

[\[Print Version\]](#)

[\[PubMed Citation\]](#) [\[Related Articles in PubMed\]](#)

The Angle Orthodontist: Vol. 68, No. 5, pp. 467–470.

A genetic study of anteroposterior and vertical facial proportions using model-fitting

I. Savoye, DDS;^b R. Loos, Msc;^c C. Carels, DDS, PhD;^{a, d} C. Derom, DSC, PhD;^e R. Vlietinck, DDS, PhD^f

^aCarine Carels, PhD, Department of Orthodontics, School of Dentistry, Oral Pathology and Oral Surgery, Catholic University of Leuven, Kapucijnenvoer 7, B-3000 Leuven, Belgium, E-mail: Carine.Carels@med.kuleuven.ac.be

^bI. Savoye, School of Dentistry, Oral Pathology and Maxillofacial Surgery, Department of Orthodontics, Catholic University of Leuven, Leuven, Belgium.

^cR. Loos, Center for Human Genetics, Catholic University of Leuven, Leuven, Belgium.

^dC. Carels, School of Dentistry, Oral Pathology and Maxillofacial Surgery, Department of Orthodontics, Catholic University of Leuven, Leuven, Belgium.

^eC. Derom, Center for Human Genetics, Catholic University of Leuven, Leuven, Belgium.

^fR. Vlietinck, Center for Human Genetics, Catholic University of Leuven, Leuven, Belgium.

ABSTRACT

Genetic model-fitting was used to determine the heritability of anteroposterior and vertical facial proportions in twins. Lateral headplates of 33 monozygotic and 46 dizygotic twins, none of whom had undergone orthodontic treatment, were used. Five proportions, based on four vertical and five horizontal measurements, were assessed: lower facial height, anterior-to posterior-facial height, total facial height to face depth, sella-A-point to sella-B-point, and sella-upper incisal edge to sella-lower incisal edge. Reproducibility was high for all variables. Model-fitting indicated that all the facial proportions were controlled by additive genes and the specific environment. The genetic component was 71% for upper- to lower-facial height, 66% for anterior- to posterior-facial height, 62% for total facial height, and 66% for sella-A-point to sella-B-point and sella-upper incisal edge to sella-lower incisal edge.

KEY WORDS: Facial proportion, Genetics, Twins.

Submitted: November 1997

Accepted: January 1998.

