Summary

This thesis presents and discusses two controlled clinical trials which where designed to evaluate efficacy and clinical relevance of diameter reduced oral implants and residual, non-ablative implant sight preparation in the treatment of normally configurated to horizontally resorbed alveolar ridges. During the last 20-25 years hardly any other dental discipline has undergone a development with a comparable scope as oral implantology: Reliability for various implant based treatment concepts has been established through numerous clinical reports and studies, thus, contributing to a considerable rise of acceptance among clinicians and patients as well as to a stunning amplification of their indication for clinical application. Considering the clinical outcome, established implant based prosthetics come nowadays very close to the benchmark "time in situ" of natural teeth. Therefore, the primary objective of these studies was not to improve even further the efficacy level of oral implants or surgical techniques. Rather, to evaluate a therapeutical alternative that provides for *equivalent reliability*, while reducing treatment risks and being less invasive, time, and cost consumptive. Hence, the trials where designed in accordance to the standards of "testing for therapeutical equivalence" derived from bioequivalence testing well established in pharmacologic research. This testing method was implemented in two controlled clinical trials each set in a parallel group design. To guarantee the independence of the each "monitored unite" per patient only one implant was elected at random. Case figures calculation – to define an adequate trial power – and statistical evaluation of clinical endpoints were based on that election. Results of both trials reveal consistent evidence for therapeutical equivalence of diameter reduced oral implants and residual, non-ablative implant sight preparation in the treatment of normally configurated to horizontally resorbed alveolar ridges compared to the respective therapy of reference; and this while reducing treatment risks and being less invasive, time, and cost consumptive.