

Scientists increase the success rate of tooth implants

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Researchers increase the success rate of tooth implants.

Elderly or people with osteoporosis, smokers, diabetics or people who have had cancer are sometimes not eligible to receive dental implants as their bones are unable to correctly integrate the new prostheses which replace the root. Researchers at the Universitat Jaume I (UJI) in Castellón have developed an implant coating with a novel biodegradable material aimed at people with bone deficit. It will also increase the overall success rate of implants through an enhanced biocompatibility and reduce the time of osseointegration or bone integration.

If so far the titanium radicle replacing the tooth root took at least two months to be anchored to the jawbone, the prototype developed will reduce the waiting so that patients can receive the ceramic crown which

replaces the visible part of the tooth earlier, and thus regain their normal life sooner.

Julio José Suay, coordinator of the research group of Polymers and Advanced Materials explains "it consists on covering the implant with a biodegradable coating that, upon contact with the bone, dissolves and during this degradation process is able to release [silicon compounds](#) and other [bioactive molecules](#) which induce bone generation".

This is a totally innovative research line as the systems used to date consisted of increasing roughness of the implants to facilitate its integration into the bone. In this regard, Suay stresses that Soldent is a collaborative project between academia and industry developed in the framework of the call "Innpacto" of the Spanish Ministry of Economy and competitiveness.

For the Soldent project, researchers at the Jaume I and the University of the Basque Country are working with the company Ilerimplant SL in the development of this competitive prototype. After in vitro testing with [cell cultures](#) of the different biomaterials, they proceeded to the live animal evaluation, until achieving the prototype with the best results. The next phase consists of a clinical evaluation, in order to obtain the marketable sanitary product within two or three years.

The research aims to improve the success rate of [dental implants](#), especially for people with [jawbone](#) deficiencies. In this regard, non-replacement of a lost tooth involves a series of biomechanical problems such as change of the bite line, the disordering of the teeth and the creation of empty spaces between them. This can ultimately lead to periodontal diseases as gingivitis and periodontitis that deteriorate clamping mechanisms of the teeth and cause the loss of more teeth. This is why it is so important to replace teeth, in addition to the full recovery of the masticatory functions and normal social relations.

Provided by Asociacion RUVID

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