

TOOTH IDENTIFICATION SYSTEMS

(Tooth Numbering System)

Teeth are arranged in the jaws forming two dental arches:

- Maxillary Arch (Upper Arch)
- Mandibular Arch (Lower Arch)

Two arches together constitute the dentition

Each arch is divided by an imaginary midline into

- A right and left half called – *QUADRANTS*
- Maxillary right/left quadrants
- Mandibular right/left quadrants

Humans have two sets of teeth in their lifetime

- *Deciduous teeth* - 20
- *Permanent teeth*-32

Denomination and number of all mammalian teeth expressed by a formula called dental formula. Each tooth is represented by the initial letter of its: E.g.:

- Incisor-----I
- Canine-----C
- Premolar - ---P
- Molar-----M



Tooth Numbering System

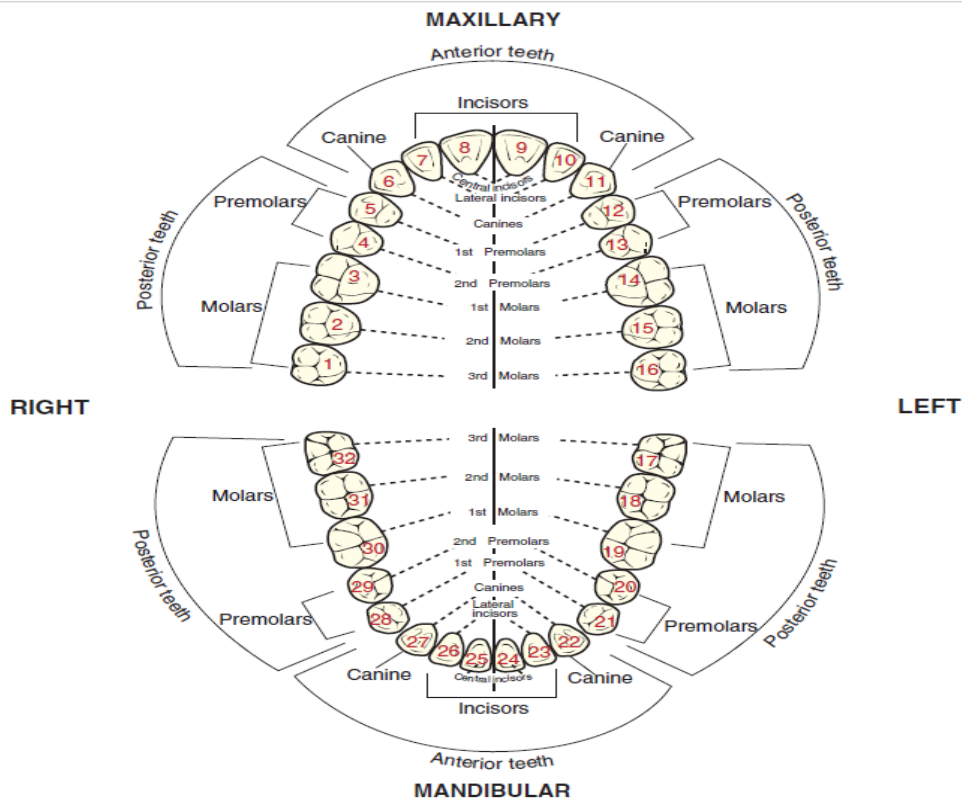
- System used by dentists to associate information to a specific tooth.
- In clinical practice some “shorthand” system of tooth notation is necessary for recording data.

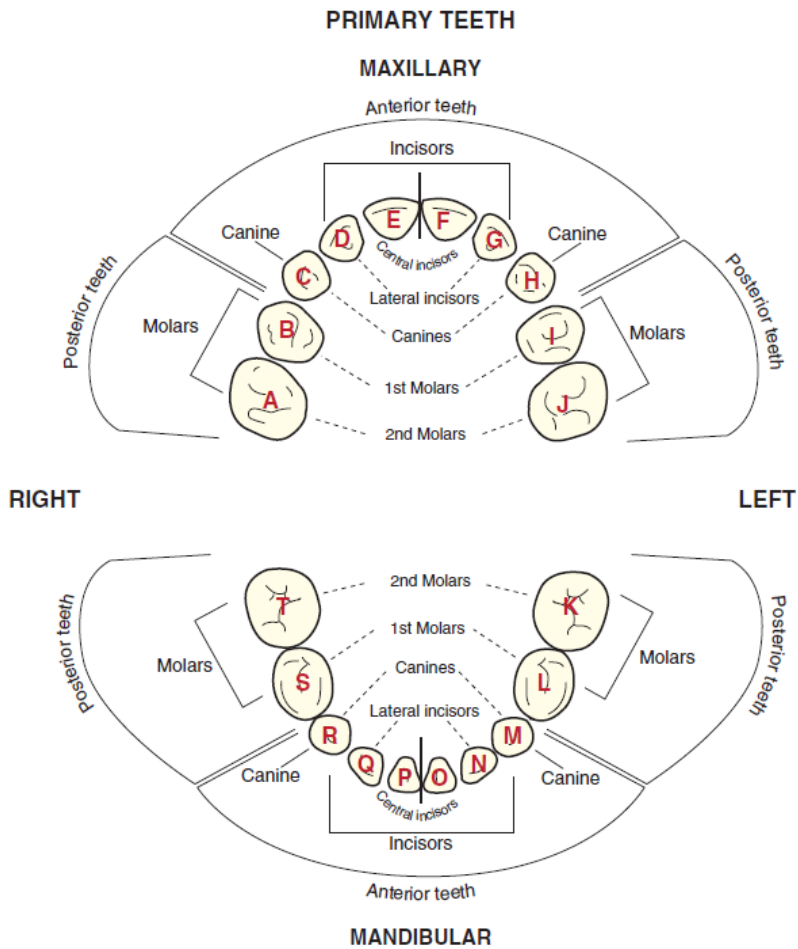
To do so efficiently, adopting a type of code or numbering system for teeth is necessary.

THREE MAIN types of numbering systems are commonly used

1-Universal Tooth Numbering System(UTNS)

- The universal numbering system [Parreidt,1882; Cunningham, 1883] is the official tooth designation system in the USA.
- Adopted by the American Dental Association in 1975.
- It includes a sequence of Arabic numbers (1-32) for Permanent and the alphabet system (A-T) for Deciduous teeth, moving clockwise around the dentition.





Advantages

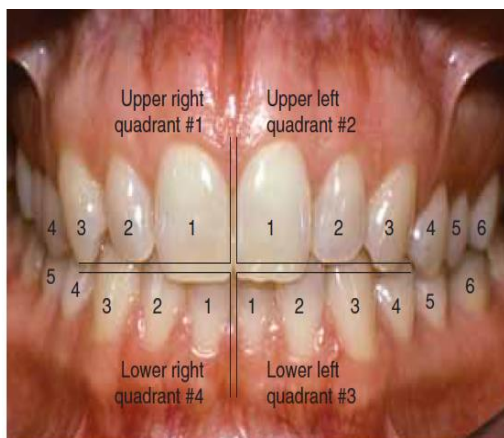
- Separate number/ alphabet is given for individual teeth.
- Easy to visualize.

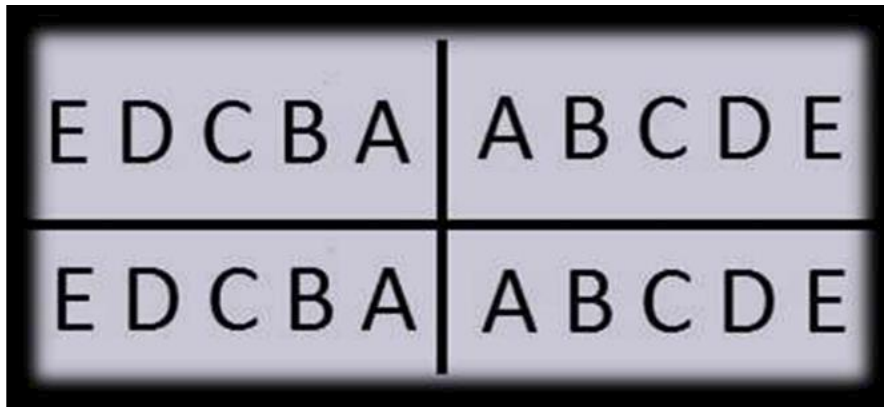
Disadvantages

- Confusing when comparing with the palmar notation system.
- Cannot be coded by computer.
- Confusing and difficult to remember.
- It does not consider the jaw quadrant clearly.

2-Zsigmondy and Palmar Tooth Numbering System

- In 1947 a committee at the American Dental Association (ADA) recommended the symbolic (Zsigmondy/Palmar) system as the numbering method of choice.
- originally called the Zsigmondy system by an Austrian dentist Adolf Zsigmondy who developed the idea in 1861.
- The Zsigmondy-Palmer system [Zsigmondy,1861; Palmer,1891],] called the “eight numerical quadrant system ”(1 through 8,) is meant for permanent dentition only).
- Initially, it was not designed for primary teeth, but in 1874 it was adopted for primary dentition.
- This is one of the oldest and most widely used systems of dental notation. This method is used by orthodontists, dental students, and practitioners in the United Kingdom.
- The Palmer notation consists of a symbol) $\Gamma \neg$ $\perp \neg$ (designating in which quadrant the tooth is found and a number indicates the position from the midline.





Palmar System for Primary Teeth

Advantages

- The system is simple to use.
- Easier for beginners due to less confusion as permanent teeth and deciduous teeth are indicated differently.

Disadvantages

- There is no differentiation between right upper, right lower, left upper, and left lower.
- Segments have only one number and are used to designate a particular tooth.
- No provision to identify supernumerary teeth.
- Difficult for verbal transmission.

3-FDI Tooth Numbering System

- The Federation Dentaire Internationale (FDI system).
- It is a two-digit system.
- It was accepted in 1970 by the FDI and adopted by WHO and the International Association for Dental Research.

- And in October 1994 adopted by the International Standard Organization [ISO American Dental Association current policies 1994].
- This dental notation meets all the basic requirements set by an FDI special committee.
- The first digit indicates the quadrant (5 through 8) and the second digit indicates the tooth type (1 through 5) (for primary teeth).
- The first digit indicates the quadrant (1 through 4) and the second digit indicates the tooth type (1 through 8) (for permanent teeth)

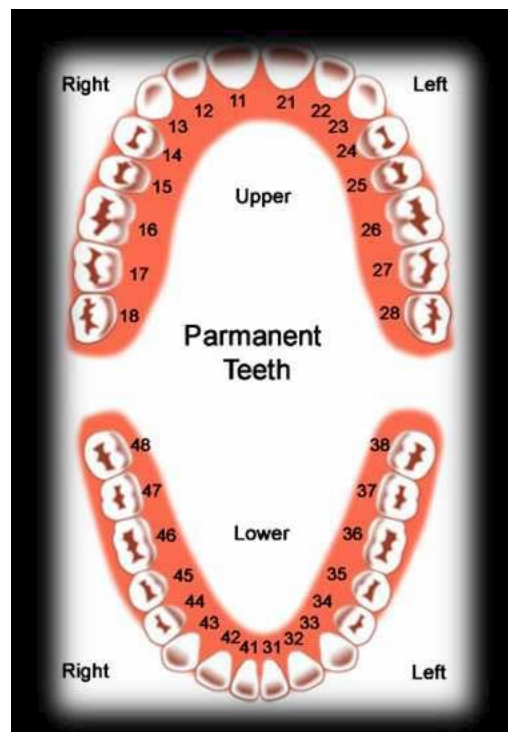
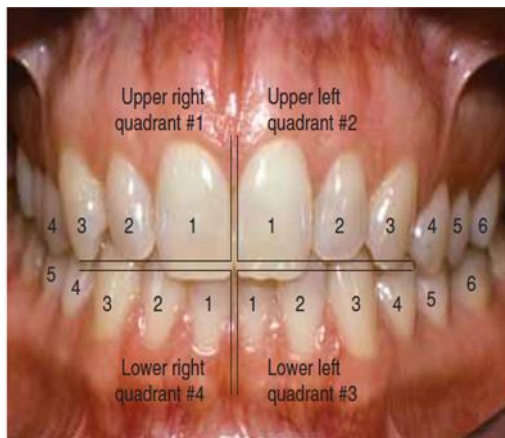
PERMANENT DENTITION

1 = Permanent dentition, maxillary, right quadrant

2 = Permanent dentition, maxillary, left quadrant

3 = Permanent dentition, mandibular, left quadrant

4 = Permanent dentition, mandibular, right quadrant



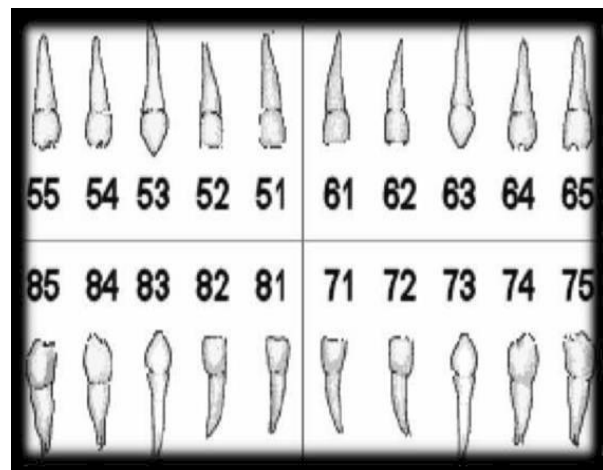
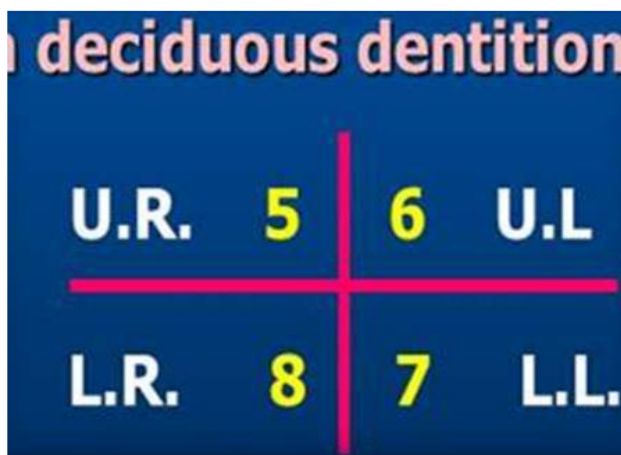
PRIMARY DENTITION

5 = Primary dentition, maxillary, right quadrant

6 = Primary dentition, maxillary, left quadrant

7 = Primary dentition, mandibular, left quadrant

8 = Primary dentition, mandibular, right quadrant



Advantages

- It is very simple, accurate, and easy to memorize.
- It is user-friendly and prevents errors in differentiating left and right, upper and lower arches, and tooth type.
- Simple to teach and easy to understand.
- Simple to translate into computer input.
- Simple in conversation and direction.
- Readily communicable in print.

Disadvantages

- In the case of deciduous teeth, there can be confusion and it is difficult to memorize.
- For specialists other than pedodontists, it can be difficult to understand or define teeth.
- For an example of 64,85 It is the combined use of the Palmer and the FDI systems that may be accurate and create no confusion, but it is time-consuming and needs much concentration.
- It is difficult to enter multiple teeth in different arches and it would be too long to use routinely.

Table 1-1 MAJOR TOOTH IDENTIFICATION SYSTEMS

	TOOTH	UNIVERSAL		PALMER NOTATION		INTERNATIONAL (FDI)		
		Right	Left	Right	Left	Right	Left	
PRIMARY DENTITION	MAXILLARY TEETH	Central incisor	E	F	A	A	51	61
		Lateral incisor	D	G	B	B	52	62
		Canine	C	H	C	C	53	63
		First molar	B	I	D	D	54	64
		Second molar	A	J	E	E	55	65
	MANDIBULAR TEETH	Central incisor	P	O	A	A	81	71
		Lateral incisor	Q	N	B	B	82	72
		Canine	R	M	C	C	83	73
		First molar	S	L	D	D	84	74
		Second molar	T	K	E	E	85	75
PERMANENT DENTITION	MAXILLARY TEETH	Central incisor	8	9	1	1	11	21
		Lateral incisor	7	10	2	2	12	22
		Canine	6	11	3	3	13	23
		First premolar	5	12	4	4	14	24
		Second premolar	4	13	5	5	15	25
		First molar	3	14	6	6	16	26
		Second molar	2	15	7	7	17	27
		Third molar	1	16	8	8	18	28
	MANDIBULAR TEETH	Central incisor	25	24	1	1	41	31
		Lateral incisor	26	23	2	2	42	32
		Canine	27	22	3	3	43	33
		First premolar	28	21	4	4	44	34
		Second premolar	29	20	5	5	45	35
		First molar	30	19	6	6	46	36
		Second molar	31	18	7	7	47	37
		Third molar	32	17	8	8	48	38