

Nanostructures improve bone response to titanium implants

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Titanium implants were successfully introduced by P.-I. Brånemark and co-workers in 1969 for the rehabilitation of edentulous jaws. After 40 years of research and development, titanium is currently the most frequently used biomaterial in oral implantology, and titanium-based materials are often used to replace lost tissue in several parts of the body.

There are some alternatives to modulating the body's response after implant placement. Modifying the implant surface topography has been a successful path among the scientific community, with the primary goals of achieving faster bone contact to the implant surface and more predictable results after several years.

Today, during the 86th General Session of the International Association for Dental Research, convening here, a team of Swedish researchers is reporting the results of experiments that focused on structures, so-called 'nanostructures', one million times smaller than a Canadian one-dollar coin. The results demonstrated enhanced bone response to dental implants modified with such small structures as soon as 4 weeks after implant placement.

Modifying the size and distribution of the nanostructures at the implant surface may not only represent a faster and more reliable treatment for patients, but also may help in understanding the sequence of events at the body-implant interface and provide guidelines for the further development of osseointegrated implant surfaces.

Source: International & American Association for Dental Research

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