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Accuracy of Digital Impressions using Laboratory Systes when Analyzed in 3D

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Currently, it is possible to achieve digital flow through laboratory scanners, however, due to a large number of commercial brands, there are limited evidence that address the accuracy among the commercial models available. Thus, the impression accuracy of three laboratory systems in prosthetic rehabilitation on parallel and angled implants was evaluated, in vitro and three-dimensionally. A metal model of a toothless jaw with four implants was scanned by a contact scanner (MDX-40-Roland, control, n=10) and compared to three laboratory scanners (n=10): AmannGirrbach, Shining and 3Shape. The images (STL) were exported to Bio-CAD software, where the overlapping and comparison of the positioning, in 3D, of the digital models with the digital master model was performed. The three-dimensional analysis on the X, Y and Z axes were guided by a pyramid, present in the digital master model. The Kruskal-Wallis and Anova Two-Way tests were applied to verify the commercial brands and implant position variables, respectively, with a level of significance at 5%. There was no difference between the scanners regarding their accuracy (p=0.0806). When the implants (A, B, C and D) were analyzed, an interaction (p<0.001) was observed between the implant (p = 0.001) and commercial brands (p=0.262) variables. Only the D implant showed a statistical difference in the scanning accuracy when the AmannGirrbach model was compared to Shining (p<0.001) and 3Shape (p=0.002). Thus, there is precision in all laboratory systems evaluated but angled implants can provide deviations during the digital impression.

Biography:

Graduation in Dentistry by UniFACID Wyden; Master in Oral Rehabilitation, Prosthesis area, at School of Dentistry, Araraquara (UNESP-FOAr); Researcher with the Total Prosthesis / CNPq research group (UNESP-FOAr); Worked in research projects in the lines tooth bank, roughness between acrylic and bisacrylic resin and biofilms of *Candida albicans*. Currently is a PhD student in Oral Rehabilitation, Prosthesis area, at School of Dentistry, Araraquara (UNESP-FOAr), working in the research line prosthetic treatment in odontogeriatrics.