

Fifty shades of white?

The advantages of implants fabricated from zirconium dioxide, such as aesthetics and high corrosion resistance, make them an interesting therapeutic alternative. Clinicians must realise, however, that just like implants made of titanium and titanium alloys, not every ceramic implant successfully osseointegrates.

The etiology of complications in implant therapy is not always found in those patients with pre-existing conditions, poor oral hygiene, or placement by those physicians with inadequate training and experience. Some manufacturers assert that these factors are the root cause of failure to osseointegrate, conveniently omitting their role as a result of flaws in the manufacturing and packaging process.

Implant quality is a key factor for successful osseointegration. After unboxing, every implant must be free of foreign particles and contaminants resulting from deficits in the complex chain of production. Sterility does not equate with a clean surface. Even though it is not rocket science, some manufacturers fail to strive for sufficient quality assurance. In particular, micron-sized plastic residues on the implant surface are associated with unwanted biological effects ranging from bone loss to implant failure.

We reached a critical degree of research integrity if a manufacturer in a renowned scientific journal portrays a level of implant cleanliness that technically does not exist—by showing manipulated and “cherry-picked” SEM images of his ceramic implant system.

It is even less supportive in building trust among implantologists if the analysis of another ceramic implant system reveals a cell-toxic biocide on the implant surface in a quality assessment study. After this manufacturer was informed accordingly, the authors of the study were subject to intimidation tactics and threats of legal action in the event of any publication of the scientific findings.

In this way, few manufacturers tarnish the success of the dental industry’s pursuit of enhancing clinical safety in ceramic implantology. Fortunately, there are responsible manufacturers who meet the quality expectations in their products and deliver flawless dental implants.

Ceramic implants deserve the trust of practitioners and patients, provided they are as clean as promised. Trust is like paper. Once it’s crumpled it can never be perfect again.

With respect,
Dr Dirk U. Duddeck



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