



PEDIATRIC DENTISTRY DISCIPLINE
UMF „VICTOR BABES” TIMISOARA

PRACTICAL CLASS 5.1

COMPLEMENTARY EXAMINATIONS IN PAEDIATRIC DENTISTRY

EXAMINATION OF THE STUDY MODEL - PART I -



Examination of the study model:

- **Monomaxillary analysis**

- dental arch form
 - symmetry
 - palate depth
 - dental formula
 - tooth morphology
 - position anomalies
- (of a single tooth or of a dental group)

- **Occlusion analysis**

- sagittal plane
- transversal plane
- vertical plane



Dental arch form

- **NORMAL:**

- semicircle (primary arches)
- parable (maxilla)
- ellipse (mandible)

- **PATHOLOGICAL:**

- narrow (crowding of the incisors)
- interrupted (by canine ectopy)
- asymmetric
- other forms: M, V, Ω , trapeze



Dental formula:

- FDI TOOTH NOTATION of primary teeth

5.5	5.4	5.3	5.2	5.1	6.1	6.2	6.3	6.4	6.5
8.5	8.4	8.3	8.2	8.1	7.1	7.2	7.3	7.4	7.5

- FDI TOOTH NOTATION of permanent teeth

1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8



OCCLUSION ANALYSIS: SAGITTAL PLANE

- In the anterior region:
 - NORMAL:
 - psalidodontal occlusion** ($OJ = 0-2 \text{ mm}$)
 - edge-to-edge occlusion**
 - PATHOLOGICAL:
 - anterior crossbite** of 1 or more teeth ($OJ = 0 \text{ or negative}$)
- In the lateral region:
 - NORMAL: **neutral canine and molar relationship** (*Angle class I*)
 - PATHOLOGICAL: **mesial / distal canine and molar relationship**



OCCLUSION ANALYSIS: TRANSVERSAL PLANE

- In the anterior region:
 - NORMAL: the upper and lower inter-incisive lines coincide
 - PATHOLOGICAL: deviation to left/right with ...mm
- In the lateral region:
 - NORMAL: the superior dental arch circumscribes the inferior arch with 1 cusp
 - PATHOLOGICAL:
 - crossbite** (the inferior dental arch circumscribes the superior arch with 1 cusp)
 - scissor bite** (one dental arch circumscribes the other arch with 2 cusps)



OCCLUSION ANALYSIS: VERTICAL PLANE

- In the anterior region:

- NORMAL:

OB=1/2(primary dentition), **OB=1/3**(mixed/permanent dentition)

- PATHOLOGICAL:

deep bite

open bite

- In the lateral region:

- NORMAL: every tooth makes contact with 2 antagonists

- PATHOLOGICAL: **supra-/infra-occlusion**

exception:
inferior central incisors



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PRACTICAL CLASS 5.2

COMPLEMENTARY EXAMINATIONS IN PAEDIATRIC DENTISTRY

EXAMINATION OF THE STUDY MODEL - PART II -



ARCH DEVELOPMENT INDEXES

- SPACE ANALYSYS IN TRANSVERSAL PLANE:

The Pont Index

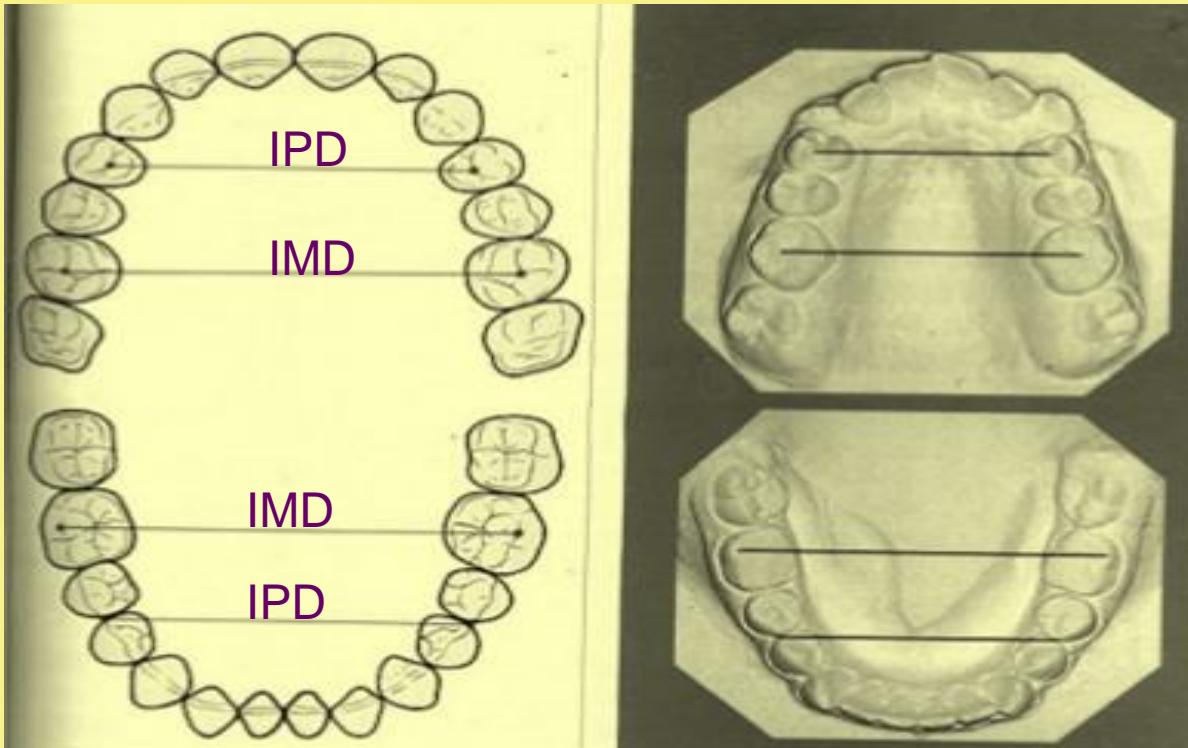
- measures the width of the dental arches in the molar and premolar regions and assesses the transversal development of the dental arches



THE PONT INDEX

Pont Index = measured value – calculated value

Measured value:



<https://www.slideshare.net/indiandentalacademy/model-analysis>

Calculated value

$$IPD = (IS \times 100) / 80$$

$$IMD = (IS \times 100) / 64$$

IPD = Inter-Premolar Diameter

IMD = Inter-Molar Diameter

IS = sum of the four upper permanent incisors
(mesio-distal diameter measured on the buccal surface)



THE PONT INDEX

Pont Index = measured value – calculated value

INTERPRETATION:

- **NORMAL:** if the difference is $0 \pm 2\text{mm}$
- **PATHOLOGICAL:** if the difference is positive, greater than $+2\text{mm}$ → wide arch
if the difference is negative, lower than -2mm → narrow arch



ARCH DEVELOPMENT INDEXES

- ANALYSIS OF THE ANTERIOR ARCH LENGTH:

The Korkhaus Index

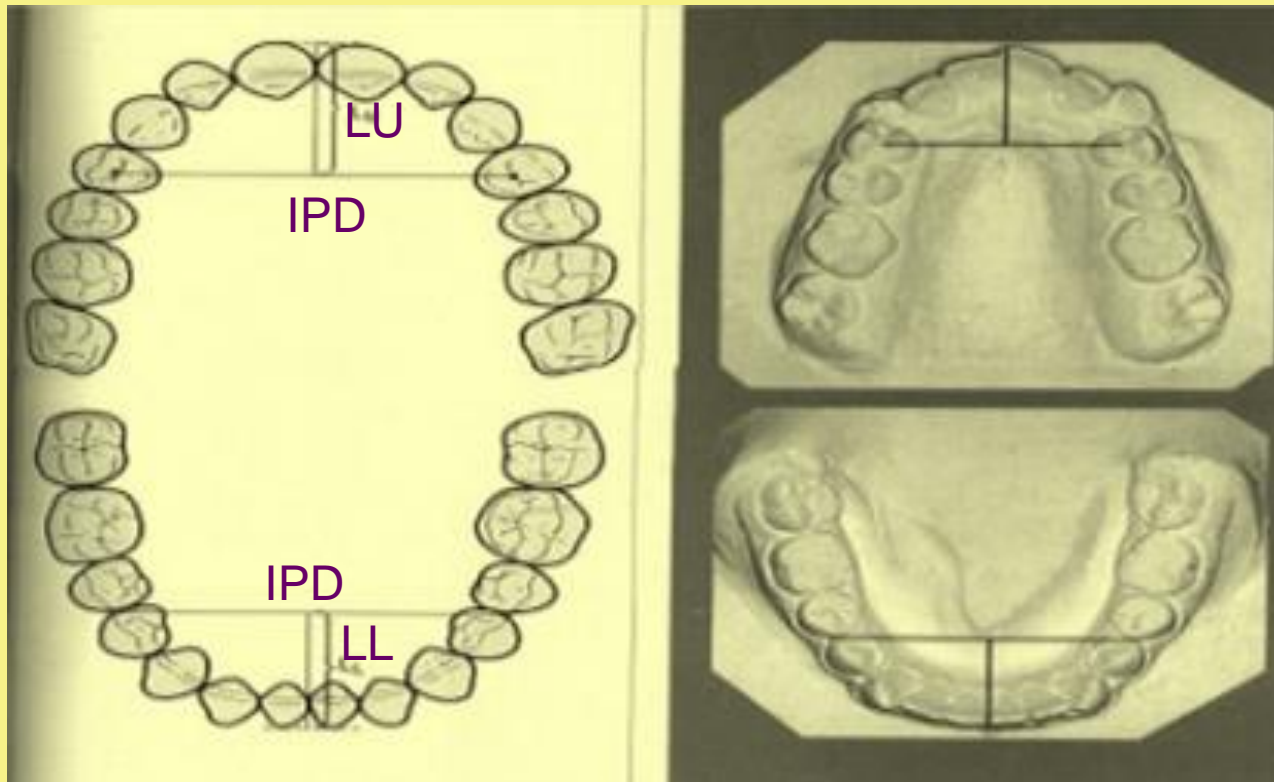
- shows the incisor's position/malposition in antero-posterior direction: PROCLINED / RETROCLINED



THE KORKHAUS INDEX

Korkhaus Index = measured value – calculated value

Measured value:



<https://www.slideshare.net/indiandentalacademy/model-analysis>

Calculated value

$$LU = 1/2 IPD$$

$$LL = 1/2 IPD - 2mm$$

LU= Length of Upper arch

LL= Length of Lower arch

IPD = Inter-Premolar Diameter



THE KORKHAUS INDEX

Korkhaus Index = measured value – calculated value

INTERPRETATION:

- NORMAL: if the difference is $0 \pm 2\text{mm}$
- PATHOLOGICAL: if the difference is positive, greater than $+2\text{mm}$ → **proclined**
if the difference is negative, lower than -2mm → **retroclined**
incisors



Bibliography:

- **Course notes**
- *Elisabeta Bratu, Florica Glăvan (coord.) – **PRACTICA PEDODONTICĂ**, Ed. Orizonturi Universitare, Timișoara, 2005 – chapter 8*