

Mandibular Antegonial Notch Depth Distribution and its  
Relationship with Craniofacial Morphology in Different  
Skeletal Patterns

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# **Abstract**

This retrospective study was performed to assess the distribution of mandibular antegonial notch depth and its relationships with craniofacial morphology in different skeletal patterns, for the Iraqi adults (**18-25** years of age). The sample included **191** pretreatment digital lateral cephalometric radiographs (**93** males and **98** females) collected from the Orthodontic Department in the College of Dentistry, University of Baghdad. The sample was divided into three groups according to the skeletal classes (**75** Cl I, **78** Cl II, and **38** Cl III), then each group divided according to depth of mandibular antegonial notch into: shallow ( $< 1$ mm.), medium ( $\geq 1 - < 3$  mm.), and deep ( $\geq 3$  mm.) groups.

Sixteen angular and thirteen linear measurements were digitized and recorded using AutoCAD **2007** computer program, and then analyzed statistically by SPSS (version 11.00) program, and the following results were found:

Cl I had the highest percentage of medium antegonial notch (**61.3%**). Cl II had the highest percentage of deep

antegonial notch (**29.5%**), while Cl III had the highest percentage of shallow antegonial notch (**31.6%**).

Males had significantly deeper notch than females in Cl I and Cl II. Significant difference found between males skeletal Cl II and Cl III.

The following significant changes in the craniofacial measurements occurred in conjunction with the increase in antegonial notch depth:

The ramus notch depth increased in skeletal Cl I and Cl II.

Saddle and cranial base angles decreased in skeletal Cl II.

All facial heights increased in skeletal Cl II, while in Cl III the lower facial height increased and the jarabak ratio decreased.

Of the mandibular rotation angles only N-S-Gn angle increased in skeletal Cl I. In Cl II N-S-Gn, SN-MP, articular and lower gonial angles increased while the upper gonial angle decreased. In Cl III SN-MP, gonial and lower gonial angles increased.

The ramus height increased in skeletal Cl II.

The lower incisor to mandibular plane angle decreased in Cl II and Cl III.

In conclusion antegonial notch depth can give an idea about mandibular growth direction, because when it increases in depth it will be mostly associated with backward mandibular rotation especially in skeletal Cl II, while shallow notch or straight lower mandibular border usually associated with forward mandibular rotation, so it can be used as a diagnostic aid in the orthodontic treatment plan.