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# The CR-CO discrepancy and its effect on cephalometric measurements

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**ABSTRACT**

The purpose of the present study was to compare cephalometric measurements derived from a centric occlusion (CO) tracing with those of a converted centric relation (CR) tracing. The sample consisted of 68 consecutively treated patients, with a CR-CO discrepancy of 2 mm or greater in either the horizontal and/or vertical planes, measured at the condyles from mounted models. Comparisons were also made within the sample between the 39 females and 29 males; and the 35 skeletal Class I and 33 Class II patients.

In analyzing the CR-CO discrepancy, the vertical component was greater than the horizontal in 96% of the sample. Every patient had a vertical component, although 10% had no horizontal component. Correlations between the horizontal discrepancy and the two tracings showed high values for approximately 50% of the measures, whereas little correlation was found with the vertical discrepancy.

Paired t tests used to compare the CO and CR cephalometric values demonstrated significant differences ($p<0.05$) for the majority of the values studied. However, there generally were no differences between the groups of males and females, or between the skeletal Class I and Class II individuals. The results of this study suggest that to make a correct orthodontic diagnosis the mandible should be placed in centric relation rather than in the more traditional centric occlusion.

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**KEY WORDS:** CR-CO discrepancy, Converted ceph, Centric relation.