

Healthy Teeth - Healthy Children

Dr. PR. CHOCKALINGAM, MDS,

Pediatric Dental Surgeon

'SRISHTI', No. 1A, Baby Nagar 1st Cross Street,
Velachery, Chennai - 600 042. **Ph : (044) - 2243 2497**

Dr. G. DHANDAPANI, MDS,

Dental Surgeon and Orthodontist

Z-Block, No.290, Anna Nagar, Chennai - 600 040.
Ph : (044) - 2621 2169

Published By Authors

HEALTHY TEETH - HEALTHY CHILDREN

Copyright © Authors

First Edition - 2012

Price : Rs.75/-

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means. Electronic or mechanical, including photocopying, recording, or any information storage and retrieval system without permission, in writing, from the authors and the publishers.

Printed by :

LKM Publication

Old No. 15/4, New No.33/4,
Ramanathan Street, T.Nagar,
Chennai - 600 017.

Ph. No : 044 - 2436 1141 / 2434 0599

PREFACE

Dentistry or the branch of medicine that preserves, restores and rehabilitates the health of teeth and oro-facial apparatus has evolved, from dentists moving nomadically on horsebacks to extract teeth into a strategic, established science. In this process of evolution, individual specialities of dentistry have consequentially gained identity. Of them is Pediatric Dentistry – Dentistry for children.

The science deals with the delivery of effective and efficient dental care for Newborns, infants and children till 14 years of age. The science rests its core on psychological handling of children, strives to upkeep the health of primary (milk teeth) and young permanent dentition.

This book explains, the core of the science and emphasises on the requirement of treatment for milk teeth and aimed to create awareness of the fact that it is the parents' duty and the child's right to obtain and receive dental care respectively.

Contents

1. Introduction	5
2. Importance of Primary Teeth	9
3. Prenatal Counselling	18
4. Infant Oral Health Care	21
5. Dental Care For Toddler and Pre – Schoolers	26
6. Dental Care for the child in 6-12 year Old Group	34
7. Dental Care for the Adolescent	42
8. Behaviour Management of Children at Pediatric Dental Care	45
9. Hospital Based Pediatric Dentistry	57
10. Dental Treatment for Children with Special Needs	62
11. Child Abuse and Neglect	65
12. Manifestation of General Diseases	70
13. Dental Considerations in Children with Systemic Diseases	83
14. Feeding Habits, Perfect Smiles	91
15. Parental care and Supervision at Pediatric Dentistry	94

1

INTRODUCTION

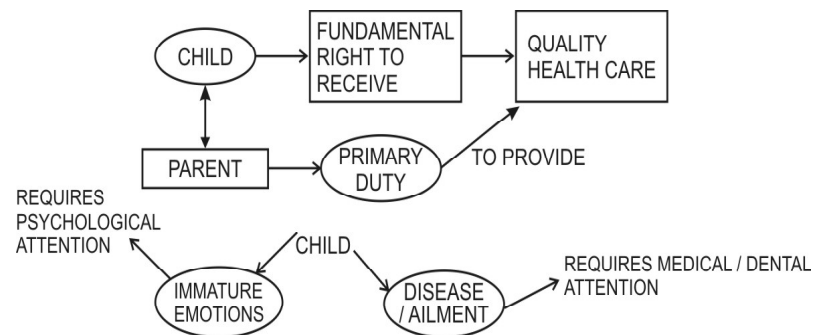
Child is the most benevolent creation of Mother nature. He is a symbol that God still loves the world.

Every child has his/her fundamental right to receive good health care and every parent / primary care taker has his/her primary duty to render the same to his/her child.

Health care for children is unique. More so, dental care for children is very unique.

Primarily Children are emotionally immature. They display an array of immature emotions - such as varying levels of anxiety, fear and phobia.

These immature emotions have to be psychologically handled, on par, while quality treatment is rendered.



Pediatric Medical Health care does not require a high-degree of compliance / cooperation of children. Medical care requires the cooperation of the child to follow the physicians directions only for 5 to 10 minutes.

Also at medical care, there are no huge instruments with wires or fear provoking going all around and less anxiety stimulating factors.

Pediatric dental care requires at least 20 minutes of unconditional compliance / uninterrupted cooperation from the part of the child with the pediatric dentist. Pediatric dentists specialize in child psychology and are better placed to analyse / understand and modify behaviour of children.

In early 1900's there existed no entity called pediatric Dentistry. Dental treatment was not offered to children. Dentists were not trained in child psychology. Crying children were considered a night mare to the dentist. They felt they were spending more time with crying uncooperative children and making less money for

Pediatric Dental Treatment	Pediatric Medical Treatment
Uninterrupted Cooperation Required of the child for atleast 20 mts More anxiety provoking factors for children	Lesser Cooperation Required off children More compliant atmosphere

In 1900's - No Entity called pediatric dentistry existed. Treating children was considered a waste of time by dentists

the time spent. When the dentist is not trained to be tolerant he will not be able to maintain his composure with the child in front of the parent. Pediatric dentistry was so unwanted and even to an extent that a sign board that was a popular, useful compliment given by dental material dealers to dentists that reads thus.

"ALL CHILDREN BELOW 13 YEARS ARE NOT TREATED IN THIS CLINIC"

Ever since the 1950's pediatric dentistry gained its identity and from late 1970's it has been evolving and maturing with a more professional out look, with time.

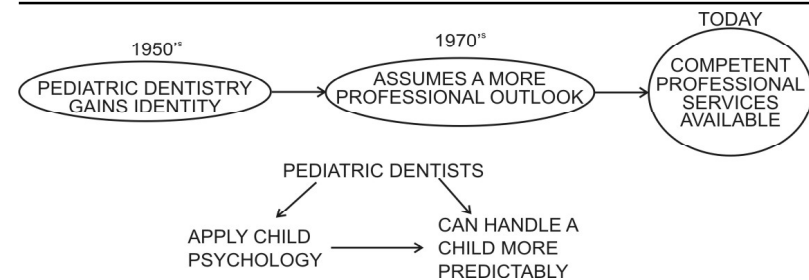
Pediatric Dentistry believes that "NO ONE CAN BE SKILLFUL WITH TREATING CHILDREN, IF THEY HAVE NOT ACQUIRED THE ABILITY TO HIDE THEIR POTENTIAL POWER TO DISTURB"

Competent pediatric Dental - Care services are available today.

Pediatric Dentist respect child psychology and appreciate children behavior at treatment.

Pediatric Dentists can handle uncooperative children more predictably.

More responsibility vests on the shoulders of pediatric dentists. They need to have a stereoscopic vision



to strive to attain multiple objectives at a point of time in two perspectives; viz the child and the parent.

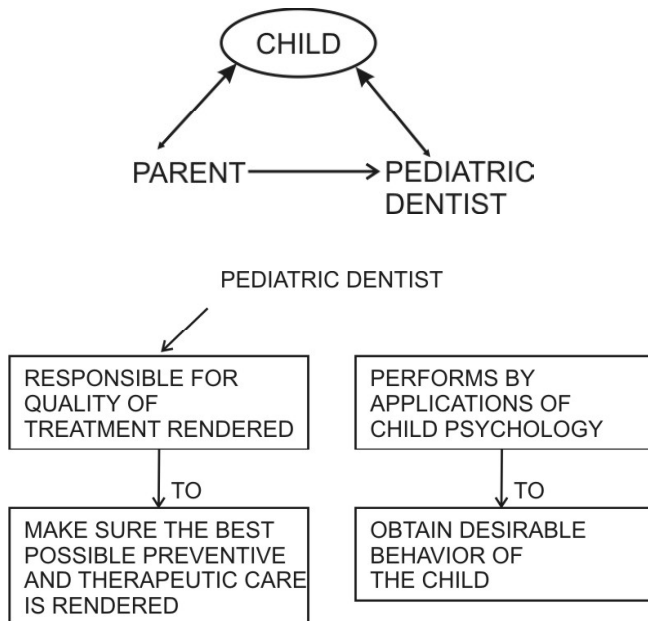
1. Pediatric Dentists are responsible for the quality of dental care delivered to the child as well as the behaviour and psychology of the patient.

2. He has to satisfy the child as well keep the parents, aware informed and motivated of treatment done.

3. The child is top on the priority list for both the parent and the pediatric dentist.

4. All the 3 entities in the PTT are inter dependent. Hence they are connected by 6 directional arrows.

5. These three facts have been depicted in a diagram called the pedodontic treatment (PTT) triangle by wright in 1960.



2

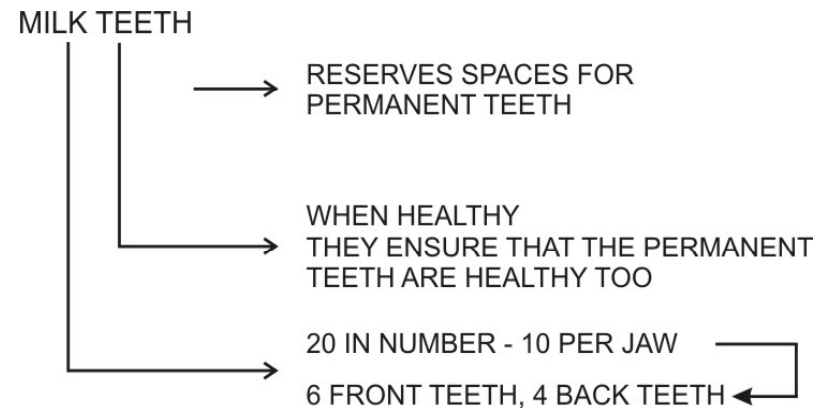
IMPORTANCE OF PRIMARY TEETH

When a child is keenly looked after at and brought up with all moral values, the adult turns out to be a productive, effective and a socially useful adult.

The very same way when milk teeth and the growth of jaw bones are taken keen attention off, during childhood (0 - 14 years), the adult teeth and jaws turn out to be in good shape.

There are various functions of milk teeth. They are 20 in number. Out of them, 12 of them are front teeth and eight of them (2 on each side) are back teeth.

The front teeth start erupting at 6 months of age of a baby. However, there can also be a small delay at eruption of the first milk tooth.



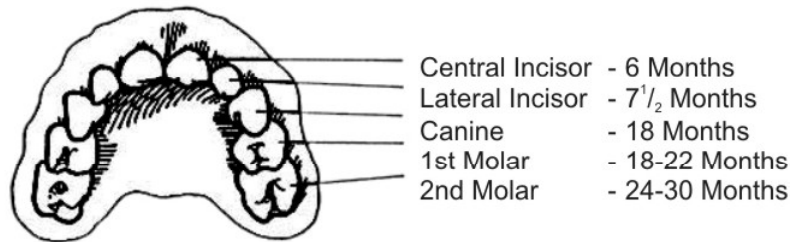
It erupts at the lower jaw at the centre. The delay upto 9 months is considered normal. After that, if still teeth do not erupt, a low intensity x-ray diagnosis is required to assess the development of that particular lower front tooth and diagnose the cause of non-eruption. Sometimes a very minor surgical procedure is required to assist the eruption of the tooth.

In several conditions like pre-term birth, lower birth weight non-eruption of the first primary tooth upto 12-15 months may be considered normal. In several pathological disease states like hypothyroidism, there is a notable delay at eruption of milk teeth.

After 1 - 1½ months after the eruption of lower front teeth at the centre, milk teeth in the upper jaw at the centre erupt. This is followed by another lower front teeth (one on each side) beside the erupted central teeth. Its position may be called para central.

It is followed by its counterpart and tooth in the upper jaw.

**Normal Eruption Schedule
Upper Milk Teeth**

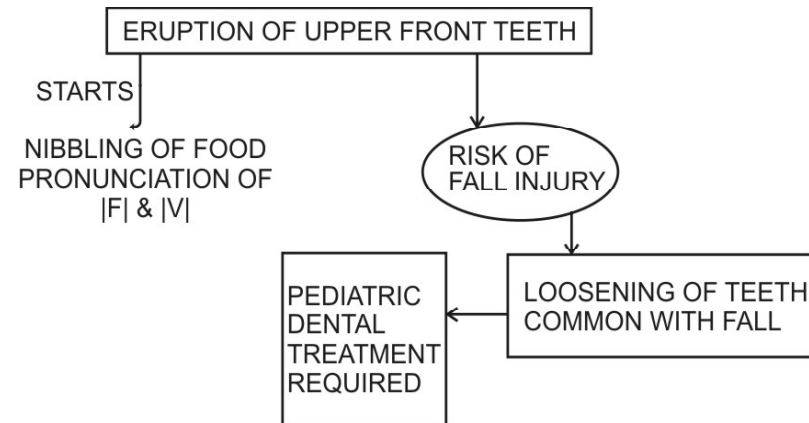


Usually at the end of 1 - 1¼ years (12 - 15 months) there would be 4 upper front teeth and four lower front teeth.

At this stage, the child is able to bite and nibble food stuff with the front teeth. These front teeth also help him to pronounce words and syllables such as /f/and/v/ better.

There is one other word of caution to parents at this time. That is - it is in the 1 - 2 year span that children learn to walk. While doing so they tend to fall against the wall or on the ground and undergo trauma to dentofacial tissues.

When children of this age undergo trauma, their teeth can either loosen away from the jaws or fracture away. The prior is more commoner. In case of dental trauma, the avulsed teeth, fracture fragments and the child should be taken to a pediatric dentist to deliver appropriate care. The objective of the appropriate pediatric dental care will be to make the loosened teeth stay firm in the jaw bones.

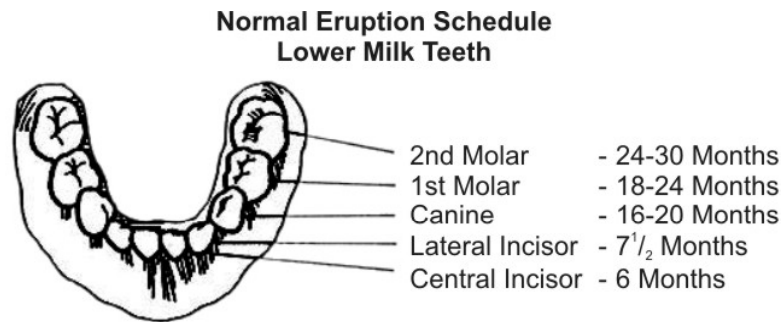


This is done by way of 'splints'. These splints are made by making a measurement or impression of the teeth and the jaw involved. The splint is then fabricated and fixed on the teeth and jaws. The logic is quite similar to the immobilization of broken fragments of a bone in the hand or leg. The splint is worn for around 3 - 4 weeks after which it is removed.

With this treatment, the loosened teeth can be made to stay firm in the jaw and the child is able to retain his / her front teeth till the time it is to naturally exfoliate.

After the eruption of the front eight milk teeth, (the child could probably be 1½ years of age then), the next set of milk teeth to erupt. They are primary molars. The first back teeth on each quadrant called first molar. Subsequently, now when then first molars erupt fully to meet their counterparts on the opposite arch, the child will be able to chew on food.

Also during the same period spanning from 16 - 24 months of age, the third front teeth on either side is all four quadrants called the canines would erupt. With the

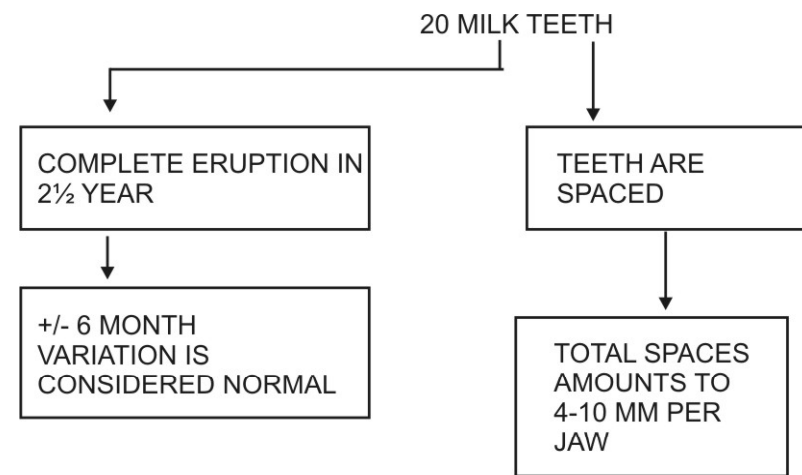


eruption of canines, the smile of the child becomes complete. In the span 24 -30 months of age, the second molar in each quadrant erupts. When these second molars erupt fully to contact its opposing counterparts chewing becomes very efficient.

Thus, all the 20 milk teeth would have completed eruption by 2½ years of age. There could be a variation of plus or minus six months.

These 20 teeth are not arranged with well established contacts between them. They have small spaces in between them ranging from 0.5 - 3mm. Totally, the amount of empty spaces in between teeth is around 4-10 mm in each jaw.

These space in between primary teeth are absolutely normal. In fact, an average of 6 - 8mm is always favourable. The reason being that the permanent teeth

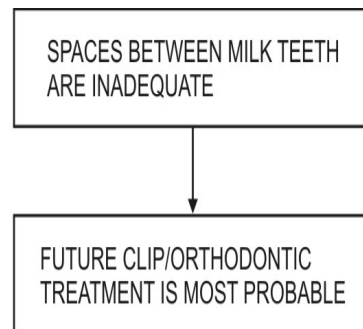


* SPACING BETWEEN MILK TEETH IS NORMAL AND ALSO HIGHLY DESIRABLE

are usually wider than the milk teeth. When the permanent teeth erupt after the exfoliation of milk teeth, there is some expansion of the jaw bone that increases the available space. However, the increase by expansion is not enough to accommodate the wide permanent incisors. It is here that the spaces of the dimensions of 6 - 8mm already present come in handy to accommodate the permanent incisors.

When the spaces are absent or less than 4mm (when cumulated together) the wider permanent teeth will erupt in a crowded fashion. It will most probably require orthodontic treatment (braces) for correction of crowded permanent teeth.

So, when the primary teeth do not have adequate spaces between them, the pediatric dentist informs the parent that the child will most probably require orthodontic treatment.



□ FROM 2½ YEARS - 6 YEARS NO MORE ADDITION / FALLING AWAY OF TEETH

□ PERMANENT INCISORS, CANINES AND PREMOLARS ERUPTION WITH EXFOLIATION OF MILK TEETH. MOLARS ERUPT DE NOVO.

From 2½ - 6 years, there is no addition or deletion of the existing 20 milk teeth. At six years of age, the first permanent tooth erupts.

It is a molar tooth. It erupts behind the last erupted primary second molar. The molars on the lower jaw precede at eruption when compared to the upper jaw molars.

So, when the first permanent molars erupt fully and come to contact their counterparts on opposing teeth, the child would have 3 chewing teeth in each quadrant. As a result, the chewing would be more efficient.

Later, at seven years of age, the front teeth at the centre (central incisor) in the lower jaw would exfoliate. The exfoliation of teeth with its corresponding ones on the other half of the same jaw will usually be synchronous.

The exfoliation of the primary teeth and the eruption of the permanent counterpart are also synchronous. Moreover the eruption of permanent teeth are the cause of exfoliation of primary teeth. When the permanent teeth keep moving up they erode the root of primary teeth. The erosion continues till it becomes very small to hold on and the primary teeth exfoliate.

The next permanent teeth to erupt into the mouth after the lower front teeth at the centre are the upper front teeth at the centre and the lower front teeth second from the mid line.

This happens before 7½ years of age. Before 8 years, the upper front teeth that is, second from, the centre also erupts. So at 8 years of age, there are totally 12 permanent teeth (4 - permanent molars, 4 front teeth on lower jaw

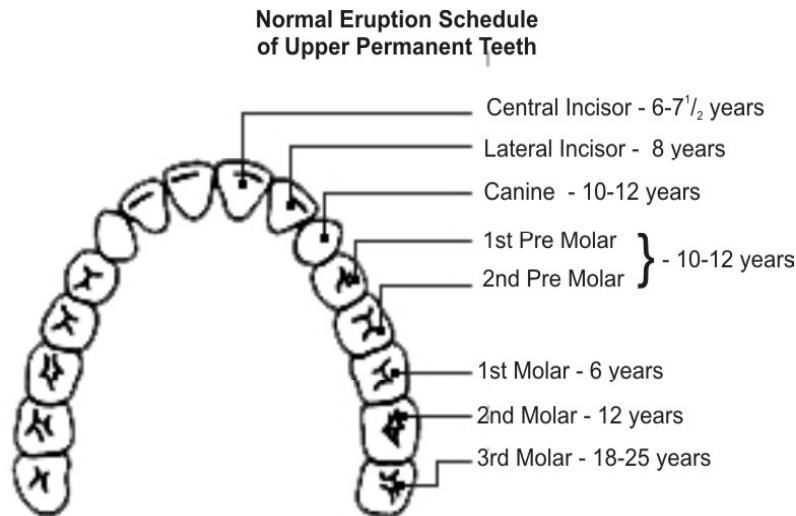
and 4 front teeth on upper jaw) and 12 milk teeth (4 - molars on lower jaw four in the upper jaw and four canines).

Between 9 years and 11 years, all the milk teeth, the remaining 3 in each quadrant exfoliate. Their order is a little variable. The exfoliated deciduous molars are replaced by premolars. And the deciduous canines are replaced by permanent canines (corner teeth).

Usually the permanent canine in the upper jaw is the last permanent teeth to erupt on exfoliation of a primary teeth, in other words, it is the last succedaneous teeth to erupt.

At twelve years, the second permanent molars erupt. They erupt behind the first permanent molars. They are called as 12 years molars.

The second molars come into effective chewing at 14 years of age.

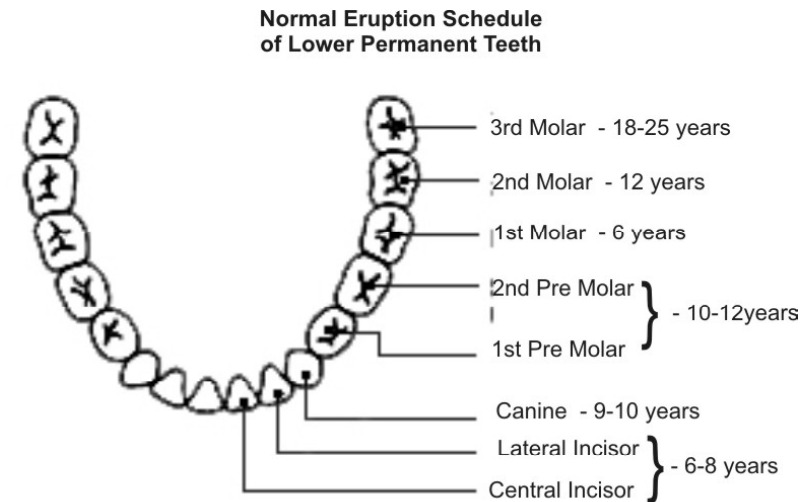


And at 18 years, the third permanent molars tend to erupt.

When a permanent tooth erupts into the mouth, it is not completely formed or not mature. The root of the tooth formed to only half the length. As the tooth continues to erupt and attains contact with the opposing counterpart the root of the tooth in around ¾ formed. And only after 2 years from the time of eruption is a tooth fully mature.



Eruption status completely attained with acceptably normal alignment



3

PRENATAL COUNSELLING

Dental care / attention for the child can start even before it is born. The teeth and the oral apparatus begin to develop at the sixth week of gestation.

The prospective alveolar arches are formed at the sixth week of gestation. In these alveolar arches there form some thickenings 10 in each arch - which form 10 milk teeth per arch. The arches grow further down ward to form the permanent teeth (incisors / canines / premolars) and grow backwards to form permanent molars.

So several factors can affect the dental development or jaw bone development in the intrauterine period. The expectant mother has to be offered counselling regarding the various points so that she can make sure the jaw/teeth of her loving child is in shape, form and harmony. They are -

Pre-natal (at pregnancy) care / counselling is important for dental development

because

Jaw bones and teeth develop at the 6th week of pregnancy

1. Nutrition - The mother has to take nutritious food that is rich in protein. She should take food rich in Calcium and Phosphorous as they directly involve to ensure the quality of dental tissues formed.

2. She should not take medications like tetracyclines, as they can cause brown staining of teeth in children. In foreign countries ladies consume alcohol. If it is consumed during the first 3 months of pregnancy, development of nose, and upper jaw will be markedly affected.

3. She should have her health maintained. She should prevent contacting German measles or Rubella infection. This can cause cardiac malformations in the foetus and sometimes blindness too.

If a lady is a syphilitic she should not plan pregnancy, as maternal syphilis can cause congenital syphilis in the child which includes features like blindness, dental malformations (screw driver shaped incisors and mulberry molars).

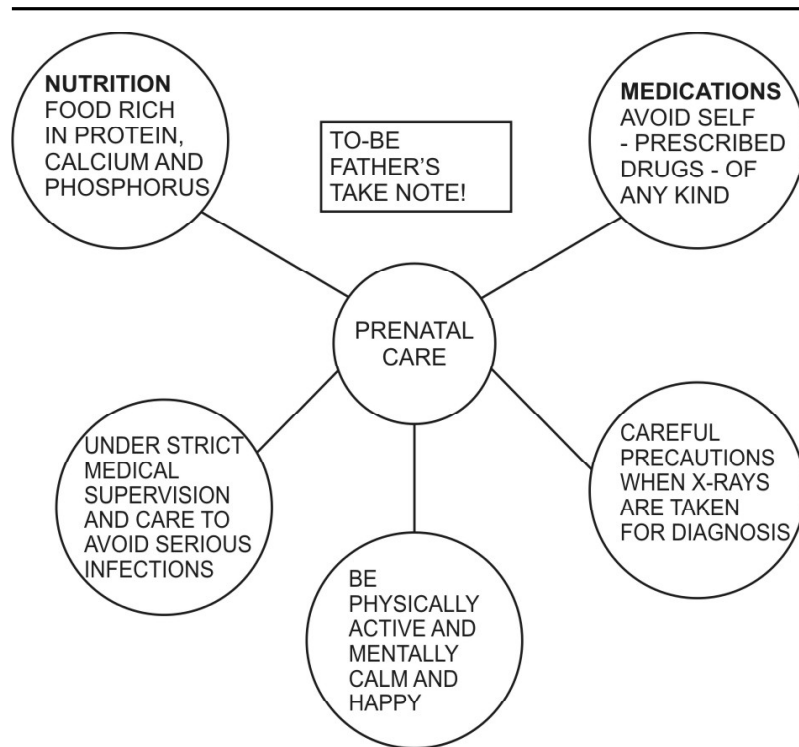
4. She should be careful that she does not inflict any physical or psychological trauma. The intra uterine growth is an incremental one - that is little by little; day by day. So if she is physically /psychologically traumatized, growth will be derailed from the normal pattern.

Milk teeth develop from arch shaped thickenings (dental lamina) that forms at the 6 weeks of pregnancy



Permanent teeth develop from another symmetric arch that develops as a downward extension of the primary dental lamina (milk teeth)

5. The mother should be careful when she requires x-ray radiation for medical / dental diagnosis. The fetus is at a higher risk for damage than the mother, so radiation has to be avoided. If it is essentially required protective measures have to be employed like a lead apron worn by the mother to protect the foetus.



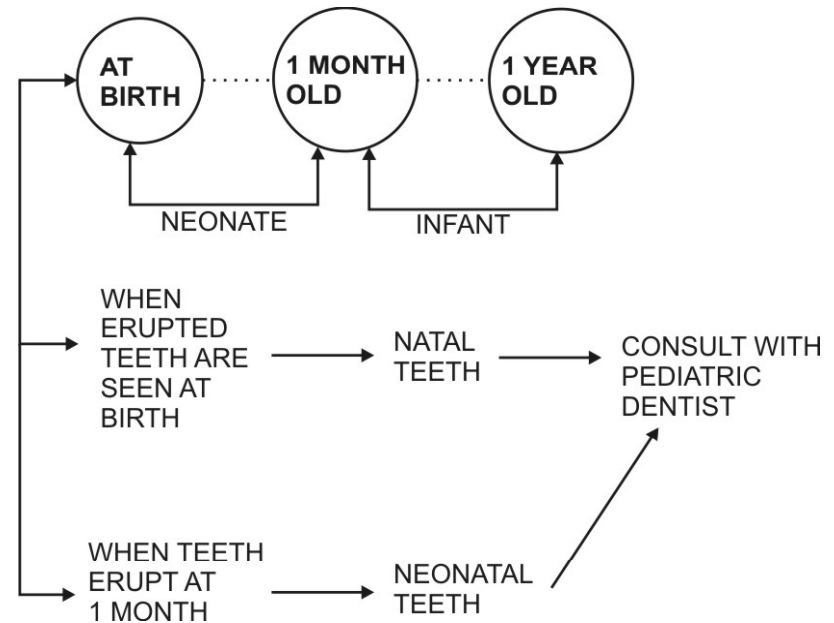
4

INFANT ORAL HEALTH CARE

High magnitude of attention need to be given to the children in 1 year age group. They are called as neonate, at or before one month of age and an infant from one month to one year.

Neonatal pediatric dental care commonly involves two issues.

1. Children who are born with teeth. These are called natal teeth. There are usually extra teeth and not milk teeth. They commonly erupt in lower front



teeth region. Sometimes these extra teeth are not present at birth but erupt before 30 days of life. They are called neonatal teeth and not milk teeth. Rarely, these teeth are sometimes milk teeth, which require a consultation with a pediatric dentist.

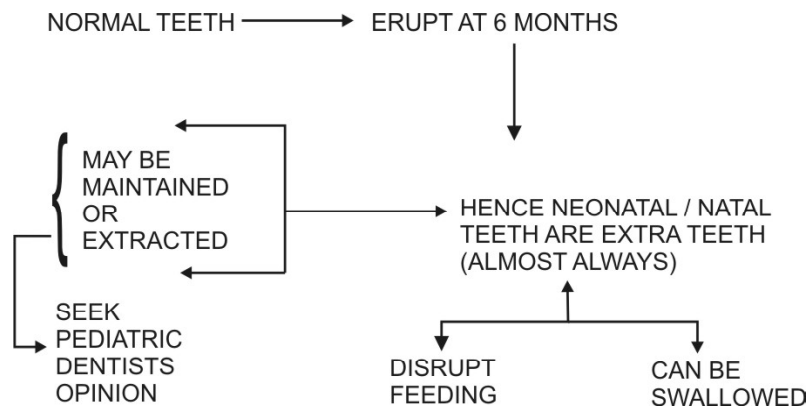
Normal milk teeth should erupt only after 6 months.

These extra teeth pose discomfort to the child and trauma to the breast tissue of the mother so that breast feeding is difficult and painful. Most of the times it is preferred to extract these extra precocious teeth. A pediatric dentist will be able to make a decision for you.

Moreover when these extra teeth are sometimes extremely mobile and can be swallowed, aspirated to give other leading complications.

2. Cleft of the lip and cleft of the palate:

This is common in 1:1000 live births approximately. When the baby has cleft lip, it is unable to suck efficiently from mothers breast. When there is cleft palate the milk sucked by the baby can come out



through the nose. When there is cleft lip and cleft palate, feeding is absolutely non-productive and not satisfying to the mother and baby.

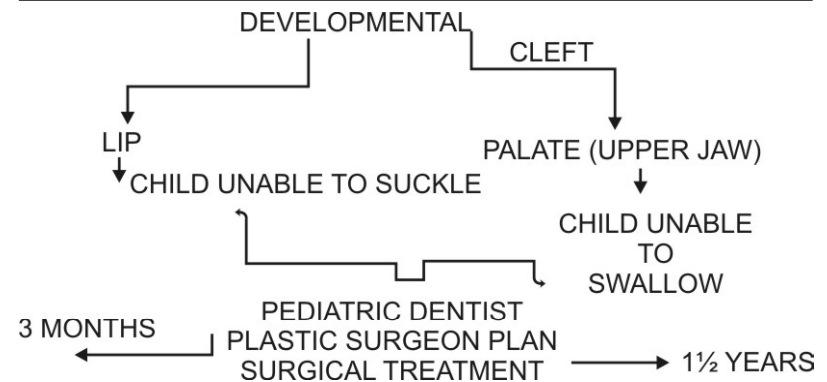
The pediatric dentist can help making clip for the baby with cleft lip to stop the milk coming out through the nose. The surgery for cleft lip need to be done at 3 months and cleft palate at 1½ years. Pediatric dentist and a plastic surgeon are involved here.

This baby will have growth retardation of the upper jaws and teeth, but can be corrected and they need to be in constant touch with the pediatric dentist.

Oral cleansing

Cleaning of mouth is required for the baby even before the teeth erupts.

The Oral cleansing of a the gum pads with no teeth should be wiped with a guaze cloth (Pre-toothbrush) wound over the finger. The advantage is that this procedure done twice a day can bring down the number of microorganisms in the oral cavity. This pretooth brush (Poppy chews) is now available.



The vulnerability of the teeth to dental caries is proportional to the number of organisms in oral cavity.

So if this is done, when the teeth erupt, they will be erupting in an environment with less vulnerability for dental caries incidence.

This should be continued till 2 years of age. Later a baby tooth brush can be used. The amount of tooth paste to be used is the size of a groundnut.

Pediatric tooth pastes are now available. They are safer than adult tooth pastes for children who have the habit to swallow the tooth paste.

The parents should only do brushing for their kids till 4 years. When the child is able to tie the knot of the shoe lace, he/she is ready to do tooth brushing on his/her own and handle his/her tooth brush by self.

However parental supervision is needed till a child is 11 years.

As for the dental development and health of primary teeth, breast feeding should be partly weaned with supplements.

A baby can be weaned at one year. A feeding bottle can be used till 1½ years only. That too the choice of the nipple is important.

After one and half years the child should use a sipper cup and then to a drinking cup at the latest by 2½ years of age. If the child is still using a feeding bottle after 2 years also, he will be having malformation of the jaws with the upper jaw protruded. Moreover it is more difficult to wean him out of the bottle.

Early childhood caries

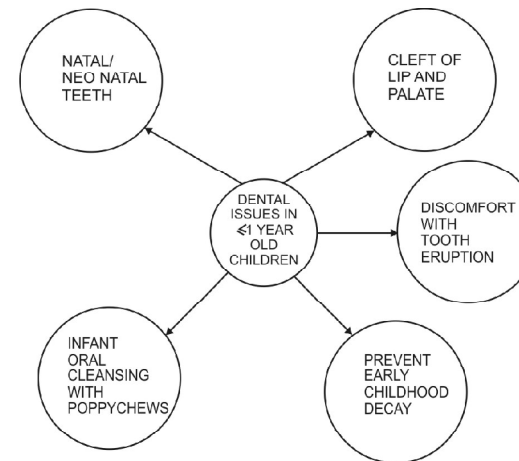
This is even more specific to the children who use a feeding bottle when they go to sleep. Here on an average ten out of the twenty teeth are decayed and badly broken down.

More importantly the upper front teeth are badly broken down with unaesthetic smile. Prognathic maxilla - The feeding bottle specially when an improper nipple is used, the lower jaw is underdeveloped and the upper jaw is excessive in growth.

Tooth Eruption Discomfort

During primary tooth eruption, the child might face irritable feeling and discomfort at the place of eruption, bleeding from gums, mild fever and less commonly ulceration and loss of apatite.

These symptoms are normal and do not require any medical intervention. First dental visit of the child to the dentist should be at the latest by 1 year of life.



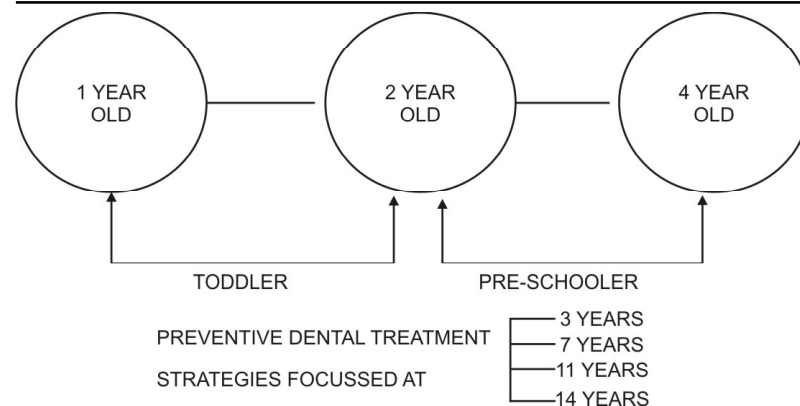
5

DENTAL CARE FOR TODDLER AND PRE-SCHOOLERS

Dental care for a child in a three - six year old category is very crucial. It takes to path of what could be the prospected dental health of the individual till life.

Prevention is better than cure is appropriate to any disease as well to dental caries. Dental caries is best prevented than treated. The prevention requires less effort, time and money but requires the awareness from part of the patient at the appropriate time.

Preventive dental treatment modalities need to be performed at ages 3,7,11 and 14 years. At 3 years the following preventive dental treatment strategies should be emphasized.



A. Diet Counselling

Children are fond of Chocolates, Sweets, Lollies and Gums. An adult cannot take 10 chocolates at a point of time but most children can eat them and even more than 10 at times.

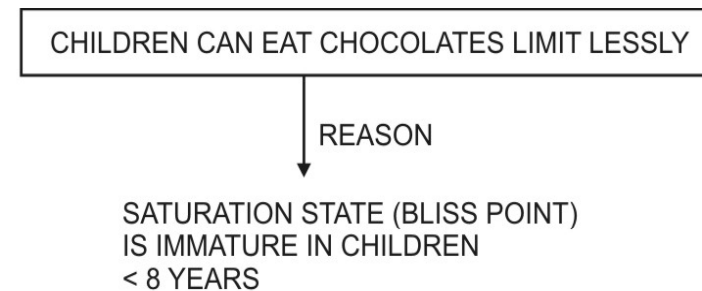
Why??

The reason is there is a state which is called BLISS POINT. It is at this point that the tongue is extremely satisfied of taking sweets or sweet food items. On attainment of the bliss point the person will not be able to take more of sweets for atleast an hour from thereon.

But for a child less than 8 years this BLISS POINT is never attained.

That is the reason why they are able to eat more number of chocolates at a point of time.

A child who is taking 3 chocolates five times a day will have more decayed teeth than who take 5 chocolates 3 times a day.



CHILDREN PREFER CHOCOLATES, LOLLIES AND GUMS, IN COLOURFUL WRAPPERS THAN CONVENTIONAL SWEETS (LIKE LADDUS, MYSOREPAK) DUE TO THE FORMAT OF PRESENTATION

This implies that the number of chocolates taken during a day is not the primary factor that influences the dental caries (its vulnerability).

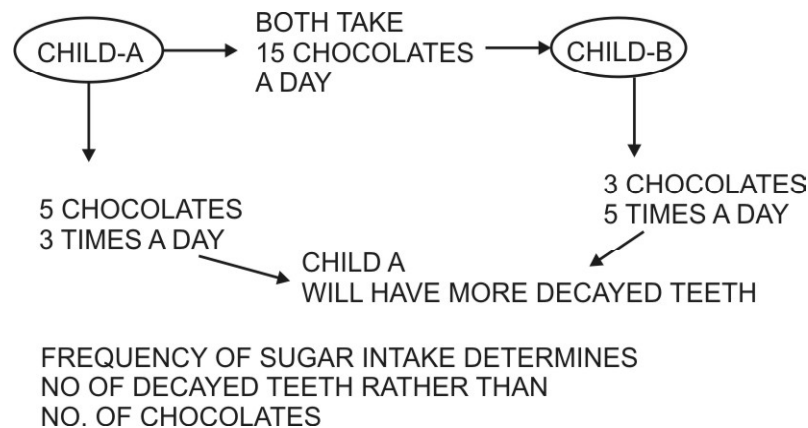
Rather it is the interval between intake of chocolates which is more important. Shorter the interval, more is the tooth decay - proneness.

What could be the best advice to a child / parent on chocolate eating?

This is most commonly asked question to a pediatric dentist.

A strict ban on eating chocolates will be pain and disappointment to a child. The tooth decay depends on number of times there is an exposure of sugar and not on the magnitude of sugar exposure (how many chocolates?)

So they can be advised to take chocolates only once during a day that too preferable just after lunch. At this point of time, how many ever chocolates the child wishes to have, he can. So without imposing a strict ban on chocolate eating this rescheduling of chocolate eating can



help prevent tooth decay. The other points to be emphasized at diet counselling are -

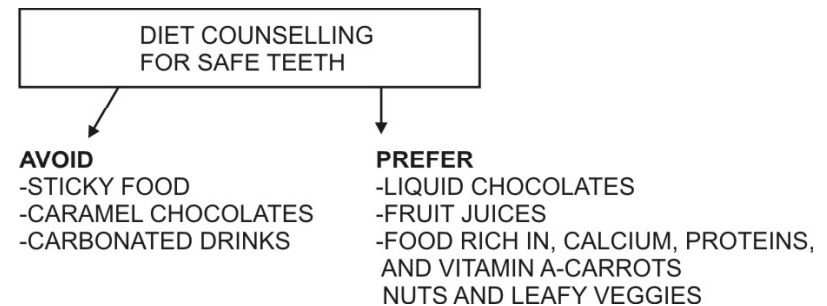
- a. All sticky snacks should be avoided.
- b. Caramel containing chocolates can be preferred less
- c. Liquid chocolates are less cariogenic than solid ones.
- d. Carbonated drinks should not be preferred as they tend to dissolve enamel to several microns.
- e. Food rich in calcium, proteins, vitamin A and D are required for normal growth of the teeth.

B. Professional Topical Fluoride Application

Fluoride is an essential ingredient of tooth pastes. The adult tooth pastes contain 1000-1500 ppm of fluoride.

Fluoride reacts with tooth enamel. Enamel is chemically hydroxyapatite. Fluoride reacts with hydroxyapatite to form fluoroapatite. This fluoroapatite is resistant to tooth decay. Sometimes children who are prone to tooth decay will require addition fluoride supplements - topically and systemically.

Topical application of fluoride by the dentists needs to be done from 3 years onwards once a year till the proneness to tooth decay reduces.



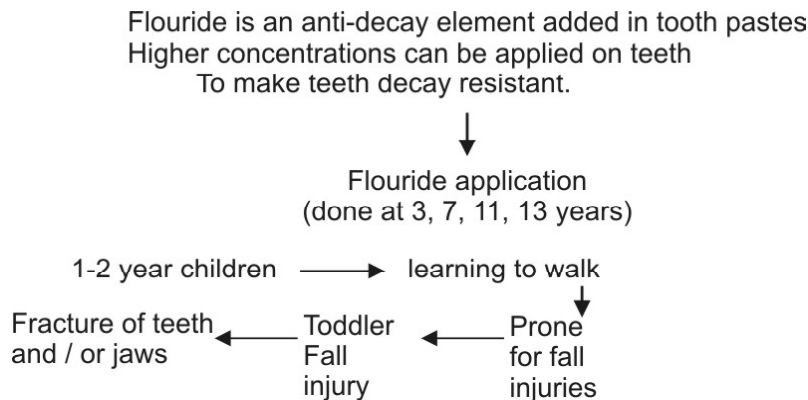
The professionally applied topical fluoride provides 9000-21,000 ppm of fluoride and thus more effective.

Systemic fluoride supplements comprise of fluoride drops, tablets and vitamin - fluoride combination. However these are not commonly used in India. The child should be encouraged to brush twice a day morning and night. The parent can do it for the child if he is not able to handle a tooth brush else the child may perform under parental supervision.

Tooth / Jaw Fractures

Fractures of milk teeth are common in 1-4 year old age group. 1-2 years old children learn to walk and they tend to fall against wall / floor / objects. 2-4 years old children are so curious and active that their over activity can work against them.

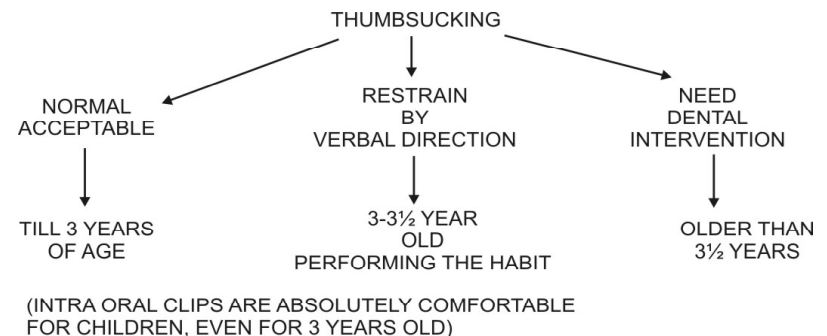
Fractures of milk teeth should not be left unattended. Any trauma to milk teeth, if it is pushed inside the jaw, it can harm the permanent teeth. If the traumatized tooth becomes loosened the pediatric dentist will assess if the tooth can be saved or extracted. Tooth



which have fallen out need to be assessed if they are to be replaced. An unattended traumatized milk teeth can secondarily be infected. So any trauma to teeth, jaws or lips with or without bleeding needs a consultation with a pediatric dentist.

Thumbsucking

The most common abnormal oral habit in Indian children is thumbsucking. It is described as habit which has an addiction potential where the child sucks the thumb and / or fingers in varying depths into the mouth. This habit is normal till three years of age. This practice gives the child more security and comfort when he / she is alone. Any attempt to stop the habit in a less than 3 years old child is incorrect. The child will tend to develop a state of insecurity and disinterest with a world if it is done. After three years, the frequency of the habit is expected to come down. From 3 to 3 ½ years the parent can start to restrain by soft verbal direction or instruct the child not to indulge in such habits. If this thumbsucking habit persists after 3½ years it requires professional intervention by a pediatric dentist.



The pediatric dentist would first counsel the child on the ill-effects of the habit and will also counsel the parents. The reason being that, a child who feels insecure due to long absence of the mother will give himself into indulging in the habit with higher frequency.

If this approach does not work, the pediatric dentist will design intra oral clips that are fixed to teeth. The clips are not sharp and do not hurt the patient. It is designed in such a way that the thumb will be able to be placed but the absolute pleasure will not be obtained.

As children work on a pleasure - pain principle, when they obtain no pleasure they stop indulging in the habit. So slowly the habit is forgotten. The pediatric dentist, also sometimes design appliances that remind the patient not to keep thumb / fingers inside the mouth.

There is, also an existent calendar reward system at pediatric dentistry.

The pediatric dentists hands out a calendar for the month to child, with a bunch of 'star' stickers. If the child did not thumb suck for an entire day he is allowed to paste a star. At the end of the month the number of stars are calculated and the child feels that he / she has achieved something worthwhile.

The older the child reports to the pediatric dentist, the more elaborate is the treatment. For children still having the habit of thumb sucking at age over 10 years, the child requires psychological counseling also.

Using harsh words, verbal abuse, physical abuse, punishments and insulting before friends should be strictly avoided by parent to stop thumb sucking habit in children.

We have come across parents punishing children to stop the habit, even to the extent of dropping a drop of hot oil on the finger that is sucked. All this is absolutely unacceptable and criminal proceedings can be initiated against the parent on the account of child abuse.



A

8 year old child having maldevelopment of upper teeth in jaws due to thumbsucking habit



B

Correction of Maldevelopment by using habit breaking appliances given by pediatric dentist

Approaches NOT to be used for Thumbsucking children

- Using harsh word, verbal abuse
- Humiliation in Front of Friends/Relatives
- Punishment of Any sort (Child abuse - liability for prosecution)

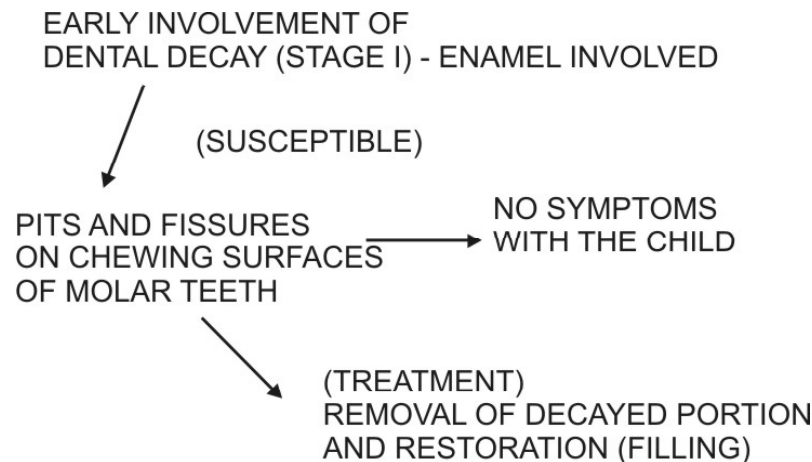
Reason - The Habit is at subconscious level needs psychological tackling

6

DENTAL CARE FOR THE CHILD IN 6- 12 YEAR OLD GROUP

Management of early and advanced dental caries (tooth decay) has a mainstay role is pediatric dental care is this age group. Dental caries will initially involve pits and fissures of molar teeth. When the decay involves only the first layer of teeth - the enamel, there is no pain or sensitivity.

In this stage, the treatment would involve removal of the decayed part of the tooth and restoring with a fluoride releasing cement.

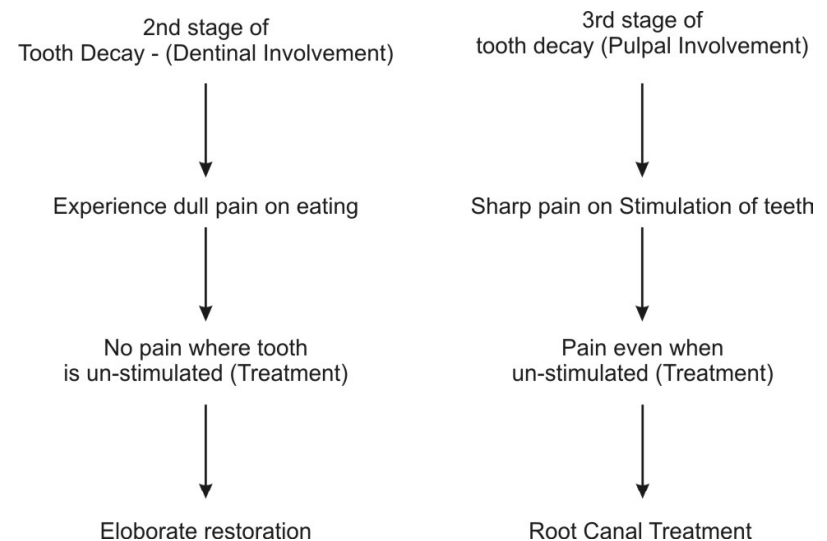


The uses of fluoride in preventing subsequent decay is mentioned in the earlier chapter. Silver amalgam which was previously popular is less preferred these days as it is black in colour and does not have any fluoride content.

When the decay of enamel is untreated it progresses to involve dentine - the second layer of a tooth. This does have nerve endings. When the dentine starts to decay the child experiences dull pain on eating. When the food particles get removed from the cavity of the decayed tooth, the pain vanishes.

This reduces the appetite of the child. At this stage too the tooth requires only a filling. If the decay is unattended, it progresses deeper. When half the thickness of dentine is decayed the child starts to get sharp, pricking, pain especially at night.

It implies that the nerve of the tooth is involved, which is the reason for sharp, severe pain. The pain is

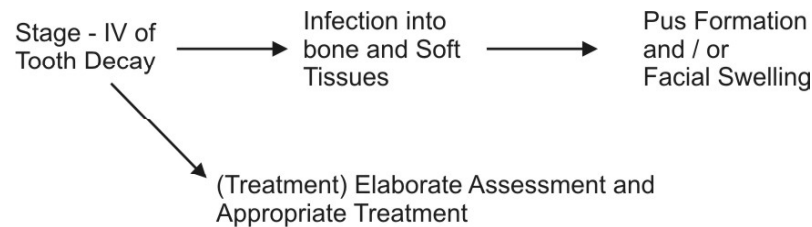


persistent, even when there is no food lodged in the cavity. At this stage the milk tooth requires a root canal treatment after this, the tooth is painless till exfoliation.

A metal (stainless steel) crown, needs to be placed on tooth that is root canal treated to make it strong at use. If the tooth is untreated at this stage also the nerve decomposes and a focus of pus develops. From here in a dental infection evolves into ora-facial infection with a facial swelling.

At these stages if the tooth is badly broken down, then it will be preferred to be extracted. The milk teeth are anyway going to fall out. Then why do they to be filled and saved? This is a frequently asked question. The logic of treatment of decayed milk teeth is this "Milk teeth need to be maintained in a healthy, functional stage till the time nature wants it. The milk teeth in the front (incisors) are required till age 7 and milk teeth at the back till age 11.

If infected milk teeth are retained with no treatment, it could form a septic focus at its root tip, which can either change the colour or shape of the succedaneous tooth. Also when if milk teeth are extracted well before the time



Milk Teeth Need to be Maintained in a Healthy, Functional Stage Till the Time Nature Wants It.

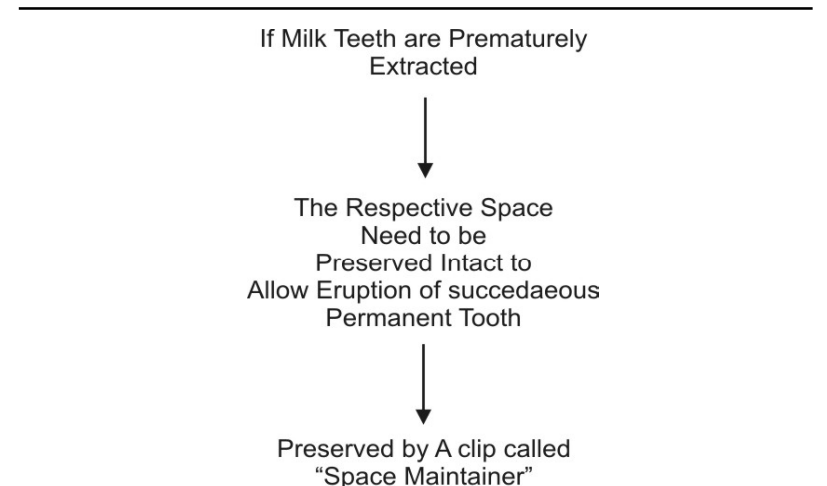
they are to be exfoliated, the space once that held the primary tooth should be maintained. Else the teeth which is behind will fall forward and the teeth in front will fall backward.

This will reduce the space for the eruption of the succedaneous tooth, which will eventually get locked. So any milk tooth should be restored to a functional state: If it is extracted a space maintainer should be fixed, to prevent space loss.

Prevention of dental caries

In this age group the following dental prevention strategies should be adopted.

- A. Diet Counseling - As described in previous chapter.
- B. Topical Fluoride application - This should be done once at 7 years.
- C. Pit and Fissure sealant:



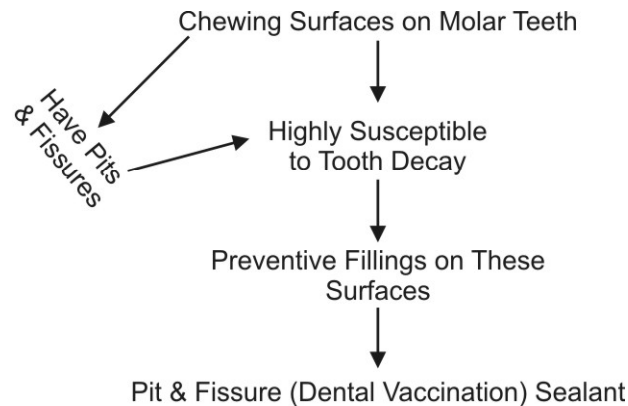
This is synonymous with the term 'dental vaccination'. This is done for the permanent molar teeth.

The permanent molars are the permanent teeth which become decayed, most commonly. That too, it is the chewing surfaces that become decayed.

These surfaces have pits and fissures. These pits and fissures are so small that bristles of the tooth brush can't enter to clean it, but food can enter inside. So tooth decay starts there.

On these pits and fissures - a liquid filling material is flowed and allowed to set. This liquid filling material is called a sealant that covers all pits and fissures. After sealant application the chewing surface has no pits / fissures but a glass-like surface, so its chances to become decayed is brought down by 99%.

Many parents get anxious with the smile of their child when they get to look a little unacceptable. A few of the associated problems are normal but many of them require orthodontic intervention at a specified time during this phase.

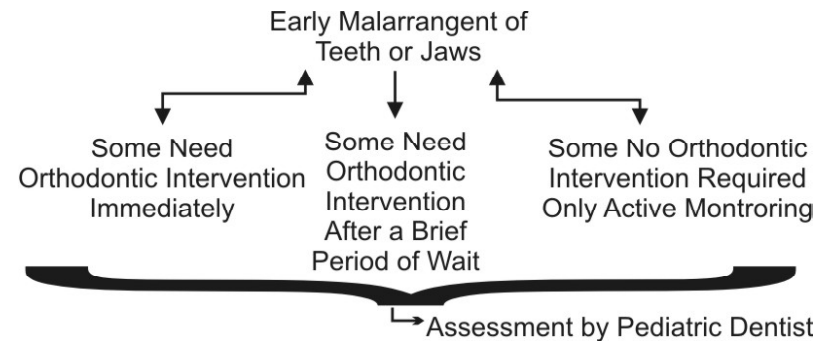


There are a few instances that do not require treatment, only observation at intervals. The permanent teeth tend to look bit of the face - It is normal. The permanent teeth are definitely larger by atleast to 40-50% of that of the milk teeth. They are meant for the adult face. Eventually when the face grows, the larger sized permanent teeth will fit in and no treatment is required. Sometimes the child is brought for clips when he has his newly erupted front teeth turning outwards and rotated with a small space in the center. This is called ugly duckling stage.

Because a duckling which looks ugly later becomes a beautiful swan. The same way this mal arrangement is due to the permanent canines which are erupting. If they have no associated problems they require only observation.

Sometimes the parent complaints that his 9 year old child's upper jaw is forwardly placed and lower jaw looks small. Both the jaws do grow together. Usually the upper jaw grows first and the lower jaw grows later.

So in a 9-11 year old patient the lower jaw looks small because its growth increment is yet to happen. However not all cases who present thus are normal.

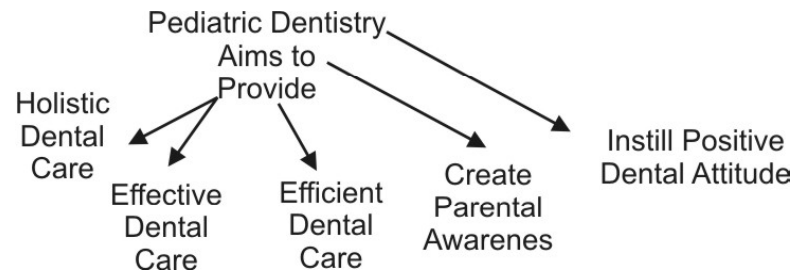


However these clinical presentations need to be consulted with a pediatric dentist, and subsequent treatment / observation should be followed up with. Several other malarrangement of jaws need immediate attention by clips - either fixed or removable. Some situations which require immediate orthodontic intervention are-

Early orthodontic treatment is done to

- Put back normal form of the dentoalveolar arch.
- Reestablish normal swallowing pattern
- Make the child look more aesthetically acceptable, that influences this self-esteem.
- Make the teeth less prone to trauma and fracture (especially protruded teeth)
- Make future - second phase of treatment easier.
- Prevent existing deformities getting more complex.
- Eliminate the need of future plastic surgery for dentofacial deformities.

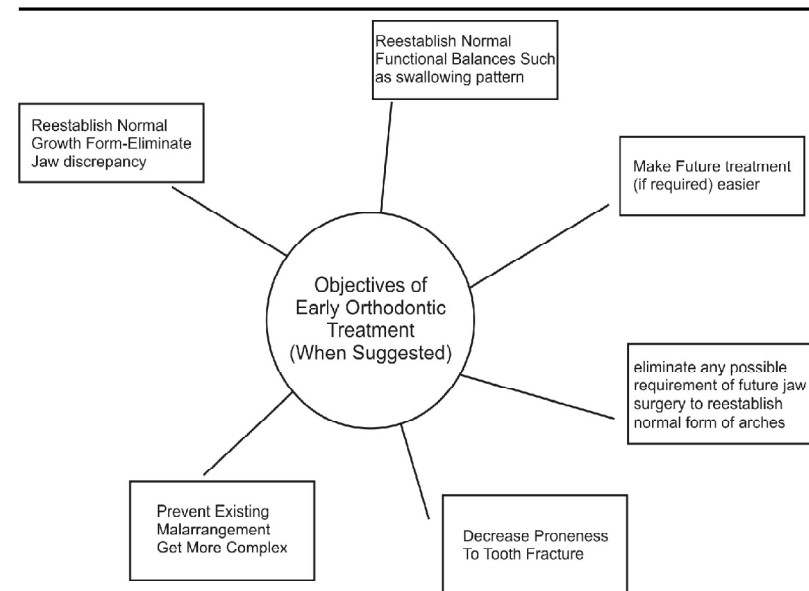
However the early orthodontic treatment does not eliminate the need for future orthodontic therapy but



reduce the chances to have it and the time required for treatment.

So the real focus of pediatric dentistry is to provide holistic, effective and efficient dental care to children till 14 years of age. It also focuses to instill a positive dental attitude in children. It aims to preserve the integrity of the dental arch so that the permanent teeth come to place in a regular mode.

Parental awareness, motivation and interest to get this privilege of pediatric dentistry to their children is most required. This book is aimed at creating the much required awareness on pediatric dentistry with parents.



Note :
When Future Orthodontic treatment would also be required after early ortodontic theapy it would be simpler, of shorter duration and use lesser forces for tooth movement

7

DENTAL CARE FOR THE ADOLESCENT

A child older than 12 is small enough not be called an adult. This transition from a mental make-up of a child to that of an adult is a considerably long phase. It spans over 5 years, between 12 - 18 years of life of an individual.

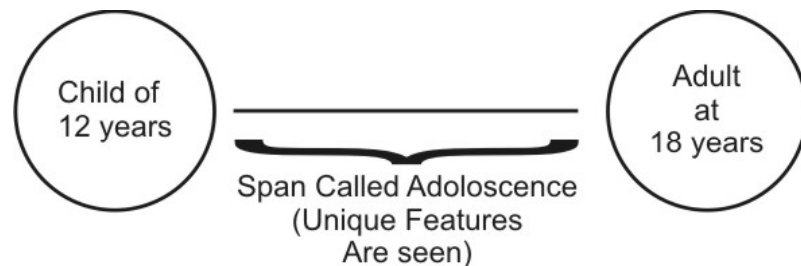
This phase of transition spanning between 12 and 18 years is called adolescence.

This adolescence is very special and specific.

In this phase, the individual neither behaves like a child nor like an adult.

He has this concept of imaginary audience. That is, he feels that the whole world is watching him all the time. That makes him utterly self-conscious.

The amount of circulating steroids in the body is also high. So he is extremely emotional. He cannot take



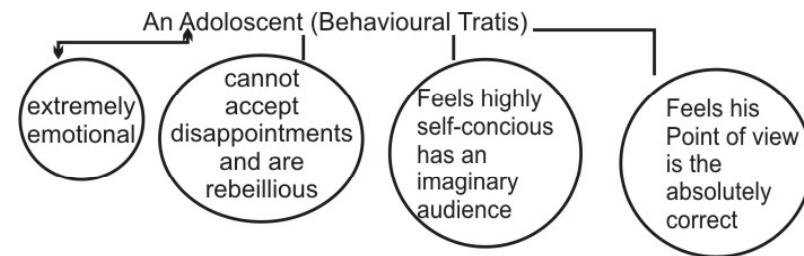
disappointments and is liable to turn very aversive / rebellious / when his point of view is not accepted.

So at managing the behavior of these children, the pediatric dentist takes into consideration the extreme sensitive nature of these 12 year old children. However, characteristics of adolescents will attempt to show out in 10 years olds itself.

In this age group, parents need to supervise on the motivations of the child towards maintaining good oral hygiene. The parents should instruct the child to take less of modern snacks (that are very sticky and have poor nutritive value) and less of carbonated beverages, that cause tooth demineralization.

As of dental prevention, the pediatric dentist will advise dental caries - susceptible children to undergo fluoride application at 13 years and pit and fissure sealants to be applied on the second permanent molars which erupt at years. The premolars which erupt at 10 - 12 years, (four in one arch) would also require sealants if they have deep pits and fissures or chewing surfaces.

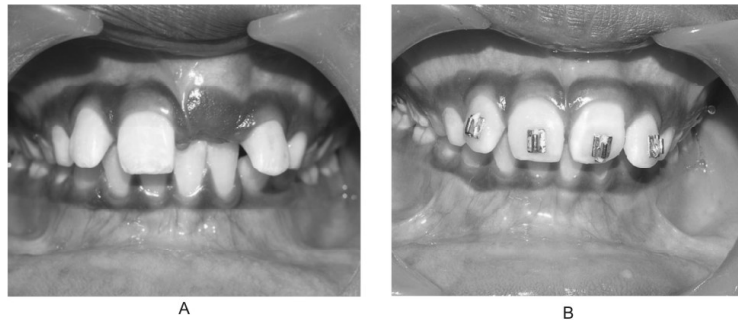
The children with proclined anterior teeth are prone to dental trauma. Traumatized teeth need appropriate professional intervention from the pediatric dentist. Sometimes pediatric dentists devise appliances / clips



called as mouth-guards that protect the teeth and jaw bone from injury. These are to be worn by children who have prominent upper front teeth and who are actively involved in sports and games.

Many children will require correction of teeth malalignment by appliances. As children are very self-conscious at this age, the pediatric dentist might suggest you tooth coloured clips also, so that the child feels more confident.

Correction of tooth malalignment is best attained when started earlier at the appropriate time, one need not wait for all the milk teeth to fall out to start correction of tooth malalignment.



10 year old child with unerupted incisor (a) Who underwent mixed Dentition orthodontic treatment to obtain alignment of teeth (b)

Dental Care for an Adolescent

- Frequent snacking seen - motivation to avoid the same.
- To undergo preventive dental strategies at 13 years.
- Require orthodontic intervention for malaligned teeth
- Oral hygiene measures are overlooked - They are reinstated.

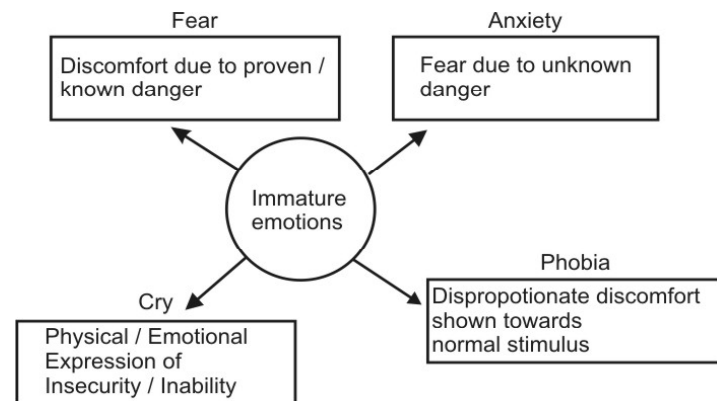
8

BEHAVIOUR MANAGEMENT OF CHILDREN AT PEDIATRIC DENTAL CARE

Children are called 'Children' owing to their emotional immaturity. They have a miraculous mix of a multitude of emotions. The children are in a way special that they have no inhibitions with respect to either the place or the situation to exhibit their immature emotions.

The various immature emotions are:

- Fear
- Anger
- Cry
- Anxiety



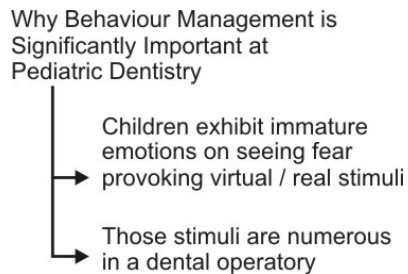
Children are innocent in a way that they do not know to hide, transform or camouflage their immature emotions.

These immature emotions are exhibited by children when they encounter some stimulus or situations of discomfort. Emotions are exhibited from the mind and it does not imply that, the stimulus that children perceive as sources of discomfort, are real always. They could be virtual also.

At pediatric dentistry, we have enough virtual stimuli (and not real) that are potential sources to evoke immature emotions.

They are:

- (a) The dental chair which is 8 feet long and 1¼ Feet wide.
- (b) A raised dental chair looks huge.
- (c) Long wires running around the dental chair.
- (d) the light that looks like floodlights.
- (e) The chairs are look - alike alligators
- (f) The motors work with a whistling noise that is not very pleasant to hear.
- (g) The instruments pour water in a spray that is not very comfortable to receive.
- (h) Other treatment approaches like injections in the mouth, salty taste of materials used, mild burning sensation of antiseptics can disturb children.



The reason why a pediatric dentist is more ideal to resort to dental treatment for children under 16 years is that :

They are competent to understand the emotional immaturity of children and deliver treatment appropriately. They can predict the psyche or the mental make-up of a child and predict his behaviour and deal him appropriately. They are competent at interpreting expression of immature emotions like anxiety, fear, anger and cry.

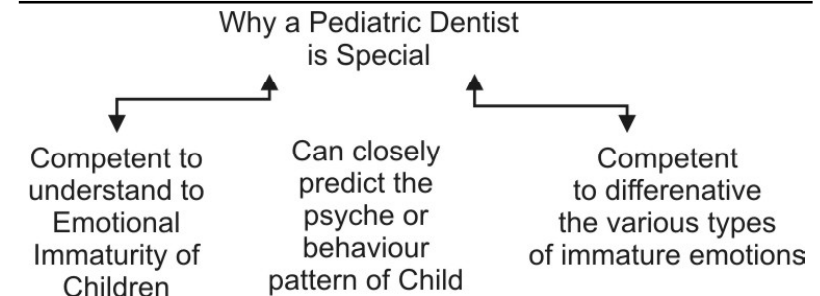
Since pediatric dentists are trained a interpretation of child psychology, they are ideal to be resorted to for dental treatment for children under 16 years.

However, pediatric dentists are not pediatric magicians.

They cannot guarantee dental treatment being done without the child crying, all the time. They cannot make a crying child smile instantaneously.

They cannot dictate, or rule over the nature or mental make-up of the child.

But they can Identify immature emotions. Understand the expression of immature emotions better. Although they cannot rule over the nature of the child,



they can go with it and bring out desirable behavior in the dental operator. Bring down the fear and anxiety of the children at least by 10% with every subsequent visit. The child is expected to be more relaxed and calm and will look forward to further appointments.

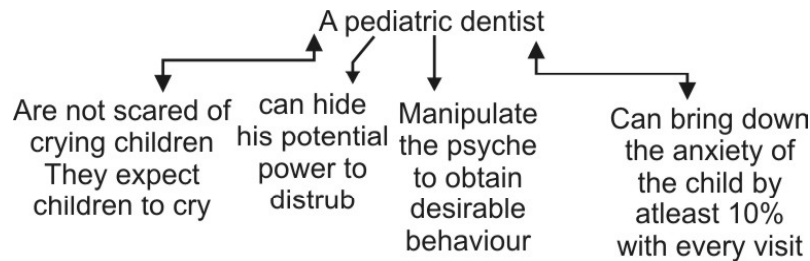
A pediatric dentist is not scared of crying children. He expects children to cry, as after all that is why you call him a child.

And a pediatric dentist also has in his sub conscious mind - "Once cannot be successful in the management of young children if he has not developed his ability to hide his potential power to disturb".

The reason why behaviour of children and child psychology is a bigger discussion with pediatric dentistry rather than pediatric medicine is that at pediatric dentistry the desired behavior is expected of the child for around 20 minutes which is not the case at pediatric medicine.

The length of time a child can cooperate in the dental operatory is called attention span. A pediatric dentist can increase the attention span of children to do more treatment per visit with his behaviour management skills.

How does a pediatric dentist manage the behaviour of children?



1. Understanding of childrens immature emotions:

A pediatric dentist is trained to identify and understand the expression of immature emotions. That is - for eg., if we take cry which is an immature emotion, - a child can cry for four reasons -

(a) A very aversive cry with an objective to stop the treatment (b) because of pain. (c) because of fear anxiety that something unacceptable will happen to him. (d) a no-tear, non-disturbing cry just to let out his stress.

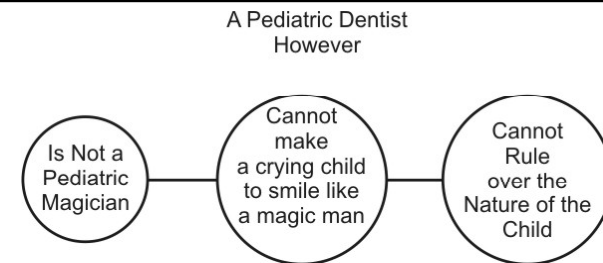
A pediatric dentist on seeing a child cry can put it under one of the four heading and deal it appropriately -

In case A: he can communicate in a stern voice to the child that he cannot behave his own way, and he cannot leave without treatment being done. He takes a firm stand.

In case B: He identifies the cause of pain and anaesthetises it.

In case C: He takes time to explain in a very patient way, with love and care that there is nothing to be scared of, all done is for the child's own good and he is a friend.

In case D: He ignores the cry as it is not disturbing to the treatment and the child is not in pain. He tries to complete the treatment faster.

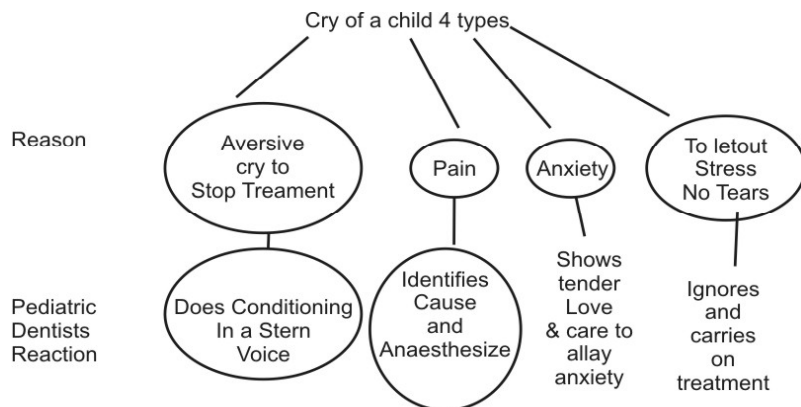


2. He has his discreet outline of management of child behaviour in the dental office.

The pediatric dentists strongly believe that he needs to win the confidence of the child to dictate child behaviour. He develops the quality of authenticity - that is he never lies to the child. Once you lie to a child, you are a liar for ever in his dictionary. And children do see someone only as black or white - they do not see shades of gray. He will never cheat the child saying that he is not going to give an injection, instruct the child to close eyes tightly and give a painful injection. Instead he says, he is going to put a medicine on the tooth, which he would feel like water going in after which the tooth will go to sleep and any procedure done on the tooth from thereon is not going to pain. The dentist is here referring to a local anaesthetic injection.

3. Empathy

A pediatric dentist develops this quality of empathy which means, he sees the situation from the place of the



child. The pediatric dentist is not worried, anxious or angry with a crying / fearful child.

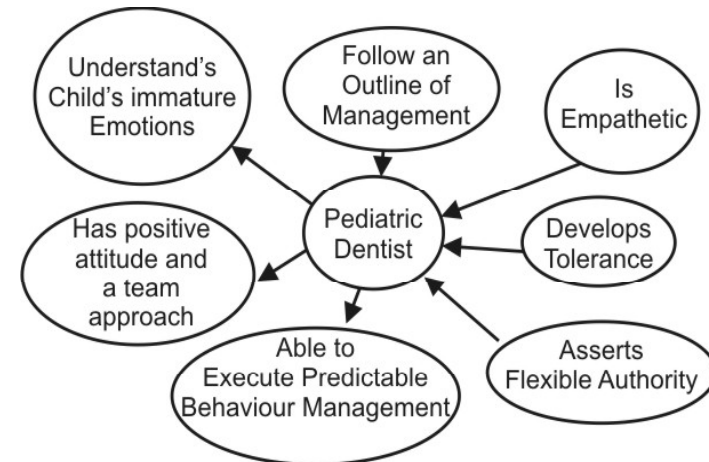
A new atmosphere, strange equipments and passive feed of negative information about dental care could probably be the reason for the crying child. The pediatric dentist understands that the cry / anxiety is quite very genuine.

So with empathy, the pediatric dentist does not get angry with a crying child and rather he shows tender love and care to a calm him down.

4.Tolerance

Tolerance: A pediatric dentist raises his level of tolerance as it is a very frequent affair that he encounters uncooperative crying children.

The raised threshold of tolerance helps him maintain his composure and gives him the confidence to handle uncooperative children.



5. Postive Attitude as Team Approach

The other qualities that a pediatric dentist develops are a positive attitude towards children, a team approach with his assistants at handling children and the like.

6. Flexible Authority

A pediatric dentist projects himself as a flexible authority to the child. It means that he makes it clear to the child that he is the authority of the situation and the decision to start / stop the treatment lies with the pediatric dentist and not with the child. At the same time he communicates his human behaviour and that he is not too hard and fast, keeping the emotional immaturity of the child in mind.

Managing a child's behaviour by a pediatric dentist -

The first mode which a pediatric dentist employs to gain the co-operativity of children is communication. His objective is to establish communication with the child. To establish communication he stresses on eye-contact. When the presence of the parent in the operating room is a sources of distraction to the child, he requests the parent

To gain co-operativity → Primary step is to establish communication : Done by

- * Eye contact
- * Verbal Intonation
- * Using Euphemisms
- * Physical - Warm Contact
- * Clear Soft Tone

to stay outside and only then he can establish his communication with children.

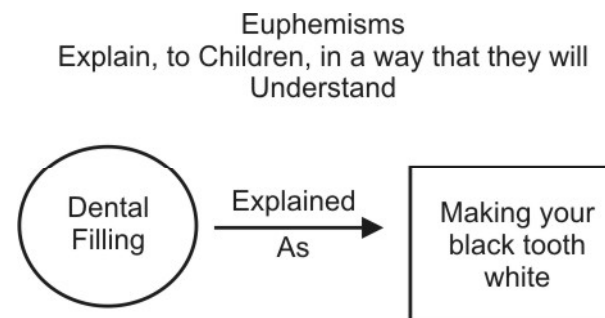
The mode of communication employed by pediatric dentists is called multi-sensory communication as he maintains eye-contact, physical contact, voice modulation and variation at intonation which is more powerful at making an impact on children rather than 'plain-speaking'.

He uses Euphemisms. That is, he explains each procedure to the child before it is done. When told with professional / complex terms the child might not understand. So he uses simple words to mean them, so that the child receives the meaning.

The dental equipment that sprays water is explained to the child as a water gun. And dental filling is explained as 'making the black tooth white'.

The second mode of bringing desired behaviour in children, is to teach the child how to behave in a dental operatory.

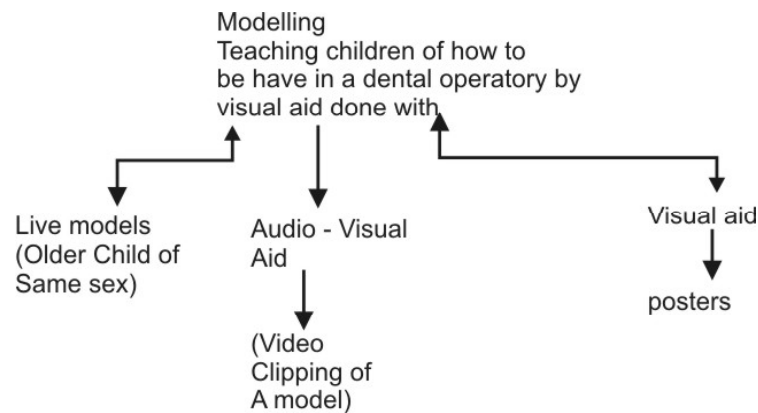
The pediatric dentistry employs a technique called 'modelling'. That is, a younger child as allowed to see an older child getting treated (who is behaving well). Thus



his anxiety is brought down as he knows what is going to happen. Sometimes video clippings of children receiving dental treatments and posters of dental treatment being delivered to children also work as good models for younger children to learn how to behave in the dental operator.

Second, a pediatric dentist does not rush through his treatment. He first explains what is being done in using terms that the child will understand. Then, he shows how the particular instrument (that is, going to be used on the child) works. Then he performs the procedure. This way, the anxiety and fear of children is brought down in a stepwise fashion. Third, whenever a child behaves good during a treatment the pediatric dentist compliments it. He compliments the behavior by way of praise (verbal appreciation), or a small gift or toy (material appreciation) or gets him involved in an activity he likes (like watching his favourite cartoon on TV). Thus the chances that this good behaviour of the child to be repeated more often is increased.

"However, parents should not promise a gift or toy or icecream as a bribe to the child to receive dental



treatment". The children are very clever. With each visit, the children will place larger demands, and they are clever - they know how to realise their 'huge' demands.

A pediatric dentist also schedules the treatment in such a way that the least discomforting, those which do not involve injections to be initially done followed up with more complex and complicated one in the subsequent visits.

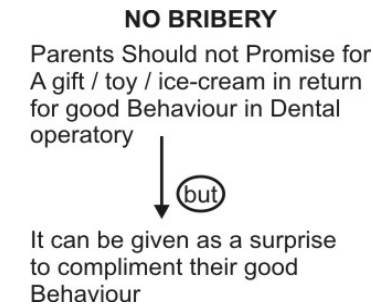
The third mode that a pediatric dentist employs to gain co-operativity of the child is for children who are not behaving well, despite the pediatric dentists efforts to calm him down.

To them, the pediatric dentist turns a bit aversive. He raises his tone to be heard vividly to the child, which is also an attempt to defeat the child's ego.

With this, he also adopts some other aversive strategies whose usefulness is well-proven after obtaining consent from the parents.

Once he makes the child co-operative with these aversive strategies, he gets back to mode -2.

However, this mode of management is applied only to children who are mature enough to understand what

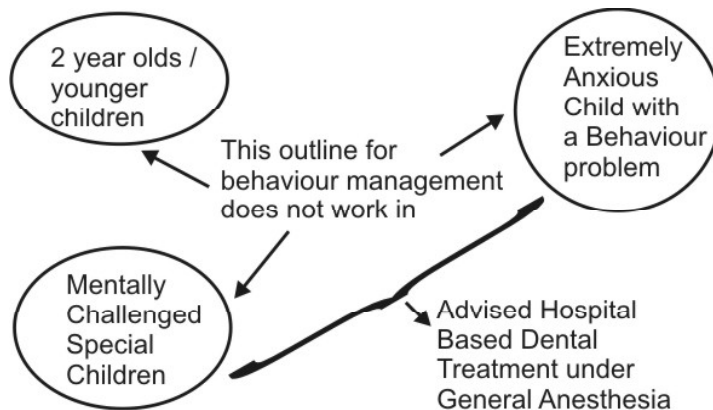


is being told. For eg. A 2 year old kid will not understand what is being told, so this aversive mode is not applied to them.

The 3 modes explained above employed by pediatric dentists, that modifies the psychology of children is called Psychological behaviour management.

There are a class of children on whom the psychological behaviour management modes cannot be employed.

How is dental treatment carried out for them?



9

**HOSPITAL BASED
PEDIATRIC DENTISTRY**

(Pediatric dental treatment under general anaesthesia)

A pediatric dentist can identify a child who cannot be psychologically managed at behaviour. The children who belong to this class are:

- (a) children less than 3 years who cannot understand or communicate effectively
- (b) children with behavioural disorders because of familial reasons
- (c) mentally retarded individuals.

Cooperativity cannot be expected of these children out of their own will. For them, the pediatric dentist will suggest dental treatment under general anaesthesia.

NO BRIBERY
Parents Should not Promise for A gift / toy / ice-cream in return for good Behaviour in Denal operatory
↓
(but)
It can be given as a surprise to compliment their good Behaviour

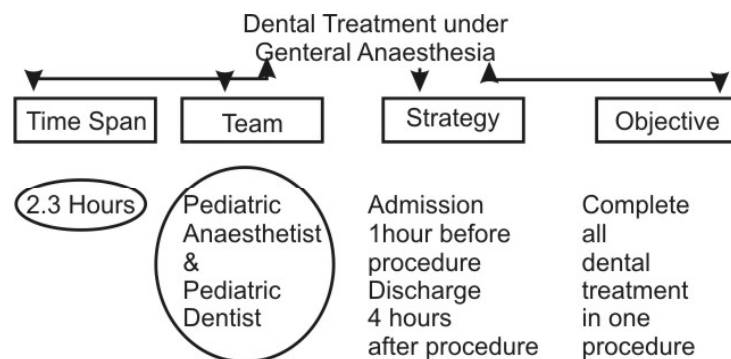
On administration of general anaesthesia by a pediatric anaesthetist, the child becomes unconscious. All the dental treatment required for the child is carried out in a single phase of 2-3 hours. So when the child recovers from anaesthesia, all his dental treatment will be completed or in other words he will be dentally rehabilitated.

For this procedure, the child on whom cooperative behaviour is not expected is assessed by the pediatric anaesthetist if he is fit to receive general anaesthesia. On fitness prevailing, the procedure is planned in a dental setup with a general anaesthetic infrastructure or a medical hospital with an operation theatre with a dental operatory.

The child needs to be admitted in the hospital only one hour before the procedure and is permitted to leave four hours after the procedure.

This procedure will require less than half-a-day in the hospital as an in-patient.

Today, this method of pediatric dentistry is widely accepted by parents of children (who would really require



this treatment) when they are suggested by pediatric dentists. The advantages of such a method is that:

(a) The immature child is not put to strain and the entire treatment is done when he is unconscious. (b) As the child is comfortable, the pediatric dentist is able to work at the best of his ability. (c) As the child is not constantly moving, the quality of treatment like dental filling is better. (d) Pediatric dental treatment involves the use of sharp instruments that are used on teeth. They hurt when pricked elsewhere. When children are constantly moving, there is a probability of the child being hurt by the sharp instrument, on the face or even the eye!! This risk is eliminated when the child is done under general anaesthesia as there is not abrupt movement.

(e) Sometimes, some tiny instruments and materials are also used. They can sometimes be swallowed by immature children, when they are forcibly crying. This risk is also eliminated when treatment is done under general anaesthesia. (f) One other advantage is that, all dental treatment required is done in one sitting. For eg. it is not uncommon to see children with 12 or more teeth

Advantage of choosing dental treatment under general anaesthesia-

- * No strain / distress to child
- * Quality of care is ultimate in efficacy
- * Enhances safety of the procedure
- * Avoids risk of swallowing of small instruments, crowns in immature children
- * All procedures completed in one appointment

decayed out of the 20 teeth as early as 2½ years of age. They will be require 6 sittings minimum to complete the dental rehabilitation. Where as under general anaesthesia, all the treatment is done in one sitting itself.

In addition, to all of these situations, this method is remarkably useful at two other instances:

(a) When the child requires more than 4 visits and parents are too busy to keep up with the appointments, then dental treatment under general anaesthesia is suggested. (b) Pediatric dentists are few and are at a very small ratio to general dentists. The dental clinics that often pediatric dental services are also few and concentrated only in big towns and cities.

So when parents bring children for treatment from smaller towns, instead of undertaking a 15-day treatment program spread over 6-8 sittings, a single sitting treatment under general anaesthesia will fit in better.

However there are prevailing misconceptions with pediatric dentistry under general anaesthesia regarding its usefulness and related risks.

Pediatric dentistry under general anaesthesia is very useful in those patients who come under one of the

Treatment under general anaesthesia is preferred choice of mode of treatment in-

- * Parents who cannot bring their children for multiple appointments
- * Parents who travel to other cities/towns where pediatric dental care is available.

categories mentioned above. This usefulness cannot be compared with any other mode.

Performing dental procedures under general anaesthesia does not increase the risk to complications in any dimension. Today, in practice, we have high end technology instruments and apparatus to enhance the safety for the child during general anaesthesia.

Performing pediatric dentistry under general anaesthesia is definitely safer than driving a sedan on Anna Salai at 9.00 a.m. !!

Dental Treatment under General Anaesthesia	
Myth	Fact
General Anaesthesia is too much for the cause of dental treatment	Is highly useful/ necessary wherever indicated
Not safe	Enhanced safety measures
High rates of failure	Enhanced efficacy of treatment / treatment quality
Pediatric dentists recommend this mode to all your children	Pediatric dentists recommend only where required

10

DENTAL TREATMENT FOR CHILDREN WITH SPECIAL NEEDS

All children are fortunate because they have childhood to enjoy with, however not all children are fortunate enough as they are not so blessed by the Lord. Here, we are referring to children who require special attention at bringing up. They are:

(a) Mentally retarded (b) Children with sensory handicap - blindness, deafness and dumb children. (c) Children with serious medical problems. (d) Children

Special children - Need specialised care at dentistry

- * Mentally challenged
- * Sensory handicap
- * Medically compromised
- * Serious medical illness
- * heart ailments
- * cancer
- * bleeding problems
- * Epilepsy (seizure disorder)

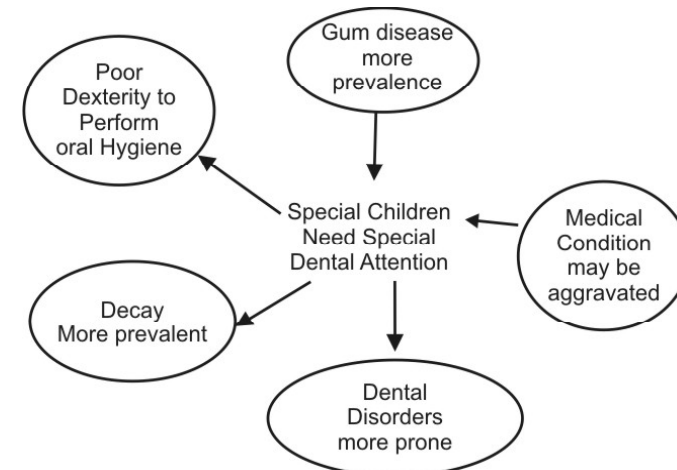
with heart ailments. (e) Children ailed with cancer. (f) Children with bleeding problems. (g) Children with epilepsy.

At pediatric dentistry too, they are given special attention and that is why they are termed as children with 'special care needs'.

Dental care is very important to these children as -

(a) they might lack the dexterity to maintain good oral hygiene. (b) The prevalence of dental decay will be higher. (c) The prevalence of gum disease will be higher in these children. (d) The prevalence of medical disease can increase the proneness of dental disorders. (e) The higher presence of dental disorders can aggravate or complicate the medical condition they are ailing with.

These children need to consult a pediatric dentist who will be working in conjunction with the medical personal to give special attention and allay the risk of complications.



The pediatric dentist will assess the oral health and render appropriate treatment. If there be a need, the pediatric dental treatment is delivered under general anaesthesia.

He advises the parent to bring the special child for a review in a stipulated period of time.

In this way, he will be able to help the child not require any serious dental infections or dental emergencies.



At Pediatric Dentistry

- * Pediatric dentist work in conjunction with physician
- * Assessment and timely appropriate treatment
- * Dental treatment under general anaesthesia
- * Parental support mandatory
- * Alternate dental emergencies

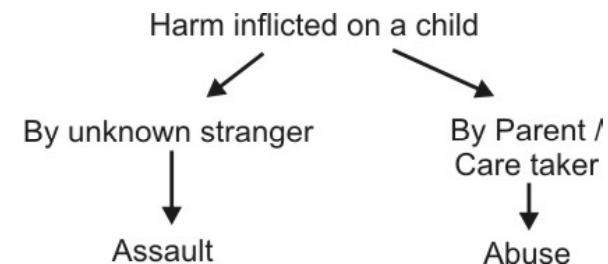
11

CHILD ABUSE AND NEGLECT

Ritu, a 8 years old girl was found trodding in the streets over 6 p.m. She was unenthusiastic about going home and even scared. To her, the streets seemed a safe place than sweet home. The reason being child abuse.

It means different when a child is beaten by an unknown stranger and by her own parents. The prior is called as an assault and the later as 'abuse'. So child abuse is harm inflicted on a minor by the primary caretaker (parent / guardian). The harm inflicted can be in many ways. It can be physical abuse, or sexual abuse or emotional abuse.

Beating the child harshly is a physical abuse. Subjecting the child for, sexual gratification either by force or by taking advantage of the child's ignorance is sexual abuse. Using harsh words, humiliating in front of peers are examples of emotional abuse.



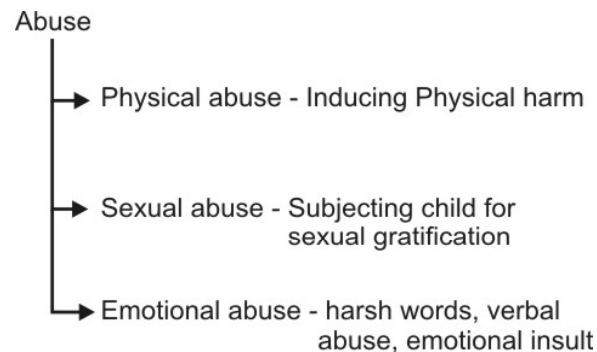
At dentistry for children, we can identify children who are abused physically, sexually as well as emotionally.

The manifestations seen at physical abuse are finger prints on face, sometimes even belt marks. Scalding of tissues and traumatized tissue which are otherwise less commonly involved in accidental trauma like the lobule of the ear are manifestations of child abuse.

The manifestations of sexual abuse at dentistry are reddish pressure spots on the upper jaw of the child. The child will be withdrawn and will express usual discomfort when the pediatric dentist belongs to the sex of the victor (abuser). The child will not allow even touching, comfortably.

The children who are emotionally abused look very dull. They do express their views and accept whatever treatment is infused on them. They even do not report if the treatment is painful to them. They also do not show any excitement or interest on anything even if they like it.

The responsibilities of the pediatric dentists are more than just delivering dental treatment for the dental complaint report for.



The first responsibility will be the identification of the sign. A strategic questionnaire will be put in front of the parents. Any incoherent set of answers would make suspicion stronger.

Then the parents' psychology to be assessed if they are ignorantly abusing their child, or deliberately indulging in the same, with a motive to hide the issue. In case of prior, the parent has to be illuminated on the facts that verbal scolding is emotional abuse and physical abuse can be detrimental. They need to be explained that when they are either harshly scolding or beating him for the wrong-doing this reprimanding will do him more harm than refining his behaviour and attitude.

In the case of the latter, the parents can also be faultily questioned if an issue of this type exists.

If they still refuse and suspicion gets stronger it can be reported to child-help organisation. These organisation probes deeper to rule the existence of an issue of the like.

These organisations will counsel the parents and obtain a promise that this will not repeat. The child and parents will be instantly review so to make sure that this issue has ceased.

Identification by Pediatric Dentist

Physical abuse	- Finger marks, pinch - marks on face, body
Sexual abuse	- Child does not allow dentist of the opposite sex to touch and look extremely withdrawn
Emotional abuse	- Are unexcited / sedantary

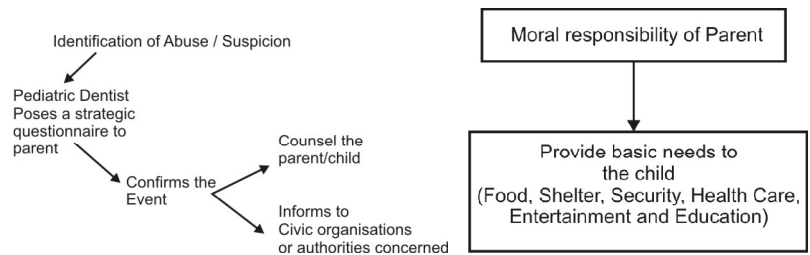
On constant review if the abusive behaviour continues, then these organisations can also incite criminal proceedings operating on behalf of the children on grounds of public-safety and commitment to preserve family relationships in the community.

The pediatric dentist can also indulge in counselling of the parents and the child. He can refer the child and parent to a psychiatrist to obtain more strategic care.

Neglect is another form of abuse. Neglect means not taking adequate care or attention that is required not being given to the child.

Every parent has the responsibility to take good care of their child. The good care means in terms of security, basic needs such as food, shelter and clothing, health care, entertainment and providing opportunities for establishing a good career.

Although law cannot question the parent if these are not being provided to the child, he should understand that as it is his moral responsibility to abide by his conscience. It is his responsibility to make himself aware of the various avenues to provide good care to the child. He should make possible time, money and effort to make sure that his child receives the same in terms of security, basic needs, health care, entertainment and education.



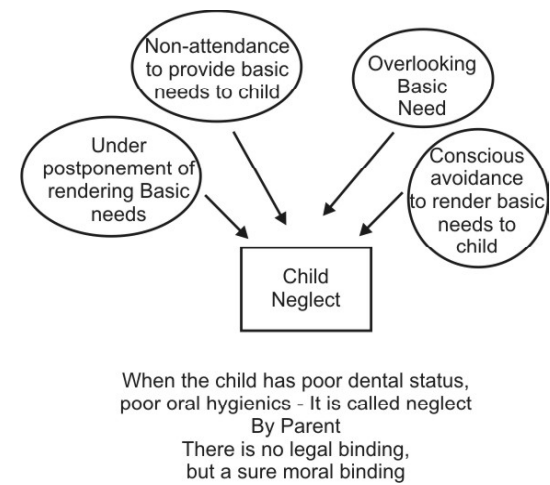
At health care, every child has the right to receive dental treatment. Poorly kept up oral status is an example of dental neglect.

The pediatric dentist puts to light to the parent that the poor oral status of the child is not just 'undoing' or 'postponement' part of the parent but rather a case of dental neglect.

He needs to be explained with the possible ill effects of not keeping good teeth. It is the dentists responsibility to make sure that the parent understands the same and resorts to health care. If the parent has a financial constraints in providing dental care, then the dentist has to find sources to guide the parent onto a set up where he can get dental care under low rates or free of cost.

The dentist will also fix a time frame for the parent to guide and motivate him towards getting his child rehabilitated dentally.

The dentist has to enthusiastically internally motivate the parent to remove the issue of neglect.

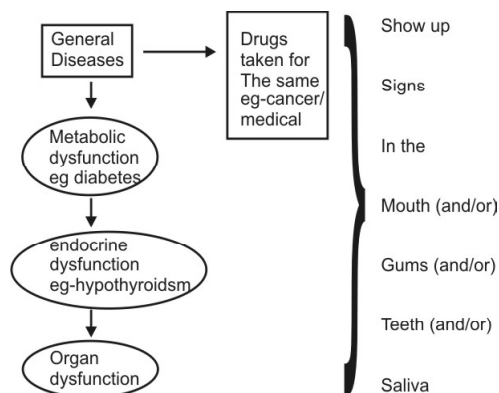


12

MANIFESTATION OF GENERAL DISEASES

The oral cavity is the reception hall of the human body. It can also be considered as the mirror of the oral cavity. It can be considered so, as systemic illness have their respective manifestations in the oral cavity. Certain metabolic, endocrine, organ dysfunction disorders have their specific as well as non-specific disease manifestations on the soft tissues of the mouth, gums, teeth and saliva.

In disease like cancer, the drugs that are given as a part of therapy can have innumerable side effects. These undesirable effects of medications can also have oral manifestations.



A few other examples where drugs taken can have oral manifestation are renal dysfunction, cystic fibrosis of lung and epilepsy.

At renal dysfunction and cystic fibrosis of lung tetracycline drugs are usually a part of the antibiotic therapy. These tetracyclines can cause discolouration of the developing teeth.

This is an enumeration of various systemic illness and their oral manifestations. These oral manifestation may be of the disease, their medication or both.

I. Cardiovascular malformations (Heart Diseases)

Patients with cyanotic congenital heart disease show more oral manifestations than those with non cyanotic congenital heart diseases.

They include:

Bluish enlargement of the gums and oral soft tissues. Enlargement of the tongue. delayed eruption of teeth, increased caries activity; increased structural defects of enamel; discolouration of teeth due to medication and / or blood by products. Dilation and capillary enlargement of the minor blood vessels in the supporting apparatus of the tooth. Hypocalcification of permanent teeth.

Heart Diseases - Oral Signs

- * Bluish enlargement of gums and tongue
- * Structural defects / increased decay risk / discoloration / on teeth

II. LEUKEMIA (Blood Cancer)

Both hard and soft tissue manifestations have been noticed. They can demonstrate-

Extra Oral findings like skin pallor, enlargement of lymph nodes, small pin-point bleeding below the skin, larger bleeding areas below the skin.

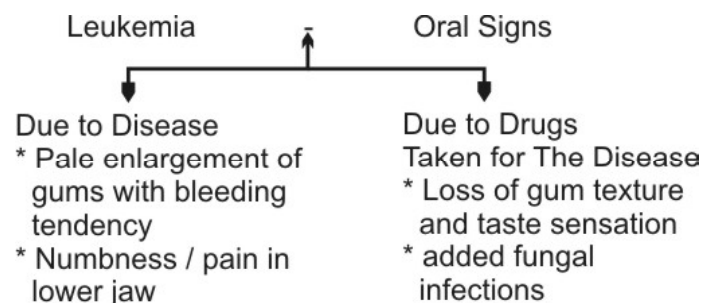
Also intra oral findings like gingival bleeding due to coagulation abnormalities. Gingival hypertrophy due to leukemic infiltrates, mucosal pallor. There may be numbness or pain in lower jaw due to pressure from leukemic infiltration on nerves.

At leukemia, the disease as well as the therapy are harmful.

The Chemotherapy i.e. the medicines used at treatment can also cause oral changes such as bleeding. Mucosal changes ranging from atrophy and extinction of lingual papillae to mucositis to frank ulceration.

Enlargement of tongue or depapillation of tongue may also be seen.

Fungal infections are found commonly in leukemia patients. Certain Bacterial infections like 'Acute



Necrotising Ulcerative Gingivitis' and viral infections like herpes simplex are also incident.

III. HAEMOPHILIA (Bleeder's Disease)

No dental abnormality has been attributed to bleeding disorder as an etiological factor. Dental decay and periodontal diseases found in these children may be a result of negligence of oral hygiene measures. Intraoral bleeding may be result of trauma to inflamed tissue or infections. Mucous membrane bleeding is consistent finding in Von Willebrand disease, which is a type of bleeding disorder. Intra Oral bleeding can appear as frank bleeding, oozing or clot formation. Small pin point bleeding spots, or blood clots of the size of 5mm, (called Echymses) clots of size upto 2 cm (called hematoma) can be seen intraorally, haemophilics can sometimes have an extra oral swelling due to intraosseous or subperiosteal haemorrhage. It may cause tooth displacement, enlargement of bone structures.

IV. ANAEMIA

Anaemia is highly incident in Indian children.

There is a possible disintegration of bone supporting the teeth. There can be advanced disease of the tooth supporting tissues. Also hypocalcification of dentin, With

Haemophilia

- * Frigile mucosa with enhanced bleeding tendency
- * Blood clots below skin
- * Diffuse swelling around jaws

calcified bodies in pulp chamber of the both is noted. The teeth can be poor at quality.

V. THALASSEMIA

It is disorder of red blood cells.

Inflicted children have a peculiar face. It is described as the characteristic facies are called Chipmunk facies. They have with enlarged maxilla with spacing of teeth, protrusion of middle third of face, extreme tightness of upper lip and protrusion of upper front teeth. The eyes are widely spaced. There is pain and swelling of parotid salivary glands. It is associated with infection from candida organisms also.

VI. RESPIRATORY DISEASES / PROBLEMS

The respiratory problems may arise due to dental abnormality such as presence of supernumerary teeth especially in midline inhibiting normal sinus function. Deviated nasal spetum and nasal polyps can be detected with help of oral radiographs. Tonsillar and adenoid enlargement can lead to a habit of breathing through the mouth.

Anemia

* Poor quality of teeth with disintegration of supporting bone.

Thalassemia

* Charateristic facies - 'chip-munk' facies

Respiratory Diseases

* Mouth breathing habits.

VII. a. CYSTIC FIBROSIS

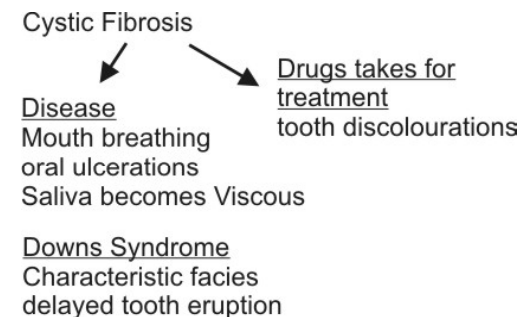
This lung disorder is treated with tetracyclines. There can be a demonstration of discolouration of teeth due to tetracycline therapy and enamel hypoplasia.

There can be change in salivary viscosity and composition. There is a high incidence of mouth breathing. Also delayed dental development and eruption, and oral ulceration may be seen. However, the incidence of dental caries is low in these patients.

VIII. DOWN'S SYNDROME

This is a genetically determinant disease due to a defect in chromosome. No. 21 of the humans.

The skull is small. There is under development of maxilla leading to open mouth and protrusion of tongue. The tongue is large. It looks fissured and called as scrotal tongue. The surface of the tongue looks depapillated. There is delayed eruption of teeth - mal-shaped, small hypoplastic. Congenital absence of milk and permanent are teeth common. Periodontal disease is common in children with down's syndrome. However the proneness to dental decay is again lesser.



IX. CEREBRAL PALSY

This is a neurological disorder. Here dental - caries and periodontal disease are exaggerated due to neglect.

a. SPASTIC TYPE

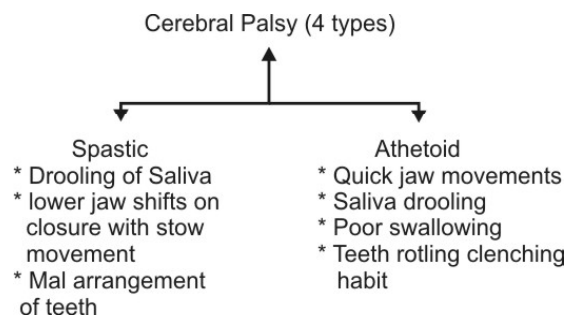
The muscles are rigid all over the body. There is hypertonicity of facial muscles, slow jaw movement, Drooling of saliva in corners of the mouth and maxilla and mandible. There is abnormality in arrangement of teeth and the lower jaw shifts on closure.

b. ATHETOID

In this type, there is rhythmic, jerky movement of all the muscles of the face. There is drooling of saliva in corners of mouth. There is quick jaw movements. There is mouth breathing and drooling. High, narrow palatal vault is also seen. There is poor swallowing and sucking efficiency. They have a habit to clench the teeth tightly. Oral hygiene is very poor as children cannot perform oral hygiene measures.

c. ATAXIC

There is poor proprioceptive sensation. The movement of the tongue is restricted in these patients.



Tongue protrusion and tooth malposition are observed. Drooling of saliva from the corners of the mouth and facial grimacing is seen.

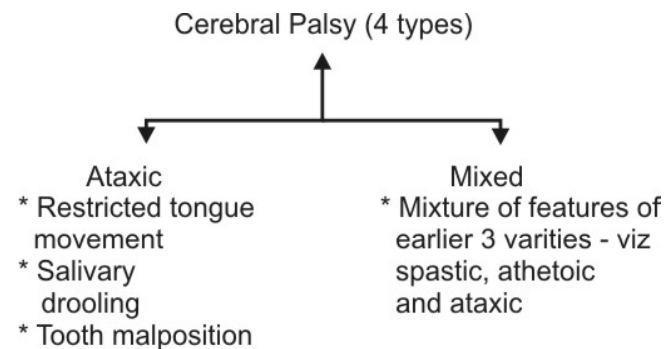
X. EPILEPSY

The patient presents with oral / facial fractures caused during episodes of seizures. They can be a soft tissue laceration of tongue and cheek tissue.

Facial fractures are observed in epileptic patients who have undergone a fall during an episode of seizure. Trauma to teeth, avulsion, luxation, fracture of teeth and dislocation of the jaw joint is also seen. Epilepsy needs constant medication for long time, sometimes till life. These drugs can cause some manifestations. They are enlargement of the gums, repeated ulceration of the oral soft tissues, dental anomalies, delayed eruption of teeth and enlargement of the lymph nodes of the neck. Recurrent aphthous ulceration. Delayed eruption and cervical lymphadenopathy

XI. AUTISM (Learning Disorder)

It is a neurological learning disorder. The mental age of the child is low. The child has a definite learning



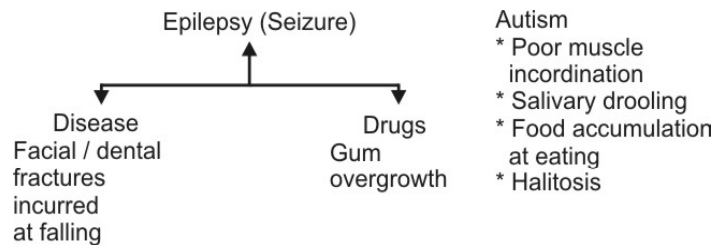
disability. Muscle tone and co-ordination are poor. There is excessive drooling of saliva from the corners of the mouth. There is poor control of tongue movement. So food eaten is not fully cleared away. They tend to accumulate in patches in the oral cavity. This causes bad breath and increased proneness to dental decay.

XII. RENAL DISEASE

Both oral soft and hard tissues can have manifestations at renal disease. The oral mucosa is pale as renal patients have marked anaemia. The platelets in blood are defective at function in renal disease. So there is increased proneness of the soft tissues to bleed. Bleeding of gums is also noted. This inflammation of the gums and soft tissues is called Uremic Gingivostomatitis. There is a Uremic breath in these patients.

Oral hard tissue findings in renal patient are:

Focal loss of the bone in the jaws. The bone that is lining the teeth called as "Lamina Dura" starts to disintegrate at a greater magnitude. These renal patients are under medication with tetracycline. This may cause characteristic staining of teeth. There is increased circulating level of blood urea. This causes blood pigments to discolour developing teeth. The quality of tooth formed is also defective.



XIII. ENDOCRINE DISORDERS

The glands that give secretions without a duct are called endocrine glands. When there be an overactivity / underactivity of the endocrine glands, there are manifestations in many parts of the body. The teeth oral soft tissues and face are rarely spared of these manifestations. The various endocrine disorders are -

a. Hypopituitarism

This is overactivity of the pituitary gland. The oral manifestations are - retarded craniofacial and dental development. The tooth eruptions delayed and incomplete. The root formation and apical foramen closure or maturation of the tooth development is incomplete.

b. Hyperpituitarism

This is overactively of the pituitary gland. The various manifestations are - accelerated development of cranofacial complexion, accelerated dental development and eruption, enlarged tongue, enlarged sinuses and hypercementosis

c. Hypothyrodism

This is underactivity of the thyroid. Developmental retardation, enlargement of the upper jaw, tooth

Renal Disease	Hypopituitarism
* Anaemia	* Tooth formation incomplete
* High Bleeding tendency	* Tooth eruptions metabolism delayed
* Tooth support bone disintegrate	
* uremic breath	
* Staining of teeth	

arrangement deformity, delayed eruption of milk teeth and permanent teeth, increased spacing between teeth, malformed teeth or misshapened teeth, incomplete formation and closure of roots, increased susceptibility to periodontal disease and tooth decay. Sometimes repeated, self-healing oral ulcerations are also common.

d. Hyperthyroidism

This implies overactivity of the thyroid gland. Inflicted children have accelerated growth and development of craniofacial complex, early eruption of teeth. Periodontal / periapical destruction, Osteoporosis, increased proness to dental decay and tooth malalignment

e. Hypoparathyroidism

This is underactivity of the parathyroid glands. Parathyroid glands secrete paratharmone which increases blood calcium level. So underactivity of the parathyroid gives manifestations of low blood-calcium level.- Involves features like: facial paresthesia, spasm of facial muscles, Oral candidiasis. Hypodontia, root dismorphogenesis, thickend lamina dura and delayed arrested eruption.

Hyperthyroidism

- * Accelerted dental development
- * enlarged tissues

Hyperthyroidism

- * Accelerated dental development
- teeth malalignment

Hypoparathyroidism

- * Mal-arranged teeth
- * enlarged tissues
- * Incomplete, delayed dental development

f. Hyperparathyroidism

Overactivity of the parathyroid gland erodes all the hard tissues of the body. The manifestations are those of bone erosion and high blood calcium level.

Bony lesion, disappearance of lamina dura, tooth drifting and mobility, diffuse, modular calcification in pulp and recurrent gingival tumors

g. Adrenocortical Insufficiency

This is underactivity of the adrenal cortex. The adrenal cortex produces 3 types of hormones. The underactivity have the following:

Inflicted children can have mucosal pigmentation and increased susceptibility to oral inflection. The child takes steroids as medications which can also have oral manifestations.

h. Adernocortical over activity

Can manifest plethoric facies, easy bruising of the skin, bleeding inside the tissues, ecchymosis and osteoporosis.

XIV. DIABETES MELLITUS

It is two types. It can be a mature onset and juvenile onset. The latter is seen in children. The inflicted children

Hypoparathyroidism

- * low blood calcium
- * Incomplete dental development
- * spasm of facial muscles

Hyperparathyroidism

- * Increased blood calcium
- * Mobility / shedding of teeth spontaneously

have delayed development, dry mouth, decrease in salivary secretion, viscous saliva, bad breath and proneness to oral infections.

Dryness of mouth. They also have increased prevalence and severity of gingivitis and periodontal diseases. However, they have low incidence of decay tooth. Burning mouth / tongue, oral fungal infections are also common. The wound healing is also delayed in children.

The proneness to dental decay is low as they take less chocolates and have imposed diet restrictions.

XV. GASTRO INTESTINAL DISORDERS

Children with peptic ulcers / gastrointestinal reflux have exaggerated gingival bleeding, Osteoporosis; enlarged tongue, delayed / atypical dental development.

Adrenocortical	Diabetes (Juvenile)
* <u>Insufficiency</u>	* <u>Children</u>
* Discoloration of gums	* Dry mouth
* Oral ulceration	* Prone to oral infections
	* Burning mouth
* <u>Over activity</u>	* Fungal infections
* Increased bleeding tendency	* Tooth apparatus disintegration

Gastrointestinal

- * Enlarged Tissues
- Delayed dental - atypical development

13

DENTAL CONSIDERATIONS IN CHILDREN WITH SYSTEMIC DISEASES

Oral diseases can exacerbate certain health conditions especially in children with systemic disorders. Similarly certain disease and conditions can create or exacerbate oral health problems.

This is so because of these factors.

(a) Oral motor abnormalities or exaggerated reflexes. (b) Special diet or poor dietary practices. (c) Frequent use of medication that contain sugar (d) Medication causing reduced salivary flow, gingival enlargement, etc. (e) behavioural problems. (f) reflexes that interfere with proper tooth brushing. (g) frequent hospitalization.

It is essential that children with systemic disease only after consulting their physician and with prior knowledge of their illness and medication that dental treatment should be carried out. Also, it is important to establish a trust based relation with these children for them to co-operate completely during treatment.

I. CARDIOVASCULAR DISORDERS

(a) Prevention of dental disease is always prudent than treatment of decay. (b) Regular monitoring of oral

health status is necessary. (c) Active dental disease is treated before cardiac surgery is undertaken (3 - 4 weeks prior). (d) In case of emergency when physician cannot be reached, it is prudent to use antibiotic coverage. (e) Root canal treatment for primary teeth is not recommended for children with cardio vascular problems. (f) Endodontic therapy for permanent teeth is performed only in selected cases with good prognosis. (g) cessation of anticoagulant therapy before oral surgical procedure after consulting the physician is a part of the treatment plan. (h) Treatment inducing gingival bleeding and intraligamentary and palatal anaesthesia require antibiotic coverage. (i) Local anaesthetic injections have to be appropriately given with thinner, atraumatic needles. (j) Using sedatives can help to reduce anxiety. (k) Those requiring extensive treatment are best treated under general anaesthesia. (l) Treatment is contraindicated in patient with recent episode of myocardial infarction congestive heart failure and uncontrolled arrhythmia.

II. BLEEDING DISORDERS

(a) Effective communication with child's physician is important. (b) Strict preventive dentistry program followed. (c) Local anaesthesia injection is cautiously given (d) Deeper injection techniques are less preferred. (e) the risk of haemorrhage is higher with extractions. (f) If surgical procedure is necessary, best managed in a hospital set-up.

II.a. Haemophilia

Nitrous oxide oxygen inhalation analgesia is used to reduce anxiety. When treated under GA, oral

incubation preferred, as there is less risk for haemorrhage. Deep scaling done in 2 sittings with a gap of 7 - 14 days. Blood replacement required before surgical procedures. Electrosurgery preferred than conventional surgery. Antibiotic prophylaxis recommended before surgical procedures.

II b. Platelet disorders

Platelet count should be 50,000/mm³ before proceeding with dental treatment. Steroids are given at a dose of 1 - 2 mg/kg. body wt. to increase platelet count. Replacement therapy before surgical procedures

III. ANAEMIA

(a) All anaemic children have greater tendency to bleed after invasive dental procedures. (b) Routine blood investigation is essential before starting invasive dental procedures. (c) Local general anaesthesia is less preferred. (d) Local anaesthetic with a blood vessel constricty agent is used. (e) Minimise stress at delivery of treatment. (f) Inhalation sedation is safe. 100% oxygen is administered for at least 4 - 5 minutes after the sedation procedure is complete.

IV. LEUKEMIA

(a) Unless there is emergency, no active treatment should be carried out until the child is in a controlled phase of leukemia. (b) Dental pain is treated conservatively using antibiotics and analgesics. (c) Regional block anaesthesia contraindicated due to risk of deep haemorrhage. (d) As oral fungal infections are common topical or systemic antifungals used. (e) Root canal treatment is contraindicated in both primary and

permanent teeth. (f) Dental treatment is not undertaken when platelets are 20,000/mm³. (g) When platelet count is low, brushing is avoided. Instead, a gauze pad containing chlorhexidine is used. (h) Dry mouth if present should be managed with salivary substitutes.

V. Diabetes Mellitus

(a) Well controlled diabetic child with no serious complication can have any dental treatment. (b) Dental management is aimed at implementation of preventive protocol, symptomatic relief of oral manifestation and immediate provision of 1^o care. (c) Appointments should be short, stress free and as atraumatic as possible. (d) Early morning appointments are preferred usually after breakfast to prevent hypoglycemia. (e) Dental treatment under general anaesthesia is avoided as it requires pre-anaesthetic fasting. If indicated, insulin regimens need to be adjusted. (f) Root canal treatment may be preferred to stressful extraction. (g) Strict oral hygiene to be followed.

There can also be Diabetic Emergencies. They can either be a Hypoglycemia emergency or a Hyperglycemia emergency.

VI. ASTHMA

(a) Treatment should be as stress free as possible to prevent precipitation of an attack. (b) Child should be placed in upright position on dental chair. (c) Patient is advised to bring his inhaler along. (d) Dental treatment under general anaesthesia or sedation may be given. LA can also be given. (e) If under steroid therapy, the patient is asked to take double or triple the steroid dosage just

before treatment begins. (f) Aspirin, Pencillin and brufen drugs are contraindicated. (g) Nitrous Oxide Oxygen sedation is most desirable. (h) In case of an attack, 100% Oxygen with patient in sitting position, leaning forwards is usually given. So the attacks can be managed at deliver dental treatment.

VII. AUTISM

(a) Appointment is fixed during that time of the day when child is usually calm and co-operative. (b) Instruments are kept out of reach to prevent injury when the children turn violent. (c) the child is allowed to get adjusted to the environment before starting any procedure. (d) Familiar objective are usually used to start talks with the child. These children never give a verbal ok. As far, they do not resist the treatment is carried on. (e) Appointments are kept short and positive. (f) Praising good behaviour is a mode to obtain good co-operativity till the end of the treatment. (g) Distraction modes are not applied in these children. (h) Preoperative sedation with muscles relaxants and Nitrous oxide, Oxygen analgesia maybe required. (i) extensive dental treatment is done under general anaesthesia and contain gadgets to immobilise the body, hands and legs are sometimes used to gives effective dental treatment.

VIII. EPILEPSY

(a) Child with minimum good control of seizures needs minimum restrictions. (b) Very high standard of oral hygiene is required. (c) A stress-reduction protocol is followed, Bright light are not used. (d) There is a possibility that a child can swallow small instruments when there be

a seizure during dental treatment. So the small instrument are always tied and made safe with a floss thread tied to it. If seizure occurs during dental treatment, all the instruments are removed from the mouth. mouth prop is used to prevent tongue biting. Patient is placed on floor in a clean area and is turned to one side to keep an open airway and allow secretions to drain. Thus epileptic seizure episodes can also be managed.

IX. Renal diseases

(a) Consultation with physician is essential. (b) At acute renal disease stages elective dental treatment may be postponed until conditions improve. However, the emergency care is provided. (c) When surgical procedures are indicated, bleeding time is assessed. (d) Nephrotoxic drugs are avoided. (e) Growth retardation and malocclusion are managed. (f) The best time to do dental treatment is 1 day after dialysis when blood is free of wastes and heparin levels are less. (g) Antibiotic prophylaxis indicated. (h) Steroid supplementation prior to dental treatment under general anaesthesia or major surgical procedures is done.

X. Mobility and physical Disabilities

a. Physical impairment:

Pads are used to position child on dental chair and give comfort to sensitive areas. The child is made to sit in a position that is natural and relaxed to him. The dentist can modify his working position to be able to provide better treatment to the disable child. Children may prefer to sit in their wheel chair rather than on dental chair and this should be allowed.

b. Visual impairment:

The child's other senses are used to initiate communication to move them around dental office and to inform before starting a dental procedure. Constant communication can be reassuring to the patient. Explanations are used to communicate. The child should be regularly instructed on proper oral hygiene maintenance and care.

c. Hearing impairment:

The communication needs to be slow with discreet. Remove lip movements. Knowledge of sign language is also helpful. Some times flash cards are used. Other methods such as tapping once before putting instruments can be used to establish communication with the child. The treatment is infused in a slow manner without any hurry.

XI. DOWN'S SYNDROME

(a) These children are usually very affectionate and highly co-operative and present no special problem during management. (b) A friendly atmosphere should be maintained. (c) As cardiac disorder are common in these patients, antibiotic prophylaxis should be given when indicated. (d) Infections should be treated aggressively. (e) Proper home oral care should be practiced twice daily. (f) Preventive dental program indicated as they are prone to caries and periodontal diseases.

XII. CEREBRAL PALSY

(a) The pediatric dentist is expected to empathetic about child's problem. (b) The patient will prefer to be

treated in wheel chair and this can be obliged. (c) Head is be stabilized throughout the treatment. (d) Physical restraints, mouth props may be used to prevent undesirable movements of the patient. (e) Premedication used to reduce hypertonicity of involuntary movement and anxiety only when involuntary muscles are relaxed dental treatment can be efficiently infused. (f) If the patient is not able to be psychologically modified, then dental treatment is provided under general anaesthesia.

14

FEEDING HABITS, PERFECT SMILES

CONVENTIONAL wisdom, supported by scientific research, advocates breast feeding as the superior method of infant feeding. The list of merits of human breast milk as compared to artificial feeds include ideal nutritional content, better absorption, fewer food related allergies, more favourable psychological development and better immunologic defenses. There is another compelling benefit to exclusive breast feeding: positive effects on the development of an infant's oral cavity, including improved shaping of the hard palate resulting in proper alignments of teeth and fewer problems with malocclusions.

The healthy swallowing action developed by infants during breast feeding sets a pattern for a correct normal swallow in adulthood. Comparing the mechanical aspects of breast feeding with bottle feeding, the tongue movement varies. The difference between the tongue movements and resting positions of the tongues in breast fed and bottle fed babies are probably due to the properties of the bottle's artificial nipple. Since the manufacture of feeding bottles and artificial nipples is not a standardized process, there may be varying effects of bottle feeding on how infants suck.

Many health professionals have observed that active breast feeding encouraged mandibular (lower jaw) development with a strengthening of the jaw muscles as the tongue, lower lip and mandible are involved. But in bottle-fed infants, greater pressure is required from the baby on the artificial material. Forceful action causes the cheeks to draw in, putting pressure on the gums and teeth, affects the position of the teeth.

The largest increments in craniofacial growth occurs within the first four years of life and that development is 90 percent completed by 12 years of age. The flexible breast tissue is beneficial in shaping the hard palate of the infant because it flattens and broadens in response to the infant's tongue action.

Thus the hard palate is shaped to a rounded U-shape. A physiologically and appropriately shaped palate aligns the teeth properly and reduces the incidence of mal-occlusions.

In the early stages of oral cavity development, the palate is almost as malleable as softened wax. Thus, when any object is pressed against the soft bones of the palate, these bones can be moulded into a narrow, unnatural shape. This eventually leads to the poor alignment of teeth and V-shaped palate with malocclusions.

This also explains how the upper back teeth are pulled inward to cause a mismatch or 'cross-bite'. Once a malocclusion develops, it can create a deleterious effect that can damage the rest of the teeth.

Another problem that occurs during early oral cavity development is that of infringement on the space of the nasal cavity. When the roof of the mouth is pushed up,

the floor of the nasal cavity rises as well. Since the bridge of the nose does not rise accordingly, there is a decrease in the total nasal space.

This can have a dramatic effect on the individuals breathing efficiency because the size of the nasal chamber is reduced, which are reasons for snoring and obstructive sleep apnea.

Preventing disease in a natural way far outweighs the alternative of treating the disease with the newest medical technology. Thus breast feeding presents rarely reported benefit in dental health.

With fewer malocclusions, these breast fed children have a reduced need for orthodontic intervention. In addition, children with the proper development of a well rounded U-shaped dental arch, which is found more commonly in breast fed children, may have fewer problems with snoring and sleep apnea in later life.

15

PARENTAL CARE AND SUPERVISION AT PEDIATRIC DENTISTRY

Although pediatric dentists are care givers for good oral health to children under 16, the primary entity for children to acquire good quality dental care, are 'the parents'.

The parents need to understand their responsibilities with respect to resort to dental treatment for their children.

The primary responsibility of the parent is to understand what he owes the child. He should understand that he is liable to be questioned for the poor health status (dental / general) for the child. Although there is no law to abide by it should be his moral conscience that should direct him.

The second responsibility of the parent is to procure information regarding various pediatric dental ailments. He needs to procure relevant basic information of the more commoner diseases, their manifestation \ (in general) and probable outcomes non-specifically. In one statement, he should be able to tell apart health and ill-health of the oro-facial apparatus.

It is also his responsibility to make himself known of the possible treatment outcomes of dental diseases. He can source these information from relevant books for general public on pediatric dentistry (like the one you are reading now), the worldwide web and public awareness programs.

It is the parents' responsibility to take the child for a well-baby examination. It means dental examination of a baby prior to any dental complaints. It has to be done before the completion of one year or 6 months from the time of eruption of the first teeth in the mouth, whichever is earlier.

From then, he will be advised by the pediatric dentist to bring the child regularly for reviews. The review will either be advised at 3 months, 6 months or one year. This will depend on the assessment of the vulnerability of child to dental decay by the pediatric dentist. In his assessment if he feels that the proneness to dental decay is higher, he would advise the parent to bring the child back in 3 months and the like if he feels the child shows no signs of vulnerability to tooth decay he would advise on annual reviews only.

Usually adults are advised, a dental review only once, in one and half year. In children, it is preferred at shorter intervals. The reason being that children have food habits that are more challenging to teeth like frequent snacking, craving for more chocolates and so on.

The poor dexterity of children does not allow meticulous oral cleansing that leads to an increased vulnerability to dental disease.

The primary teeth are exfoliating and permanent teeth are erupting. There needs to be check in growth of teeth are happening in normal pattern and normal sequence.

It is parents' responsibility to take the child for **constant reviews**. It is also the parents' responsibility to infuse the knowledge on the importance of good health and cleanliness. They should bring in the interest to keep the teeth clean and internally motivate them to good oral hygiene.

When parents make it a habit to take their children to a pediatric dentist at regular intervals, mal-arrangement of teeth is detected early. When detected early, it is a chance to treat early and the treatment is less invasive, of lesser duration and cost.