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The effect of incisal bite force on condylar seating

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ABSTRACT

The purpose of this study was to investigate the relationship between different incisal biting forces and condylar seating.

Bite force was measured with strain gauges at the incisors in 22 adult subjects. The subjects were positioned with mandibles in retruded centric and with an opening not exceeding the range of hinge axis movement. Condylar movement was measured using standard true hinge axis location procedures. Condylar position was measured with no force, then with bite forces of 4.5 kg, 7.5 kg and a comfortable maximum.

Biting force significantly affected condylar movement ($p < 0.001$). As incisal bite forces increased, so did the amount of condylar seating to an average of 0.49 mm anteriorly and 0.27 mm superiorly using maximum biting force.

Therefore, when taking a centric relation record, a technique involving an anterior stop and sufficient biting force should seat the condyles more fully.

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