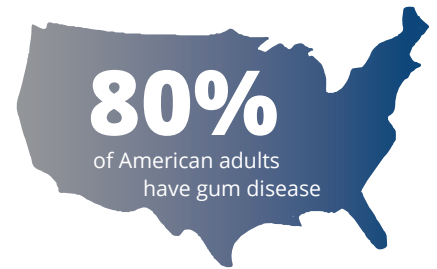


HAVE DIABETES?

You're at risk for periodontal disease.



it's a 2-way street



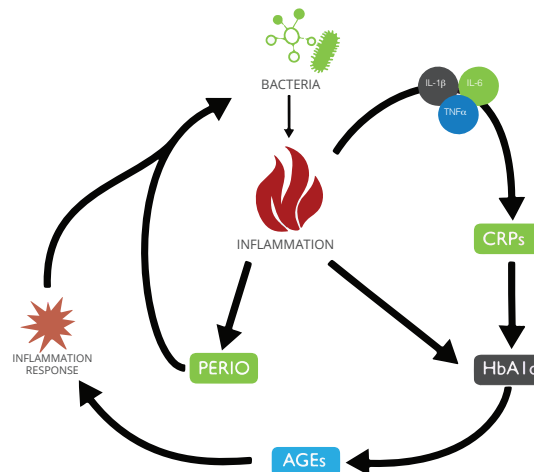
DIABETES

Diabetics with periodontal infection have hyper-responsive monocyte/macrophage cells resulting in increased inflammatory cytokines; and they produce high levels of TNF α in response to periodontal bacteria as compared to non-diabetics. They have decreased immune cell function, inhibiting adequate defense against periodontal bacteria.

PERIODONTAL INFECTION

Diabetics with periodontal infection have a 6-fold worsening of glycemic control. Infection causes the release of stress hormones. This worsens insulin resistance causing a bigger rise in glucose levels and impairing the bodies ability to use the glucose for energy.

THE CONNECTION:

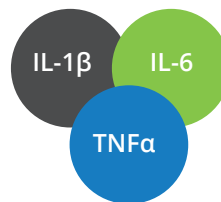


COMPLICATIONS for the diabetic patient

In response to periodontal bacteria, diabetics produce high levels of TNF α as compared to non-diabetics.

Periodontal disease decreases glycemic control.

Numbers of teeth decrease as HbA1c levels increase. Good oral hygiene can protect a Type 2 Diabetic patient from progression of diabetes



Inflamed periodontal tissues produce significant amounts of proinflammatory cytokines: interleukin 1-beta (IL-1 β), IL-6, prostaglandin E2, and tumor necrosis factor-alpha (TNF α). This systemic inflammatory burden has damaging effects on the host.

the inflammatory BURDEN:

Systemic inflammation is the root cause of disease. Inflammatory factors like periodontal disease accumulate, and this inflammatory burden leads to a diseased state.

THE GOOD NEWS

1%

reduction in levels of
HbA1c

is associated with:

21%



reduction of deaths related to diabetes

21%



reduction of risk for diabetes related illness

14%



reduction in myocardial infection

37%



reduction of microvascular infection

PERIODONTAL DISEASE TREATMENT

CAN RESULT IN A...

0.4%

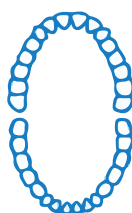
reduction in levels of
HbA1c

TREATMENT OPTIONS



scaling & root planing

scaling and root planing is a non-surgical deep cleaning of the root surfaces to remove plaque and tartar from deep periodontal pockets to allow the body to heal from the infection.



periodontal trays

devices used by the patient at home that administer medication to prevent the recolonization of the periodontal bacteria and infection and allow the body to heal itself.

HbA1c defined

HbA1c is a lab test that shows the average level of blood sugar (glucose) over the previous 3 months. It shows how well you are controlling your diabetes.

AGEs defined

Advanced Glycogen End products are proteins or lipids that become glycosylated after exposure to sugars

the Science



Inflammatory mediators defined

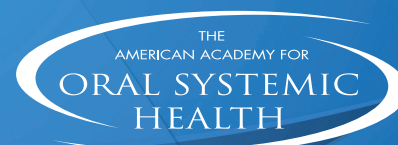
Cytokines (or protein) that regulates various inflammatory responses such as TNF α , IL-1 β , and IL-6

CRPs defined

C-Reactive Protein tests measure levels of inflammation in the body.

References

- Charles C. Whitney, M.D. *A comprehensive review of vascular disease Part 3: root causes of disease.* 2012.
- Tonetti MS, et al., *N Engl J Med* 3/1/2007; 356:911-920.
- Mealy, B. *Periodontal disease and diabetes: a two-way street.* JADA. 2006;137.
- Shanies, S, Hein, C. *The Significance of Periodontal Infection in Cardiology.* Grand Rounds. 2006;1.
- Tonetti MS, D'Aiuto F, et al. *Treatment of periodontals and endothelial function.* *N Engl J Med.* 2007 Mar 1;356(9):911-20.
- Nesse W Abbas F, et al. *Periodontal inflamed surface area: quantifying inflammatory burden.* *J Clin Periodontol* 2008; 35: 668-673.



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