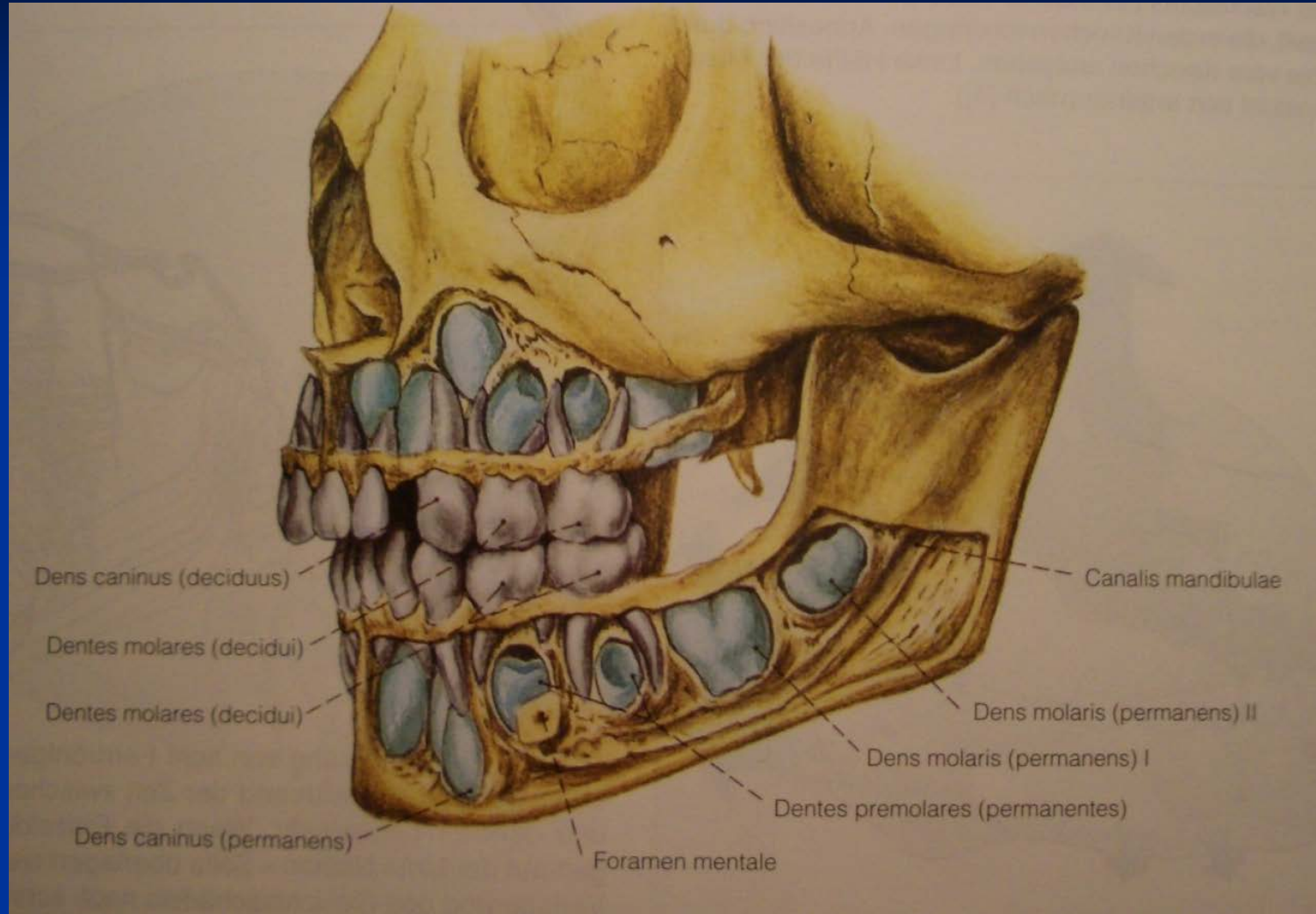


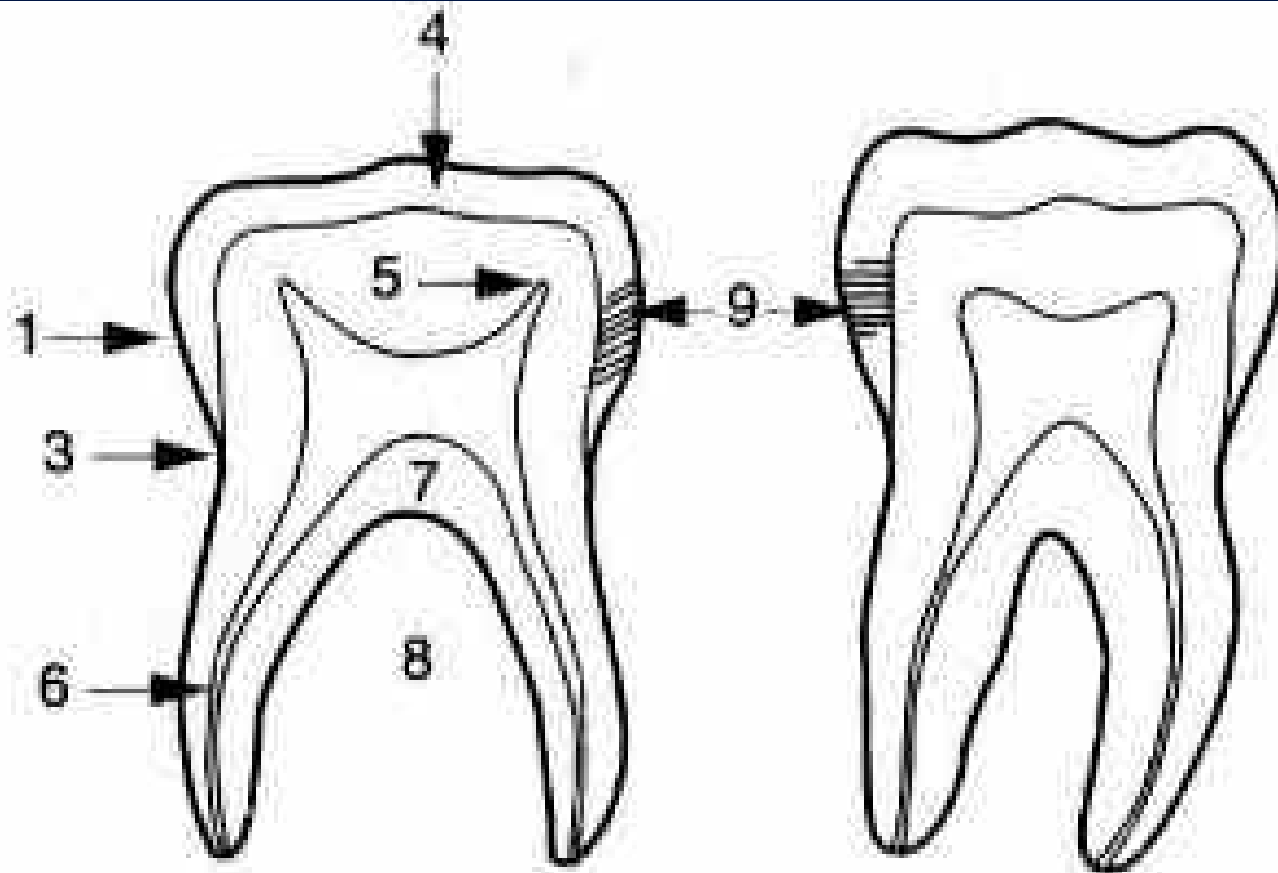
Zahn- und Pulpaanatomie

Dr. Zsuzsanna Tóth Ph.D.

Semmelweis University

Klinik für Zahnerhaltung

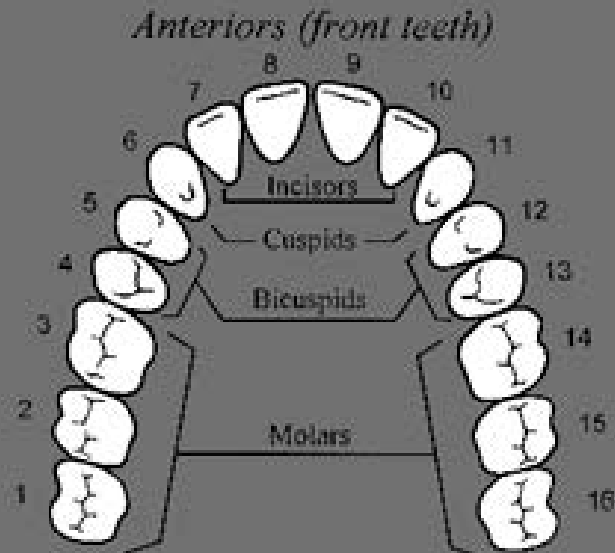




Milchzahn

Bleibender Zahn

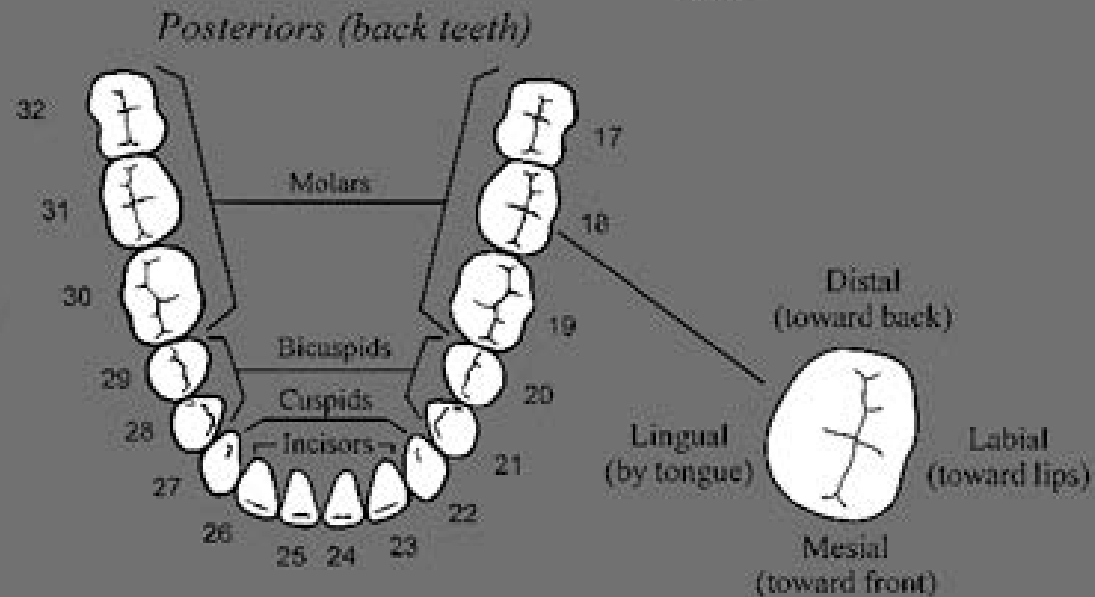
Uppers
(maxillary)



Right

Left

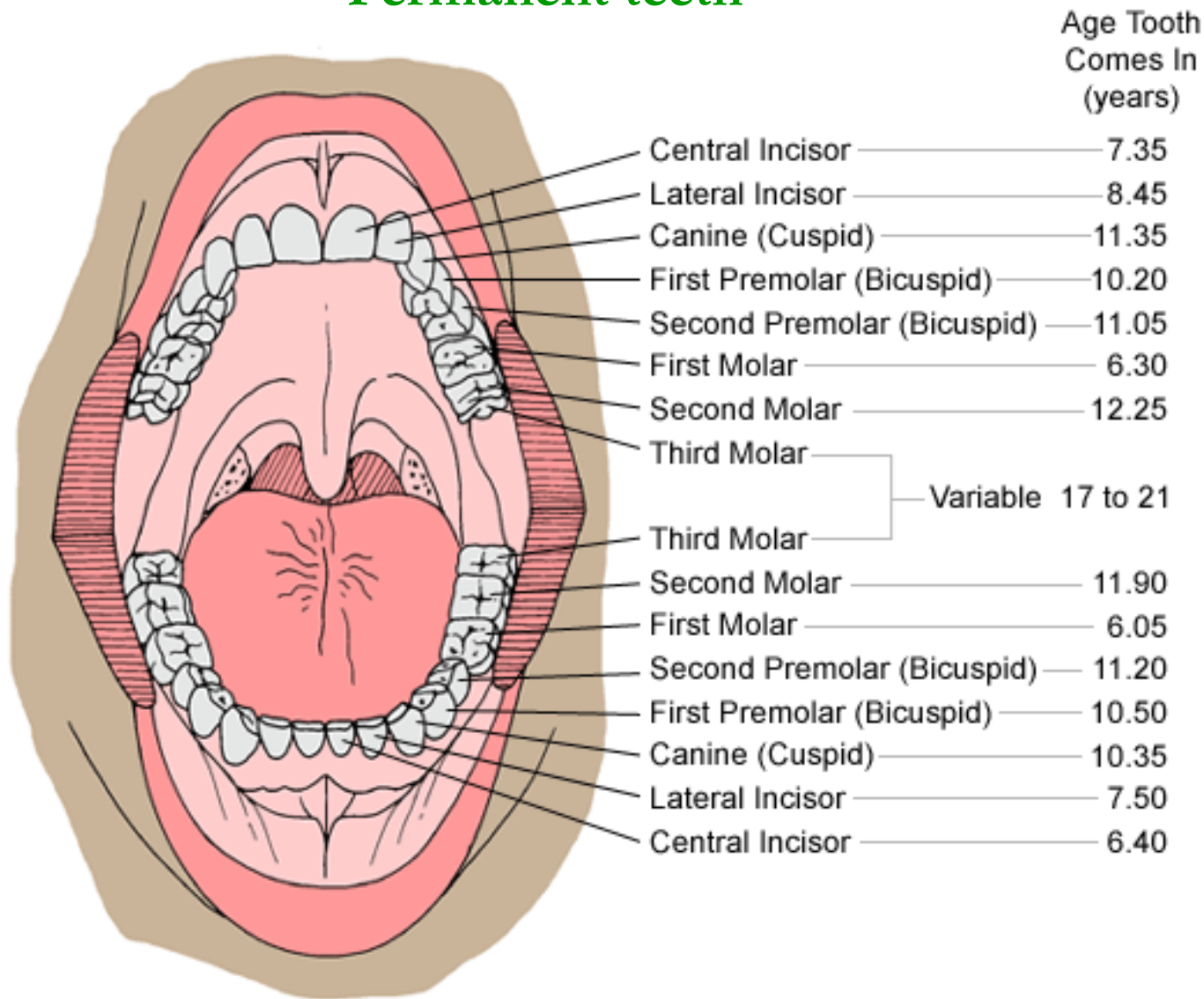
Lowers
(mandibular)

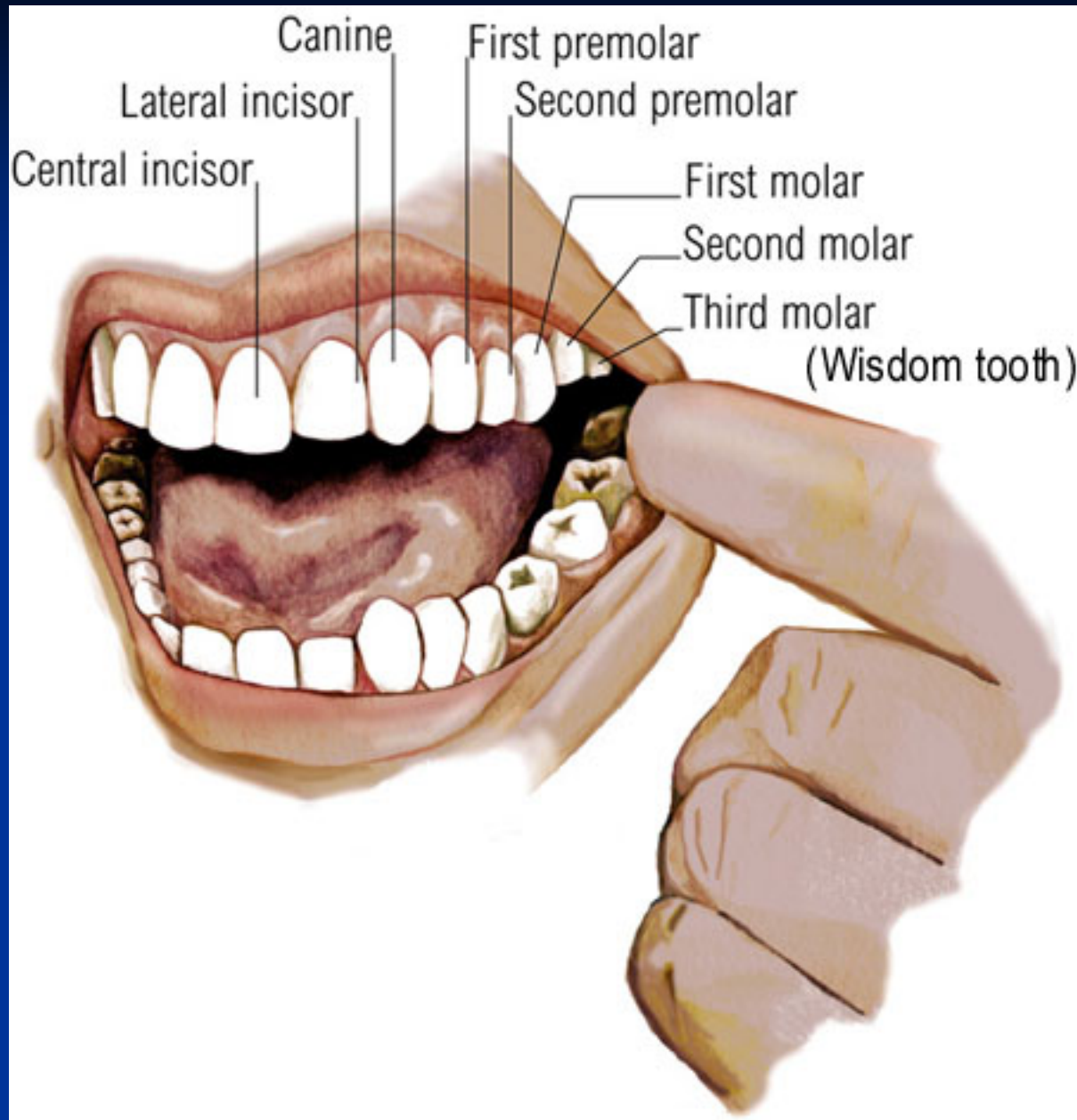


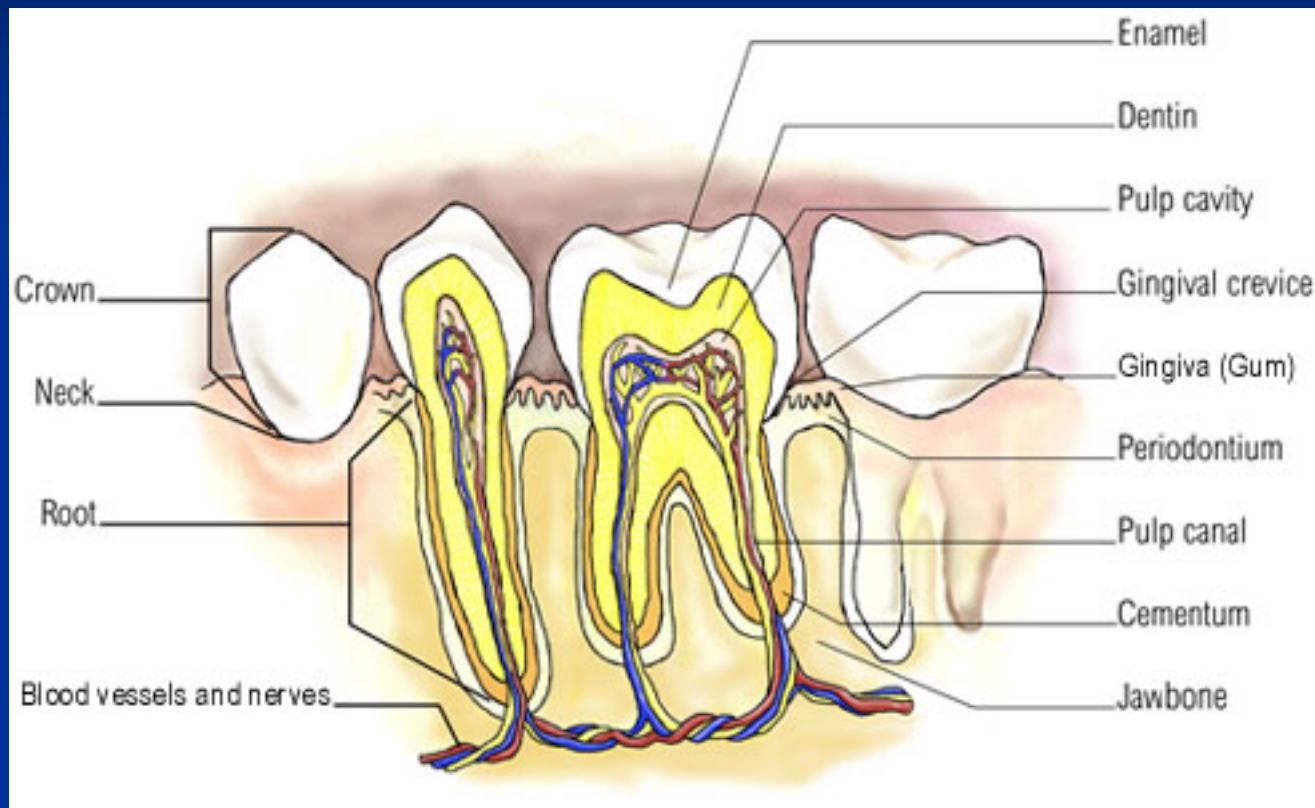
Deciduous teeth

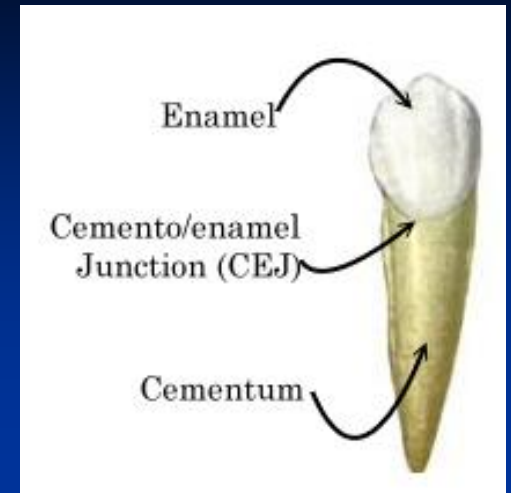
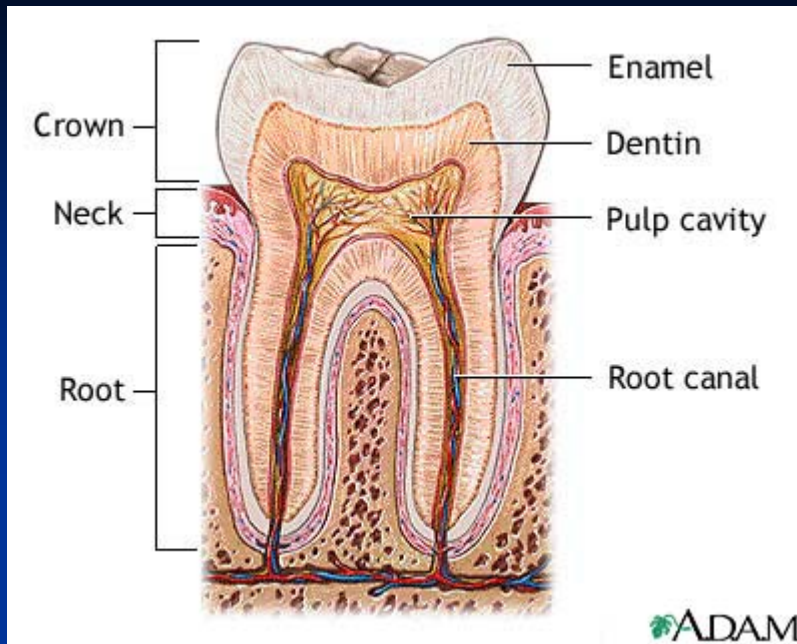
	Age Tooth Comes In (months)	Age Tooth Is Lost (years)
Upper Teeth		
Central Incisor	9.6	7.0
Lateral Incisor	12.4	8.0
Canine (Cuspid)	18.3	11.0
First Molar	15.7	10.0
Second Molar	26.2	10.5
Lower Teeth		
Second Molar	26.0	11.0
First Molar	15.1	10.0
Canine (Cuspid)	18.2	9.5
Lateral Incisor	11.5	7.0
Central Incisor	7.8	6.0

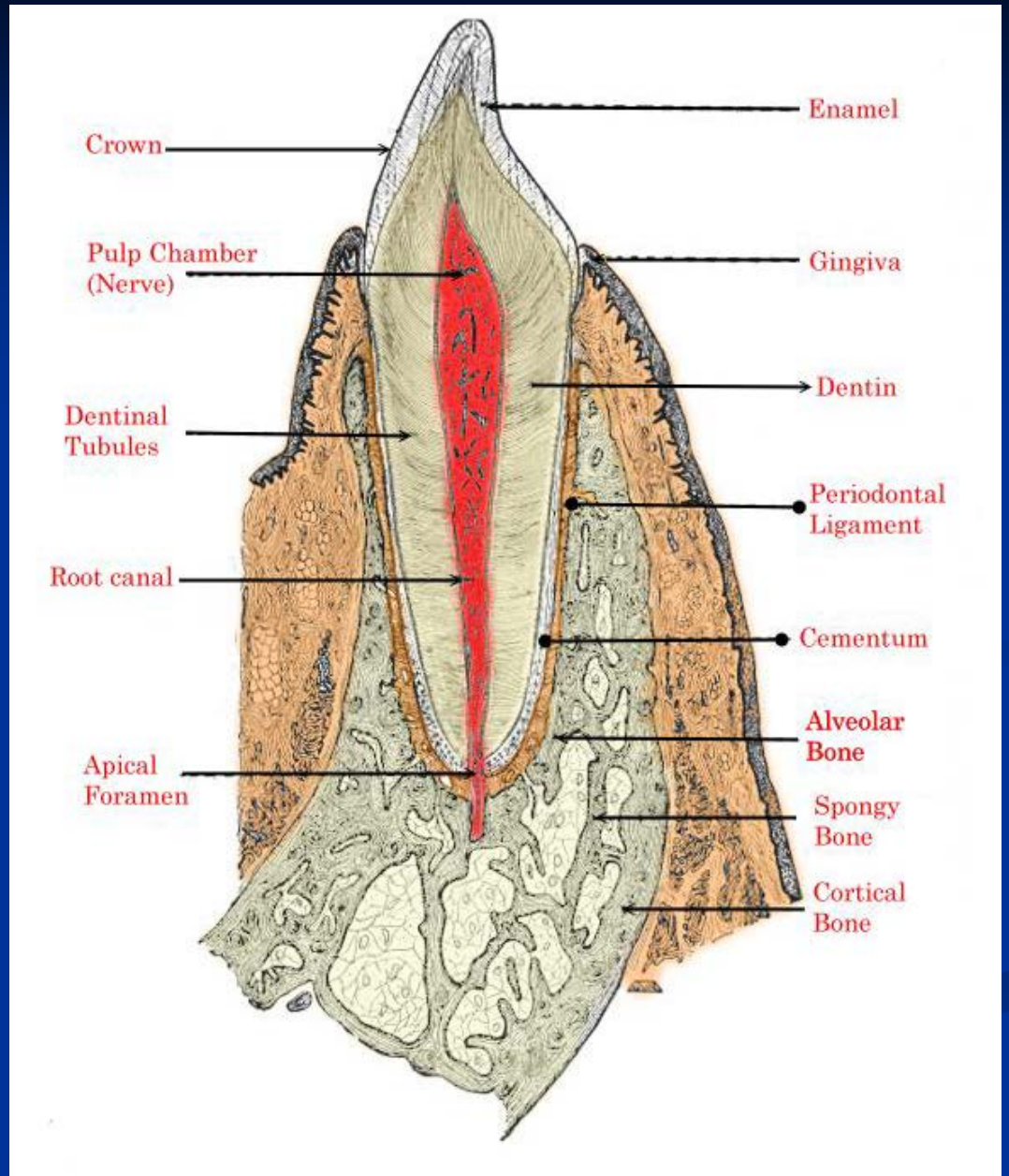
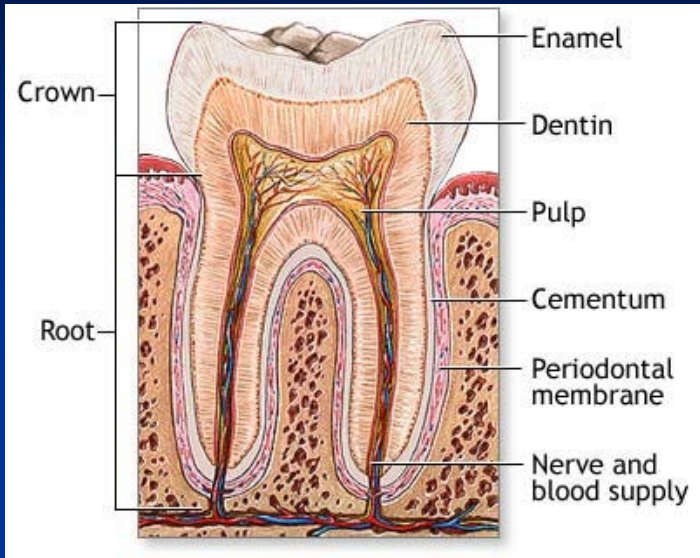
Permanent teeth

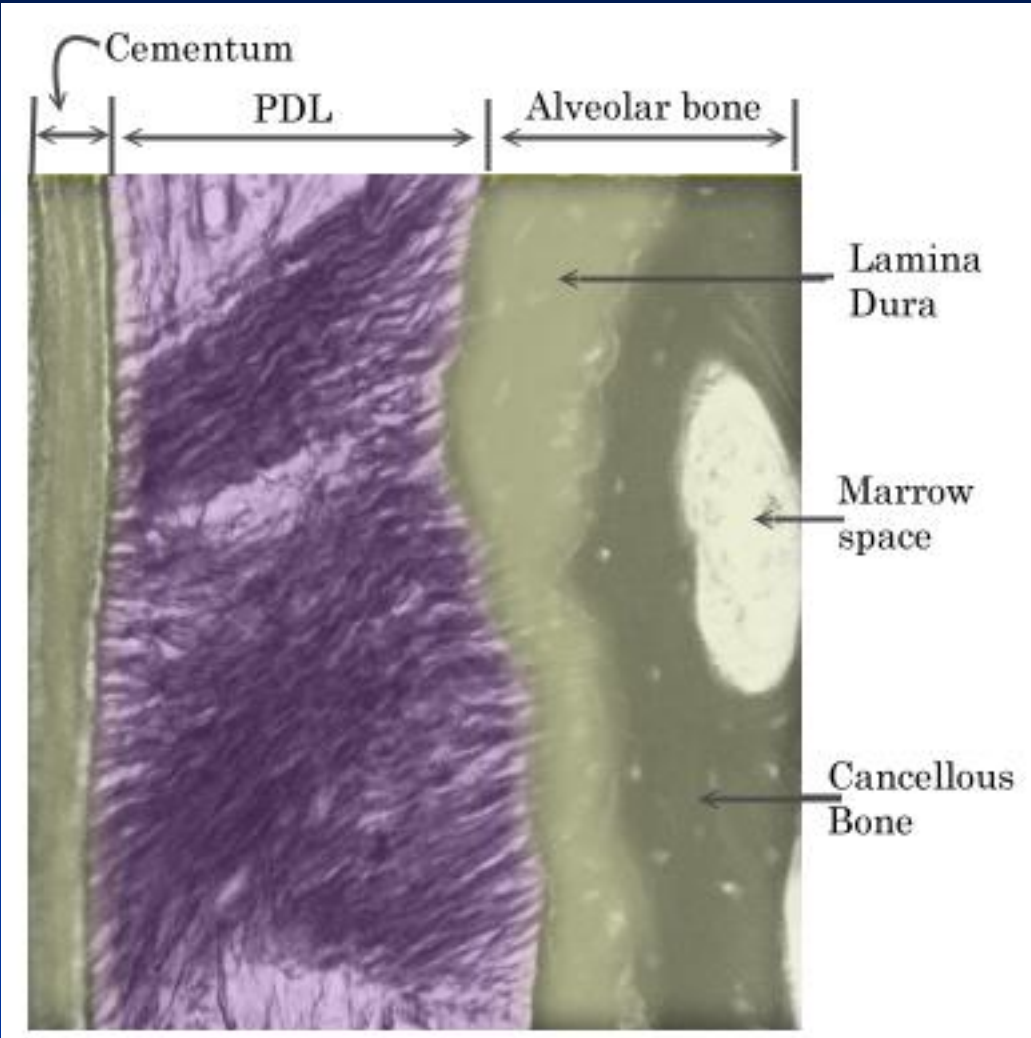


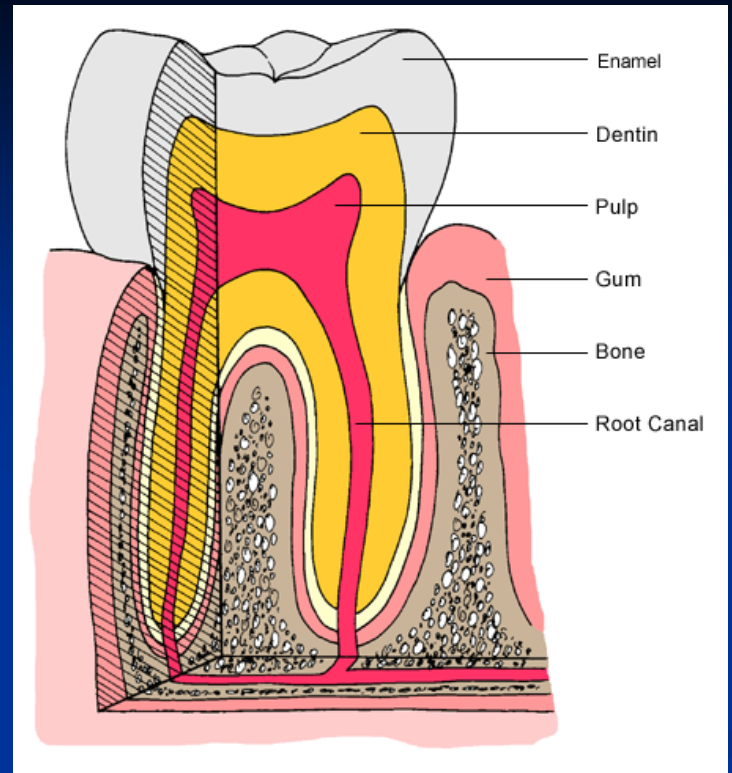
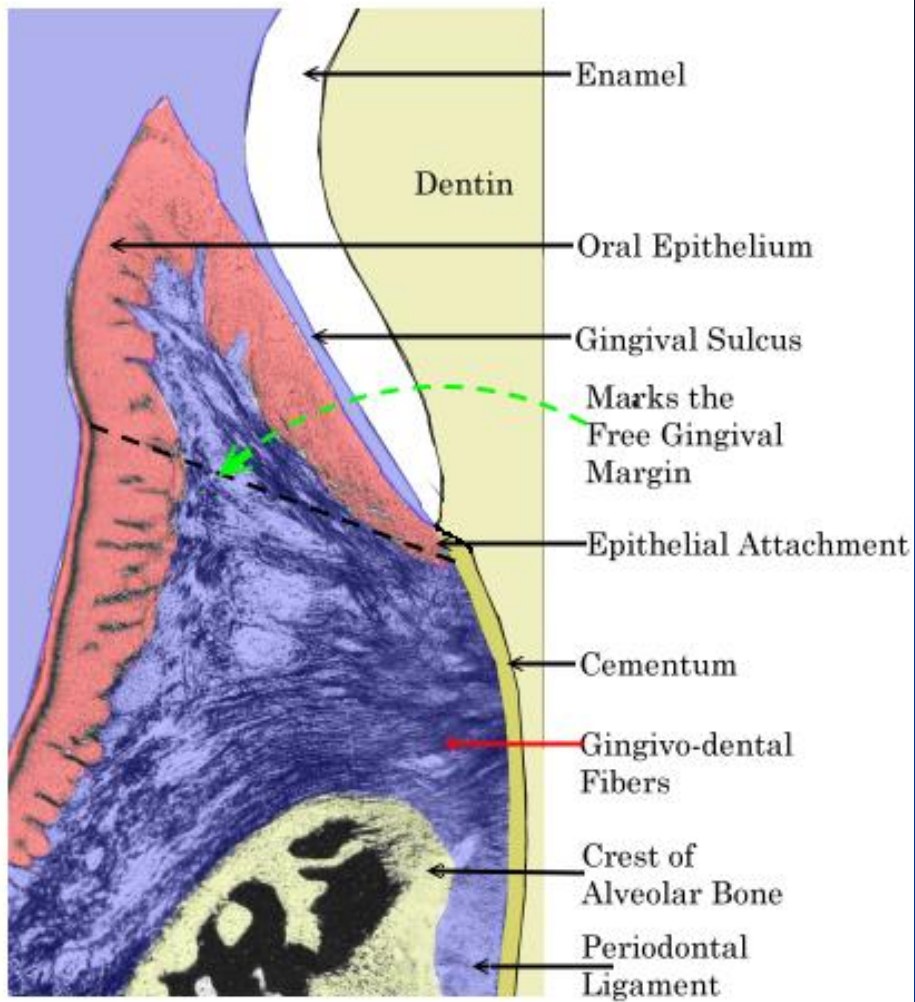










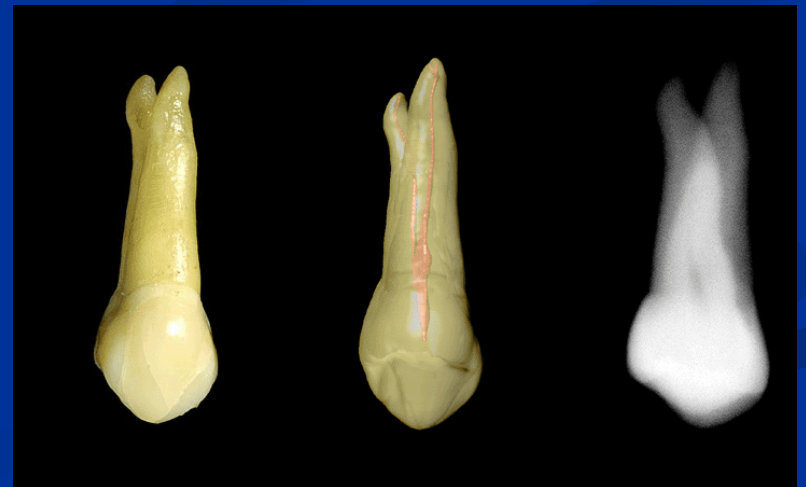
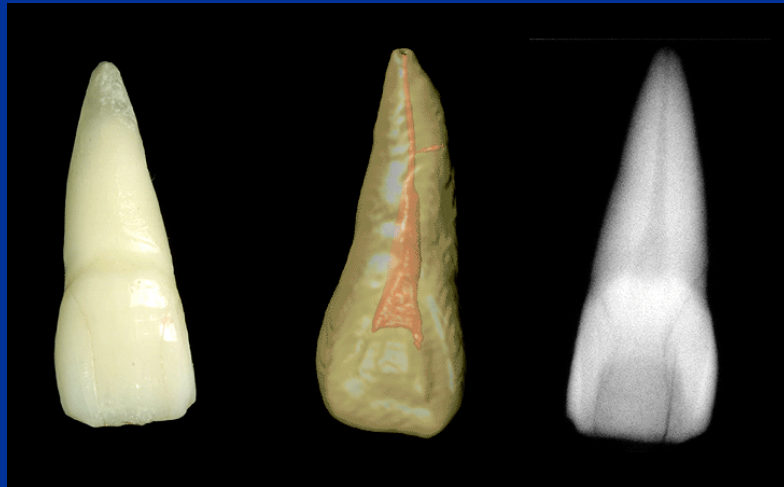




Brown &
Herbranson



Dental Anatomy & Interactive 3-D Tooth ATLAS



www.toothatlas.com

PULPAMORPHOLOGIE



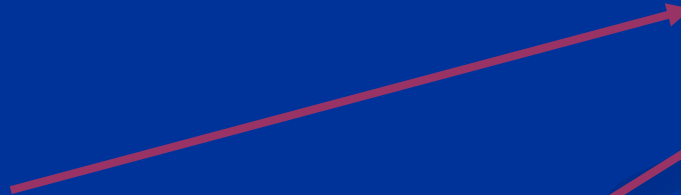
Ameloblasten



Schmelz



Dentin



Odontoblasten



PULPA

Aufgaben:

- Ernährung des Zahnes
- Abwehr von Erregern
- Innervation des Zahnes
- Dentinbildung

PULPAGEWEBE

Lockerer, spezialisiertes Bindegewebe:

- Zellen einer interzellulären Grundsubstanz
- Retikuläre, kollagene Fibrillen, Fasern
- Gefäße
- Nerven

PULPAGEWEBE

gallertiges Bindegewebe

- homogene Grundsubstanz
- zahlreiche aktive Fibroblasten (große, helle und ovale Kerne) in netzförmiger Anordnung
- sehr wenige retikuläre und (dünne) kollagene Fasern
- zahlreiche freie Zellen
- randständiger Odontoblastenverband (epithelartig; ein bis sechs Reihen)

- Gefäßplexus (weite dünne Gefäße)
- Nervenplexus (marklose Fasern, besonders unter den Odontoblasten)

DENTINBILDUNG

- Primär
- Sekundär
- Tertiär

DENTINBILDUNG

- Primär
- Secundär
- Tertiär

Innervationsmodell des menschlichen Zahnes

- Prädentinoberfläche
- Odontoblasten und Odontoblastenfortsätze
- Kernarme Zone (Weil)
- Kernreiche Zone
- Fibroblasten
- Ersatzzellen
- Abwehrzellen
- Fibrillen und Fasern
- Gefäße
- Nervenfasern (Eifinger)

ODONTOBLASTEN

- Kronenpulpa

50 000 Zellen / mm²

- Wurzelpulpa

signifikant weniger

Caries media

Lokalisierte
irreguläre
Reizdentinbildung

Zahnbezeichnung

- Zsigmondy-Palmer, Chevron,
Set-Square System
- The FDI two-digit system
(internationales Method)
- European, Scandinavian,
Haderup System
- American (universales) System

FDI Federation Dentaire Internationale

WHO World Health Organization

IADR International Association for Dental
Research

Zsigmondy-Palmer, Chevron, Set-Square System

8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
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8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Right

Left

V	IV	III	II	I	I	II	III	IV	V
---	----	-----	----	---	---	----	-----	----	---

V	IV	III	II	I	I	II	III	IV	V
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FDI

18 17 16 15 14 13 12 11

21 22 23 24 25 26 27 28

48 47 46 45 44 43 42 41

31 32 33 34 35 36 37 38

Right

Left

55 54 53 52 51

61 62 63 64 65

85 84 83 82 81

71 72 73 74 75

European, Scandinavian, Haderup System

8+ 7+ 6+ 5+ 4+ 3+ 2+ 1++1 +2 +3 +4 +5 +6 +7 +8

Right

Left

8- 7- 6- 5- 4- 3- 2- 1-

-1 -2 -3 -4 -5 -6 -7 -8

USA

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17

Right

Left

Danke schön!