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Effects of different implant surfaces and designs on marginal bone-level alterations: a review

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Abstract

Objective: The purpose of this review was to evaluate the effect of different implant surfaces and designs on marginal bone-level (MBL) alterations.

Material and methods: A MEDLINE search (PubMed) was performed to identify clinical, prospective and controlled studies using a sufficient sample size ($n \geq 10$ subjects) and with a follow-up time of ≥ 3 years.

Results: Ten publications fulfilled the inclusion criteria. Two studies evaluated the influence of implant surface characteristics and two studies reported on the effect of implant design on MBL changes. Six publications analyzed the combined effect of different implant surfaces and designs on MBL alterations. As revealed from available studies, there is no evidence that modified surfaces are superior to non-modified implant surfaces in marginal bone preservation. One study reported on significantly improved MBL preservation for implants with a conical and micro-threaded marginal collar than implants with a cylindrical and non-threaded marginal portion after 3 years in function. No implant system was found to be superior in marginal bone preservation.

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