# 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**

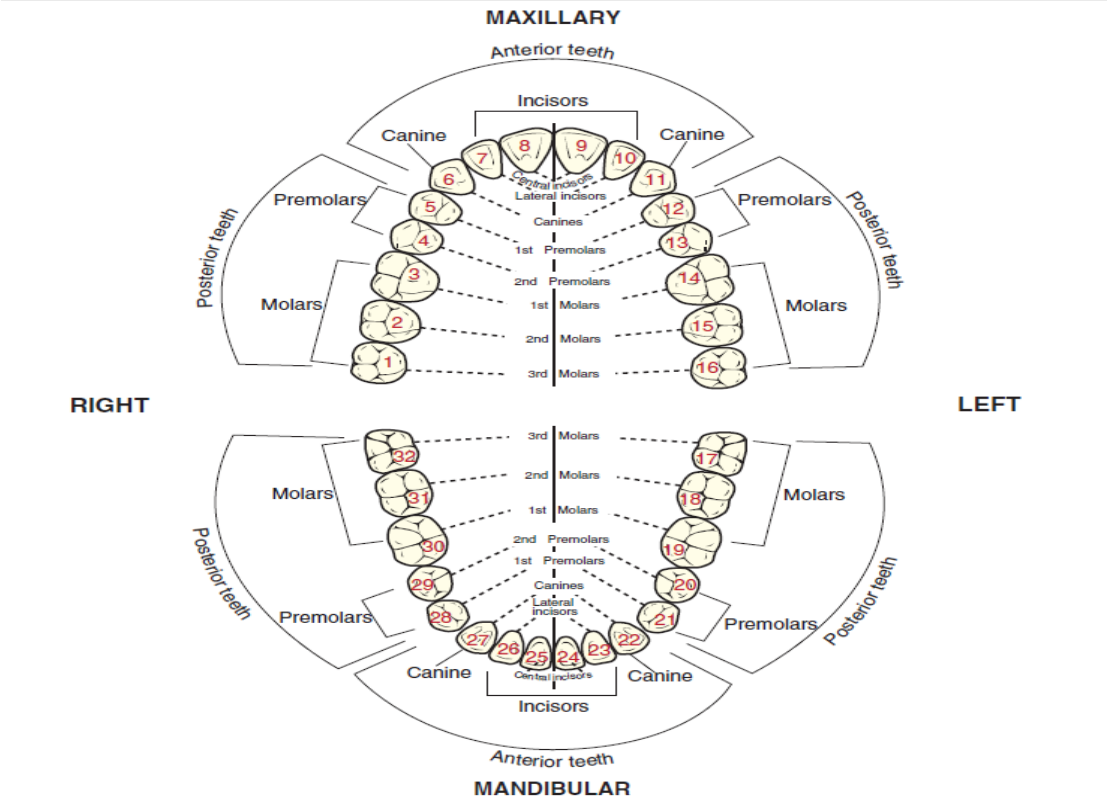
- **System used by dentists to associate information to a specific tooth.**
- **In clinical practice some "shorthand" system of tooth notation is necessary for recording data.**

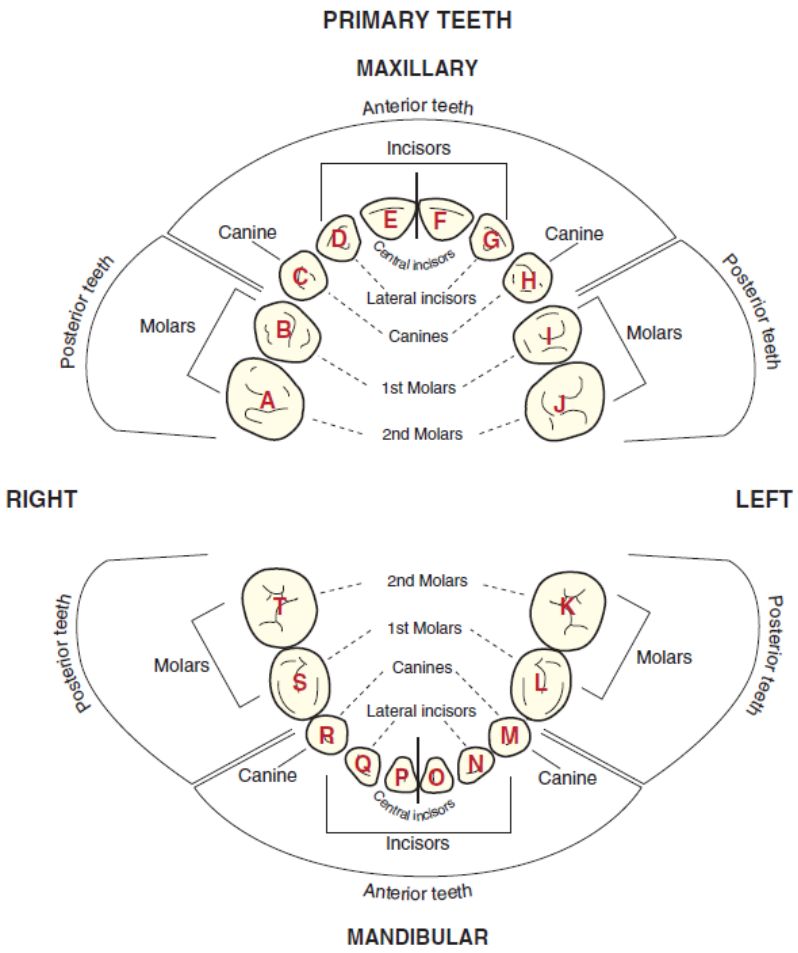
**To do so efficiently, adopting a type of code or numbering system for teeth is necessary.**

**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

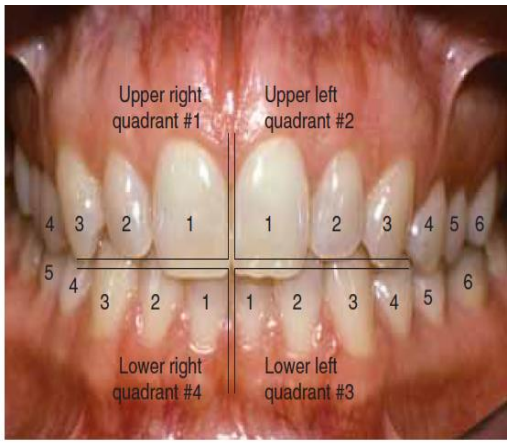
- **Separate number/ alphabet is given for individual teeth.**
- **Easy to visualize.**

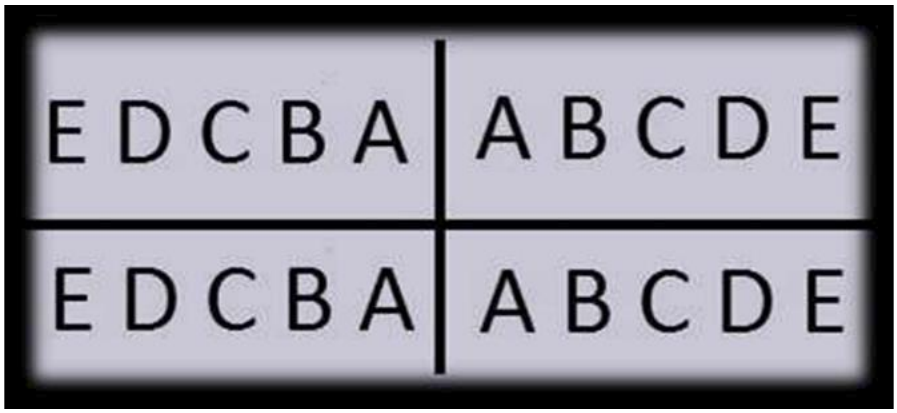
## Disadvantages

- **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) ┌┐ └┘ (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 has been 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 through8) (for permanent teeth)**

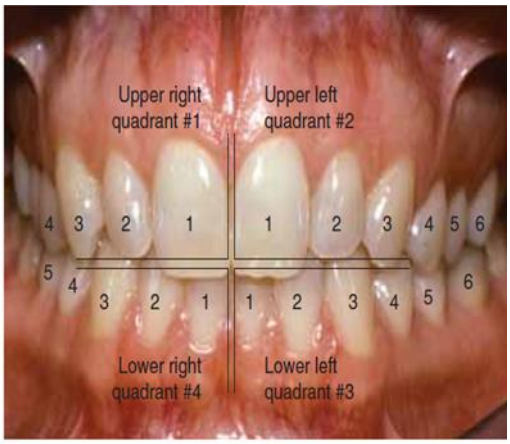
**PERMANENT DENTITION**

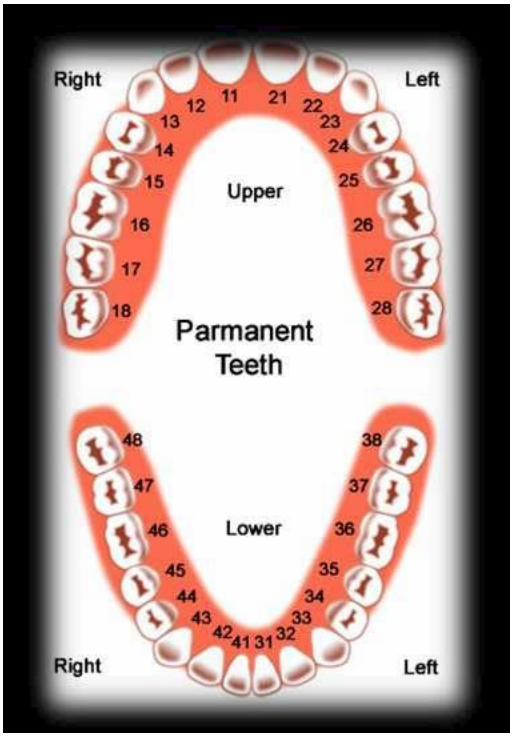
**1 = Permanent dentition, maxillary, right quadrant**

**2 = Permanent dentition, maxillary, left quadrant**

**3 = Permanent dentition, mandibular, left quadrant**

**4 = Permanent dentition, mandibular, right quadrant**



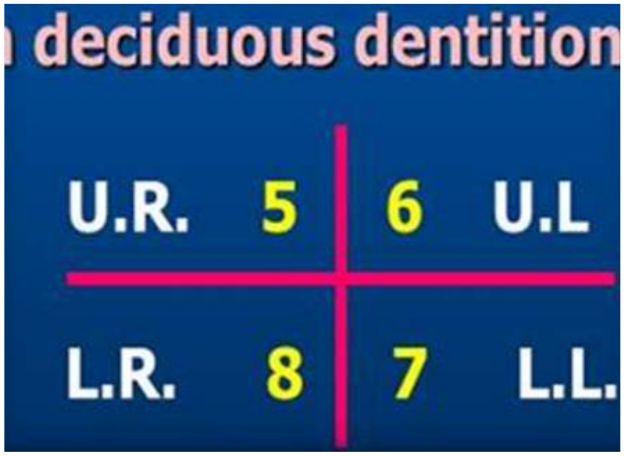
**PRIMARY DENTITION**

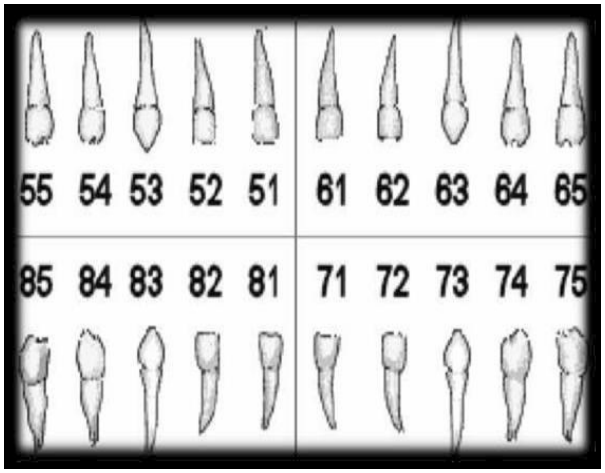
**5 = Primary dentition, maxillary, right quadrant**

**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**

| | | | UNIVERSAL | | PALMER NOTATION | | INTERNATIONAL (FDI) | |
|---|---|---|---|---|---|---|---|---|
| | | TOOTH | 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 | $\overline{A}$\| | \|$\overline{A}$ | 81 | 71 |
| | | Lateral incisor | Q | N | $\overline{B}$\| | \|$\overline{B}$ | 82 | 72 |
| | | Canine | R | M | $\overline{C}$\| | \|$\overline{C}$ | 83 | 73 |
| | | First molar | S | L | $\overline{D}$\| | \|$\overline{D}$ | 84 | 74 |
| | | Second molar | T | K | $\overline{E}$\| | \|$\overline{E}$ | 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 | $\overline{1}$\| | \|$\overline{1}$ | 41 | 31 |
| | | Lateral incisor | 26 | 23 | $\overline{2}$\| | \|$\overline{2}$ | 42 | 32 |
| | | Canine | 27 | 22 | $\overline{3}$\| | \|$\overline{3}$ | 43 | 33 |
| | | First premolar | 28 | 21 | $\overline{4}$\| | \|$\overline{4}$ | 44 | 34 |
| | | Second premolar | 29 | 20 | $\overline{5}$\| | \|$\overline{5}$ | 45 | 35 |
| | | First molar | 30 | 19 | $\overline{6}$\| | \|$\overline{6}$ | 46 | 36 |
| | | Second molar | 31 | 18 | $\overline{7}$\| | \|$\overline{7}$ | 47 | 37 |
| | | Third molar | 32 | 17 | $\overline{8}$\| | \|$\overline{8}$ | 48 | 38 |