Sierra Nevada
Periodontics & Implant Dentistry

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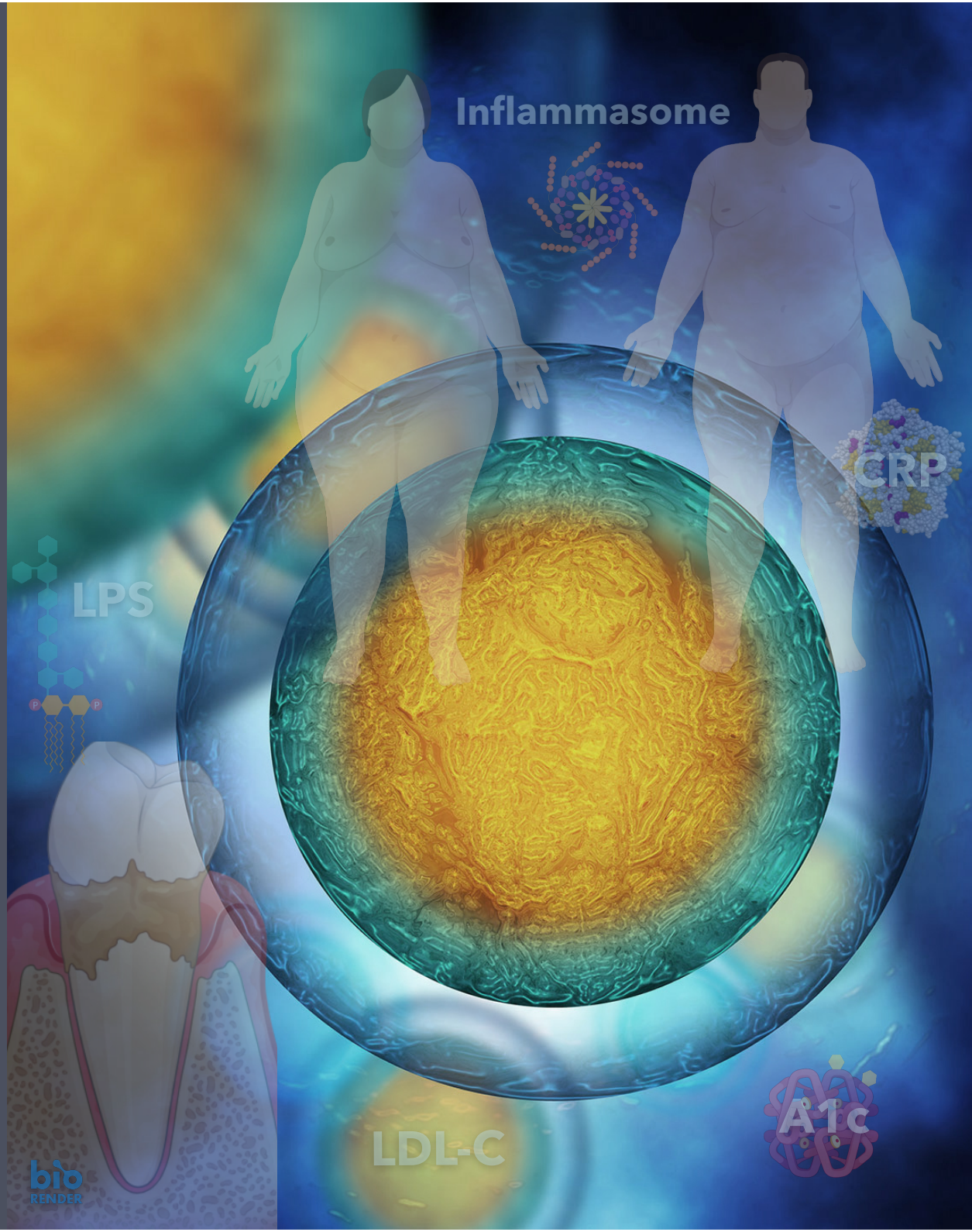
THE PERIODONTAL-SYSTEMIC CONNECTIONS

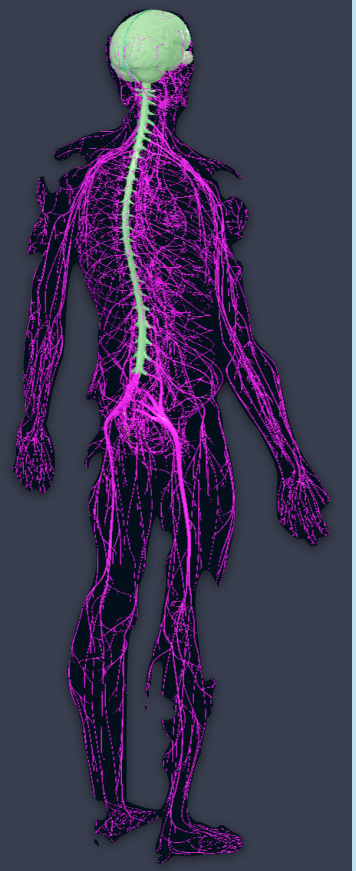
An Inflammatory Tale



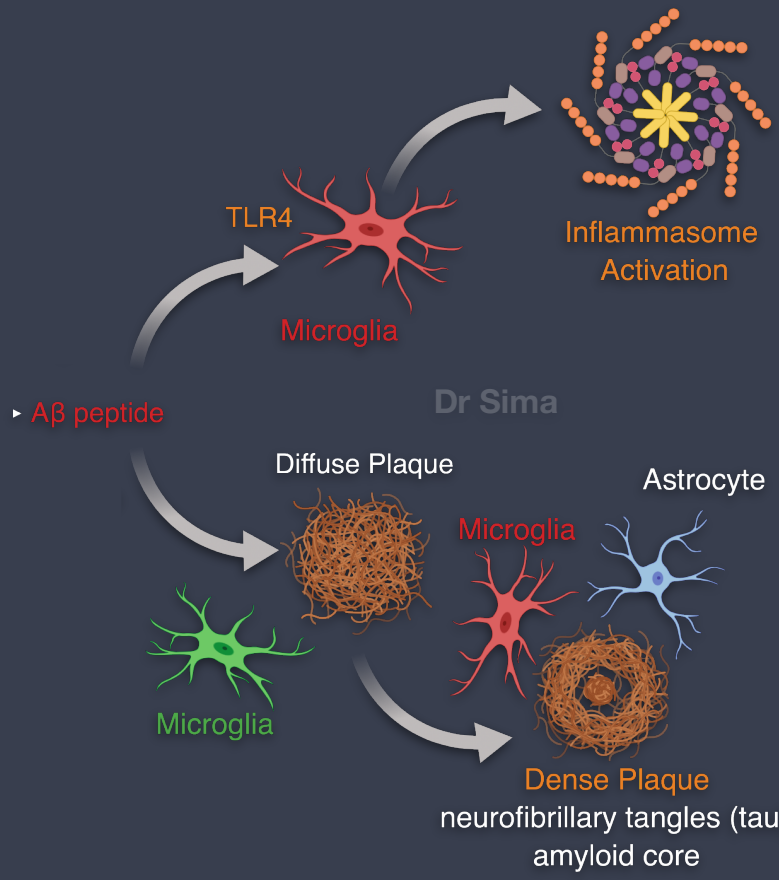
Perio-Systemic

ALZHEIMER'S

The most common cause of dementia.
Progressive loss of cognitive function independent of the state of attention.



USA: 6M ADULTS



The largest NHANES survey to date provided evidence for an association between periodontal pathogens and AD, which was stronger for older adults.[11]

Effectiveness of periodontal pathogen treatment on reducing sequelae of neurodegeneration should be tested in randomized controlled trials.

The fundamental abnormality in AD is the deposition of Aβ peptides and ***pro-inflammatory activation of microglia*** is thought to play an important role in its pathogenesis.

AD outcome measures include Cornell Scale for Depression in Dementia (CSDD), quality of life for AD and dementia (QOL- AD, QUALIDEM), Symbol Digit Substitution Test (SDST), the Serial Digit Learning Test (SDLT), reflexes, muscle tone, coordination, balance, sense of sight and hearing.

Worse scores on three measures of oral health status (BOP, CAL, tooth loss) were significantly associated with poorer performance on measures of cognitive function SDST and SDLT after adjustment for age and other covariates.[1]

A fixed effects meta-analysis of PD-AD showed that the presence of PD is associated with the presence of AD (OR 1.69). When only severe forms of PD were evaluated, a significant association was also observed (OR 2.98).[2,3]

Perio-Systemic

CANCER

USA: 18.6M SURVIVORS (2025)

PD may induce a chronic systemic low-grade inflammatory state and the spreading of oral pathobionts with carcinogenic potential.[14]



Since ***chronic inflammation facilitates tumor progression*** and treatment resistance, potential links between PD and cancers were investigated.

The largest cohort study assessing PD as potential risk factor for cancer mortality indicated an increased risk of overall (RR 1.27) and pancreatic cancer (RR 1.69) mortality. After adjustment, the results showed even stronger associations of PD with overall (RR 1.33) and pancreatic cancer (RR 2.32) mortality.[4]

In another large cohort study Michaud et al found a 13% increase in total cancer among men reporting PD at baseline, and a 45% increase in risk among men with advanced PD.[5,6] PD was not associated with prostate cancer, colorectal cancer or melanoma, the three most common cancers in this cohort of never smokers, but a 33% increase in risk was observed for smoking-related cancers (lung, bladder, oropharnygeal, esophageal, kidney, stomach and liver cancers; HR = 1.33). Men with advanced PD had an HR of 2.57 for smoking-related cancers, compared with men who did not have PD.