

Registrado X-tra – Impression accuracy and dimension stability

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The quality of indirect restorations depends not only on the preparation, restoration and luting materials, but also equally as much on the quality of the bite registration. Inaccuracies in the first step of the prosthesis continue in all subsequent steps.

Registration materials – In-vitro study (Goethe University, Frankfurt)^[1]

To what extent the respective bite registration material influences the occlusal accuracy of fit of a restoration was analysed^[1] in an in-vitro study at the Goethe University in Frankfurt (Carolineum) Dental Prosthetics Clinic and Centre for Dental, Oral and Maxillofacial Medicine. Teeth 47 (partial crown) and 46 (full crown) were prepared and master models (Co-Cr-Mo) made from the mandible and maxillae. With these models, changes in the left and right condyle position in habitual occlusion were measured from individual tooth registrations at different points in time after bite registration in the articulator (Condymeter® III with Splitcast).

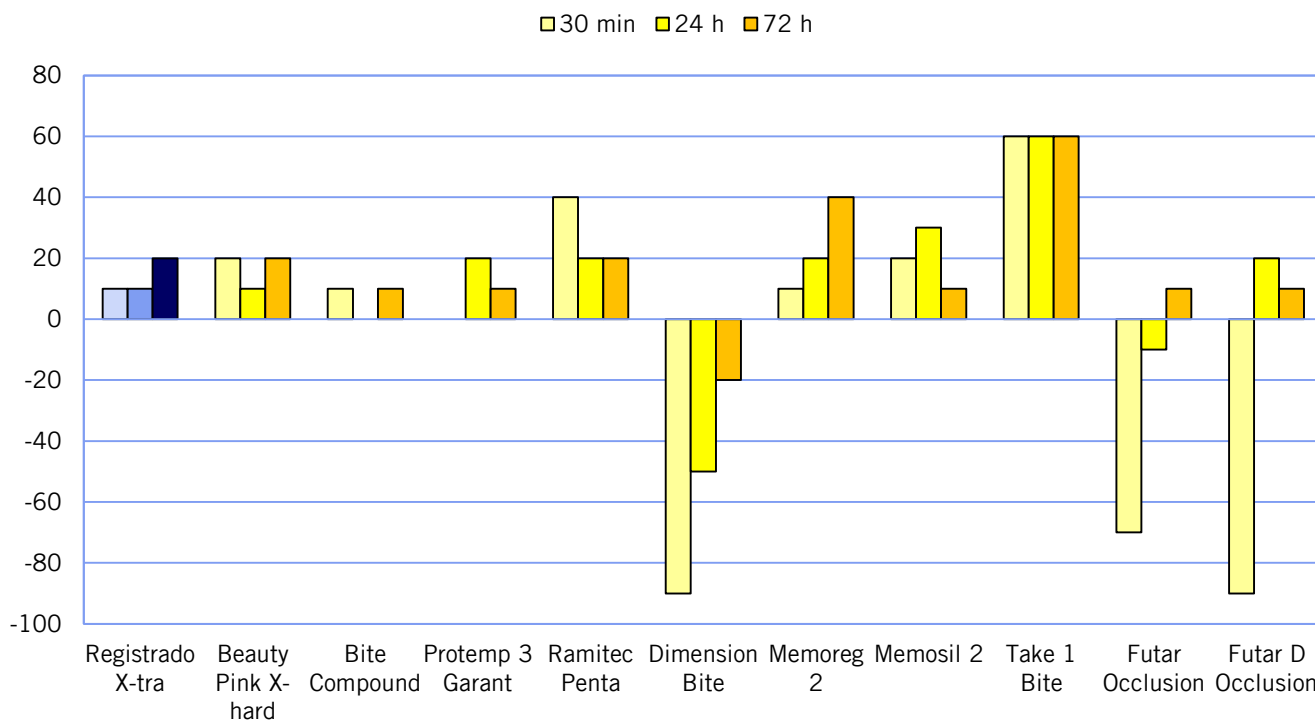


Figure 1: Vertical dislocation of the right condyle in µm (median from 10 measurements)

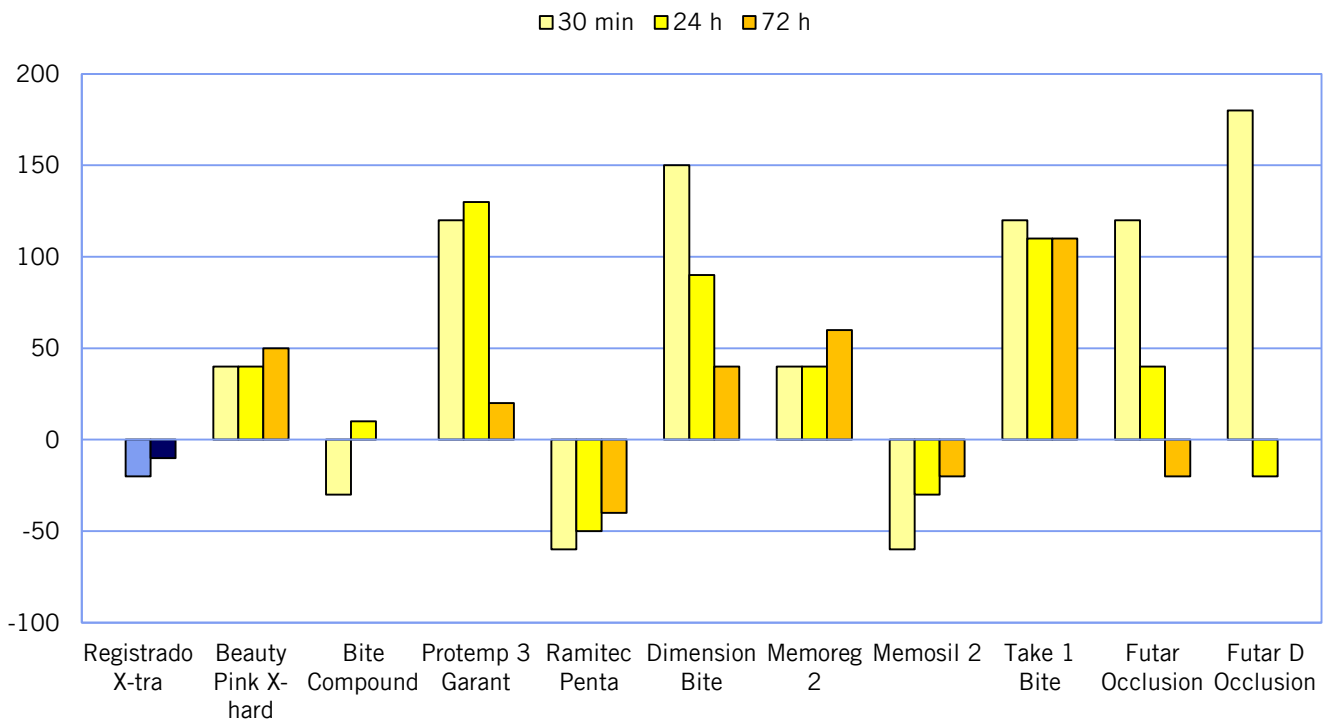


Figure 2: Vertical dislocation of the left condyle in µm (median from 10 measurements)

Material properties, such as insufficient Shore hardness, extensive dimensional changes or deformation behaviour under loading, can lead to cranial and caudal displacement and negatively influence the occlusion of prostheses. Registrado X-tra caused the lowest maximum dislocation over both condyles (Fig. 1 – 2) overall of all the tested materials. 20 µm could be registered as the highest value from both measurements. Other materials exhibited a maximum value of up to 180 µm. The high dimensional stability of Registrado X-tra is a positive contribution to the clinical success of prostheses.

Conclusion: Registrado X-tra shapes a solid foundation for high quality, indirect restorations with its high degree of impression accuracy and superior dimension stability.

[1] M. Kempf, P. Ottl, A. Piwowarczyk, H. C. Lauer, DGZPW Jahrestagung 2002, Dresden, Poster #31.