SOUTHERNIMPLANTS®
Innovative Treatment Solutions

SInergy - Southern Implants' Enhanced Surface

SInergy, the Southern enhanced surface is not a "coating", it is an **abraded rough surface of the most stable of the Titanium Oxides** . This is the same dense form of titanium oxide common to "machined" surface implants. The Southern Implants surface is classified as "moderately rough" (S_a 1-2µm) [1], and is achieved by blasting with alumina particles followed by cleaning with inert solvents to remove blasting residues.

A. The first experimentation with the **SInergy** enhanced surface was in **1992**. After extensive validation it was **put into widespread clinical use in 1997**. It is achieved by a subtractive process in which Alumina particles ($A1_20_3$) are blasted onto the implant.

B. The particle size of 110µm is supported by the work of Soskolne (Israel) and Wennerberg (Sweden) on the one hand and Ronald (Norway) on the other. Based on their research, greatest bone to titanium bond strength is obtained with abrasion particles **greater than 75µm and less than 170µm**.

C. Szmukler-Moncler has analyzed and compared the popular implant surfaces in publications and a presentation at the AO, San Francisco 2004. He reports that the Southern Surface is **remarkably consistent** and **free of contaminants** whilst those that are acid etched or oxidized are shown to be highly variable.

D. There is consensus in the literature that "moderately rough" surfaces pose no risks for the patient and are therefore **safe to use**. Moderately rough was defined by Albrektsson as S_a 1.0 to 2.0µm (Applied Osseointegration Research, Vol 5, 2006). The Southern surface has S_a = 1.43µm in one published study and S_a = 1.55µm on implants analyzed by Prof Ann Wennerberg in 2006.

Dr Mats Wikström, Chief of Clinics, Brånemark Centre Göteborg, in 2007 concluded that the Southern surface is one of the three best documented moderately rough surfaces on the market.

One RCT and two retrospective studies have shown successful outcomes for the Southern surface with over 10 years follow-up. Five and 8-year results of the RCT have been included in Cochrane Collaboration systematic reviews.

1. Vandeweghe S, Hawker P, De Bruyn H. An Up to 12-Year Retrospective Follow-Up on Immediately Loaded, Surface-Modified Implants in the Edentulous Mandible. Clin Implant Dent Relat Res. 2016 Apr;18(2):323-31.
2. Vandeweghe S, Ferreira D, Vermeersch L, Mariën M, De Bruyn H. Long-term retrospective follow-up of turned and moderately rough implants in the edentulous jaw. Clin Oral Implants Res. 2016 Apr;27(4):421-6.
3. Ma S, Tawse-Smith A, De Silva RK, Atieh MA, Alsabeeha NHM, Payne AGT. Maxillary Three-Implant Overdentures Opposing Mandibular Two-Implant Overdentures: 10-Year Surgical Outcomes of a Randomized Controlled Trial. Clin Implant Dent Relat Res. 2016 Jun;18(3):527-44. (10-year prosthodontic outcomes awaiting publication).
4. Doornewaard R, Christiaens V, De Bruyn H, Jacobsson M, Cosyn J, Vervaeke S, et al. Long-Term Effect of Surface Roughness and Patients' Factors on Crestal Bone Loss at Dental Implants. A Systematic Review and Meta-Analysis. Clin Implant Dent Relat Res. 2017 Apr;19(2):372–99.