Sierra Nevada
Periodontics & Implant Dentistry

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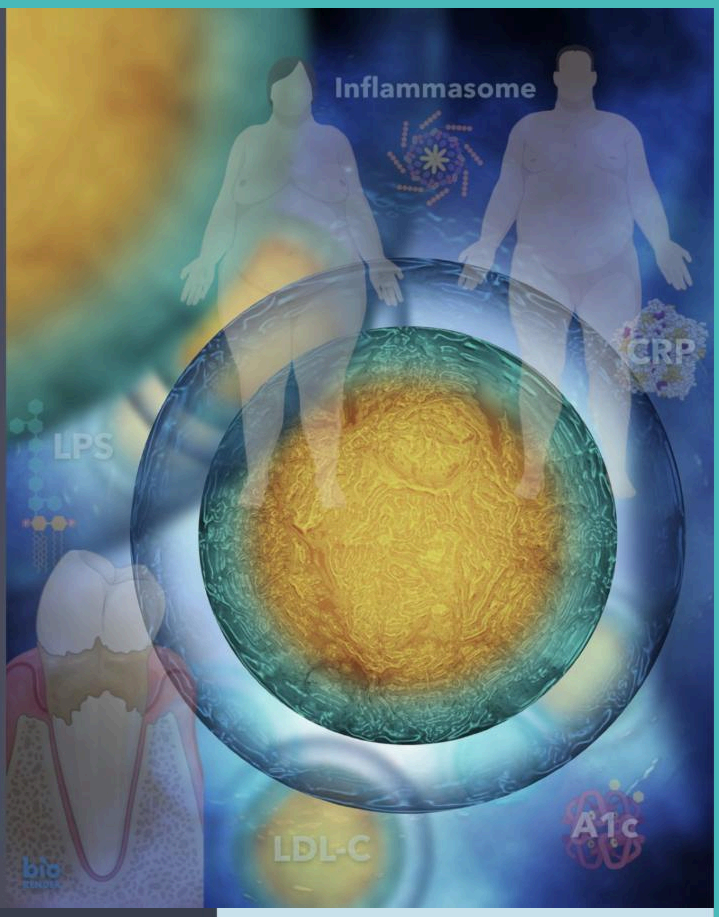
THE PERIODONTAL-SYSTEMIC CONNECTIONS

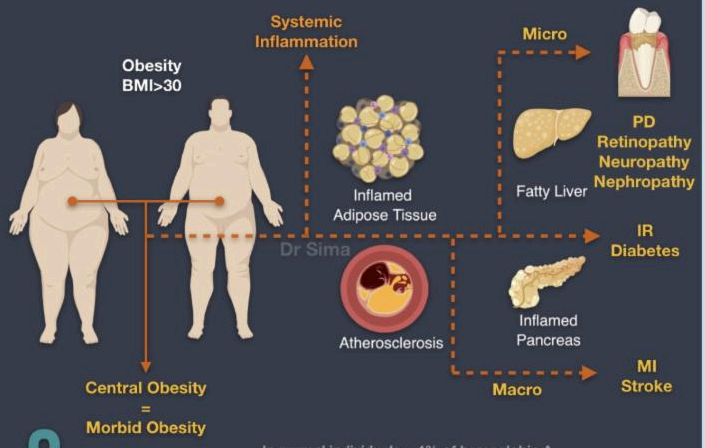
An Inflammatory Tale



Perio-Systemic

OBESITY - DIABETES

USA: 34M ADULTS - DIABETES
88M ADULTS - PREDIABETES



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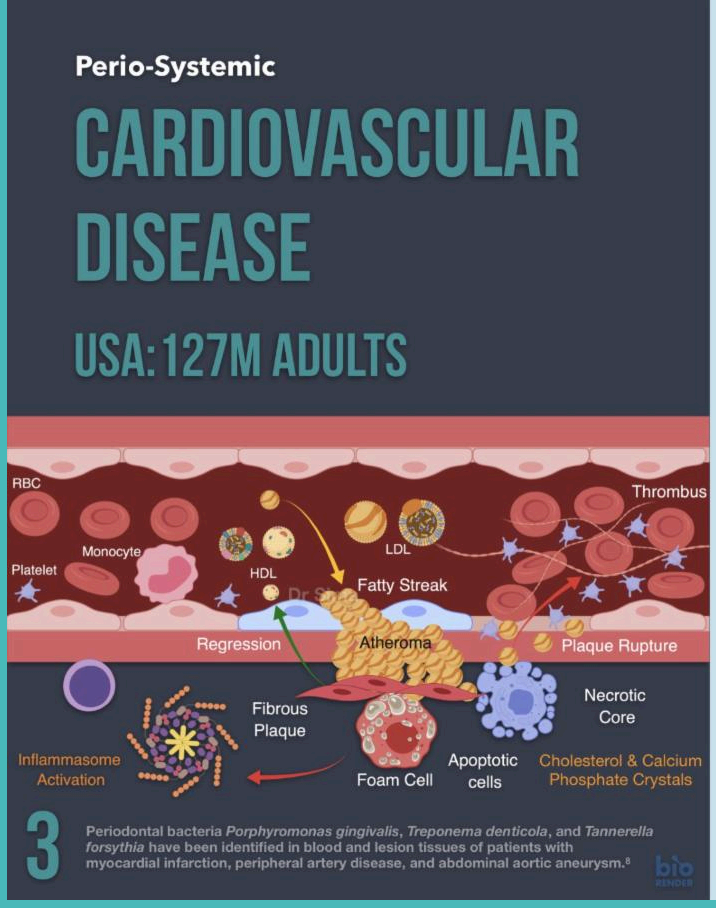
In normal individuals ~ 4% of hemoglobin A undergoes glycation at the amino-terminal valines of the β-chain forming the HbA1c subfraction.

Morbid obesity (central obesity) is associated with ***systemic inflammation*** that leads to insulin resistance (IR) and ***diabetes mellitus*** in susceptible individuals, ultimately resulting in *macrovascular* (atherosclerotic cardiovascular disease - CVD, myocardial infarction - MI, stroke) and *microvascular* (neuropathy, nephropathy, retinopathy, PD) complications when ***uncontrolled (HbA1c >7%)***.

Glycated hemoglobin (HbA1c) is an advanced glycation end-product and serves as measure of blood glucose level control over 2-3 months (the average red blood cell lifespan is 120 days).

People with diabetes are ***2 times more likely to have PD*** than people without diabetes. Diabetes impacts healing and the ability to fight infections, including those against pathogenic oral bacteria associated with PD.

Treatment of diabetes improves periodontal health and treatment of periodontitis improves diabetes control, as reflected in lower HbA1c.[1] Uncontrolled diabetes can make PD more severe and PD may make it harder to control diabetes.[2]



Heart disease (including Coronary Heart Disease, Hypertension, and Stroke) remains the ***number 1 cause of death*** in the USA. CVD, listed as the underlying cause of death, accounts for nearly 850,000 deaths in the US, or 1 of every 3 deaths. Cardiovascular outcome measures include health-related quality of life, endothelial function, intima-media thickness, CRP, BP, angina, MI, death.

PD and atherosclerotic CVD are associated independent of known confounders. The two disorders ***share inflammatory pathogenesis and several common risk factors***, including smoking, age, and diabetes mellitus. There is robust epidemiological evidence for positive associations between PD and heart disease, and its complications.[3]

Available research data indicate a general trend toward a ***periodontal treatment-induced suppression of systemic inflammation*** and improvement of markers of atherosclerotic CVD and endothelial function, suggesting improved vascular health.[4,5]

References:

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