

عنوان مقاله:

A Review of Dental Implant Treatment Planning and Implant Design Based on Bone Density

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Context: A key determinant for clinical success is the diagnosis of the bone density in a potential implant site. The percentage of boneimplant contact is related to bone density, and the axial stress contours around an implant are affected by the density of bone. Evidence Acquisition: A number of reports have emphasized the importance of the quality of bone on the survival of dental implants. The volume and density of the recipient bone have also been shown to be determining criteria to establish proper treatment plans with adequate number of implants and sufficient surface area. Previous clinical reports that did not alter the protocol of treatment related to bone density had variable survival rates. To the contrary, altering the treatment plan to compensate for soft bone types has provided similar survival rates in all bone densities. Results: When bone density decreases and bone become softer, the implant surface in contact with the bone decreases, therefore treatment plan should be modified by changing the drilling protocol, using gradual loading and reducing the force on the prosthesis or increasing the loading area with increasing implant number, implant position, implant size, implant design (deeper and more threads with more pitch, squared shape) and implant body surface condition. Conclusions: Once the prosthetic option, key implant position, and patient force factors have been determined, the bone density in the implant sites should be evaluated to modify the treatment plan. Inappropriate implant number or design in poor quality bone results in higher failure rates. Changing the treatment .plan and implant design is suggested, based on bone density to achieve higher survival rates

کلمات کلیدی:

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