



# ORAL HEALTH IN COMPREHENSIVE CLEFT CARE

An educational manual for non-oral health professionals

## DAY 1



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# PURPOSE AND GOAL

The purpose of this three-day course is to improve the oral health and long-term well-being of children who undergo cleft surgery. It is designed to ensure all members of the cleft care team are aware of the importance of oral health and can take an active role in preventing oral diseases.

At the end of this course, you will:

- be aware of the importance of oral health;
- know how to prevent and identify oral diseases;
- know when to refer onwards.

# INTERPROFESSIONAL COLLABORATION AND CLEFT CARE

## **Learning objective:**

Understand the importance of interprofessional collaboration in the care of people with cleft.

# WHY IS INTERPROFESSIONAL COLLABORATION IMPORTANT?

Interprofessional collaboration is defined as two or more healthcare professions working together with the patient. Shared decision-making improves patient and professional relationships and also improves health outcomes.

Babies born with cleft have significant needs from a wide range of healthcare specialties, and the care they receive depends on many factors, including distance from the clinic, cost of treatment and parental knowledge and beliefs.

There may be an adverse effect on children's quality of life if they are not able to access the full range of services, especially speech therapy and oral healthcare.

# EXERCISE

- How many professions involved in the care of a child born with cleft can you name?
- How could you improve communication between teams at your facility?

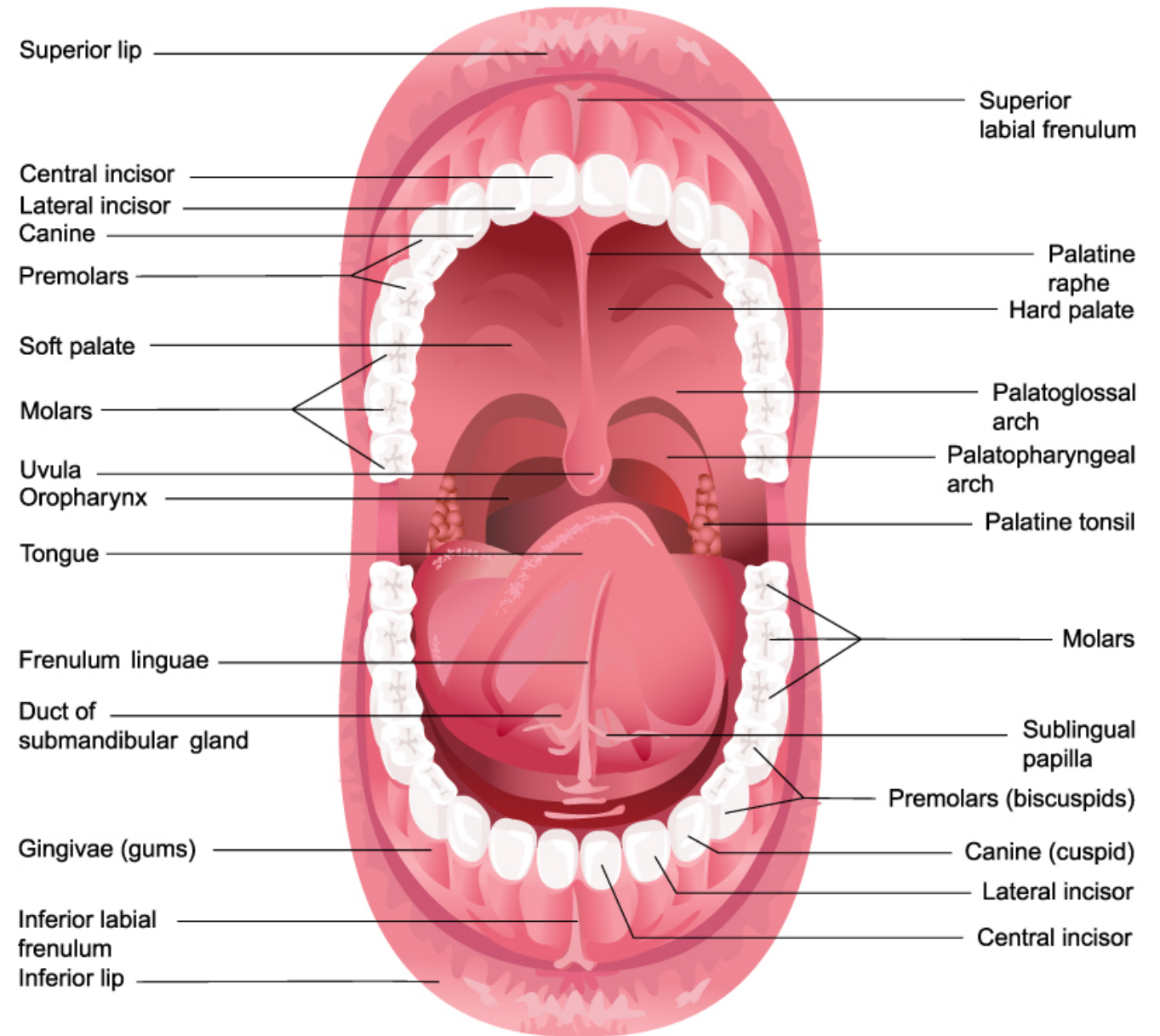


# UNDERSTANDING ORAL ANATOMY

## **Learning objective:**

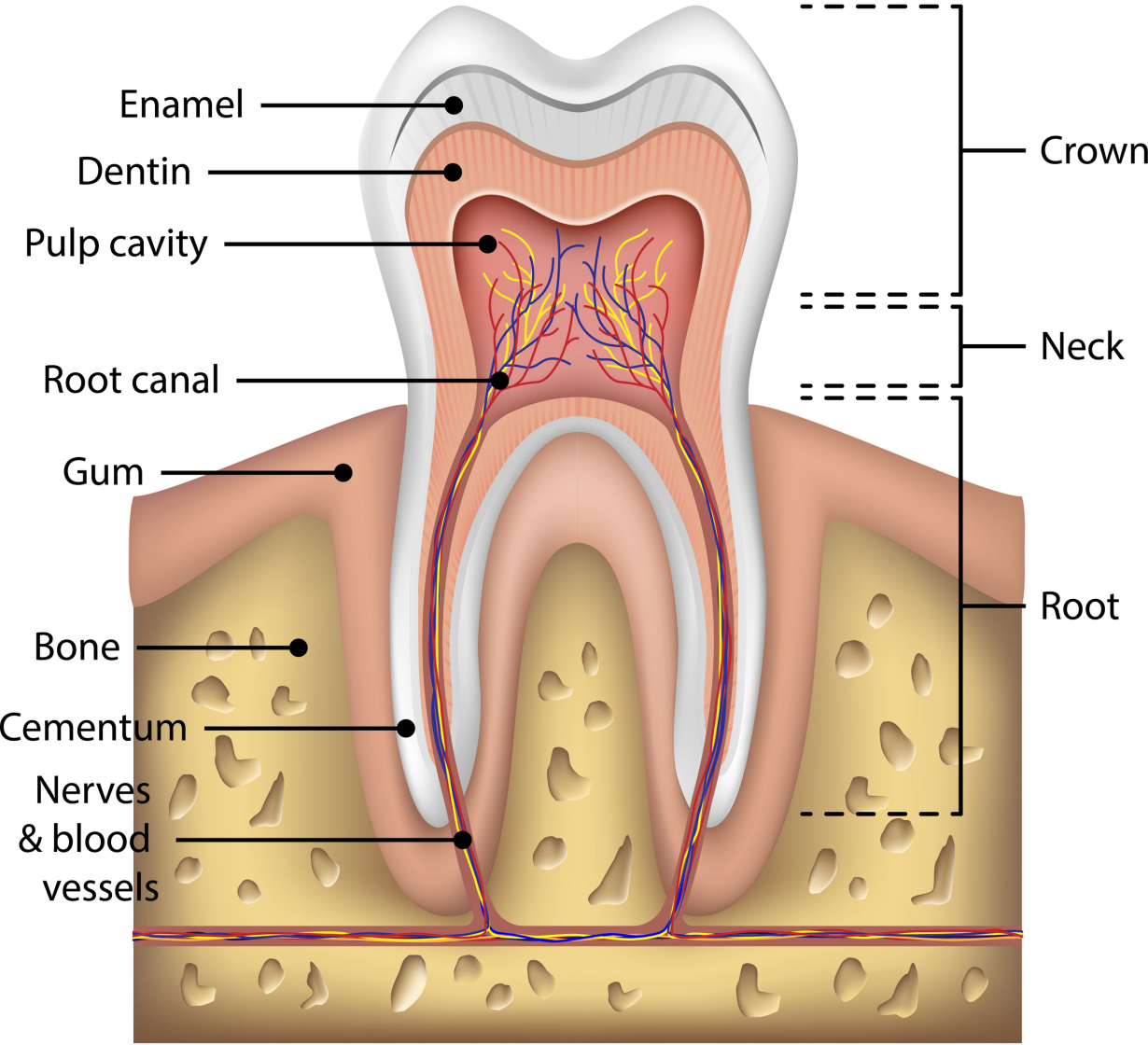
Understand and identify oral anatomy, gingival anatomy, the types of teeth, eruption dates and tooth anatomy

# COMMON ORAL ANATOMY



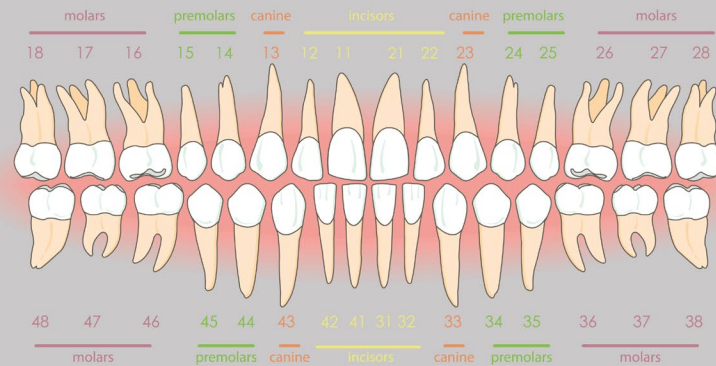
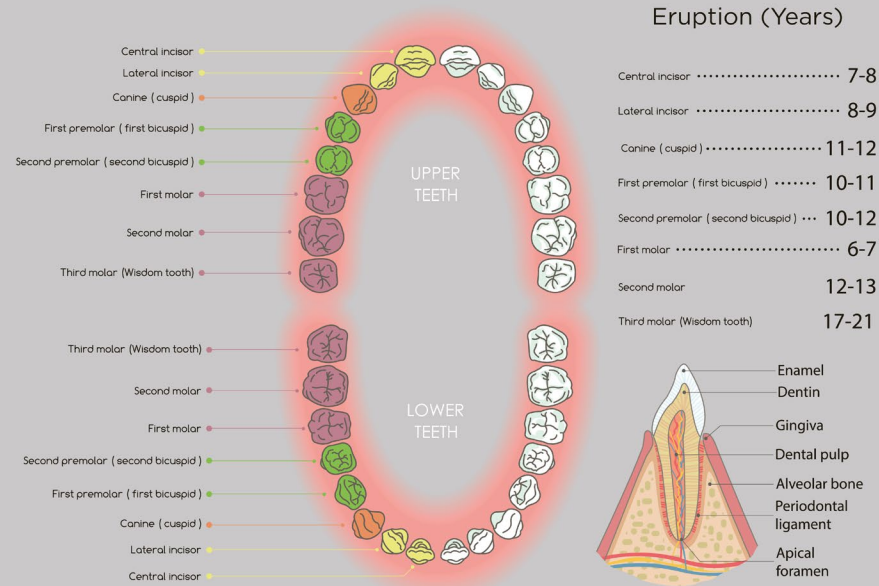


# TOOTH ANATOMY

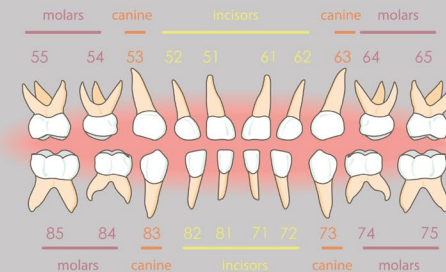
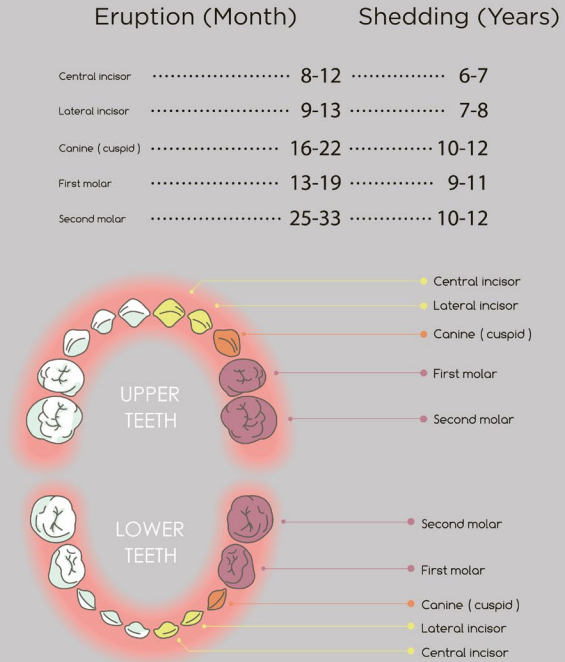


# TYPES OF TEETH AND WHEN THEY ERUPT

## Permanent Teeth Development



## Primary (Deciduous) Teeth Development



# THE DEFINITION AND CAUSES OF OROFACIAL CLEFTS

## **Learning objective:**

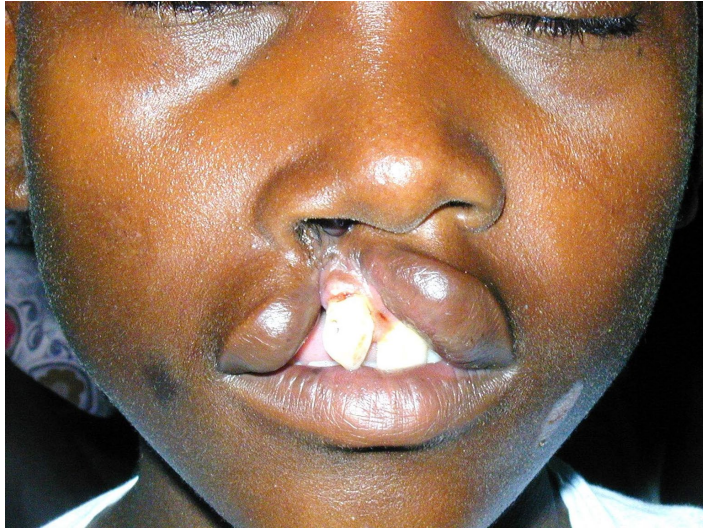
Understand the definition and causes of cleft.

# WHAT IS A CLEFT?

Cleft conditions occur when parts of the lip and/or palate and nose do not fuse together during embryonic development.

They can be divided into three general categories:

1. cleft palate alone;
2. unilateral or bilateral cleft lip, with or without cleft alveolus;
3. unilateral or bilateral cleft lip and cleft palate.



**RIGHT COMPLETE CLEFT LIP**



**LEFT CLEFT LIP**

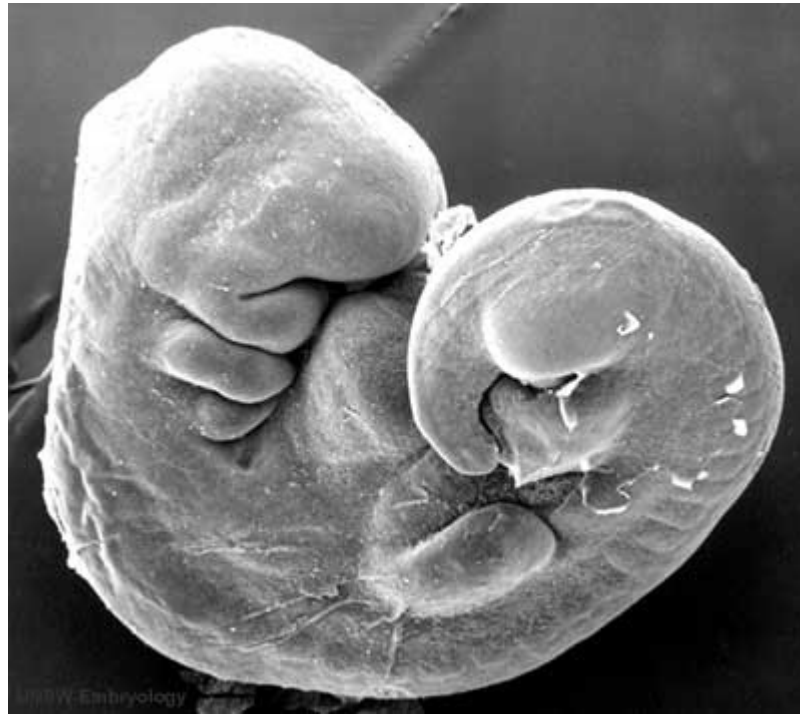


**BILATERAL CLEFT LIP**

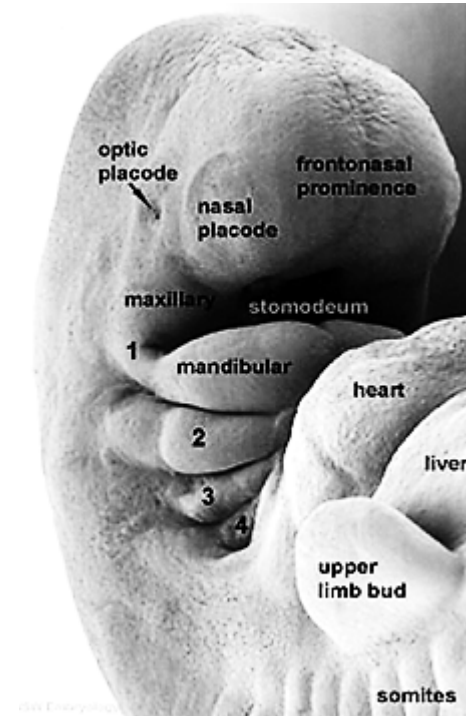


**WITH OR WITHOUT ALVEOLUS**

# HOW DO CLEFTS DEVELOP?



EMBRYO AT 28 DAYS



EMBRYO AT 32 DAYS



EMBRYO AT 49 DAYS



EMBRYONIC DEVELOPMENT OF THE FACE

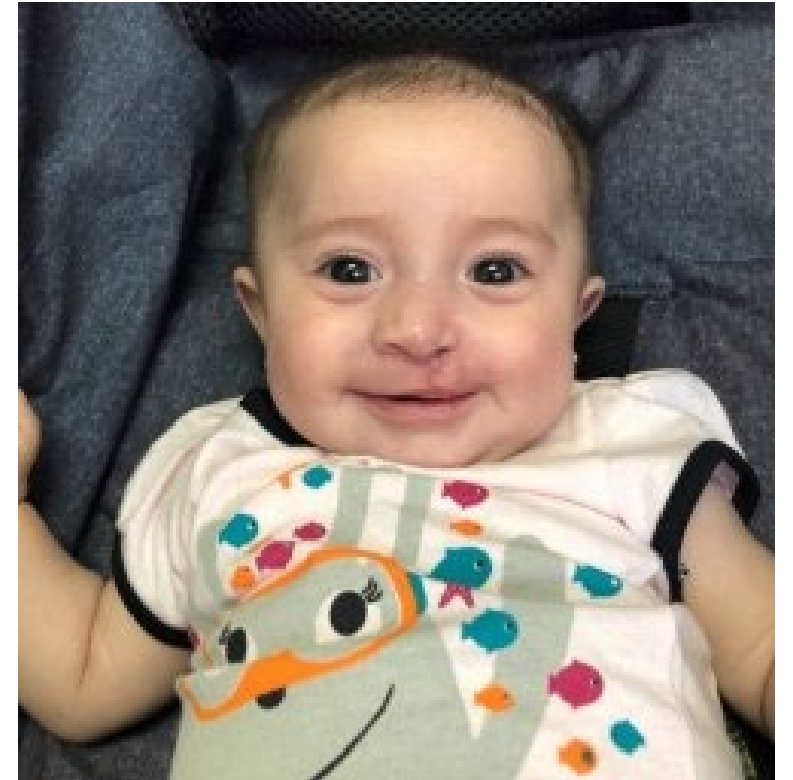
# GENETICS AND EPIDEMIOLOGY OF CLEFT LIP AND PALATE

## Genetics of cleft lip and palate

- Between 30%-50% of clefts are related to genetic factors. Cleft conditions can be categorized as syndromic or non-syndromic.

## Epidemiology of cleft lip and palate

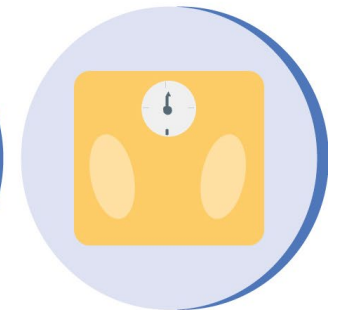
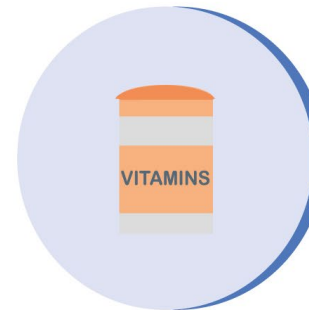
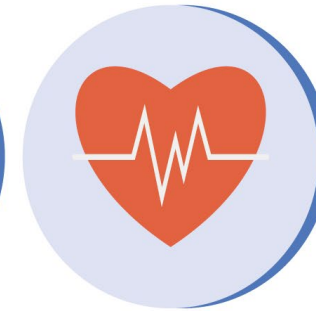
- At a global level, cleft conditions affect approximately 1 in 700 live births.





# PREVENTION OF CLEFT

- Prenatal examination and genetic counselling
- Healthy and varied maternal diet
- Folic acid supplementation
- Carefully monitored medication use during early pregnancy
- Avoid of alcohol and tobacco during early stages of pregnancy
- Prevention of gestational diabetes mellitus and maternal obesity
- Stress control during early stages of pregnancy



# ORAL HEALTH CONDITIONS COMMONLY ASSOCIATED WITH CLEFT

## **Learning objective:**

Understand diseases and conditions commonly associated with cleft, such as caries and malocclusion

# ORAL HEALTH CONDITIONS COMMONLY ASSOCIATED WITH CLEFT

Children with clefts rarely escape dental complications

This can be attributed to:

- dry mouth caused by mouth-breathing habits;
- less natural cleaning of the teeth due to the morphology;
- variable diet or feeding habits;
- dental anomalies;
- increased consumption of sweetened medications;
- delayed oral clearance time for foods.



# WHY ARE PRIMARY TEETH IMPORTANT?

Taking care of primary teeth is important to:

- allow children to chew and eat properly;
- help children to speak more clearly;
- maintain space for the eruption of adult teeth;
- guide adult teeth into place;
- help to shape the infant's face;
- prevent early childhood caries;
- keep future dental costs to a minimum;
- offset the need for orthodontic treatment later;
- reduce the risk of caries in permanent teeth.

# EARLY CHILDHOOD CARIES

Early childhood caries (ECC) is defined as the presence of one or more decayed, missing (due to caries) or filled tooth surfaces in any primary tooth.



Pedo Planet - Children Dental Centers, (Chennai, New Delhi), India. Centre for Early Childhood Caries Research (CECCRe), Sri Ramachandra Institute of Higher Education and Research, Chennai, India

# MALOCCLUSION

A malocclusion describes how teeth meet together and literally means “poor bite.”

Patients with cleft find it challenging to maintain good oral hygiene due to malocclusion.

After cleft lip and palate repair, the prevalence of malocclusion is 97%!



# ABNORMALITY OF TOOTH ERUPTION AND TOOTH NUMBER

Abnormal tooth size and position are often present in patients with cleft.



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# KNOWLEDGE OF DENTAL CARIES

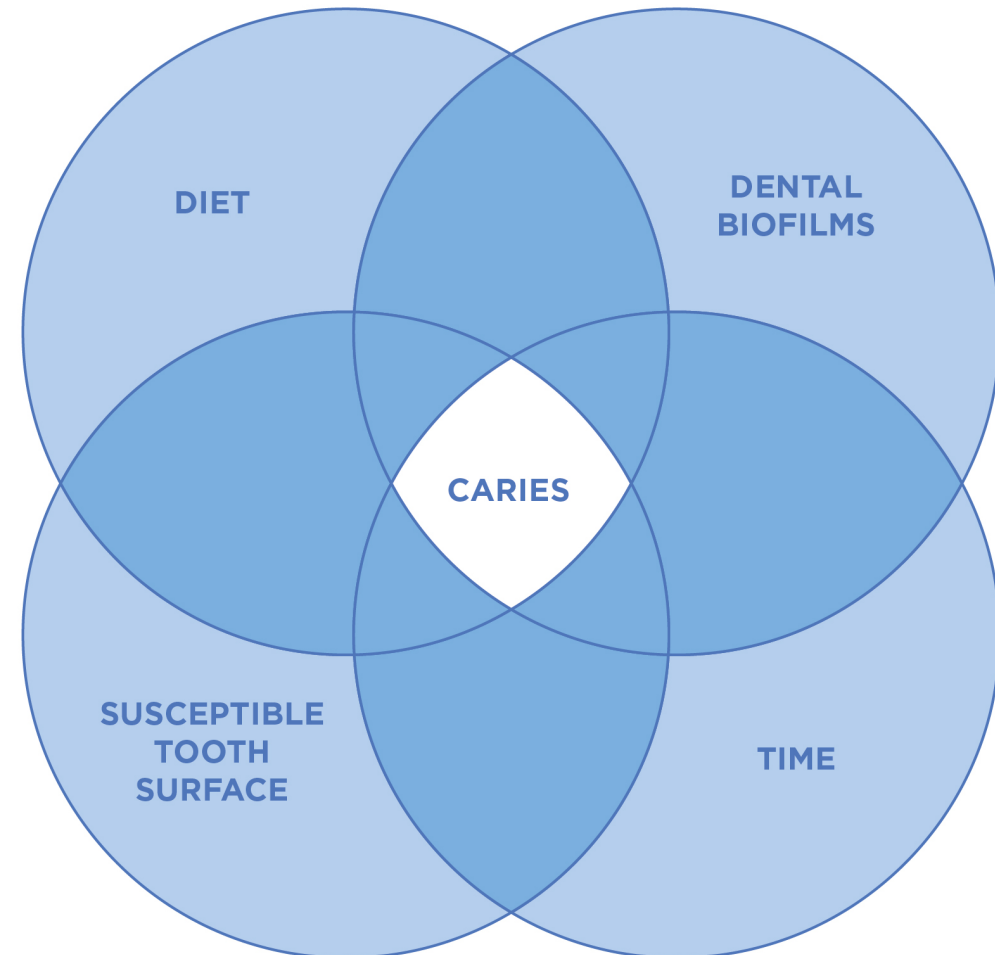
## **Learning objectives**

Understand dental plaque, its role in tooth decay and the role of diet in dental plaque formation.

Identify caries and its appearance in its early stages.

# KNOWLEDGE OF DENTAL CARIES

For dental caries to occur;  
four things need to be present:



# WHAT IS DENTAL BIOFILM (PLAQUE)?

Dental plaque, also known as biofilm, is a soft, sticky layer that adheres to the tooth surface.

Biofilm is predominantly composed of oral microorganisms along with proteins present in saliva.

A thin layer of salivary proteins gets deposited on the tooth surface to form the 'acquired enamel pellicle'.

Once this layer is formed, bacteria, oral microorganisms, adhere to this pellicle, forming the biofilm.



# ROLE OF PLAQUE IN DENTAL CARRIES

Plaque biofilm is characterized by acidogenic bacteria, such as *Streptococcus Mutans*.

When the child consumes free sugars, the bacteria metabolize the carbohydrates into acidic waste products, causing the pH of the mouth to drop.

Essential minerals are leached out of the tooth structure, leading to demineralization.

In a healthy oral environment, saliva production removes this acidic environment over a time period of approximately 30-40 minutes, and remineralization occurs.

However, if the child has suboptimal oral hygiene and is frequently consuming free sugars or fermentable carbohydrates, the mouth remains in an acidic pH, leading to dental caries.



# ROLE OF DIET IN DENTAL CARIES

## Exercise

Name 10 foods or drinks which can contribute to dental caries



# RECAP AND CLOSE

1. Why is interprofessional collaboration important?
2. What are four main parts of a tooth?
3. How do clefts develop?
4. How can clefts be prevented?
5. Why do children with cleft suffer more oral health problems?
6. Why are primary teeth important?
7. What is early childhood caries?
8. What four things are needed to be present for dental caries to occur?
9. How does plaque contribute to dental caries?
10. How does diet contribute to dental caries?

# THANK YOU

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