

Researchers increase

Success rate of tooth implants



Spanish researchers have developed an implant coating with a novel biodegradable material aimed at people with inadequate jawbone. According to the inventors, it will also increase the overall success rate of implants through its enhanced biocompatibility and reduce osseointegration time.

Elderly people or people with osteoporosis, smokers, diabetics or people who have had cancer are sometimes not good candidates for dental implants, as their jawbone is unable to integrate the implants adequately. While a titanium implant takes at least two months to become anchored in the jawbone, the new prototype, developed at the Universitat Jaume I in Castellón and the University of the Basque Country in Bilbao, reduces this period so that the ceramic crown that replaces the visible part of the tooth can be seated earlier, allowing patients to regain their normal life sooner.

“It covers the implant with a biodegradable coating that upon contact with the bone dissolves and during this degradation process releases silicon compounds and other bioactive molecules that induce bone generation,” explained Julio José Suay, coordinator of the Polymers and Advanced Materials research group. “This is an innovative line of research, as current implant systems use increasing roughness of the implants to facilitate osseointegration.” After *in vitro* testing with cell cultures of the different biomaterials, the researchers proceeded to the animal evaluation, until they achieved the prototype with the best results. The next phase entails a clinical evaluation in order to obtain a marketable, sterile product within two to three years. The research aims to improve the success rate of dental implants, especially for people with jawbone deficiencies. Not replacing a lost tooth involves a series of biomechanical problems, such as a change in the bite line, malalignment of the teeth and the creation of diastemas. This can ultimately lead to such periodontal diseases as gingivitis and periodontitis that deteriorate the support structures of the jaw and cause the loss of more teeth. This is why it is so important to replace teeth—in addition to the full recovery of masticatory function and normal social relations.

Oestrogen might cause

Gum disease during pregnancy

Researchers have found that hormone levels may determine the extent of gingivitis during pregnancy. In a recent study, they observed that pregnant women with higher levels of oestrogen and dental plaque were at a greater risk of developing gingival inflammation compared with women who had lower levels.

In order to assess the role of oestrogen in gingival inflammation development during pregnancy, researchers from the University of Helsinki measured the salivary oestrogen levels and examined the periodontal health of 30 pregnant women and 24 female controls.

Overall, the researchers found that women with high oestrogen and plaque levels had the highest frequency of preg-

nancy-related gum disease in all trimesters and after giving birth. Those with the highest plaque levels experienced more extensive bleeding gums. In addition, they observed that women whose oestrogen levels and dental plaque scores increased significantly during the second and third trimester were more likely to develop gingivitis than those with high plaque scores alone. The findings thus hold important implications for the improvement of pregnant women’s oral health, the researchers said.

The study was published in the December 2012 issue of the *Journal of Periodontology*.

Link between

Weight problems and tooth loss

Although obesity is a growing public health concern, only limited data is available on the link between tooth loss and obesity. Now, a new study involving 1,720 Brazilian adults has provided new evidence that obesity is associated with the number of teeth. However, it found that the link depended largely on the participants’ age.



The researchers found that the presence of less than ten teeth in at least one arch was positively associated with increased mean BMI and waist circumference. The prevalence of obesity was 50 per cent higher in those with less than ten teeth in at least one arch compared with those with ten or more teeth in both arches.

However, the researchers also found that with increasing age the relationship between tooth loss and obesity became less significant.

“The main explanation for this fact lies in dietary changes with aging and tooth loss. Food-intake pattern changes according to the presence and number of natural teeth,” they said.

In order to promote oral health and early prevention of tooth loss and obesity, further longitudinal studies that involve both urban and rural communities are needed to better understand the complex relationship between the two diseases, they concluded. Currently, the researchers are preparing the second phase of this study to test their formulated hypothesis.

The study was published in the October issue of the *Revista de Saúde Pública journal*.



FDA considers

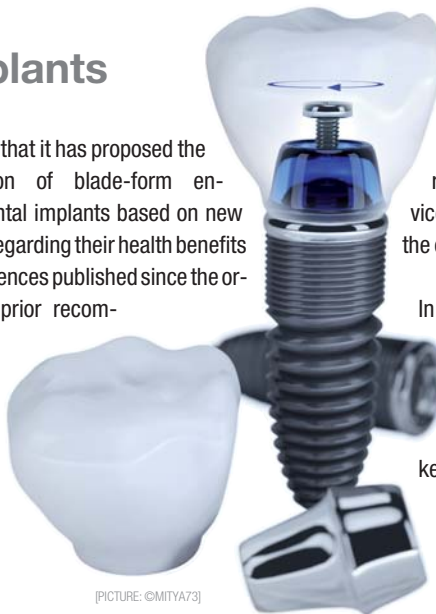
Reclassification of dental implants

The American Food and Drug Administration (FDA) has proposed a reclassification of blade-form endosseous dental implants commonly used in dental restoration from Class III to Class II devices, reducing the regulatory requirements for marketing these implants.

The FDA recognises three classes of medical devices based on the level of control necessary to assure safety and effectiveness. While Class II devices, i.e. medium-risk devices, are subject to general and special controls, Class III devices are highly regulated. Usually, Class III devices support or sustain human life, or are of substantial importance in preventing impairment of human health, but may present a potential, unreasonable risk of illness or injury.

In many cases, premarket approval is required to ensure the safety and effectiveness of these devices.

The FDA said that it has proposed the reclassification of blade-form endosseous dental implants based on new information regarding their health benefits and risk incidences published since the organisation's prior recom-



[PICTURE: ©MITYA73]

mendation. "FDA has been reviewing these devices for many years and their risks are well known. A review of the applicable clinical literature indicates that the device has a high success rate and that few relevant adverse events have been re-

ported in the case of these devices or related devices, suggesting that the device has a high long-term safety profile," the organisation stated.

In addition to complying with general controls, the implants would be subject to special controls, including special labelling requirements, mandatory performance standards and postmarket surveillance.

However, premarket approval would no longer be mandatory to effectively mitigate possible health risks, including infection and adverse tissue reactions.

Electronic or written submissions on the proposal can be submitted by April 15, the organisation stated.

EU health-care sector faces

Serious recruitment problems



[PICTURE: ©VIOLETKAIPA]

The EU health-care sector is facing hard times. With an ageing work-force and insufficient new recruits to replace those who are retiring, the future does not look promising. Owing to demanding working conditions and relatively low pay in some health occupations, recruits are not attracted to the sector. A while ago, the EU member states invited the EC to propose an action plan to assist them in tackling the key challenges facing the health work-force in the medium to longer term. This commission staff working document describes the current status of the sector, among other matters.

The health-care sector comprises workers who primarily deliver health-care services, including health professionals (doctors, nurses, midwives, pharmacists and dentists), allied health professionals, public-health professionals, health management, and administrative and support staff. Some people also

work for the health-care sector indirectly, such as those employed in the health-care industries and support services, pharmaceuticals, medical device industries, health insurance, health research, e-health, occupational health, spa, etc. Most health-care workers are female. More than 13.1 million women were employed in the sector in 2010, making up more than three quarters of the health work-force in the entire EU. Health care is one of the largest sectors in the EU, with around 17.1 million jobs in 2010, which accounts for eight per cent of all jobs in the EU-27. The number of jobs in the sector increased by 21 per cent between 2000 and 2010, creating four million new jobs. According to the EC document, the health-care sector even continued to grow during the economic crisis, with the positive trend reflected in all age groups. Forecasts predict that it will remain a growing sector, even though employment growth will be more modest compared with 2000 to 2010.

Dental implants market

Will double by 2018

According to business report provider GBI Research, the dental implants market is set to almost double in value over the next six years. Owing to technological advancements and the aging population worldwide, the company expects a rapid increase in the use of dental implants in the near future. An analysis of the market for titanium and zirconium dental implants revealed that the global dental implants market is expected to grow at a compound rate of 10 per cent from \$3.4 billion in 2011 to \$6.6 billion in 2018, GBI Research's health care experts said. They found that the market is mainly driven by growing concerns about oral hygiene, increasing life expectancy and the availability of advanced solutions for dental implants based on digital dentistry, which increases procedure efficiency and reduces the incidence of adverse outcomes. Moreover, the investigators observed an increasing preference for dental implants as a treatment option over conventional devices such as crowns, bridges or dentures.



[PICTURE: ©VIOLETKAIPA]