Implant Surface Characterization Comparison

**Surface Needs:**
Implant surface topographies influence the osseointegration process, as well as help to mitigate potential risks associated with peri-implantitis.

- Studies have shown that implant topographies play a role in both osteoconduction and the subsequent de novo bone to implant interface strength.
- The prevalence of implants experiencing peri-implantitis has been reported in excess of 12%. Studies have shown that minimally rough implants are less likely to develop peri-implants than rough implants once exposed to the oral environment.

### REFERENCES
1. Gubbi P, Towse R. Quantitative and Qualitative Characterization of Various Dental Implant Surfaces, Poster Presentation P421; European Association for Osseointegration, 20th Meeting; October 2012; Copenhagen, Denmark. (http://www.biomet3i.com/Pdf/Posters/P421.pdf)

### ATTRIBUTES

<table>
<thead>
<tr>
<th>PROCESS</th>
<th>BIOMET T3® with DCD® Surface</th>
<th>NOBEL BIOCARE® TiUnite® Surface</th>
<th>DENTSPLY OSSEOPEED™ Surface</th>
<th>STRAUMANN SLACTIVE® Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grit blasting with calcium phosphate media (Threaded area only on T3 T3)</td>
<td>Anodic oxidation</td>
<td>Grit blasting with TiO2 media</td>
<td>Grit blasting with alumina oxide media</td>
<td></td>
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<tr>
<td>Dual acid-etching</td>
<td>Acid-etching</td>
<td>Acid-etching in nitrogen atmosphere</td>
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</table>

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Dr. Gubbi and Mr. Towse contributed to the above research while employed by BIOMET 3i. Dr. Davies have a financial relationship with BIOMET 3i.
A Contemporary Hybrid Implant Designed For:

- **Primary Stability**
  - The specifications of the 3i T3™ Implant are held to rigorous tolerances to provide a closely integrated implant-to-osseointerface fit, creating a dental implant system that helps the clinician achieve primary stability. Initial bone to implant contact is a major contributor to the implant’s stability.

- **Osseointegration**
  - In a preclinical study, the BIOMET T3 with the DCSDR Surface demonstrated increased integration strength throughout the healing phase as compared to blast and acid-etched, acid-etched only and turned only surfaces.

- **No Increased Peri-implantitis Risk**
  - The 3i T3 Implant utilizes the proven OSSEOTITE® Surface technology at the coronal aspect of the implant. In a five-year study, the dual acid-etched surface of the OSSEOTITE Implant presented no increased risk of peri-implantitis or soft-tissue complications versus a machined surface.

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DEFINITION OF SA

The Sa value is a three-dimensional amplitude parameter of the average roughness over a surface. ¹

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References


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**Multicenter, Randomized Controlled 5-Year Study Of Hybrid And Fully Etched Implants For The Incidence Of Peri-implantitis**


- **SULCUS BLEEDING INDEX**
  - Machined Surface
  - OSSEOTITE Surface

- **PROBING DEPTH SCORES**
  - Machined Surface
  - OSSEOTITE Surface

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No implant (test or control) showed changes in probing depths greater than 3.0mm.

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1. Dr. Gubbi, Dr. Kenealy, and Dr. Stach have financial relationships with BIOMET 3i LLC resulting from speaking engagements, consulting engagements and other retained services.

2. Dr. Zetterqvist has financial relationship with BIOMET 3i LLC resulting from speaking engagements, consulting engagements and other retained services.

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5. References 1-2 discuss the BIOMET 3i TYPICAL Implant macrodesign, which is incorporated into the 3i T3 Implant.

6. References 3-9 discuss the BIOMET 3i OSSEOTITE® and/or NanoTite™ Implant dual acid-etched or DCSDR technology, which is incorporated into the 3i T3 Implant.

7. The specifications of the 3i T3™ Implant are held to rigorous tolerances to provide a closely integrated implant-to-osseointerface fit, creating a dental implant system that helps the clinician achieve primary stability. Initial bone to implant contact is a major contributor to the implant’s stability.


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Values may vary depending on test methodology.

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