

Evaluation of denture base resin formula with Silver nanoparticles on Biofilm Load and Systemic Inflammation in Elderly Patients

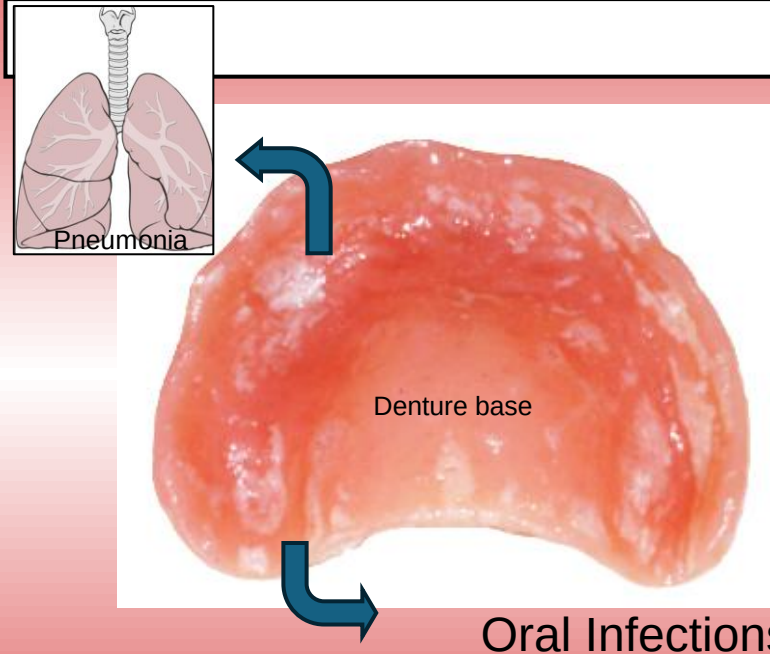
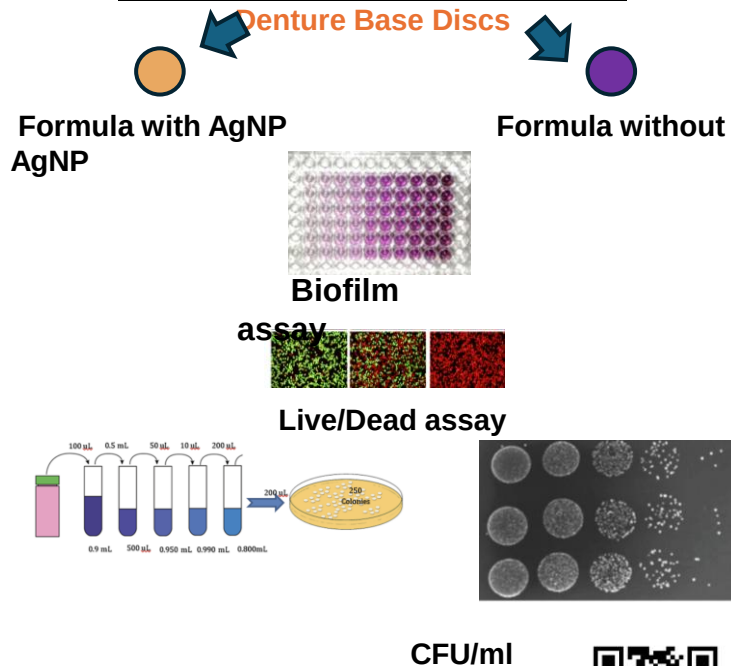
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Introduction: Biofilm accumulation on denture base materials contributes to oral infections such as stomatitis and systemic diseases, such as pneumonia and cardiovascular disease, especially in vulnerable elderly populations. While several in vitro studies have demonstrated the antimicrobial efficacy of Silver Nanoparticles (AgNP) against microorganisms, there is a notable lack of in vivo human studies assessing the long-term effects of AgNP incorporation in denture base material and exploring their impact on systemic inflammatory markers and pathogen load in denture-wear populations.

Hypothesis Phase I: Discs with AgNP will show no changes in their physical properties and **significantly lower biofilm load**.

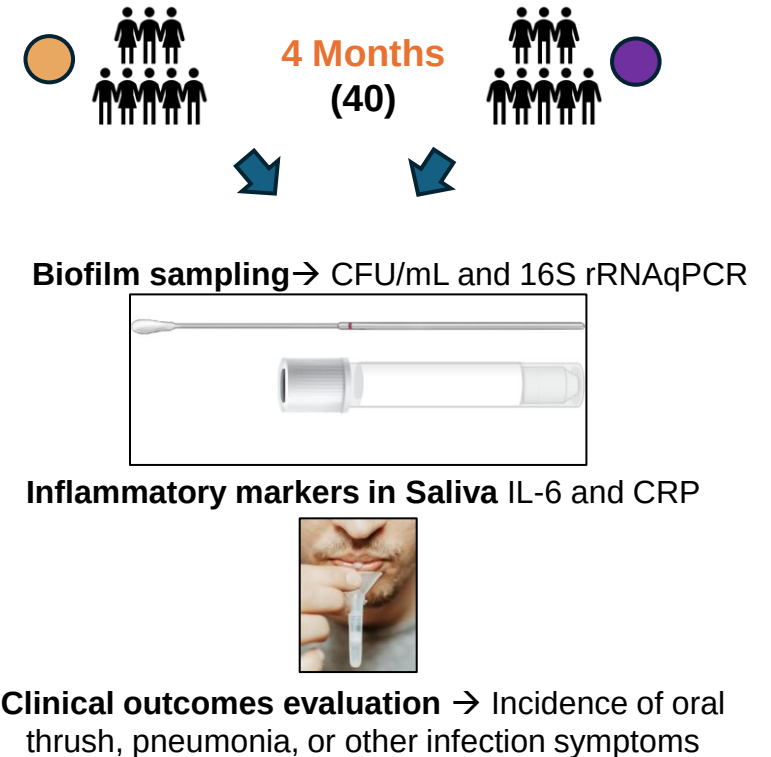
Experiment Design – Phase I



Conclusion: A new product for denture base, that can change the standard of care for these high-risk populations, reduce morbidity and healthcare burden due to denture-associated infection, and have broader implications for **preventive dentistry and elder care**.

Hypothesis Phase II: Dentures with AgNP show **lower biofilm load in participants** and **reduced salivary inflammatory markers**.

Experiment Design – Phase II



Bibliographic References:

