89.

An Evaluation of the Quality of Tooth Preparation with Intraoral Parallometer-Axisgraph - Pilot Study

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Measuring of the axial angle in practice shows an average angle of 20 degrees. The result of the high taper angles is a nonsatisfactory resistance form in 22.5% cases.

The purpose was to examine the efficiency of the Jonjić oral parallelometer, known as the "AXISGRAPH", with respect to basic ergonomic rules, leading to savings in working energy and time and an increase in the quality of the preparation.

METHODS: On the basis of clinical cases models were made of the upper and of the lower jaw of acrylic resin. The practitioner, who has 10 years experience, initially prepared each model set in a KAWO-EWL model, conventionally using freehand preparation, and then with an Axisgraph. Both models were in the same condition. Comparison was made between the time required for preparation, working energy used, and the quality of the preparation. The quality of the preparation was determined using the axial angle of the prepared tooth, measured by the method described in Jonjic's dissertation.

RESULTS: The freehand preparation took 80 minutes while preparation with the Axisgraph took 50 minutes.

The average angle in freehand preparation was 15.03 degrees while, (the average angle of preparation was 10.4 degrees) using Axisgraph, and in 30 minutes less time than the freehand preparation.

CONCLUSION: Preparation with the Axisgraph significantly saves time on preparation and allows better quality for the prepared tooth.

90.

A Comparison of Trace Element (TE) Release from High Noble Au-Pt Alloy and Base Co-Cr-Mo Alloy Under *In Vitro* Conditions of Imitating Oral Saliva

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In a moist environment electrochemical conditions lead to release of metal ions into the patient's saliva. The aim of this study was to examine and compare the types and quantities of metal ions released from two alloys: AuPt alloy and Co-Cr-Mo alloy under *in vitro* conditions, imitating artificial saliva. We soaked ten sets of Au-Pt alloy pieces having 133 mm^2 exposure surface and ten sets of Co-Cr-Mo alloy (WironitR, Bego, Germany) pieces having 497 mm^2 exposure surface for 1, 2, 3, 4, 5, 6, 7, 14, 21 and 30 days (six pieces each set) in phosphate buffered saline (pH 6.0) to mimic dental saliva. TE in the phosphate buffered saline (saliva) were assessed by ICP-AES (JY 50P, Jobin-Ywon, France) with the detection limit of 10 mg/L. We found detectable amounts (mg/L) of TE (Mean SD) released from Au-Pt alloy (Mean SD): Zn 124 (51), Cu 53 (63), Fe 15 (11) and Cr 18 (25) and detectable amounts of TE released from Co-Cr-Mo alloy (Mean SD): Co 337 (170), Fe 21 (15) Zn 87 (56), Ni 41 (68), and Cr 49 (42). The manufacturer did not indicate the presence of Zn and Fe in the Au-Pt alloy and the presence of Fe, Zn, and Ni in the Co-Cr-Mo alloy. Significantly higher amount of Zn was released from high noble AuPt alloy than from Co-Cr-Mo alloy ($p<0.05$) and a significantly higher amount of Cr was released from Co-Cr--Mo alloy than from Au-Pt alloy. There was no significant difference in the amount of Fe ions released between the two alloys ($p>0.05$). We must keep in mind that the amount of released TE may be much higher than the reported values after laboratory procedures (casting, polishing, etc.) and, moreover, other TE may become detectable.