

Aetiology of malocclusion skeletal factors

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References

- Chapter 5 and 6 from (Contemporary orthodontics) by W. Proffit
- Chapter 2 and 5 from (An Introduction to Orthodontics) by Laura Mitchell

Lecture outline

- Aetiology (Definition, importance, classifications)
- Skeletal factors
 1. A-P
 2. Vertical (AOB)
 3. Transverse

Aetiology

- Aetiology: is the study of [causation](#), or origination. The word is derived from the [Greek *aitiologia*](#), "giving a reason for"
- The word is most commonly used in medical and philosophical theories, where it is used to refer to the study of why things occur.

Why study aetiology?

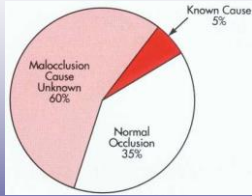
- If causes behind the malocclusion were fully understood, the process of diagnosis and treatment planning would be more successful.
- In addition, prevention, prediction and management of malocclusions would be more reliable.

Malocclusion and dentofacial deformity

- Malocclusion is a developmental condition.
- Malocclusion and dentofacial deformity are caused not by pathologic process, but by moderate distortions of normal development.

Occasionally → single specific cause.
e.g. genetic syndromes, fracture of the jaw

More often → complex interaction among multiple factors that influence growth and development.



Classification of the aetiology of malocclusion

- White and Gardiner's classification
- Salzmann's classification
- Moyer's classification
- Graber's classification
- Proffit classification

Classification of the aetiology of malocclusion

- White and Gardiner's classification

Skeletal and dental
Pre-eruptive and post-eruptive causes

Classification of the aetiology of malocclusion

- White and Gardiner's classification.
- Salzmann's classification.

Malocclusions manifest in three stages:

1. The genotypic
2. The fetal environment.
3. The postnatal environment.

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Aetiology sites:

- Craniofacial skeleton
- Dentition
- Orofacial musculature
- Other soft tissues

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Aetiological factors:

- General
- local

Aetiology of Malocclusion

GENERAL FACTORS	LOCAL FACTORS
<ul style="list-style-type: none"> • They affect all or greater part of the occlusion. They include; (A) Abnormalities in skeletal relationship (B) Soft tissue factors (C) Disproportion between tooth size and arch length 	<ul style="list-style-type: none"> • Congenital absence of teeth • Anomalies of tooth size • Anomalies of tooth shape • Abnormal labial frenum • <u>Premature loss of deciduous teeth</u> • Supernumerary teeth • Abnormal resorption of deciduous teeth • Delayed eruption of permanent teeth • Abnormal eruptive path • Ankylosis of deciduous teeth • Proximal caries • Improperly contoured restorations

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Etiologic Factors for malocclusion are: (Proffit)

1. Specific causes of malocclusion.
2. Hereditary influences.
3. Environmental influences.

Aetiology of malocclusion

- Skeletal
- Soft tissues
- Dental
- Other specific factors



Inherited versus environmental factors → genetics influence the skeletal pattern, environment influences tooth position, but both act synergistically to create malocclusion.