



NORMAL OCCLUSION AND MALOCCLUSION RELATED TEMPOROMANDIBULAR JOINT ELEMENTS



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What is Occlusion from an Orthodontist's Point of View?

From our perspective, occlusion is the maximum intercuspitation (centric occlusion) of the lower and upper teeth.



What is Malocclusion?

When one or multiple parts of the stomatognathic system do not work properly, the harmony in the occlusion is lost and this is called as MALOCCLUSION.



What is Malocclusion?

Common INDICATORS of a misaligned bite include crowded teeth, an overbite or open bite, or increase overjet and many more dental discrepancies.



Dental Crowding



Increase overjet
Protruded maxillary incisors



Openbite



Here are some examples of orthodontic problems that we are dealing with;



Dental
Crowding



Openbite



Protruded
Teeth



Deepbite



Protruded
Mandible



Maxillary
Constriction

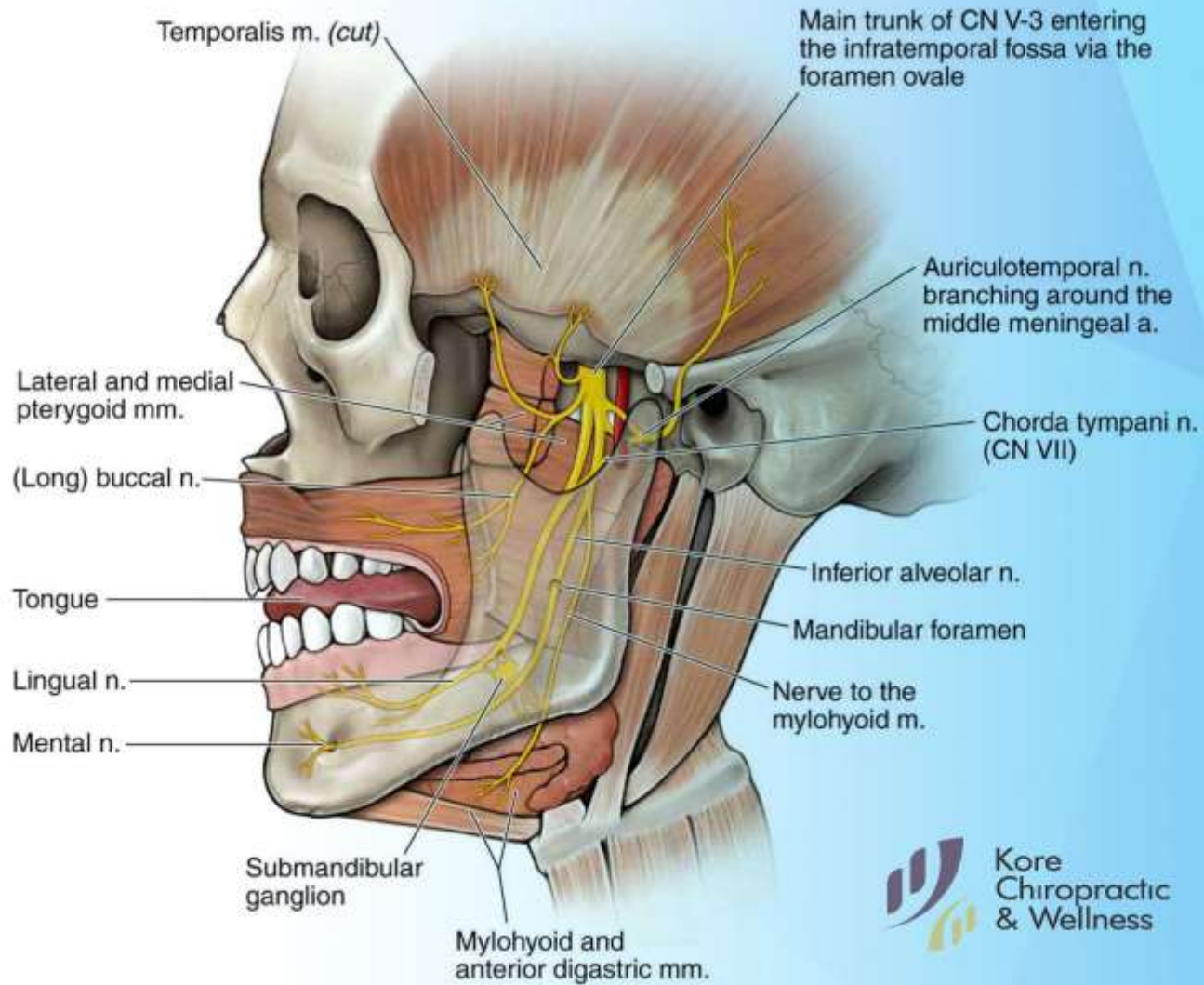


Stomatognathic System

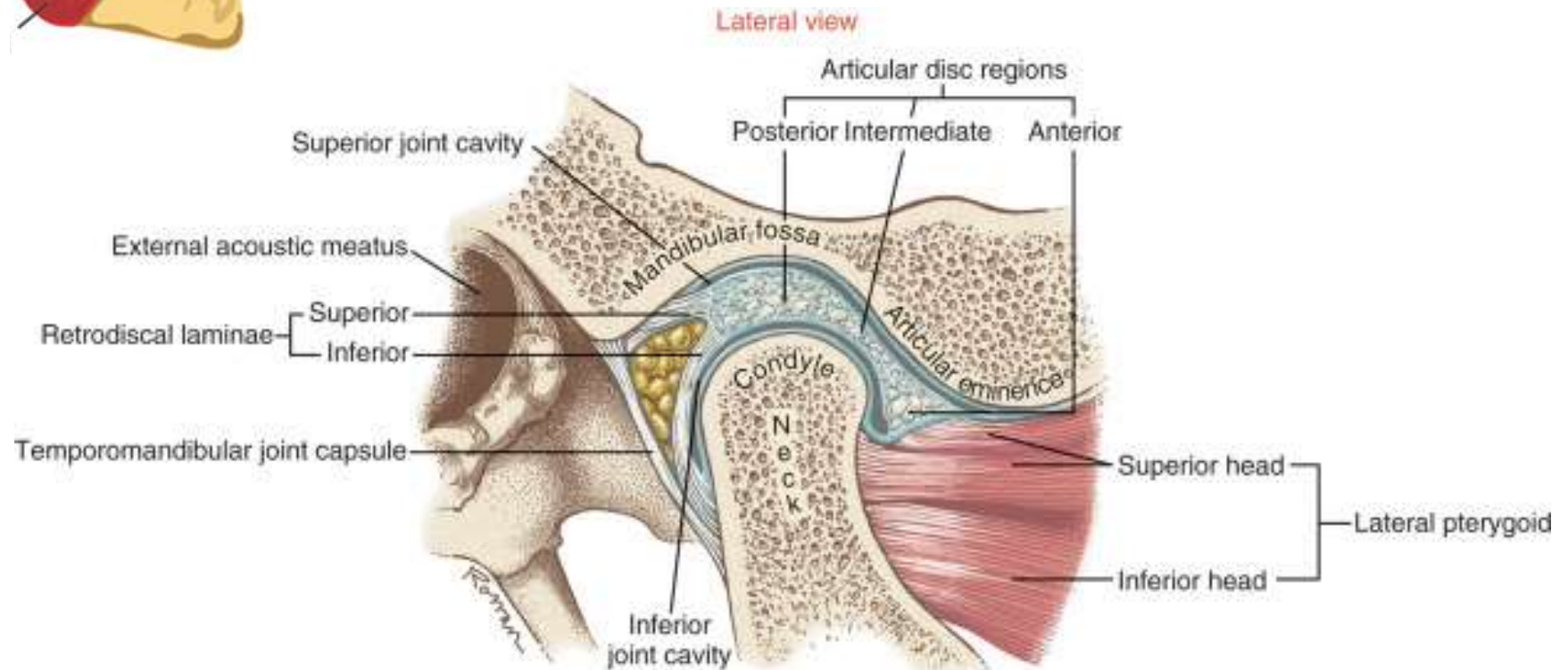
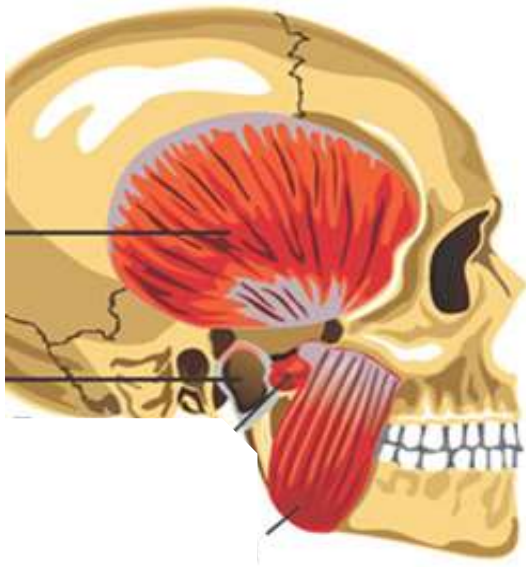
The stomatognathic system consists of the temporomandibular joints, bones forming the oral cavity, soft tissue (gingiva, mucosa, tongue, cheeks, lips, and glands), muscles involved in chewing and swallowing, and teeth.



Stomatognathic System



Temporomandibular Joint Elements



Temporomandibular Joint (TMJ) Anatomy and Disc Displacement



www.AlilaMedicalMedia.com

<https://www.youtube.com/watch?v=mB468Jh9aAY>



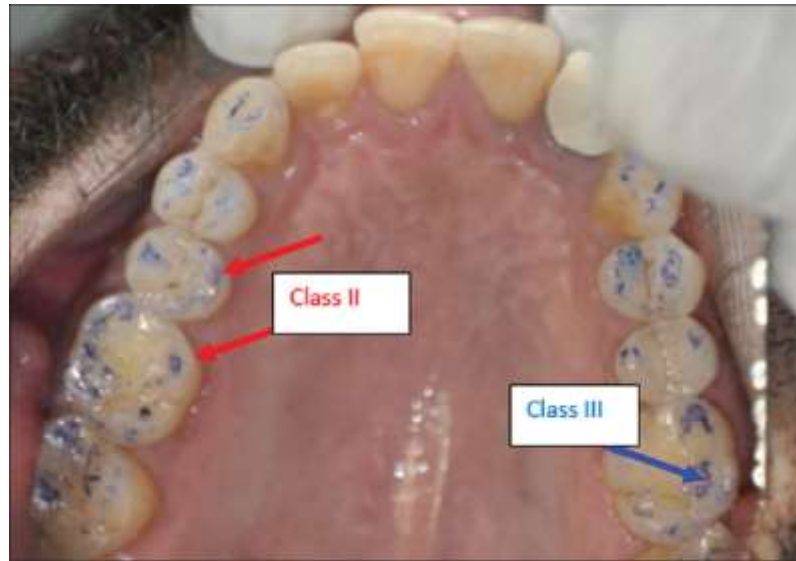
Orthodontists can rehabilitate these malocclusions with the help of different treatment methods and provide a balanced chewing function and smile aesthetics.



I wonder if we are doing it right when we evaluate the temporomandibular joint in terms of health?



The etiology of most TMDs is not known. Two hypotheses, regarding **occlusal interferences** and psychological stress, have been more commonly discussed in the scientific literature in this respect.



*Honarmand, M, Javadzadeh A, Asl HT, Madani AS. Investigation of the frequency of psychiatric disorders in patients with pain syndrome due to dysfunction of the masticatory muscles. J Mashhad Sch Dent 2009;33:77-82.

*Okeson JP. Management of Temporomandibular Disorder and Occlusion. 6th ed. St. Louis: Mosby Co.; 2008. p. 2-24, 130-63, 334-75.

*Ong KS, Keng SB. The biological, social, and psychological relationship between depression and chronic pain. Cranio 2003;21:286-94.



Class 2

Class 2 Division 1

Class 2 Division 2

Class 3



Deepbite



*Honarmand, M, Javadzadeh A, Asl HT, Madani AS. Investigation of the frequency of psychiatric disorders in patients with pain syndrome due to dysfunction of the masticatory muscles. J Mashhad Sch Dent 2009;33:77-82.

*Okeson JP. Management of Temporomandibular Disorder and Occlusion. 6th ed. St. Louis: Mosby Co.; 2008. p. 2-24, 130-63, 334-75.

*Ong KS, Keng SB. The biological, social, and psychological relationship between depression and chronic pain. Cranio 2003;21:286-94.



Openbite



Crossbite



Laterocclusion



Class II malocclusion, Division 1:

A Class II malocclusion with proclined maxillary incisors, resulting in an increased overjet.



Angle Class II



TMJ



Class II malocclusion, Division 2:

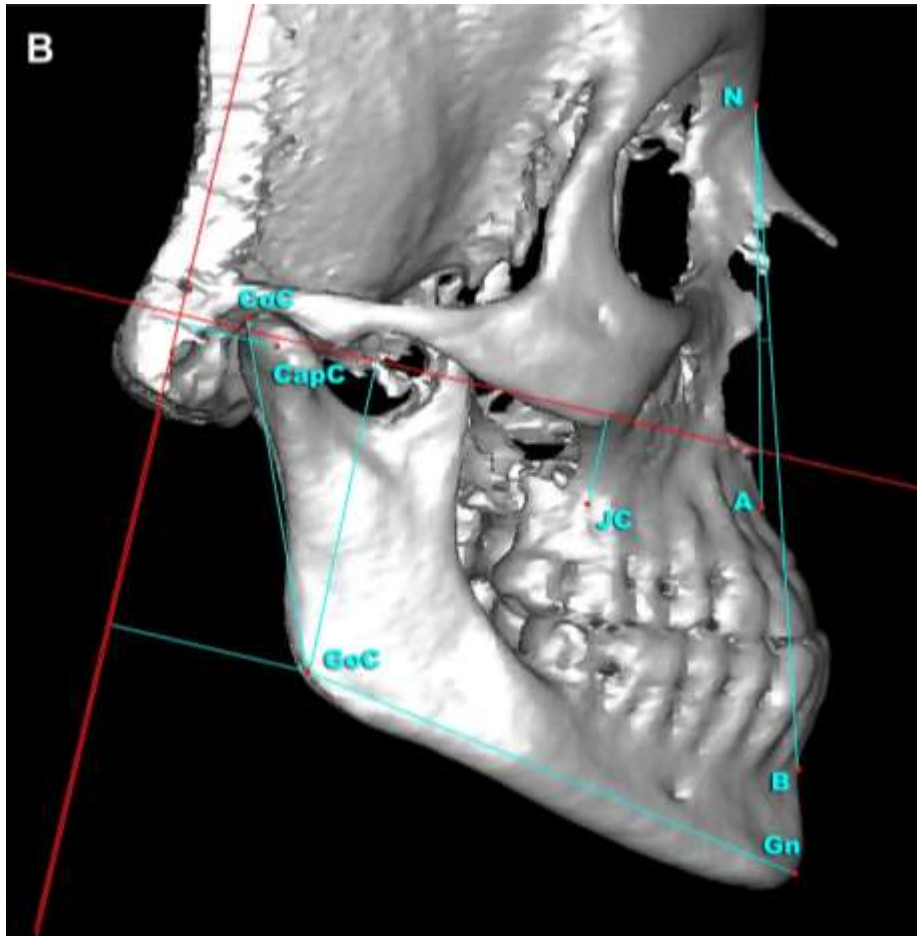
A Class II malocclusion typically with the maxillary central incisors tipped palatally.



Angle Class II

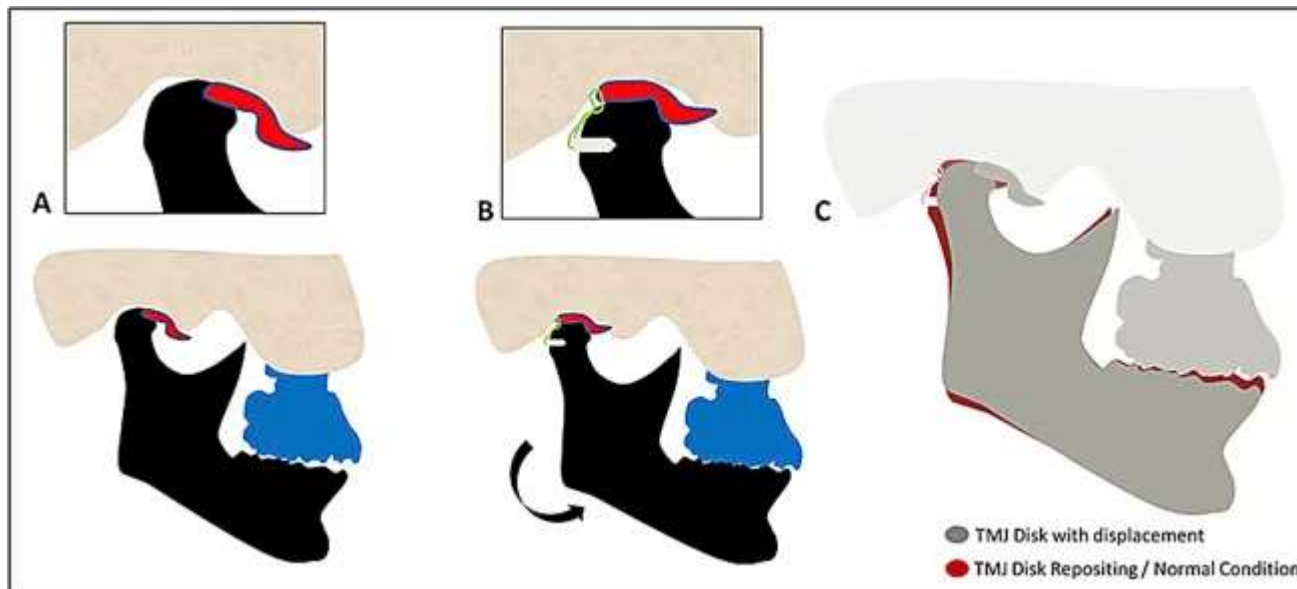


Angle Class III



- A patient had an anterior open-bite malocclusion and bilateral TMJ osteoarthritis.
- She was treated with orthodontics and articular disc repositioning surgery.

OPENBITE

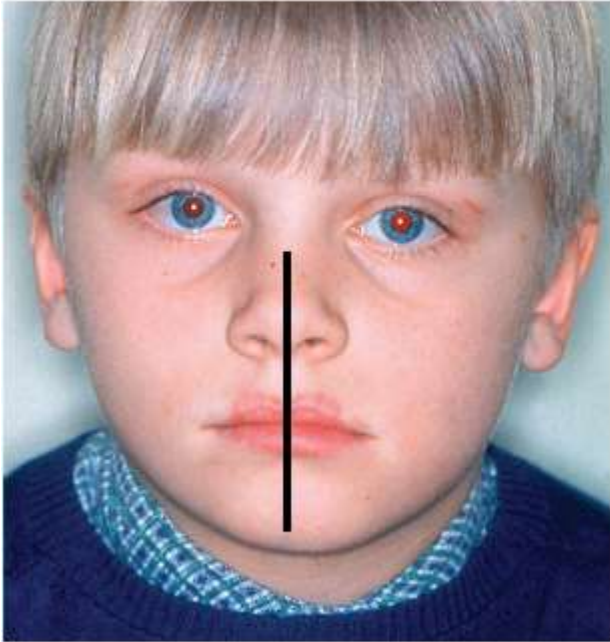


LATEROOCLUSION

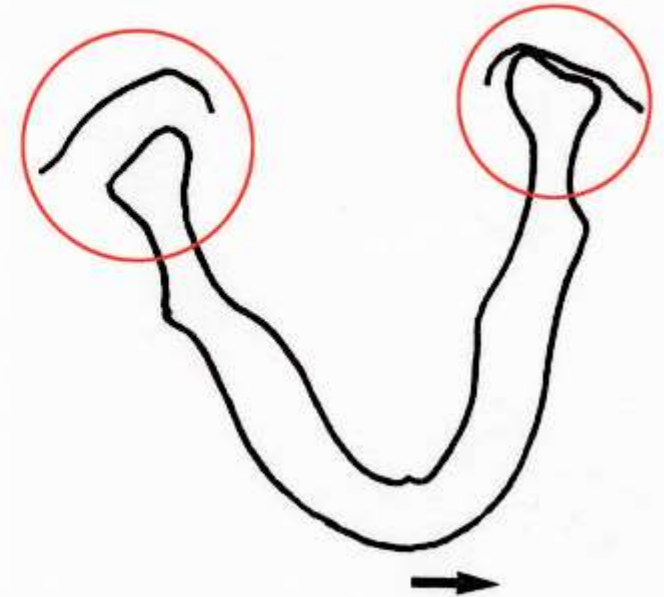
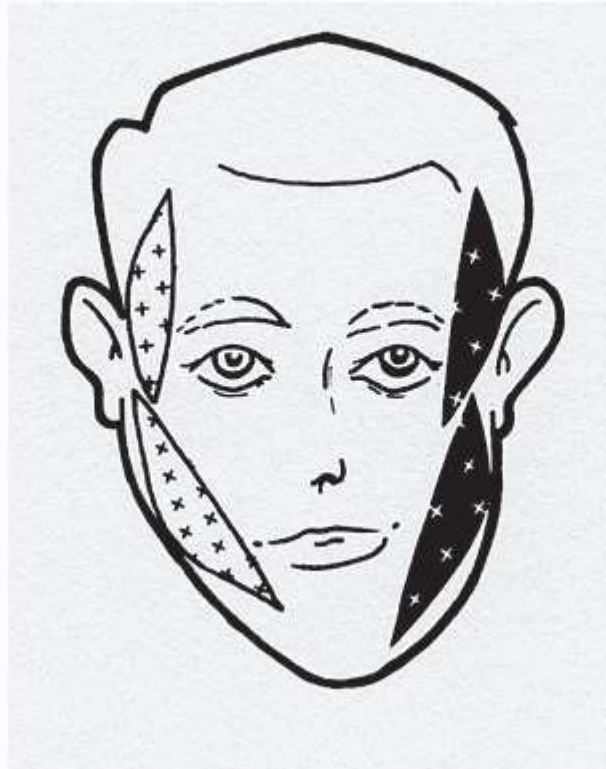


LATEROOCLUSION

a



b



The 9- year- old boy showing facial asymmetry (a) and asymmetric activity of the temporal masseter muscles at the mandibular sliding to intercuspal relationship (b). Drawing illustrating the changed condylar position in relation to the temporal bony component (c).



LATEROOCLUSION ➔ LATEROGNATHIA



A functional crossbite transformed to a skeletal malocclusion in a 25-year-old woman. Facial asymmetry (a), midline deviation (b)

Such type of malocclusions need orthodontic treatment to rehabilitate the asymmetric muscular activity between the crossbite and non-crossbite sides and the changed condyle/temporal relationship caused by mandibular deviation.



REMOVING (Eliminating) PREMATURE CONTACTS

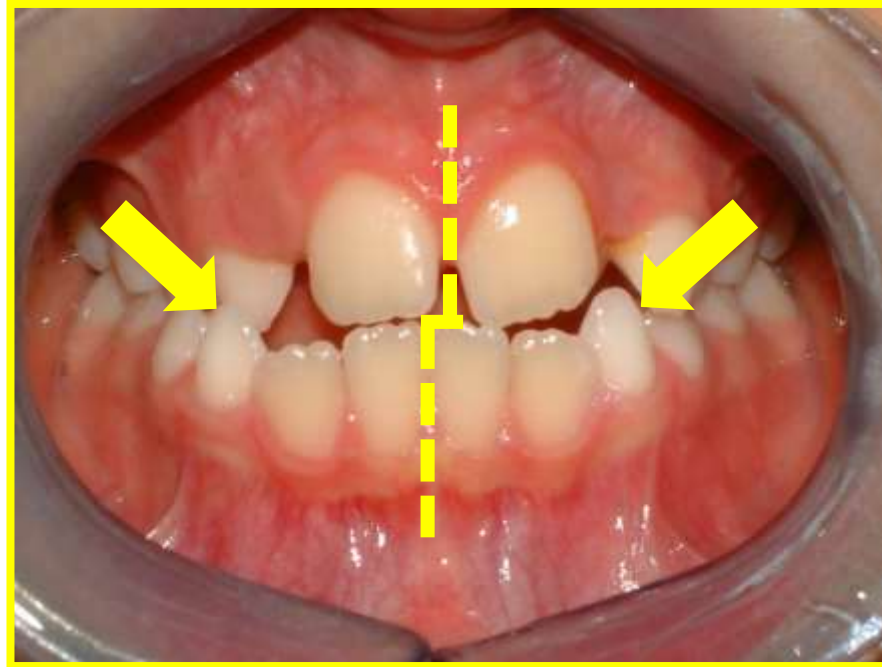


Premature contacts in mixed dentition can cause lateral deviation of the mandible, shift to class 2 or class 3 dental malocclusion!!!

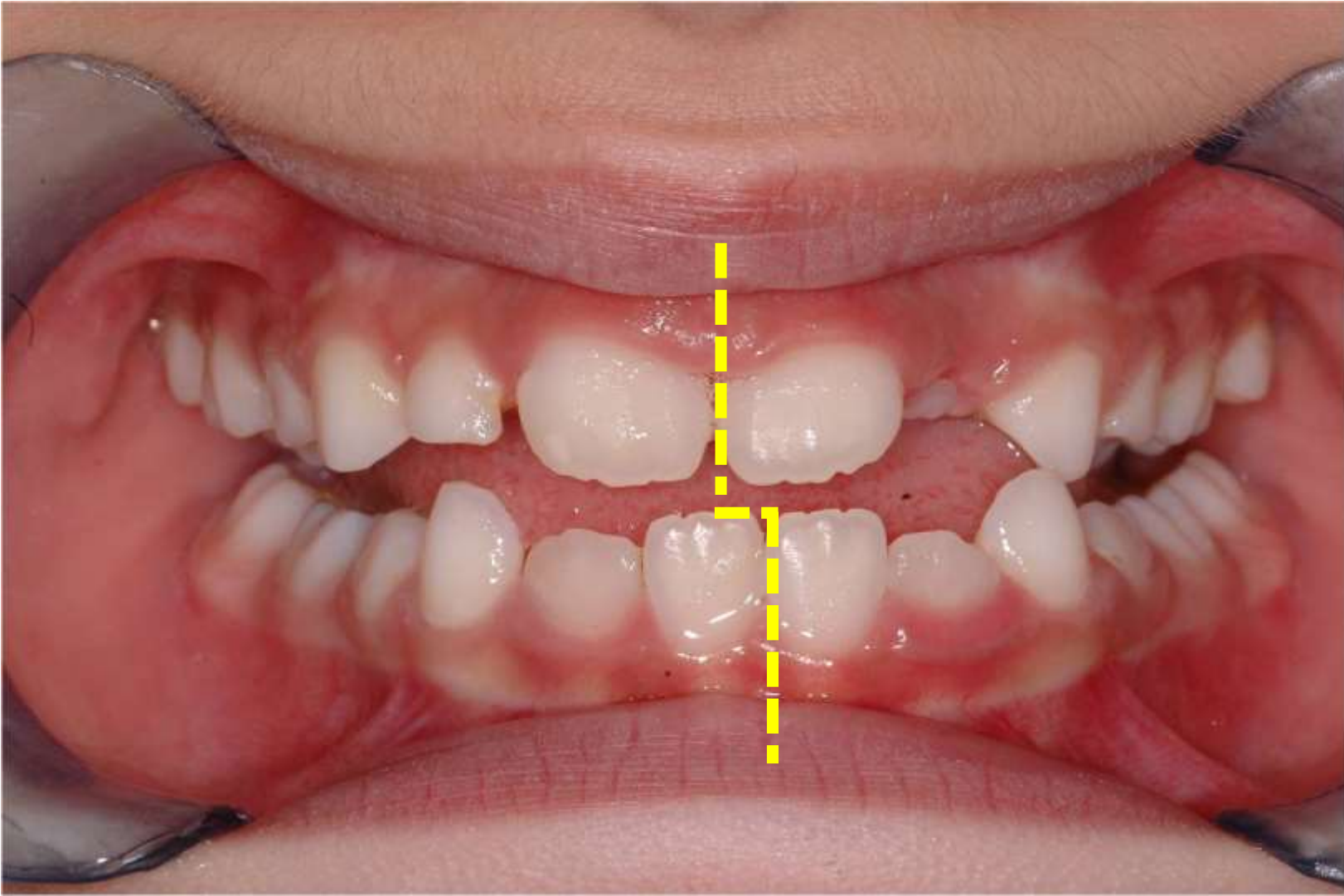
Prematür kontaktların ortadan ka



Grinding should be applied from the cusps of the deciduous canines!



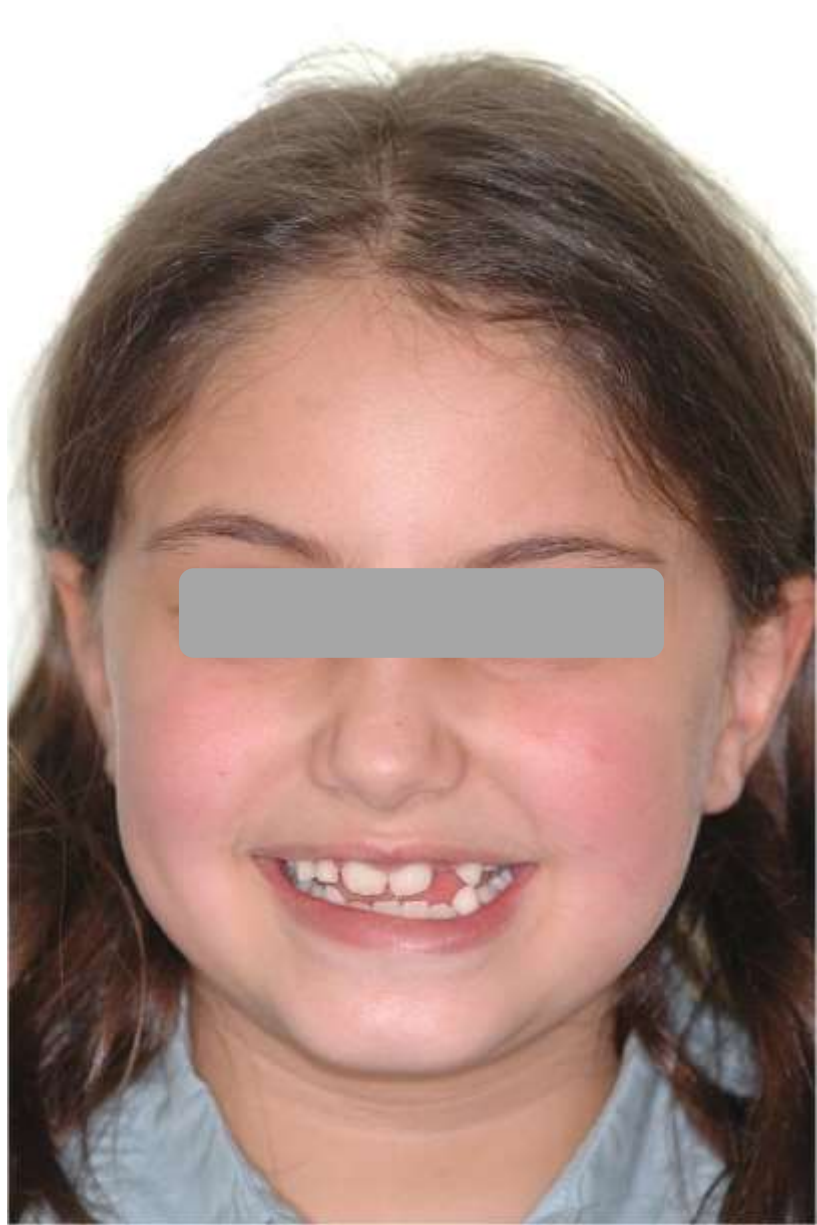












CROSSBITE



In general, it appears that the correlation of malocclusion with Temporomandibular Joint Disorders (TMD) has not been clearly demonstrated.

Class II malocclusion was slightly more prevalent among TMD patients, which needs to be taken into account by patients and orthodontists.



Sadrabad MJ, Ameli N, Kianpour M, Ghorbani R, Sohanian S. The relationship of temporomandibular disorders with Class II malocclusion as a risk factor. APOS Trends Orthod 2021;11(1):41-7.





Have a healthy and pleasant day 😊

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