OsseoSpeed™ – more bone more rapidly

OsseoSpeed™ was launched in 2004 and is a follower and a further development of the moderately rough titanium surface, TiOblast™, which has among the longest prospective clinical documentation. OsseoSpeed gains its additional surface characteristics via a chemical (fluoride) treatment and a slight topographic modification of the TiOblast surface. Incorporation of small amounts of fluoride ions in the titanium oxide layer, a slight increase on the micrometer scale in surface roughness and the appearance of a nanoscale topography have been reported for the OsseoSpeed surface. Other surface characteristics have been analyzed and presented elsewhere.

The pre-clinical in vivo performance of OsseoSpeed is documented in various experimental models with different focuses including human histology. Similar or increased bone formation and stronger bone-to-implant bonding around the OsseoSpeed surface compared to its ancestors (TiOblast and machined titanium surfaces), is reported at shorter healing times. Factors such as enhanced osteoblast differentiation and thrombogenic properties of the OsseoSpeed surface have been attributed to the improved and fastened healing.

Results from the comprehensive clinical study program show good functionality and high esthetics and predictable and maintained marginal bone levels at OsseoSpeed implants. Prospective clinical studies report a mean marginal bone loss of 0.3 mm after 1, 2, 3, 5 and 8 years of function. Very small changes in Implant Stability Quotient values during the early healing is recorded, which is interpreted as a continuous gain in osseointegration and stability. Prospective clinical data shows that the OsseoSpeed implant can be safely used with a reported survival rate ranging from 94.5% to 100% including the use of immediate loading protocols in the atrophic maxilla, in sinus lifted/grafted posterior sites and at immediate installation in extraction sockets. Case reports and retrospective clinical studies show acceptable implant survival rates after up to 5 years in function.
References


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