



“There are many things that have improved significantly over the last 30 years.”

Prof. Ann Wennerberg answered questions regarding her recent research findings on implant surfaces.

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## “It is fantastic to have implants as a treatment option”

**Prof. Ann Wennerberg** from the University of Gothenburg in Sweden is a world-leading authority on dental implant surfaces. She recently led a systematic review of 62 clinical studies in which she analysed a total of over 17,000 implants with at least ten years of follow-up. The study compared the long-term clinical outcomes of implant treatments with different surfaces including sandblasted, titanium plasma-sprayed, turned, sandblasted and acid-etched, and anodised ones. Dental Tribune International met with Prof. Wennerberg to discuss her research and its findings.

**Prof. Wennerberg, in your study, you compared five different implant surfaces including the TiUnite implant surface by Nobel Biocare. Could you please explain what TiUnite is exactly?**

To begin with, TiUnite is an anodised surface. An electrolytic bath is used to create the typical pores and struc-

tures on the surface of the implant. On an image, an anodised surface can be easily detected and distinguished from an etched or blasted one.

**What are the main advantages of implants with the TiUnite surface? Were any of these investigated in the study?**

I think, the sole fact that the renowned company Nobel Biocare produces it, is already an advantage. There are a number of moderately rough surfaces that function well, but in order to assess their safety, as stated in the paper, it is helpful and important to work with companies that have already collected some clinical data regarding their products. For quite some years now, there has been a continuously strong interest in TiUnite. Thus, it is safe to say that its safe clinical use has been proven by now, which is an advantage, of course. Throughout the recent years, Nobel Biocare implants

with a turned surface have been very well documented. In this very study, we were particularly interested in how TiUnite, which is still relatively new, performs in the oral cavity. Since its surface has so many undercuts, there had been some concerns that it might be difficult to clean and, as a result, might harbour bacteria that cause bone resorption over time.

#### What are the limitations of the TiUnite surface?

I do not know if there are any limitations at all. We do not have any proof that it possibly causes more bone resorption or other problems. Having said that, I cannot rule out the possibility entirely. I have no idea how the implant will perform over the course of 25 years or more. As of now, we have not been able to confirm this concern though. As for the financial aspect, a lot of the major companies, which have spent a great deal on the development of these surfaces, naturally expect some form of profit, which results in some implant systems being more expensive. However, there often is more documented data available on these systems, in comparison to cheaper ones—so you know what you are buying. It may not be the case for every product but, generally speaking, I think it is true.

#### What are the next steps in surface technology? Where do you see innovations heading?

Right now, we are not yet at the point to talk about innovations. From a research point of view, however, it might be possible that at some point you would be able to load surfaces with different substances when treating a certain disease for example. With regard to infections, you might load a surface with antibiotics or something else, to which the tissue would respond in one way or another. There are already some developments in this area. Furthermore, I think that in terms of topography, we have come to a really good state-of-the-art. Of course, other fields such as implant design have not yet been investigated thoroughly enough and may be of great interest in the future.

#### What do you consider to be the biggest development in dental implantology throughout the past decades?

This question is difficult for me to answer, since there have been many developments. With regard to materials, for example, both mechanical properties and prosthetic solutions have improved a lot, and, as a result, we are better able to compensate for misalignment. There are many things that have improved significantly over the last 30 years, but I would not say it happened in one giant leap. Things have developed more in a step by step kind of way. Thanks to the many players in the field, who have provided us with very good clinical results, these developments are constantly being pushed forward. Overall, I think it is fantastic to have implants as a treatment option for patients.

#### Thank you very much for the interview.

*Editorial note: The study, titled "Long-term clinical outcome of implants with different surface modifications", was first published in the European Journal of Oral Implantology.*

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