

Model series of the development of the jaw and teeth.

The Dentition (teething)

The human set of teeth is not uniform in respect to its development. Theoretically all teeth (32) are layed down together (diphodont), i. e., the anlage of the permanent teeth as well as the milk teeth develop simultaneously in the dental lamina (milk teeth = temporary teeth). Only the 20 milk teeth however are replaced by 2nd generation successional permanent teeth and are augmented by 20 (molar) superadded permanent teeth. Embryologically these teeth are milk teeth that are not replaced even though the anlage is present.

The eruption of the teeth commences at 6 months with the middle lower incisors. Usually the eruption of a tooth in the lower jaw is followed by the eruption of its complement in the upper jaw.

With the appearance of the 2nd milk molars at approximately 2½ years, the development of the deciduous teeth is completed. At this time however, the roots of the canine and the molars are not fully mature, so that the full development of the milk teeth requires between 3½ and 6 years. At this point, after the maturation of the milk teeth, there is an interruption in the growth of the jawbone until just prior to the dentition of the permanent teeth. The growth of the jawbone is lengthwise to accommodate the larger and more numerous permanent teeth.

The extent of the growth is such that there are gaps between the teeth. By the end of the 5th year the 2nd dentition begins with the appearance of the first lower permanent molar and at same time the loss of the milk incisor which soon is replaced by the first permanent incisor or vice versa.

The deciduous teeth: 20 teeth per half jaw: 2 incisors

1 canine

2 milk molars

The deciduous incisors and canine teeth have the same shape as permanent incisors and canine teeth. The deciduous molars have a wide grinding surface with an average of 4 cusps.

Root structure: in lower jaw
 two roots each
 in upper jaw
 three roots each.

The roots of the milk molars are divergent. The growth pressure of the permanent teeth dissolves the roots and the “tooth loosens” and is shed. It is characteristic of permanent teeth that they appear first in the lower jaw, only the fourth tooth (1st premolar) is an exception. The eruption of the successional permanent, and the development of the superadded permanent teeth proceed concurrently. The development of the canine teeth is com-

pleted in the 13th year and the development of the last molar (3rd superadded) in the 20th year.

1st Dentition: 6. – 30. months

2nd Dentition: 5. – 14. years

3rd Dentition: wisdom teeth

The after most tooth because of its late appearance (approx. 5 years after the second molar) is called the wisdom tooth (= 3rd dentition).

The permanent molars have no predecessors. By their appearance the human set of teeth gains additional chewing units. For this reason they are called superadditive teeth.

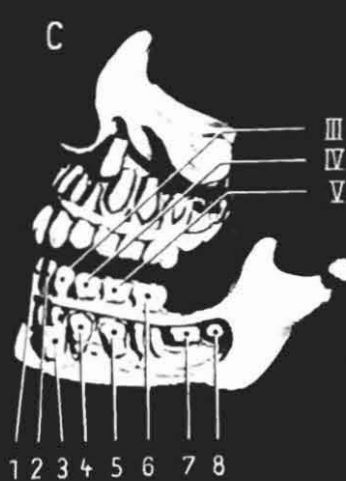
A



B



C



D



A = Ober und Unterkiefer eines Neugeborenen (weit offener Kieferwinkel)

Upper and lower jaw of a newborn (Jaw angle obtuse)

Mâchoires supérieure et inférieure d'un nouveau-né (angle de la mâchoire grand ouvert)

Maxilar superior e inferior de un recién nacido (ángulo mandibular muy abierto)

B = Ober- und Unterkiefer eines fünfjährigen Kindes (Verkleinerung des Kieferwinkels und Verbreiterung des Unterkieferköpfchens)

Upper and lower jaw of a five year old (smaller obtuse angle and widening of the condyle of the lower jaw)

Mâchoires supérieure et inférieure d'un enfant de 5 ans (réduction de l'angle de la mâchoire et l'extension de la petite tête de la mâchoire inférieure)

Maxilar superior e inferior de un niño de cinco años (ángulo mandibular reducido y cóndilo mandibular inferior ampliado)

C = Ober- und Unterkiefer eines neunjährigen Kindes

Upper and lower jaw of a nine-year old

Mâchoires supérieure et inférieure d'un enfant de 9 ans

Maxilar superior e inferior de un niño de nueve años

D = Ober- und Unterkiefer eines Erwachsenen (Steilstellung des Kieferastes, Kieferköpfchen walzenförmig)

Upper and lower jaw of an adult (Almost vertical position of the jaw rami, condyle is cylindrical)

Mâchoires supérieure et inférieure d'un adulte (position éscarpée de la branche maxillaire, petite tête de la mâchoire en forme cylindrique).

Maxilar superior e inferior de un adulto (rama de la mandíbula en posición empinada; cóndilo mandibular, en forma cilíndrica)

Durchbruch der Milchzähne
Eruption of the milk teeth
Eruption des dents de lait
Erupción de los dientes de leche

I = i 1	6. – 8. Monat/month/mois/mes
II = i 2	8. – 12. Monat/month/mois/mes
III = c	15. – 20. Monat/month/mois/mes
IV = m 1	12. – 16. Monat/month/mois/mes
V = m 2	20. – 40. Monat/month/mois/mes

Reihenfolge ihres Erscheinens
Order of appearance
Suite de leur éruption
Orden de su aparición

- 1.
- 2.
- 4.
- 3.
- 5.

Durchbruch der bleibenden Zähne
Eruption of the permanent teeth
Eruption des dents permanentes
Erupción de los dientes permanentes

1 = I 1	6. – 9. Jahr/year/an/año
2 = I 2	7. – 10. Jahr/year/an/año
3 = C	9. – 14. Jahr/year/an/año
4 = P 1	9. – 13. Jahr/year/an/año
5 = P 2	11. – 14. Jahr/year/an/año
6 = M 1	6. – 8. Jahr/year/an/año
7 = M 2	10. – 14. Jahr/year/an/año
8 = M 3	16. – 30. Jahr/year an/año

Reihenfolge ihres Erscheinens
Order of appearance
Suite de leur éruption
Orden de su aparición

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

			Milchmolaren
			Milk molars
			Molaires de lait
			Molares de leche
Zahnformel			
Dental formula	8 7 6 5 4 3 2 1		I II III IV V
Formule dentaire	8 7 6 5 4 3 2 1		I II III IV V
Fórmula dental	V IV III II I		1 2 3 4 5 6 7 8
			<div style="display: flex; justify-content: space-around; width: 100%;"> </div>
			<div style="display: flex; justify-content: space-around; width: 100%;"> Prämolaren bleibende Molaren </div>
			<div style="display: flex; justify-content: space-around; width: 100%;"> pre molars molars </div>
			<div style="display: flex; justify-content: space-around; width: 100%;"> prémolaires Molaires permanentes </div>
			<div style="display: flex; justify-content: space-around; width: 100%;"> Premolares Molares permanentes </div>

Die Milchzähne werden in römischen Ziffern angegeben (I bis V);
 die bleibenden Zähne in arabischen Ziffern (1 bis 8).

Roman numerals refer to milk teeth (I to V);
 arabic numerals to permanent teeth (1 to 8).

Dents de lait – Chiffres romains (I – V)
 Dents permanentes – Chiffres arabes (1 – 8)

Los dientes de leche se indican en números romanos (I al V);
 los dientes permanentes, en cifras arábicas (1 al 8).