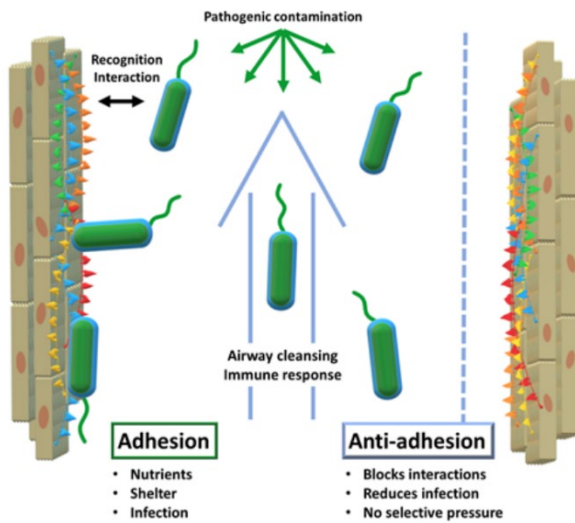


# New anti-adhesion method for preventing bacterial colonization on dental implants



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Keywords

Bacterial colonization, anti-adhesive method, dental implants, biofilm

Intellectual Property

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## Description

Bacterial infections are a leading cause of dental implant failure, often resulting in peri-implant mucositis and peri-implantitis. Pathogenic bacteria readily transition from a free-floating (planktonic) state to a biofilm-forming lifestyle on implant surfaces, where they exhibit increased resistance to antibiotics and host immune responses. Upon adhesion to the implant surface, bacteria activate regulatory pathways that enhance attachment, promote biofilm maturation, and modify their metabolic activity to persist in the oral environment. Here, we introduce a targeted anti-adhesive strategy designed to disrupt bacterial colonization on dental implants, effectively preventing biofilm formation and reducing the risk of peri-implant infections.

## Advantages

Anti-attachment methods are effective strategies for reducing bacterial colonization. Our method has the potential to prevent infections associated with dental implants by inhibiting bacterial adhesion and biofilm formation. It can be used as a

surface treatment for implants or in combination with antibiotics to manage peri-implant infections, enhancing therapeutic efficacy while potentially lowering antibiotic dosage. This approach helps reduce the risk of antibiotic-resistant bacterial strains, promoting long-term implant success and oral health.

## Applications

- Treatment of bacterial infections associated with dental implants, including peri-implant mucositis and peri-implantitis.
- Prevention and management of biofilm-related infections on implant surfaces.