



## THUMB SUCKING – A THREAT

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### ABSTRACT

Oral habits is a part of human development. Habit is a fixed practice produced by constant repetition of a act. Oral habits are habits which are acquired temporarily or permanently in children which is harmful to dental structures. Thumb sucking is considered to be normal upto four to five years of age. Thumb sucking is an innate reflex and one of the most common security and self soothing mechanisms. The article elaborates on the various thumb sucking habits, their etiology, classification, clinical findings, prevention and management.

**KEYWORDS :** Thumb sucking, Oral Health

**INTRODUCTION:****HABIT DEFINITION AND CLASSIFICATION :**

Oral habits is a part of human development. Habit is defined as a fixed practice produced by constant repetition of an act<sup>1</sup>. Oral habits are habits which are acquired temporarily or permanently in children which is harmful to dental structures. A habit is a repetitive action that is being done automatically.<sup>2</sup> It can range from benign transient habits to significant problematic habits.

Oral habits can be divided into 2 groups:

- 1.Acquired oral habits
- 2.Compulsive oral habits.

Graber includes all habit under extrinsic factors of general cause of malocclusion. For eg: Thumb sucking, tongue thrusting, lip/nail biting ,mouth breathing, speech defects etc., Sucking is the earliest and easiest coordinated muscular activity for a baby. There are 2 types: Breast feeding and bottle feeding are Nutritive type and Non nutritive type which includes sucking on objects or body parts like digits, thumb, which do not provide nutrition. Insufficient breast feeding leads to development of non nutritive sucking habits<sup>1</sup>

**THUMB SUCKING DEFINITION AND CLASSIFICATION :**

Thumb sucking is defined as the 'Placement of thumb or one or more fingers in various depths into the mouth or oral cavity (GELLIN 1970).Thumb sucking is considered to be normal upto four to five years of age.<sup>3</sup>Thumb sucking is an innate reflex and one of the most common security and self soothing mechanisms. Since thumb sucking is relaxing ,it may also induce sleep. For this reason ,young children may suck their thumbs whenever they feel tired.If thumb sucking occurs over a period of longer duration it may affect the growth and alignment of teeth.It can also causes changes in the roof of the mouth. Thumb sucking is of 2 types:

1.Active–when there is a heavy force by the muscles and if this habit continues the position of permanent teeth and the shape of mandible affected(Johnson and Larson,1993).

2. Passive-the child put his/her finger in the mouth but there is no force acting on teeth and mandible(Gale and Ager,1979).<sup>2</sup>

**CLASSIFICATION:SUBTELNY'S (1973)**

Based on depth of placement:

TYPE A: Whole digit is placed into the mouth ,pressing over palate. Found in 50% of children.

TYPE B:Thumb placed is not touching the vault of palate.Found among 13-24% of children.

TYPE C:Thumb is placed just beyond 1st joint, contacting hard palate and maxillary incisors only .Found in 18% of children

Type D :Very little portion of thumb is placed into mouth.Found in 6% of children.

**ACCORDING TO MOYER:**

PHASE 1:From birth to 3 years- Normal and sub clinically significant sucking is seen . If aggressive sucking continues at the end of phase 1, it may be carried to the next phase. So preventive measures can be taken by physiological barrier.

PHASE 2:In 3-7 years of age - Clinically significant sucking is seen. It occurs due to clinically significant anxiety . Dental problems can be solved during this phase .

PHASE 3: If habit persists into phase 3,then it is intractable sucking.The problem will be more serious. Psychotherapy is needed.

**THEORIES OF THUMB SUCKING :****PSYCHOSEXUAL THEORY BY SIGMUND FREUD (1919):**

Personality develops through a series of stages in which the id's pleasure-seeking energies are concentrated in specific erogenic areas. Mouth is an erogenous zone. Freud viewed

Non nutritive sucking as a pleasing erotic stimulation of the lips and mouth.

#### **LEARNING THEORY (DAVIDSON 1967):**

According to this theory, the adaptive response is the reason for thumb sucking habit. There is no psychological cause. This habit is acquired as the result of learning, eg., when the child feels hungry/bored the child tends to suck the thumb which gives a calming effect.

#### **BENJAMIN'S THEORY (1962):**

One of the causes of thumb sucking habit is rooting reflex. It is considered a normal mechanism as it disappears around 7-8 months of age in normal infants.

#### **JOHNSON AND LARSONS THEORY(1993):**

It is a combination of psychoanalytical and learning theories. They said that every child has the inherent biological drive for sucking. Environmental factors may contribute in developing this habit.<sup>4</sup>

#### **ETIOLOGY:**

There are three main theories that explains the etiology.

##### **1.Unsatisfied sucking needs during childhood:**

Insufficient sucking/maternal nipple deprivation leads to confusion, frustration, etc. Insufficient sucking needs occurs as a result of imbalances in the development of breathing, swallowing, mastication, speech articulation.<sup>5</sup>

##### **2.Learned behaviour:**

This theory explains that thumb sucking is an inborn behaviour that becomes as habit and also it gives calming effect to the infant, hence the habit continues in some children when they feel anxious/tired. In utero , the inborn nature of sucking habit is supported by the ultrasound pictures.<sup>6</sup> Further studies found that subject who had a thumb sucking siblings were more likely to engage in persistent thumb sucking.

##### **3.Emotional theory:**

The theory is based on Freudian and it also relates the oral phase of child development with digit/finger sucking. Habit fixation is a habit that persists beyond the verbal stage of a

child's development. Thumb sucking or digit sucking in later stages is usually considered a sign of regression, and fixation and regression are signs of emotional disturbance. Support for the emotional theory may be found that thumb sucking was more frequent in children who were put to sleep alone as infants compared to infants who enjoyed the presence of their parents at bedtime.<sup>7,8</sup> A recent study found that sleeping alone in infants was a predictor of insecure attachment.

#### **Causes :**

- Prolonged sucking.
- Habit during eruption of teeth.
- Feeling of hunger.
- Feeling of insecurity.
- Attention getting mechanism.
- Feeling of personal inadequacy.
- Learning pattern without underlying cause, etc.,

#### **CLINICAL FINDINGS:**

##### **INTRAORAL:**

Habit of prolonged sucking beyond the age of 5 yrs leads to various types of malocclusion like open bite, crossbite, increased overjet, crowding, lingually positioned lower incisors, anterior open bite, narrow upper arch.<sup>9</sup> If anterior open bite occur due to thumb sucking, a secondary tongue thrust develops leading to the exaggeration of the condition.<sup>3</sup> Speech problems, including mispronouncing T and D, lisping, and thrusting out the tongue when talking, can be seen.<sup>10</sup> A study by Elise Baker in 2018 concluded that, no phonological impairment is seen in young children with nonnutritive sucking habit by use of pacifier.<sup>11</sup> Hiu Tung Bonnie Ling et al in their study in 2018, reported that daily pacifier use and thumb/finger sucking habits in children for more than 1 year are likely to increase class II incisal relationship, class II canine relationship, increased overjet with anterior openbite.<sup>12</sup> The best preferred treatment time is late primary or early mixed dentition stage as it is seen that in majority cases, prior to eruption of the permanent teeth if the activity is discontinued, minor tooth changes are resolved.<sup>13</sup>

**EXTRAORAL FINDINGS:**

Fungal infection on thumb, short upper lip, hypotonic, increased deformation of digits, hyperactive lower lip, etc.,

**MANAGEMENT:**

- Preventive therapy.
- Psychological therapy.
- Chemical method
- Mechanotherapy/Remainder therapy.

**1.Preventive therapy:** Never let the habit to be started. The practice must be discontinued at its perception. Feed the child in natural way.

**2.Psychological therapy or counselling therapy:**

Time out refers to the act in which if the habit occurs,a reinforce is removed. For eg: whenever the child starts thumb sucking the mother can stop reading the story and she can resume story telling once the child stops thumb sucking. Positive reinforcement-encourage the child by giving rewards(eg,stickers) in the absence of sucking.<sup>14</sup>

**Dunlops Beta hypothesis:**

Children may be forced to focus on performing the action,as they practice. The child is generally asked to sit in front of a mirror,while sucking his thumb and observe himself as he indulges in the habit. This will help them to stop practicing the habit in a better way.

**Thumb sucking book:**

“THE LITTLE BEAR WHO SUCKED HIS THUMB” is a book published for children. In this book the child relates to story and it will deliver a positive message without pressure.

**3.Chemical method :** Application of foul tasting things like asoefetida, quinine, pepper on the hand of child as these will prevent the child from placing the thumb in the mouth.

**4.Mechanotherapy/Remainder therapy:**

a)Intraoral appliance:

- Hybrid habit breaking appliance.

- Blue grass appliance.
- Palatal crib.
- Light emitting diode habit breaking appliance.

b) Extraoral appliance :

- RURS elbow guard.
- Modified RURS elbow guard.
- Modified Three alarm system.
- Alarming wrist watch

**CONCLUSION:**

Thumb sucking terminates spontaneously between 2-4yrs of age. overall prognosis is benign. Frequency of Thumb sucking habit appears to be less in cases of breast feeding, use of pacifier in children. Parents are not aware of the harmful oral habits and their effects. Therefore dentist should provide information to the parents about the harmful oral habits, their types and their ill effects and how to manage and treat oral habits.

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