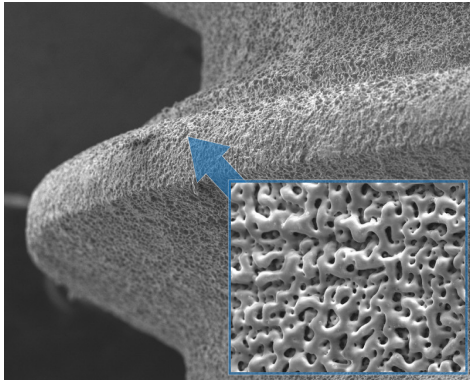


NANO ACTIVE SURFACE[®]

Osseointegration explained



The rough surface of the implant is good for its osseointegration and cellular response. Studies have shown that the best bone growth corresponds to surface cavities size of approximately 10μ . Growth of the bone tissue in such implant cavities provides a firm mechanical interlock between the implant and the bone.

But First, Osseointegration?

Lets get down to the Surface Treatment Basics:

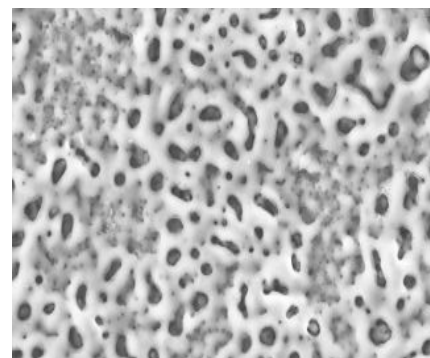
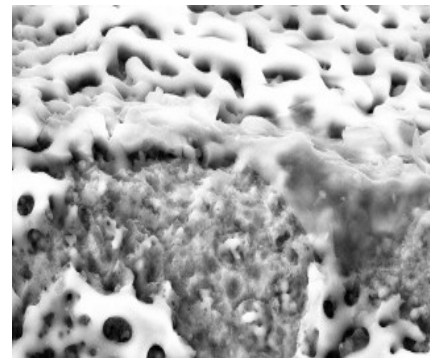
So what is all the fuss about Surface Treatment Quality in Medical Implants?

First of all what is a Medical Implant?

A medical implant is a device manufactured to replace a missing biological structure, support a damaged biological structure, or enhance an existing biological structure. Medical implants are man-made devices, in contrast to a transplant, which is a transplanted biomedical tissue.

Why Surface Treat them?

The surface of implants that contact the body might be made of a biomedical material such as titanium, silicone or apatite depending on what is the most functional. Under ideal conditions, implants should initiate the desired host response. Ideally, the implant should not cause any undesired reaction from neighboring or distant tissues. However, the interaction between the implant and the tissue surrounding the implant can lead to complications. The process of implantation of medical devices is subjected to the same complications that other invasive medical procedures can have during or post surgery along with several different complications. Common complications include infection, inflammation, and pain. Other complications that can occur include risk of rejection from implant induced coagulation and allergic foreign body response. Depending on the type of implant, the complications may vary.



So now we know that if an Implant is rejected we would be posed in a big issue starting with the complications all the way to the removal of the rejected Implant. The goal of the Surface Treatment procedure is to make the Surface of the Implant active.

A treated and active Implant surface will ensure better reception of red blood cells by the body and enable faster and better bone and tissue growth towards the Implant, while greatly reducing the instances of rejected Implants.

Osseointegration ?

Osseointegration, the term refers to the direct structural and functional connection between living bone and the surface of a load-bearing artificial implant. Osseointegration can be enhanced by the science of medical bone and joint replacement techniques. Osseointegration is also defined as : "The formation of a direct interface between an implant and bone, without intervening soft tissue". Osseointegrated implant is a type of implant defined as "an endosteal implant containing pores into which osteoblasts and supporting connective tissue can migrate". Applied to oral implantology, this thus refers to bone grown right up to the implant surface without interposed soft tissue layer. No scar tissue, cartilage or ligament fibers are present between the bone and implant surface. The direct contact of bone and implant surface can be verified microscopically. What we always seek is the best Osseointegration possible.

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