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A new odontological technique manages to reduce from six months to two weeks the wait time to implant new teeth. It is possible thanks to the use of the growth hormone in oral implantology, which allows bone regeneration and the hastening of the integration between bone base and dental implant.

The use of the growth hormone in oral implantology has managed to regenerate the bone and hasten the integration between the bone base and the dental implant. The process allows to reduce from six months to two weeks the wait time to place the crown which replaces the lost tooth on the oral implant.

This advance has been the result of the research of the doctoral thesis "Growth hormone and osteointegration in the oral cavity" by Cecilia Vander Worf Úbeda, supervised by Professors Antonio Cutando Soriano and Gerardo Gómez Moreno (School of Odontology of the University of Granada, Spain).

"We must consider –says Cutando– that a dental implant is successful when it is possible to get a firm, stable and lasting joint between the bone substratum and the crown constructed on it, in which we call prosthetic restoration. That was the goal of this research work, which has also managed to improve the patients' quality of life reducing the wait period to receive a new tooth". The Works were developed all through three years with a methodology applied to 13 dogs, with the authorization of the Ethical Committee of the University of Granada.

Hastened biointegration

The research carried out by Cecilia Vander Worf obtained a good and fast biointegration, which consists of "the direct biochemical joint between the raw bone and the surface of the implant, demonstrable through electronic microscopy, irrespective of any mechanical joint mechanism". Osteointegration requires the formation of new bone around the implant, a process resulting from remodelling the interior of the bone tissue. "The process –says Vander Worf– starts with the osteoclasts, the cells responsible for reabsorbing the necrotic area originated by bone milling during the preparation of the bone recipient bed. Together with them, vascular neoformation will provide the cell elements, the osteoblasts, which will create new bone able to interact with the titanium oxide layer of the implant for the biological integration of it".

The doctoral thesis has been carried out in the Framework of the Research Project "Study of the synergism between Melatonin and Growth Hormone (GH) on the processes of osteointegration in dental implants and bone regeneration in the oral cavity", financed by the Spanish Ministry of Health and Consumption, the Spanish Ministry of Education and Science, the Carlos III Health Institute and the Andalusian Council.

The results of this work have been published in different papers in the last years; the most recent are:

-Cutando A, Gómez Moreno G, Arana C, et al. Melatonin stimulates osteointegration of dental implants. J Pineal Res. 2008 Feb 19; Vol. 49.

-Cutando A, Gómez-Moreno G, Arana C, et al. Melatonin reduces oxidative stress because of tooth removal. J Pineal Res. 2007 Apr; 42(4):419-20.

Note: download video in TV quality (300 MB): <http://www.ugr.es/~ri/videos/>

Reference: Department of Stomatology of the School of Odontology of the UGR. Professors Cecilia Vander Worf Úbeda (cecivan@correo.ugr.es), Antonio Cutando Soriano (acutando@ugr.es) and Gerardo Gómez Moreno (ggomez@ugr.es).

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Journal of Pineal Research

Cutando A, Gómez Moreno G, Arana C, et al. Melatonin stimulates osteointegration of dental implants. J Pineal Res. 2008 Feb 19; Vol. 49.

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