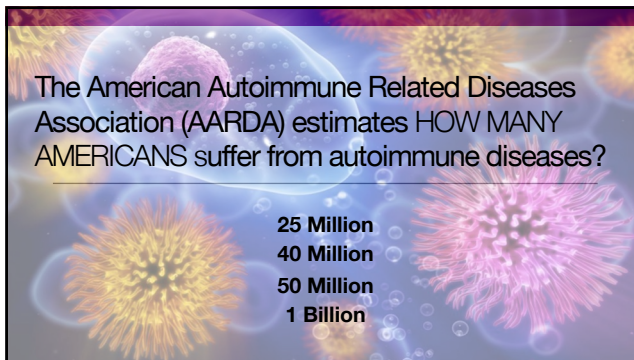




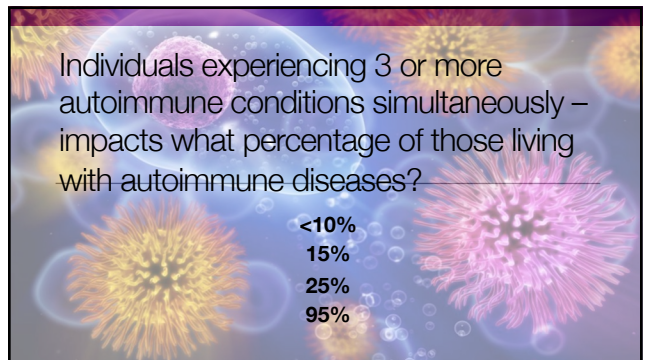
1



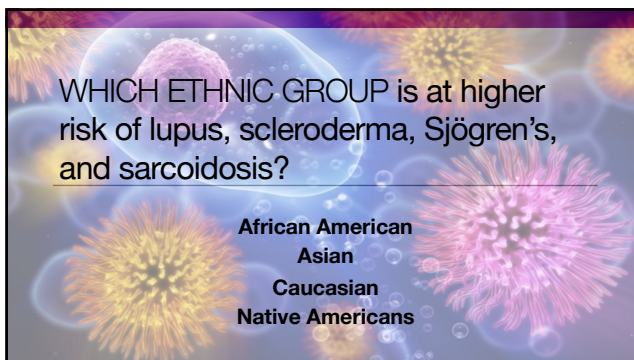
2



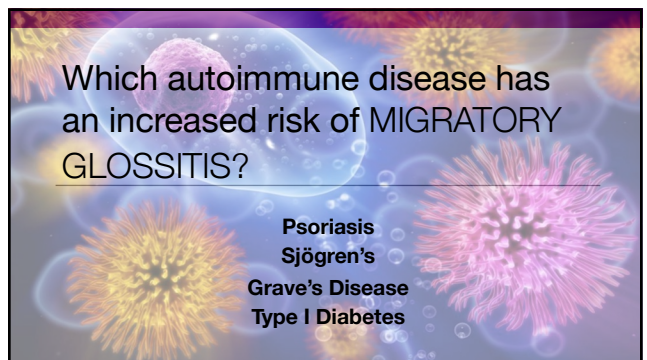
3



4



5



6



7

Which autoimmune disease commonly affects the gingiva with conditions such as DESQUAMATIVE GINGIVITIS, BURNING, AND BLEEDING?

---

Ulcerative Colitis  
 Mucous Membrane Pemphigoid  
 Lupus  
 Scleroderma

8



9

MULTIPLE ORAL ULCERATIONS are often the earliest presentation for which autoimmune disease?

---

Behcet's Disease  
 Psoriasis  
 Scleroderma  
 Lupus

10



11

Women are affected by autoimmune diseases by WHAT GREATER PERCENTAGE than men?

---

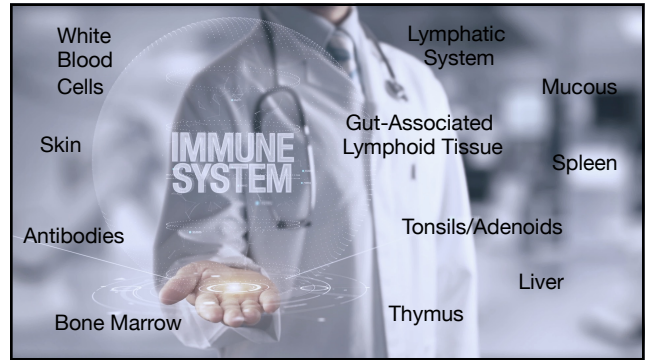
40%  
 50%  
 60%  
 75%

12

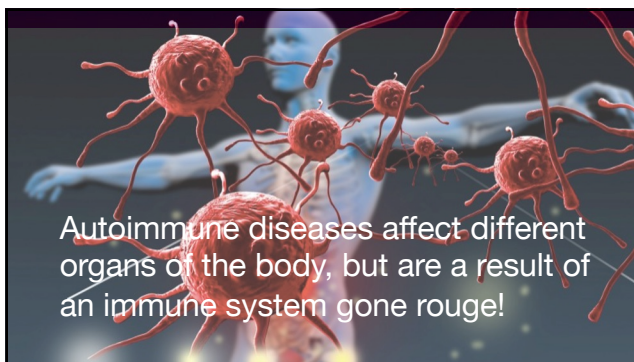




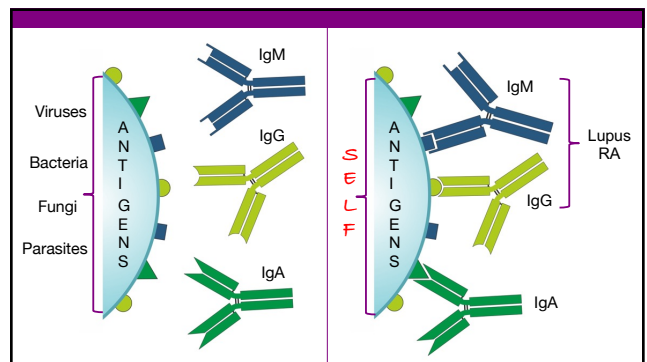
13



14



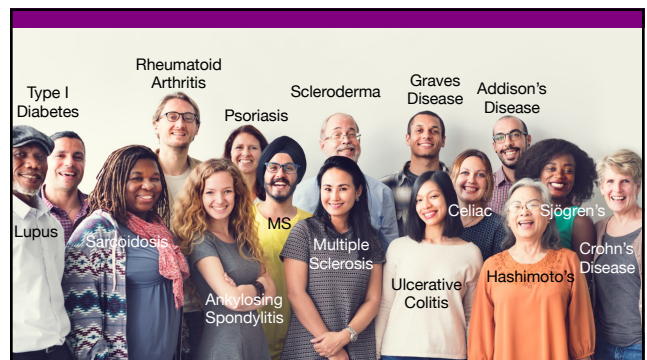
15



16



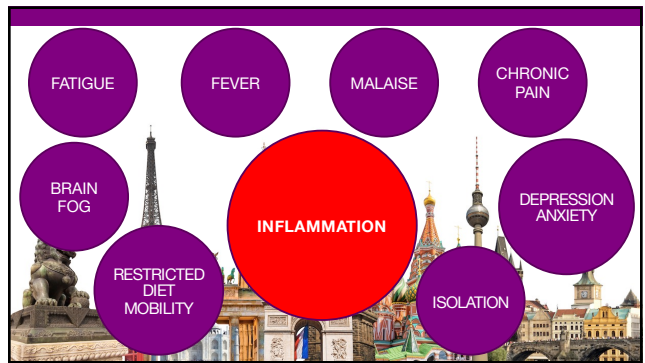
17



18



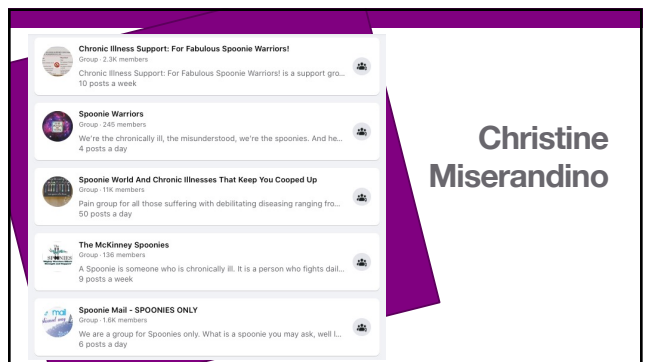
19



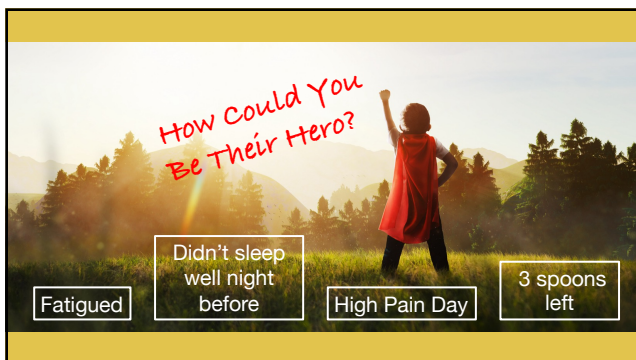
20



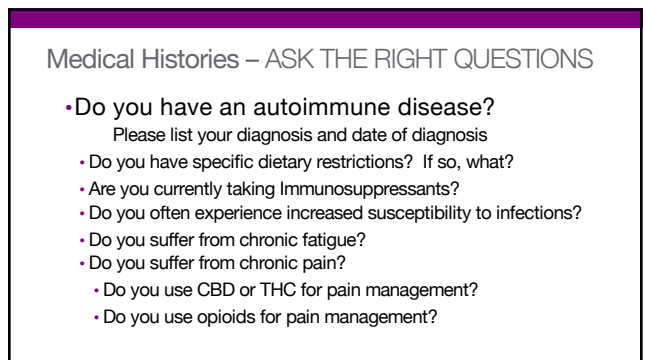
21



22



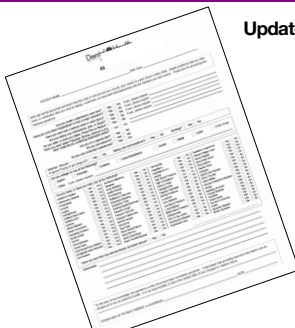
23



24



**Update Medical History Prior to Appointment**



Stelara	B-12
Amitiza	L-Lysine
Gabapentin	Inositol
Wellbutrin	Lo-loestrin
Nexium	Turmeric
Nortriptyline	Grapefruit Seed
Dicyclomine	Extract
Tylenol	Soccharomyces
Skelaxin	boulardii
Zofran	Florastor
Nitrofurantion	ProBioraPro
Mono-MCR	
Clotrimazole	

25



Inquire about their energy level TODAY during social graces or while reviewing their medical history

26

**Provide Clinical COMFORT**



27

**Make daily disease control EASY**



28



Provide WRITTEN product recommendations and customized OH recommendations  
Text  
Email

29



Early Diagnosis

30

Review Article  
**Autoimmune Diseases and Their Manifestations on Oral Cavity: Diagnosis and Clinical Management**

Martina Roccaforte, Gabriele Di Carlo, Mariella Rossi, Francesca Giannaccaro, Alessandro Schiavi, and Antonella Palmieri

Department of Oral and Maxillofacial Surgery, University of Bari, Bari, Italy; Bari Dental School, University of Bari, Bari, Italy; Bari Dental School, University of Bari, Bari, Italy; Bari Dental School, University of Bari, Bari, Italy; Bari Dental School, University of Bari, Bari, Italy; Bari Dental School, University of Bari, Bari, Italy

Received 10 March 2018; Accepted 19 May 2018; Published 27 May 2018

Copyright © 2018 Martina Roccaforte et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

This paper will discuss the oral manifestations of autoimmune diseases. For this reason, attention will be focused on the diagnosis of autoimmune diseases through the oral cavity. The aim of this paper is to provide a comprehensive overview of the oral manifestations of autoimmune diseases, with a special focus on the diagnosis and clinical management of these conditions. The main aim of this paper is to provide a comprehensive overview of the oral manifestations of autoimmune diseases, with a special focus on the diagnosis and clinical management of these conditions.

**1. Introduction**

Autoimmune diseases are a group of chronic conditions in which the immune system attacks the body's own tissues. The oral cavity is a common site for the development and progression of autoimmune diseases. The oral manifestations of autoimmune diseases are diverse and can affect the lips, gingiva, and oral mucosa. The oral manifestations of autoimmune diseases are diverse and can affect the lips, gingiva, and oral mucosa.

**2. Systemic Lupus Erythematosus**

Systemic lupus erythematosus (SLE) is a chronic and systemic autoimmune disease characterized by the presence of autoantibodies against various organs and tissues. The oral manifestations of SLE are diverse and can affect the lips, gingiva, and oral mucosa. The oral manifestations of SLE are diverse and can affect the lips, gingiva, and oral mucosa.

Saccucci, M, Di Carlo, G. et al. Autoimmune diseases and their manifestations on oral cavity diagnosis and clinical management. Journal of Immunology Research 2018, Article ID 6061625, 6 pages <https://doi.org/10.1155/2018/6061625>, Open Access.

31

Lupus

Sjogren's

Pemphigus Vulgaris Behcet's

Mucous Membran Pemphigo

32

Oral manifestations	Crohn's disease	Ulcerative colitis
Cobblestoning the mucosa	X	
Granulomatous cheilitis		X
Mucosal tags		X
Pyostomatitis vegetans		X
Deep oral fissuring		X
Cheilitis angularis		X
Dental caries		X
Mucogingivitis	X	X
Periodontitis	X	
Lichen planus	X	
Dysphagia	X	
Dry mouth	X	
Halitosis	X	
Taste changes	X	
Aphthous ulcerations	X	

Legend: X = presence of the manifestation.

Lauritano, D; Boccalari, E.; Di Stasio, D.; Della Vella, F.; Carinai, F.; Lucchese, A.; Petruzzi, M. Prevalence of Oral Lesions and Correlation with Intestinal Symptoms of Inflammatory Bowel Disease: A Systematic Review. Diagnostics 2019, 9, 77.

33

**Pemphigus vulgaris**

80-90% prevalence

Oral cavity first: 60%

Irregular blisters that rupture

Skin may follow oral lesions

Mucous Membrane Pemphigoid - differential diagnosis

Baglama S, Trcko K, Rebol J, Milkovic J. Oral manifestations of autoinflammatory and autoimmune diseases. Acta Dermatovenerologica. 2018; 27:9-16.

34

**Scleroderma**

80% prevalence

Localized or Systemic

Xerostomia common

Baglama S, Trcko K, Rebol J, Milkovic J. Oral manifestations of autoinflammatory and autoimmune diseases. Acta Dermatovenerologica. 2018; 27:9-16.

35

**Behcet's Disease**

97-100% Prevalence

Diagnosis: recurrent oral ulcerations + (2):

- eye lesions
- skin lesions
- genital lesions
- Pathergy test

Baglama S, Trcko K, Rebol J, Milkovic J. Oral manifestations of autoinflammatory and autoimmune diseases. Acta Dermatovenerologica. 2018; 27:9-16.

36





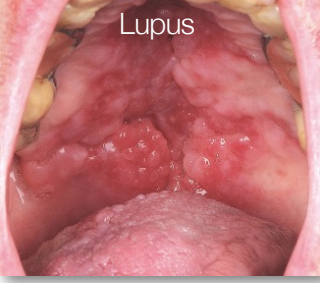
**Sjogren's Disease**

80% cases Sicca symptoms

Early diagnosis of oral diseases

Baglama S, Trcko K, Rebel J, Milkovic J. Oral manifestations of autoinflammatory and autoimmune diseases. Acta Dermatovenereologica. 2018; 27:9-16.

37



**Lupus**

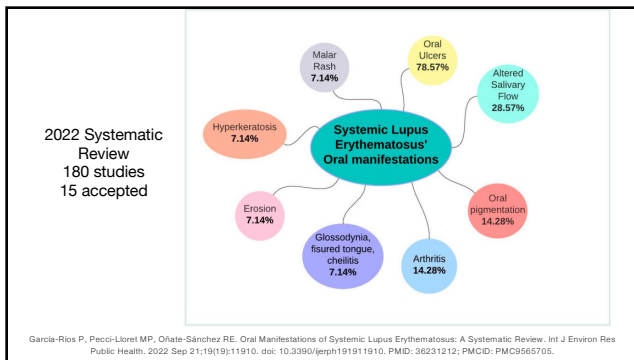
45% oral prevalence

40% erosive painful lesions

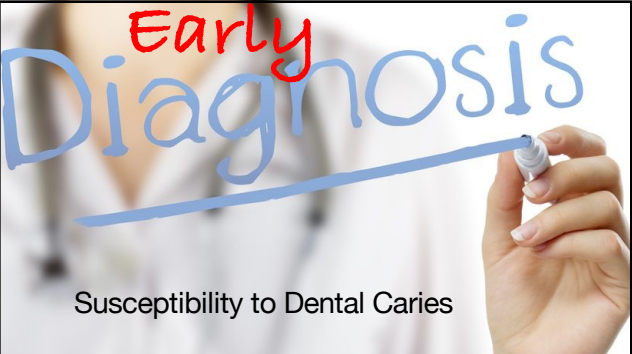
Secondary viral, bacterial & fungal infections

Baglama S, Trcko K, Rebel J, Milkovic J. Oral manifestations of autoinflammatory and autoimmune diseases. Acta Dermatovenereologica. 2018; 27:9-16.

38



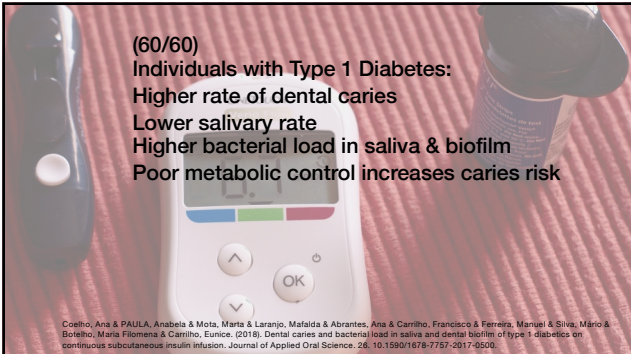
39



**Early Diagnosis**

Susceptibility to Dental Caries

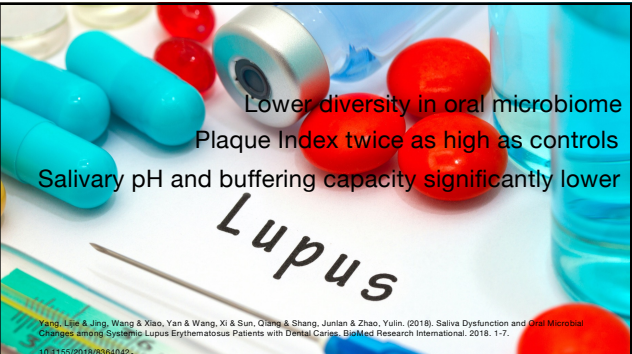
40



**(60/60)**  
Individuals with Type 1 Diabetes:  
Higher rate of dental caries  
Lower salivary rate  
Higher bacterial load in saliva & biofilm  
Poor metabolic control increases caries risk

Coelho, Ana & PAULA, Anabela & Mota, Marta & Laranjo, Mafalda & Abrantes, Ana & Carrilho, Francisco & Ferreira, Manuel & Silva, Mário & Botelho, Maria Filomena & Carrilho, Eunice. (2018). Dental caries and bacterial load in saliva and dental biofilm of type 1 diabetics on continuous subcutaneous insulin infusion. Journal of Applied Oral Science. 28. 10.1590/1678-7757-2017-9304.

41

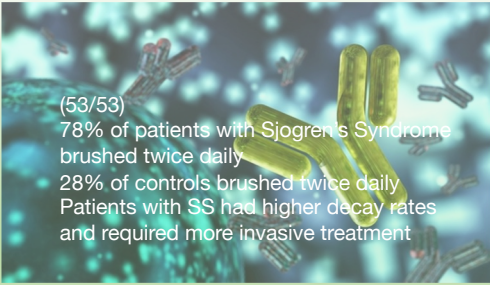


Lower diversity in oral microbiome  
Plaque Index twice as high as controls  
Salivary pH and buffering capacity significantly lower

**Lupus**

Yang, Lijie & Jing, Wang & Xiao, Yan & Wang, Xi & Sun, Qiang & Shang, Junlan & Zhao, Yulin. (2018). Saliva Dysfunction and Oral Microbial Changes among Systemic Lupus Erythematosus Patients with Dental Caries. BioMed Research International. 2018. 1-7. doi:10.1155/2018/3640402.

42



(53/53)  
78% of patients with Sjogren's Syndrome brushed twice daily  
28% of controls brushed twice daily  
Patients with SS had higher decay rates and required more invasive treatment

Lisa Baga Christensen, Poul Erik Petersen, Jens Jørgen Thom & Morten Schiødt (2001) Dental caries and dental health behavior of patients with primary Sjogren syndrome, Acta Odontologica Scandinavica, 59:3, 116-120, DOI: [10.1080/000163401752029294](https://doi.org/10.1080/000163401752029294)

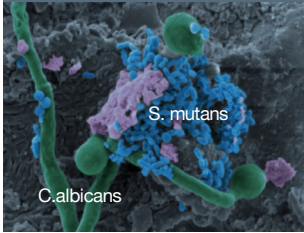
43



**HYDRION**  
Toothpaste

44

### Do Candida albicans & Strep mutans Co-infections Increase Caries Risk?



**S. mutans**  
**C. albicans**

- Both produce & tolerate acids
- Both thrive on high sugar diet
- S. mutans provides C. albicans adhesion sites in the oral cavity
- C. albicans lowers oxygen favoring environment for growth of S. mutans


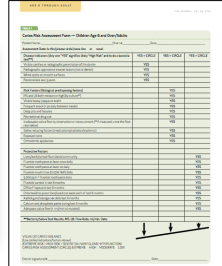
Vila T, Sultan AS, Montelongo-Jauregui D, Jabra-Rizk MA. Oral candidiasis: a disease of opportunity. J. Fungi 2020, 6, 15; doi:10.3390/jf6010015. [www.mdpi.com/journal/fungi](https://www.mdpi.com/journal/fungi). Accessed: August 18, 2020.

45

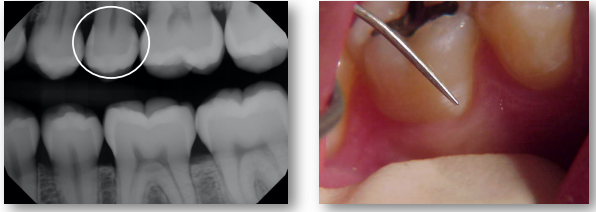
“Collectively, these studies strongly indicate that the presence of Candida albicans in the oral environment could be considered a **risk factor** for the development of dental caries”

Vila T, Sultan AS, Montelongo-Jauregui D, Jabra-Rizk MA. Oral candidiasis: a disease of opportunity. J. Fungi 2020, 6, 15; doi:10.3390/jf6010015. [www.mdpi.com/journal/fungi](https://www.mdpi.com/journal/fungi). Accessed: August 18, 2020.

46

47



48

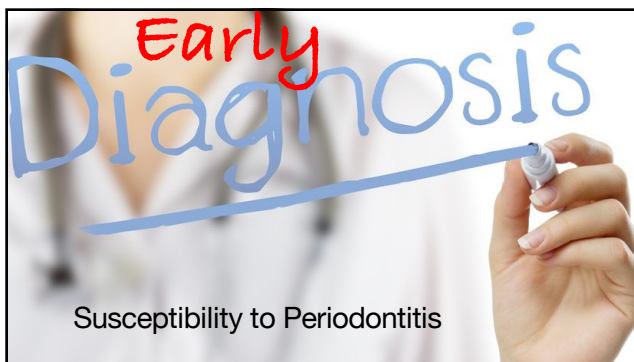




49



50



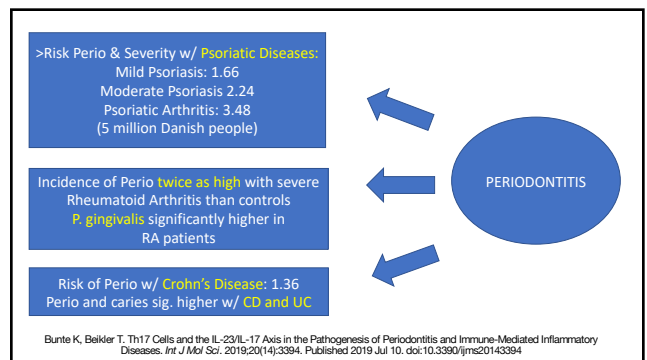
51



52

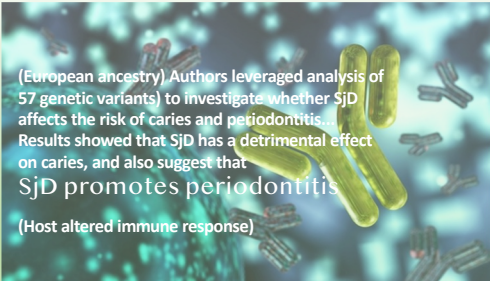


53



54

(European ancestry) Authors leveraged analysis of 57 genetic variants to investigate whether SjD affects the risk of caries and periodontitis. Results showed that SjD has a detrimental effect on caries, and also suggest that SjD promotes periodontitis (Host altered immune response)



Reckalkamm SL, Alayash Z, Hoffreiter B, Nolde M, Baumeister SE. Sjögren's Disease and Oral Health: A Genetic Instrumental Variable Analysis. J Dent Res. 2024 Mar;103(3):263-268. doi: 10.1177/00220345231218903. Epub 2024 Jan 29. PMID: 38284272; PMCID: PMC1090855.

55

RESEARCH ARTICLE Open Access

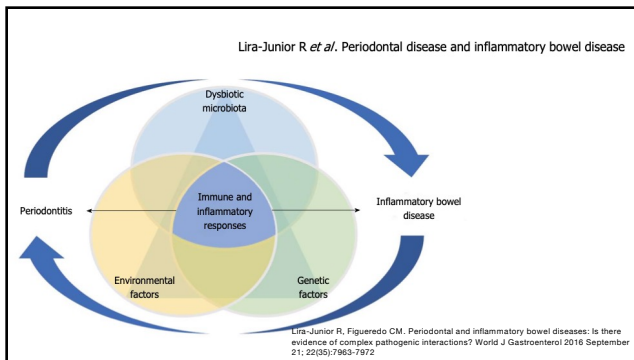
### Periodontitis and inflammatory bowel disease: a meta-analysis

Yang-yang She<sup>1</sup>, Xiang-bo Kong<sup>2,3\*</sup>, Yaping Ge<sup>1</sup>, Zhi-yong Liu<sup>1</sup>, Jieyu Chen<sup>1</sup>, Jing-wei Jiang<sup>4</sup>, Hong-bo Jiang<sup>5</sup> and Silian Fang<sup>1,6\*</sup> BMC Oral Health 2020

**Abstract**  
**Background:** Periodontitis was reported to be associated with inflammatory bowel disease (IBD). However, the association between them has not been fully established in existing literature. Therefore, this meta-analysis was conducted to evaluate the relationship between periodontitis and IBD.  
**Methods:** Electronic databases were searched for English publications from 1970 to 2020 to identify eligible studies. The pooled odds ratios (OR) and 95% confidence intervals (CI) were calculated using a random-effects model.  
**Results:** Six eligible studies involving 10,123 patients with periodontitis and 10,123 patients with IBD were included. The pooled OR was 3.17 (95% CI: 2.08-5.07) and 5.37 (95% CI: 3.64-7.75) for Crohn's disease and ulcerative colitis, respectively.  
**Conclusions:** The results demonstrate that periodontitis is significantly associated with IBD. Further studies are needed to elucidate this relationship.  
**Keywords:** Periodontitis, Inflammatory bowel disease, Meta-analysis

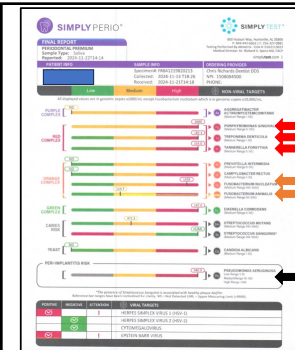
Results demonstrate periodontitis is significantly associated with IBD

56



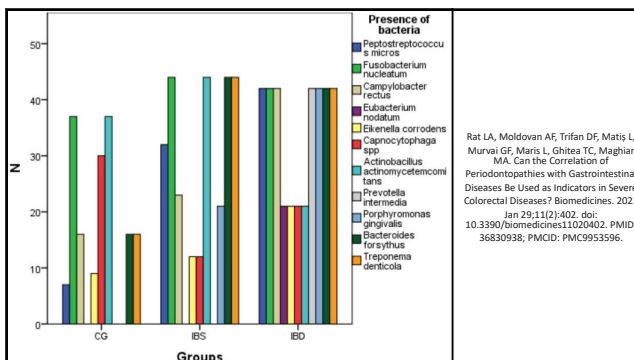
57

SIMPLY PERIO™



Oral/Gut Microbiota Influencing Outcomes?

58



59

PD often precedes RA  
 Pg and Aa breakdown immune tolerances  
 PD can trigger autoimmune responses

PD pathogens (Pg and Aa) and dysbiosis contribute to immune abnormality in RA patients amplifying cytokines

Koziel J, Potempa J. Pros and cons of causative association between periodontitis and rheumatoid arthritis. Periodontol 2000. 2022 Jun;89(1):83-98. doi: 10.1111/prd.12432. Epub 2022 Mar 9. PMID: 35262966; PMCID: PMC9935644

60



A compilation of data showing the pros and cons of causative relationship between periodontitis and rheumatoid arthritis:

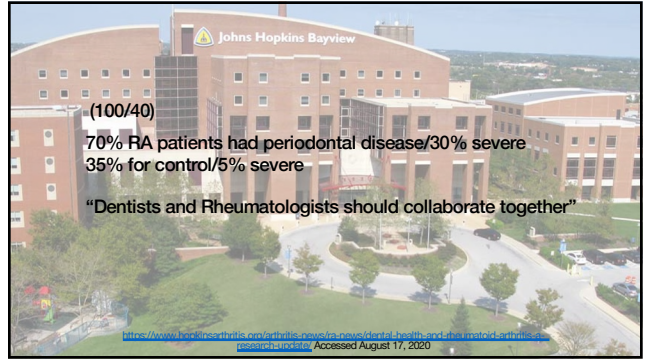
PROS	CONS
<ul style="list-style-type: none"> <li>PD patients are at greater risk for RA than healthy individuals<sup>10</sup></li> <li>Inflammatory nature of both diseases: bidirectional exacerbation through inflammatory mediators without enzyme relationships<sup>21,27-29</sup></li> <li>PD prevalence degree relates to RA<sup>30-32</sup></li> <li>Significantly higher prevalence of RA in RA patients with PD<sup>33</sup></li> <li>Association of PD with ACPA in RA</li> <li>Increased prevalence and incidence of PD treatment while RA treatment</li> <li>Pre-existing PD is associated with increased risk of RA<sup>34</sup></li> <li>The inflamed periodontium</li> <li>Periodontitis is a common dybiotic disease tissue</li> <li>Citrullinated <i>P. gingivalis</i> proteins and peptides reacts with ACPA</li> <li><i>P. gingivalis</i> and <i>P. agrestis</i> promote arthritis progression via IL-17 signaling<sup>35</sup></li> <li>Molecular mimicry of bacterial enzymes, Hsp60 and RgpA; bacterial proteins are recognized by antibodies from RA patients<sup>10,15,16,30</sup></li> </ul>	<ul style="list-style-type: none"> <li>RA risk alleles within the HLA (particularly HLA-DRB1) predispose to PD<sup>17</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> <li>Genetic studies have not proposed a causal relationship between RA and PD<sup>18</sup></li> </ul>

Initiation and progression of RA likely influenced by unique role of periopathogens & inflammatory response but not all data is conclusive

PD - periodontitis, RA - rheumatoid arthritis, PTMs - post-translational modifications, PADs - peptidylarginine deiminases, PPAD - *P. gingivalis* PAD, A.A. - Aggregatibacter actinomycetemcomitans

Kozlaj J, Potempa J. Pros and cons of causative association between periodontitis and rheumatoid arthritis. Periodontol 2000. 2022 Jun;89(1):83-98. doi: 10.1111/prd.12432. Epub 2022 Mar 9. PMID: 35262966; PMCID: PMC9355644

61



(100/40)

70% RA patients had periodontal disease/30% severe  
35% for control/5% severe

"Dentists and Rheumatologists should collaborate together"

<https://www.mdpi.com/1927-1775/12/20/3893>, Accessed August 17, 2020

62

Review | Best Pract Res Clin Rheumatol, 2017 Feb;31(1):19-30.  
doi: 10.1016/j.bprc.2017.08.001. Epub 2017 Sep 1.

### Periodontal disease and periodontal bacteria as triggers for rheumatoid arthritis

Zijian Cheng<sup>1</sup>, Josephine Meade<sup>1</sup>, Kulveer Mankia<sup>2</sup>, Paul Emery<sup>2</sup>, Deirdre A Devine<sup>3</sup>

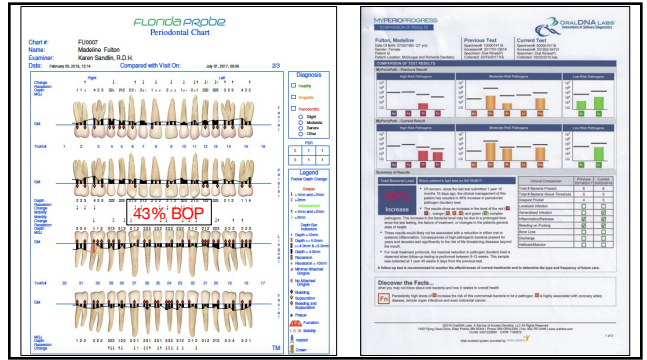
Affiliations + expand  
PMID: 29221584 DOI: 10.1016/j.bprc.2017.08.001  
Free article

**Abstract**  
There is an epidemiological association between periodontitis and rheumatoid arthritis (RA), which is hypothesised to lead to enhanced generation of RA-related autoantibodies that can be detected years before the onset of RA symptoms. Periodontitis is a common dybiotic disease tissue. Damage occurs because the immune system fails to limit both the resident microbial community and the associated local immune response. Certain periodontal bacteria, including Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans, may contribute to RA autoantibody production through direct post-translational modification of proteins or, indirectly, by influencing neutrophil-mediated neo-epitope generation. Oral bacteria that invade the blood may also contribute to chronic inflammatory responses and generation of autoantibodies. The putative association between periodontitis and the development of RA raises the potential of finding novel predictive markers of disease and disease progression and for periodontitis treatment to be included in the future as an adjunct to conventional RA immunotherapy or as part of a preventive strategy.

RA patients have a significantly increased prevalence of periodontal disease

Future Research Agenda:  
To determine whether periodontal treatment should be considered as an adjunct to immunotherapy in patients with early RA.

63



Florida A&M Periosteal Chart

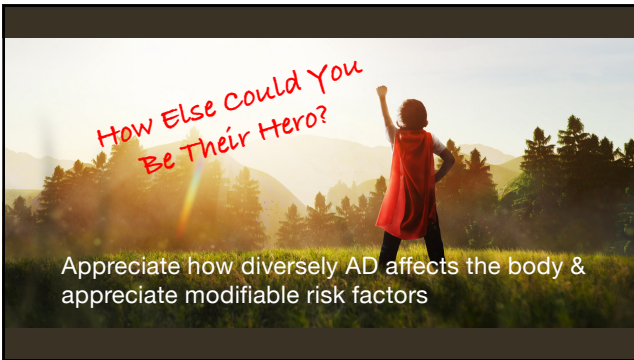
Chart # F2007  
Name: Madeline Futon  
Examiner: Karen Sanders, R.D.H.  
Date: 08/16/2018  
Compared with Visit On: Jul 29, 2018

43% BOP

PAR-Hygiene

Discover the Facts...  
Periodontal disease is a leading cause of tooth loss and is associated with a number of systemic conditions, including cardiovascular disease, diabetes, and rheumatoid arthritis.

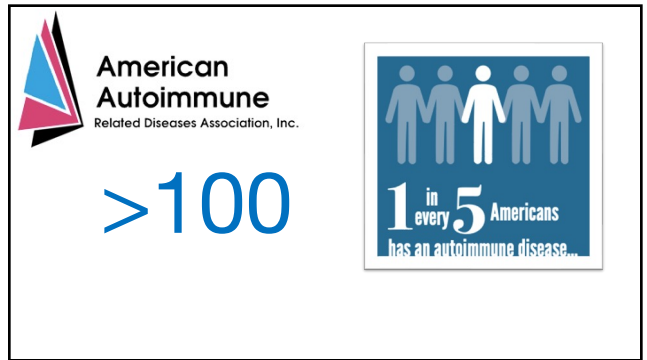
64



How Else Could You Be Their Hero?

Appreciate how diversely AD affects the body & appreciate modifiable risk factors

65

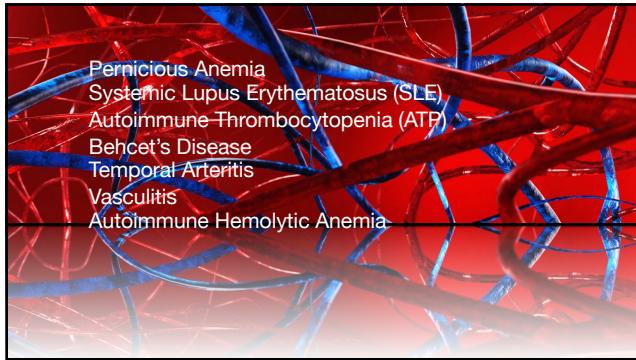


American Autoimmune Related Diseases Association, Inc.

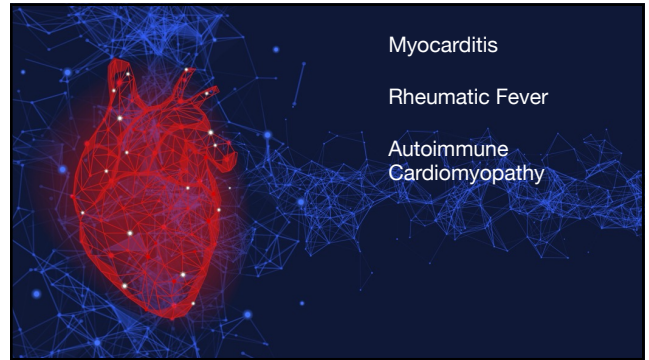
>100

1 in 5 Americans has an autoimmune disease...

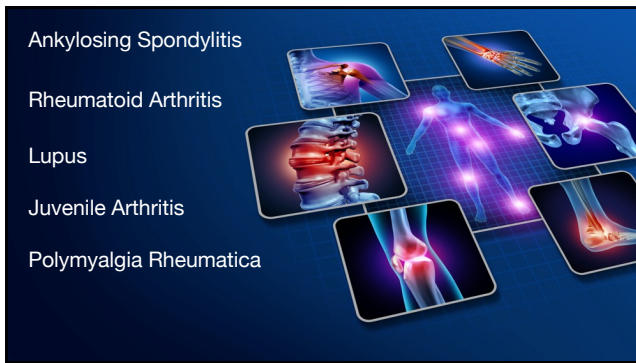
66



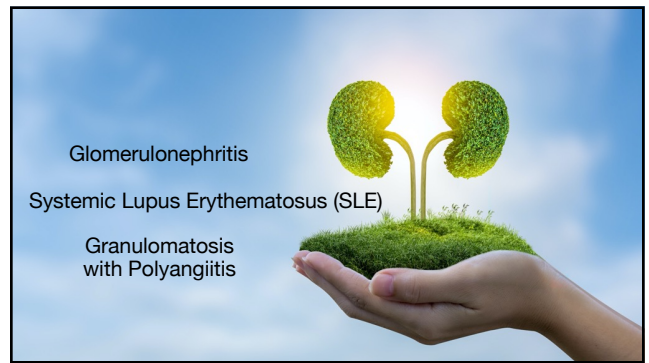
67



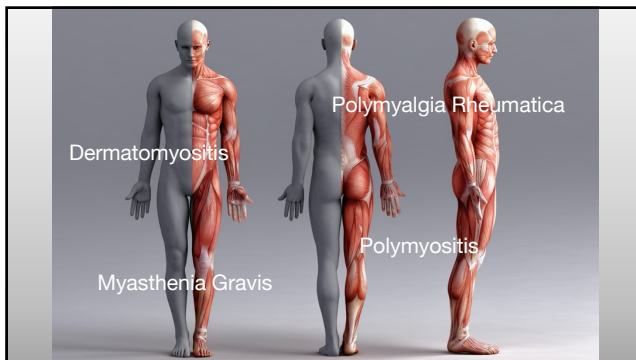
68



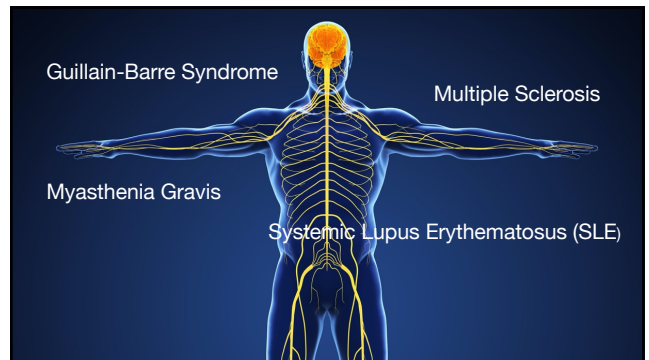
69



70



71

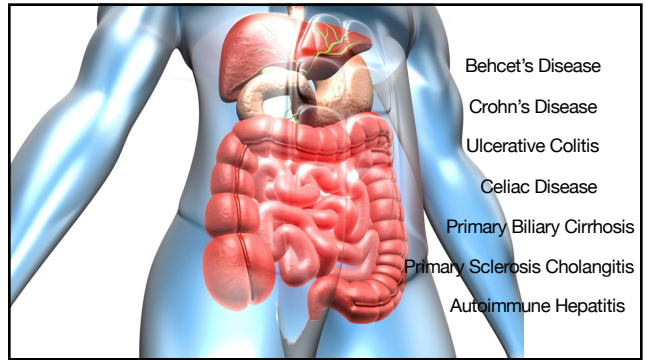


72

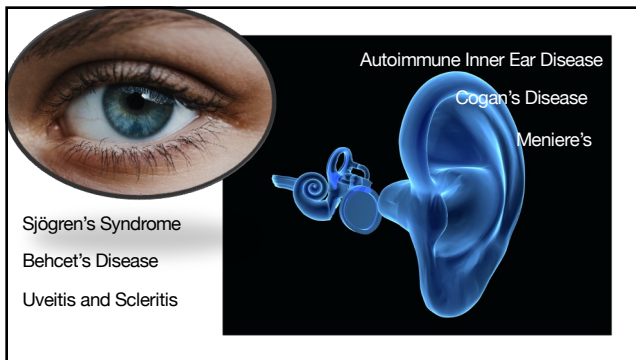




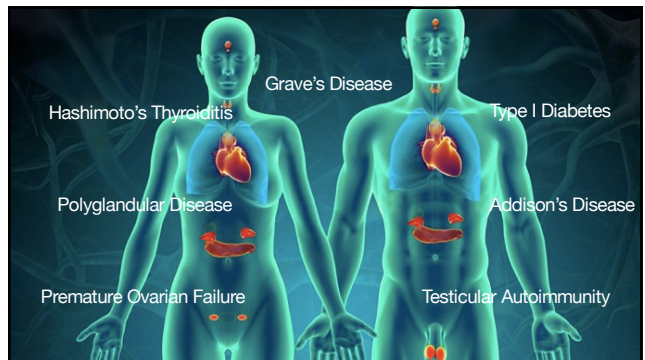
73



74



75



76

### Age of Onset of Autoimmune Diseases

Type I Diabetes, Celiac Disease, Vitiligo  
**CHILDREN**

Multiple Sclerosis, Myasthenia Gravis, Vitiligo, Lupus  
**YOUNG ADULTS**

Scleroderma, Sjögren's Syndrome, Rheumatoid Arthritis  
**MIDDLE AGED ADULTS**

Sjögren's Syndrome, Autoimmune Thyroid Disease, Myasthenia Gravis  
**ELDERLY ADULTS**

Castiblanco J, Arcoz-Burgos M, Anaya JM. Introduction to Genetics of Autoimmune Diseases. In: Anaya JM, Shoenfeld Y, Rojas-Villarraga A, et al., editors. Autoimmunity: From Bench to Bedside [Internet]. Bogota (Colombia): El Rosario University Press; 2013 Jul 18. Chapter 16. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK469433/>

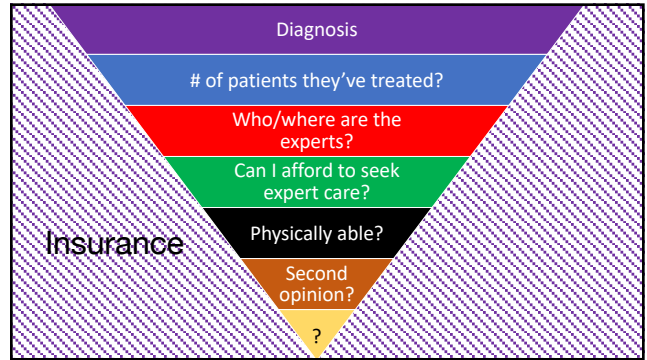
77

How long does it typically take for patients to receive an accurate diagnosis of an autoimmune disease?

78



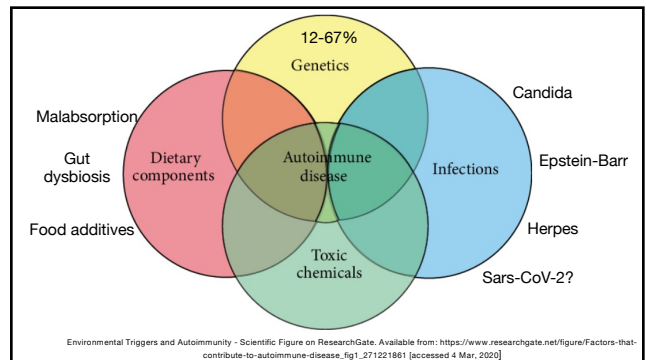
79



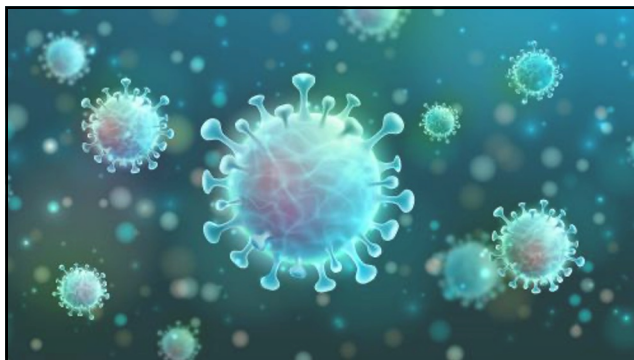
80



81



82



83

**Risk of autoimmune diseases in patients with COVID-19: a retrospective cohort study**

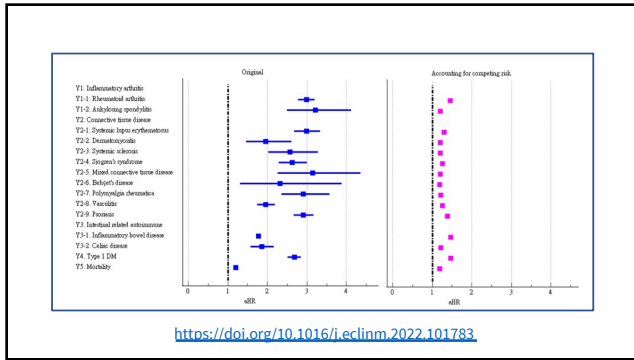
Renin Chang<sup>1,2,3,4\*</sup>, Thomas Yen-Ting Chen,<sup>4\*</sup> Shou-Ing Wang,<sup>1,2,3\*</sup> Yao-Min Hung,<sup>5,6,7,8\*</sup> Hui-Yuan Chen,<sup>4</sup> and Cheng-Chung James Wei<sup>1,2,3,4,9</sup>

**1-1-2020 to 12-31-21  
888,643 cases with AD  
2,926,016 controls**

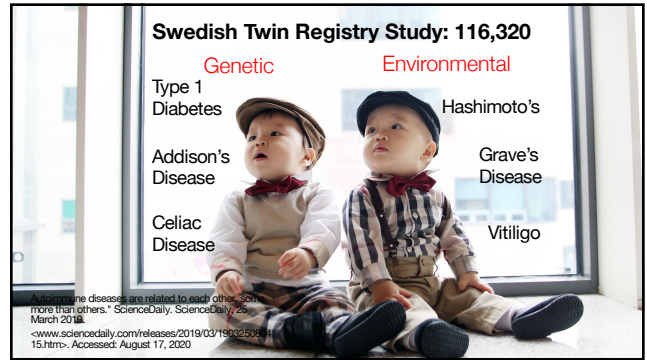
**At 6-mo follow-up risk of various AD substantially higher in COVID-19 individuals than controls**

Chang, R., Chen, T. Y. T., Wang, S. I., Hung, Y. M., Chen, H. Y., & Wei, C. C. J. (2023). Risk of autoimmune diseases in patients with COVID-19: A retrospective cohort study. *EClinicalMedicine*, 56.

84



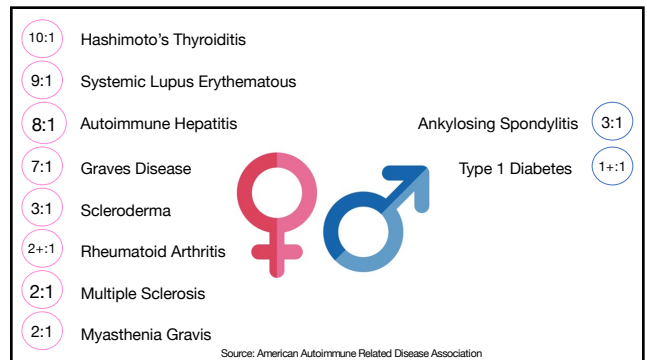
85



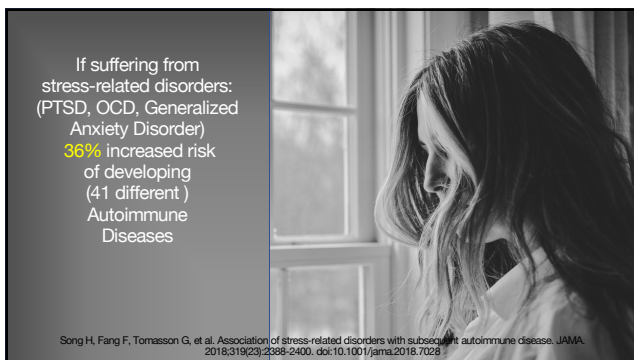
86



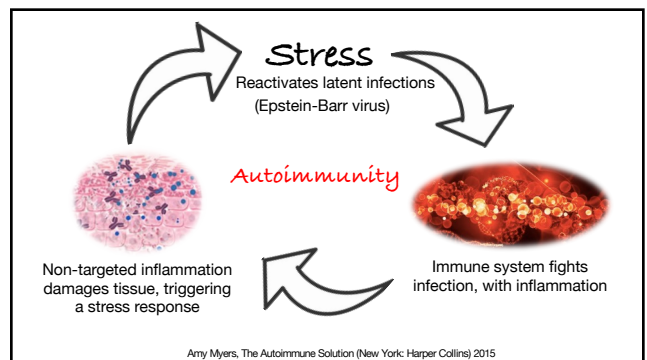
87



88



89

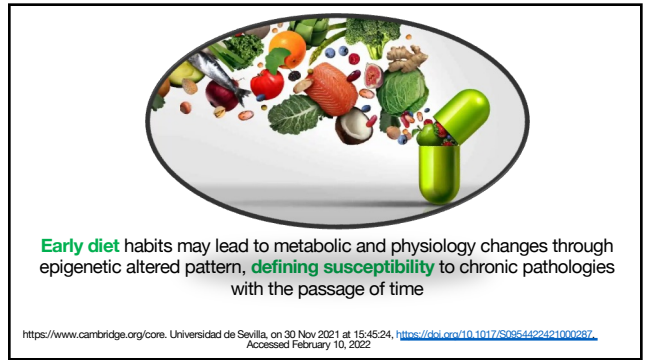


90

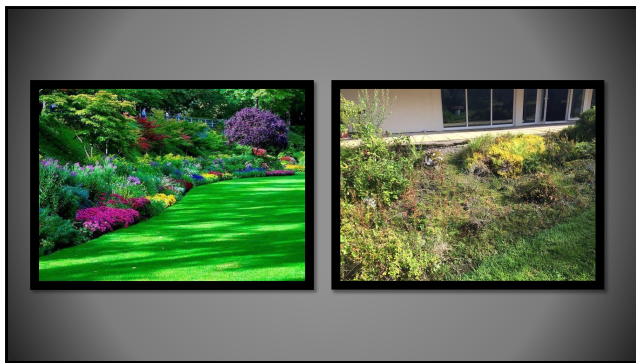




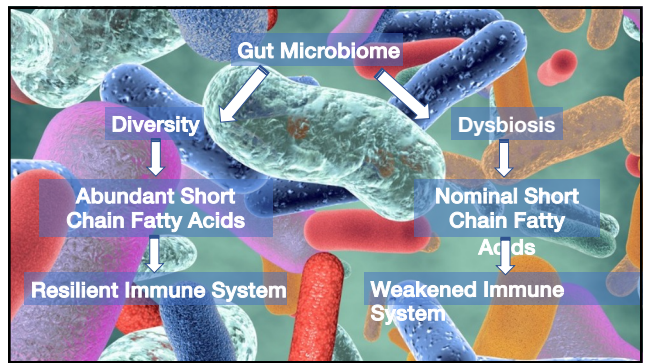
91



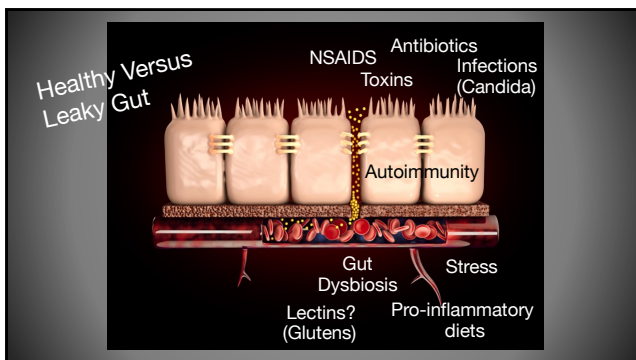
92



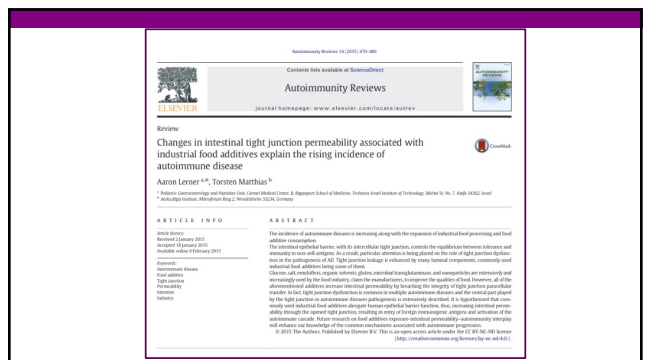
93



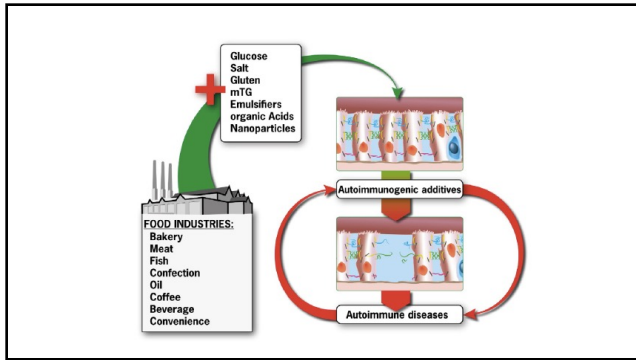
94



95



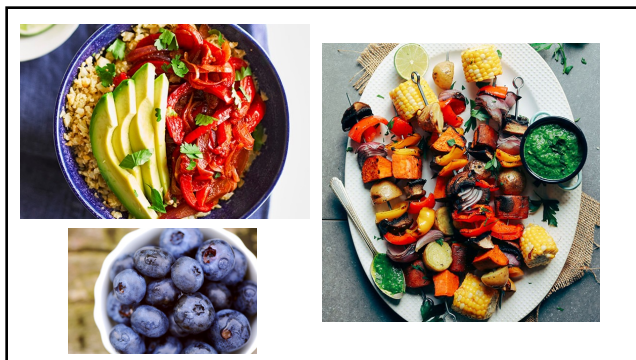
96



97



98



99

Gastroenterologist  
Rheumatologist  
Physical Medicine Doctor  
Gynecologist  
Psychiatrist  
Therapist  
Physical Therapist  
Chiropractor  
Infectious Disease Doctor  
Pain Management Doctor  
Dietician

HEALTH INSURANCE

Appointment

101



102

Become part of  
their care **TEAM**

103

Gastroenterologist  
 Rheumatologist  
 Physical Medicine Doctor  
 Gynecologist  
 Psychiatrist  
 Therapist  
 Physical Therapist  
 Chiropractor  
 Infectious Disease Doctor  
 Pain Management Doctor  
 Dietician  
 Dentist/Dental Hygienist

104

Collaboration

105

**NSPT POTENTIAL: SJÖGREN'S SYNDROME**

SS + PERIO + PT

SS / NO PERIO

CONTROL PERIO + PT

CONTROL NO PERIO

Increased levels of pro-inflammatory cytokines IL-1 $\beta$  and IL-8 correlated with decreased salivary flow with Sjögren's Syndrome

Ambrosio L.M., Poval, E.S., Franca, B.N., Balzarini, D.A., Abreu, I.S., Lopes, S.B., Nunes, T.B., Lourenco, S.V., Pasoto, S.G., Saraiva, L.; et al. Effects of periodontal treatment on primary sjogren's syndrome symptoms. *Braz. Oral Res.* 2017, 31, e8.

106

**NSPT POTENTIAL: SJÖGREN'S SYNDROME**

SS + PERIO + PT

SS / NO PERIO

CONTROL PERIO + PT

CONTROL NO PERIO

Improved salivary flow 30 & 90 days post PT w/ SS

Increased levels of anti-inflammatory cytokine IL-10 following PT

Significant improvements from EULAR Patient Reported Index with SS + PT (dry mouth, fatigue, pain)

Ambrosio L.M., Poval, E.S., Franca, B.N., Balzarini, D.A., Abreu, I.S., Lopes, S.B., Nunes, T.B., Lourenco, S.V., Pasoto, S.G., Saraiva, L.; et al. Effects of periodontal treatment on primary sjogren's syndrome symptoms. *Braz. Oral Res.* 2017, 31, e8.

107

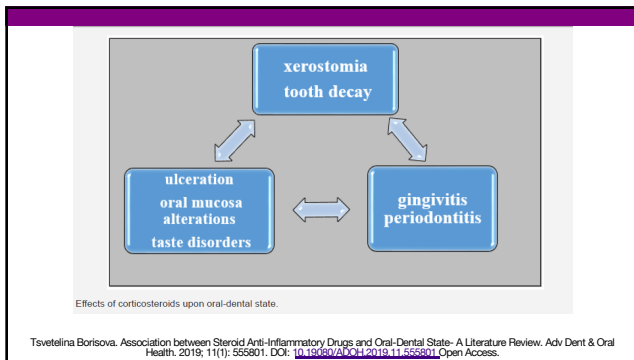
Medications to Dampen Autoimmunity

108

Corticosteroids to Reduce Inflammation / Pain

109





110

**Biologics Target Specific Cytokines**

TNF- $\alpha$   
Enbrel  
Remicade  
Humira

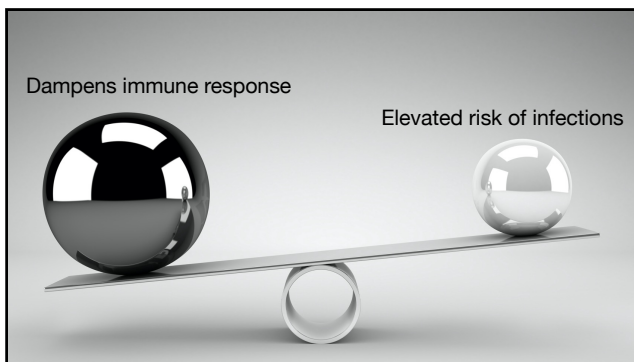
IL-12 & 23  
Stelara

IL-6  
Actemra

IL-17a  
Taltz  
Cosentyx

IL-1  
Kineret

111



112

RESEARCH ARTICLE Open Access

**Does periodontitis affect the treatment response of biologics in the treatment of rheumatoid arthritis?**

60 RA patients  
Ave. age 58  
6 months

Tachibana, M., Yonemoto, Y., Okamura, K. et al. Does periodontitis affect the treatment response of biologics in the treatment of rheumatoid arthritis? *Arthritis Res Ther* 22, 178 (2020). <https://doi.org/10.1186/s13075-020-02269-x>

There was a **negative correlation** between the extent of PD at baseline and the treatment response of RA patients who received **biological therapy**.

The **evaluation** of the periodontal condition is considered to be an **essential part** for the management of RA.

113

**NSPT POTENTIAL**

NSPT in lupus/periodontitis subjects was reported to **significantly improve the responsiveness to immunosuppressive therapy** compared to the control group

Fabrizi, C., Fuller, R., Bonifa, E., Guedes, L. K., D'Alleva, P. S., Borba, E. F. Periodontitis treatment improves systemic lupus erythematosus response to immunosuppressive therapy. *Clin. Rheumatol.* 2014, 33, 505-509.

114

**Nonrigid periodontal therapy to extinguish inflammation seen in rheumatoid arthritis**

Reduces Pro-inflammatory Cytokines (TNF- $\alpha$ )

Reduces P gingivalis

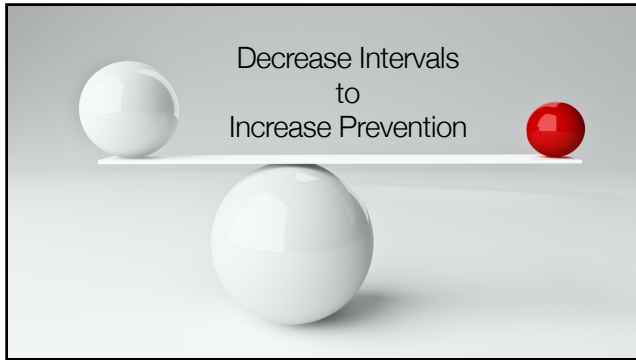
Decreases RA & inflammatory markers

Decreases RA symptoms

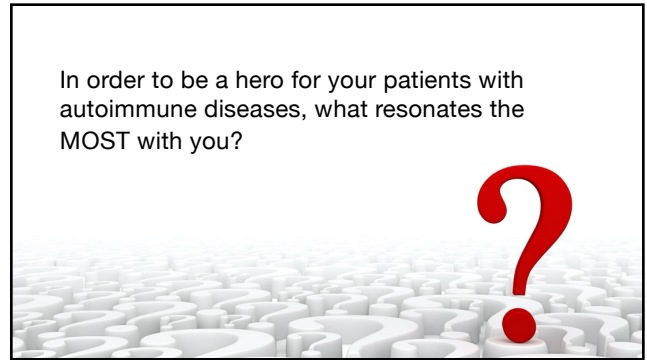
**IMPROVES BIOLOGIC THERAPY**

<https://www.rhimes.com/pathology/periodontitis/article/14197256/nonrigid-periodontal-therapy-to-extinguish-inflammation-seen-in-rheumatoid-arthritis>

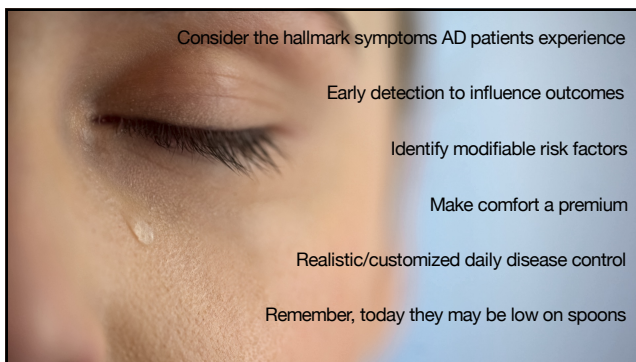
115



116



117



118



119



120