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Influence of nanometric topography on human gingival cell physiology

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Thus far, dental implants are believed to be the best alternative to natural teeth. One of the main factors governing the success of dental implants is a healthy peri-implant soft tissue/implant interface. The fibrotic nature of peri-implant soft tissue, however, is one of the major causes of instability of this tissue and eventually failure of the implant. In this study, we assessed the effects of nano-topographic surfaces on reduction of stable cell adhesion and eventually fibrosis. Our results demonstrate that nano-topographies induce orientation of human gingival fibroblasts along the topographies' pattern. In addition, cells growing on these topographic surfaces demonstrate lower levels of stable adhesion to the extra cellular matrix, suggesting lower levels of adhesive signaling and downstream fibrosis. More importantly, these cells have lower levels of fibrosis as well. Taken together, our data suggests anti-fibrotic features of nano-topographic surfaces in human gingival fibroblasts.

Biography

Mohammad Parsanejad completed his PhD in 2013 from University of Ottawa and postdoctoral studies from Children's Hospital of Eastern Ontari. He started his dental school in 2016 at Western University.

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