

Geometry influence of the implant on the stresses levels in the bone under dynamic loading

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This study shows the variation of the equivalent stress induced by the masticatory efforts along the bone as a function of the radius of the lower part of the implant. It will be noted however, than the intensity of this stress increases with the reduction of this parameter. Implant designers must take into account what geometrical parameter. Several parameters (size and conicity of the upper part thread form, size and radius of curvature of the lower part) were analyzed in the aim of proposing a form of implant minimizing stress in the living tissue. Osseointegration is fundamental phenomenon of dental implantology. It provides stability, reliability and durability of dental implants and predictable long-term clinical success. The geometric form of the implant is a determining parameter of the osseointegration and the intensity of the forces exerted on the bone. This is the objective of this study. Indeed, we show, numerically by the finite element method, the geometric parameters of the implant condition level and distribution of the stresses induced in the bone by masticatory efforts, simulated here by a dynamic loading. Several parameters (size and conicity of the upper part thread form, size and radius of curvature of the lower part) were analyzed in the aim of proposing a form of implant minimizing stress in the living tissue.

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