

5th World Congress on
DENTISTRY AND MAXILLOFACIAL SURGERY
September 18-19, 2023 | Rome, Italy

Received Date: 06-24-2023 | Accepted Date: 06-27-2023 | Published Date: 10-20-2023

The influence of genetics on Orthodontic malocclusion

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Malocclusion is a common disarrangement of teeth or jaws that affects populations worldwide, resulting in impaired oral function, increased susceptibility to dental trauma, periodontal disease and reduced dentofacial esthetics (1, 2).

Malocclusion often develops as a complex trait condition that is influenced by combinations of transcription and growth factors acting on bone, teeth, and skeletal muscles (3). Craniofacial bone growth and development have been reported to be affected by many signaling pathways, including transforming growth factor β (TGF- β), bone morphogenetic protein (BMP), Hedgehog, and fibroblast growth factor (FGF) pathways (4, 5).

Skeletal malocclusion usually has a genetic etiology, with familial aggregation and hereditary tendency (6). Identification of these factors and mechanisms would help diagnosis, prediction, and treatment for skeletal variations (7).

Recent Publications

1. Claudino D, Traebert J. Malocclusion, dental aesthetic self-perception and quality of life in an 18 to 21-year-old population: a cross-section study. *BMC Oral Health* 2013; 13:3.
2. Emrich RE, Brodie AG, Blayney JR. Prevalence of Class 1, Class 2 and Class 3 malocclusions (Angle) in an urban population. An epidemiological study. *J Dent Res* 1965; 44:947-53.
3. Sciote JJ, Raoul G, Ferri J, Close J, Horton MJ, Rowleson A. Masseter function and skeletal malocclusion. *Rev Stomatol Chir Maxillofac* 2013;114:79-85.

Biography

Damla Cardak graduated from Vefa High School in 2008. She completed her undergraduate education at Istanbul University Faculty of Dentistry in 2015. Later, she increased her clinical experience in general dentistry. She started associate degree education in Anadolu University Open Education Faculty Management of Healthcare Organizations and finished in 2022. In 2021, she started her doctorate education at Izmir Katip Celebi University, Institute of Health Sciences, Department of Orthodontics.

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