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The mouth gut axis: How the oral microbiome dictates human health

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Throughout human history we have felt we are at war with microbes existing in our environment. Mainstream thought was long pinned to the idea that bacterial entities are the enemy and we must do all we can to combat them. However recent advances in the understanding of the human microbiome show that this is far from the case. With bacterial cells outnumbering human cells by a factor of 10 to 1, the reality that our bodies are a vessel for an ecosystem of bacterial genetic diversity that dictates our own physiological processes. Researchers are just discovering how dysbiosis of the gut microbiome links to disease processes of nearly all of the bodily systems including immune, digestion and brain. Whilst medical attention is only recently being drawn to the bacterial origin of disease processes, the dental community has long established the bacterial origin of oral diseases such as dental caries and periodontal disease. The missing link is to connect the oral microbiome dysbiosis found in dental disease and recognizing its role affecting the human microbial flora, and hence every other disease process in the body.

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Preparation and evaluation of particle size and its distribution in a resin composite prepared by dental amalgam powder through scanning electron microscope

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Background: Dental resin composite comprised of a matrix reinforced with fillers, different fillers were used for preparation of resin composite. Dental amalgam powder incorporation in a resin devoid of fillers and its evaluation through scanning electron microscope (SEM) was performed in this study.

Aim: Evaluate through SEM a resin composite prepared by dental amalgam powder as filler.

Material & Method: Commercially available bonding agent and dental amalgam powder was mechanically mixed through an amalgamator in a ratio of 20%. Particle size was evaluated before and after mixing and particle distribution in the resin composite matrix was evaluated through SEM and measurements were performed through Adobe Acrobat Reader software.

Results: Mean values of particles were 15.20 μm for dental amalgam powder, which when mixed with bonding agent was 12.14 μm . Particle distribution on the basis of size after mixing with resin was found nonsignificant. Two tailed T- test when applied result was 0.13 through SPSS version 16 ($p \leq 0.05$).

Conclusion: An even filler particle distribution of the resin composite can be achieved by mechanical mixing dental amalgam powder with resin through amalgamator.

Significance: Mechanical mixing of fillers in a resin composite through amalgamator is an uncomplicated procedure especially for experiments.

Recommendations: Dental amalgam powder can be used as filler when mixed with a bonding agent and acts as an intermediate base with inherent antiseptic properties.

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