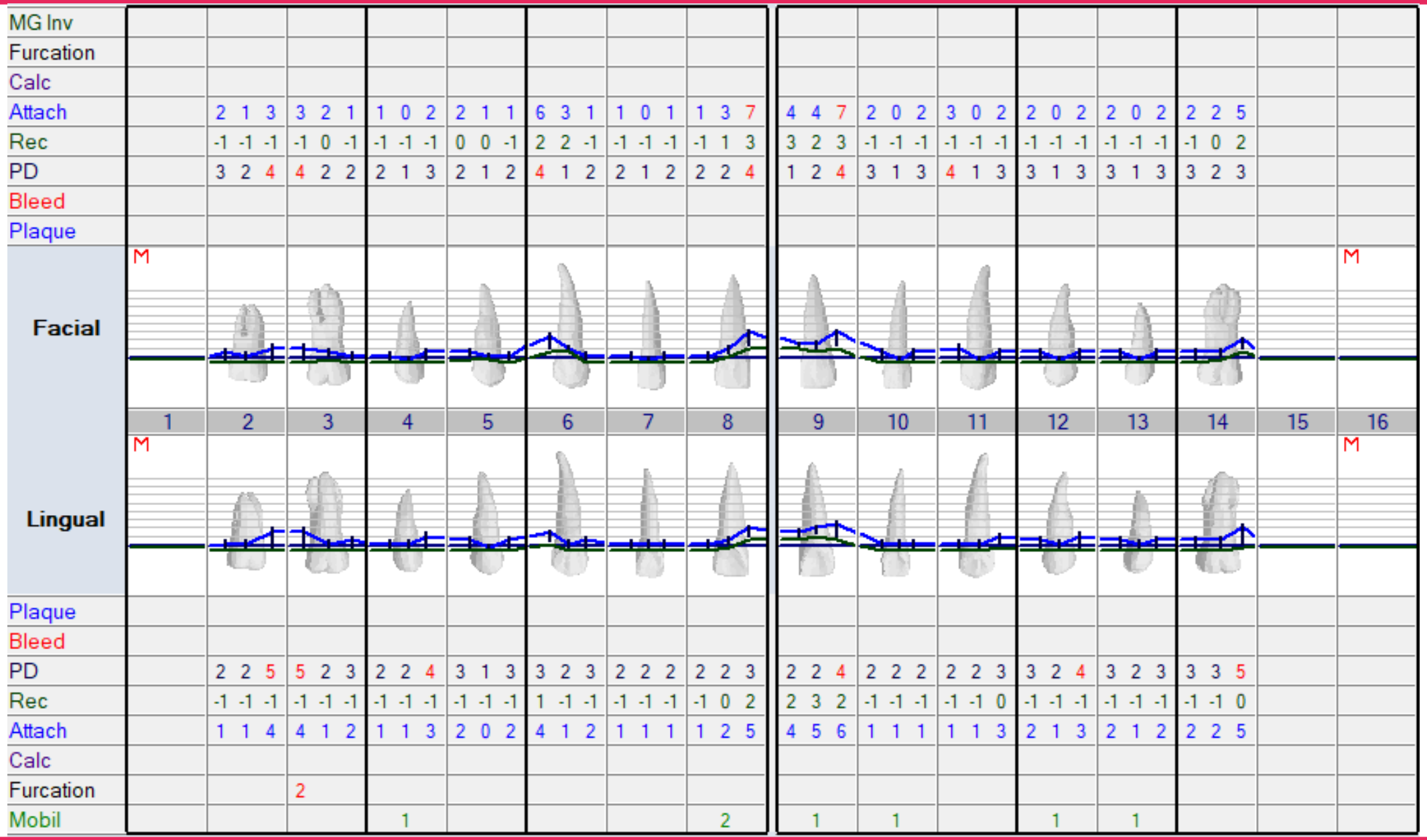
So, what can we do for this patient?

- Compromised maintenance
- Patient education
- Emphasize control of type 2 diabetes and overall general health
- Emphasize patient OHI

Perio Maintenance

- Ozempic – started June 2024
- Last A1c – 6.6%
- PD 1-5mm
- Abscess #8 resolved
- Generalized reduction in mobility

Perio Maintenance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PD	3 2 3	3 1 2	2 1 2	2 1 2	2 1 3	3 1 2	2 1 2	2 2 3	3 2 2	3 1 3	3 1 2	2 2 2	2 1 2						
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Attach	1 1 2	2 0 1	1 1 1	1 0 1	1 0 3	3 2 2	2 1 2	2 3 3	3 3 2	2 0 2	2 1 1	1 1 1	1 0 2						
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Maintenance of Hopeless Teeth

Retention of hopeless teeth: the effect on the adjacent proximal bone following periodontal surgery

Eli E Machtei [1], Ilan Hirsch

Affiliations + expand

PMID: 18052695 DOI: 10.1902/jop.2007.070125

The present study showed that periodontal surgery inhibited further bone loss and resulted in slight RBG for the hopeless teeth (0.82 ± 0.34 mm). Several factors may explain these results; the most important factor was the subject's plaque control and strict main-

Within the limitations of the study, it seems that long-term preservation of hopeless teeth following periodontal surgery is an attainable goal with no detrimental effect on the neighboring teeth. However, results should be interpreted with caution, and each case must be dealt with separately. Prospective longitudinal studies involving larger sample sizes and combining radiologic and clinical parameters are necessary to substantiate the evidence of the present study.

Proximal bone loss adjacent to periodontally "hopeless" teeth with and without extraction

E E Machtei [1], Y Zubrey, A Ben Yehuda, W A Soskolne

Affiliations + expand

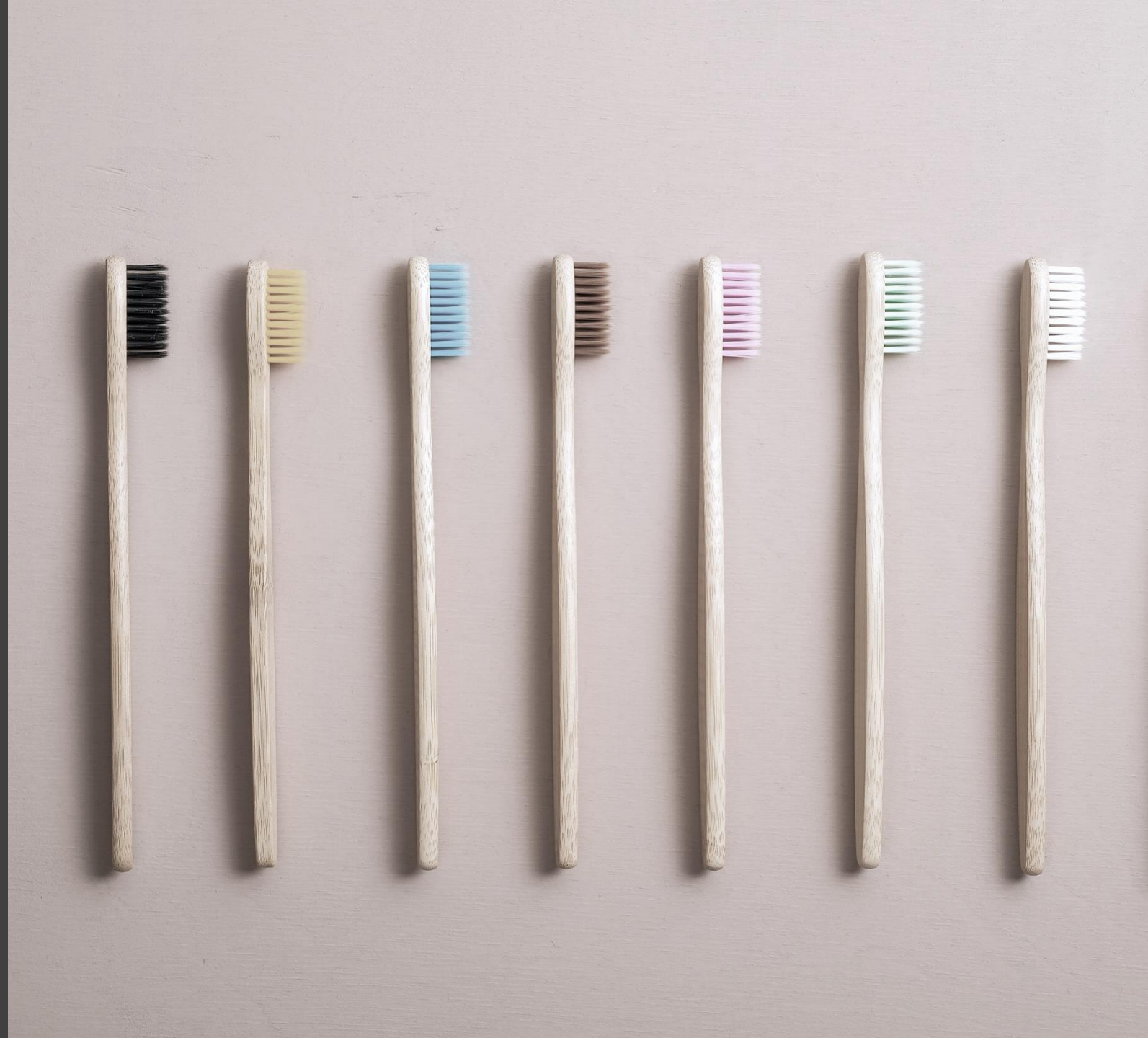
PMID: 2795418 DOI: 10.1902/jop.1989.60.9.512

port of both the "hopeless" teeth and their proximal neighbors. The mean annual bone loss associated with the retained "hopeless" teeth was 3.42% with a similar 3.12% annually found at the adjacent teeth. These values were more than 10 times the annual bone loss found at sites adjacent to extracted "hopeless" teeth (0.23%).

Before Initial Therapy

After Initial Therapy

WHERE DO WE GO FROM HERE?



Treatment Plan

- Continue strict 3-month maintenance schedule
- Retain #8 and 31 as long as possible
- Reinforce OHI
- Patient motivation

QUESTIONS?

Thank you!