

CLINICAL

DENTAL EFFECTS OF PROLONGED THUMB SUCKING

RUNA MOWLA-COPLEY

Thumb sucking is a very common childhood habit with three quarters of infants sucking their thumb in their first year. Indeed, sucking the thumb is considered normal behaviour for babies and can even start in the womb. Ultrasound scans have observed babies in the womb sucking their thumbs from 28 weeks gestation.

As dental health professionals we often see children whose occlusion has been affected by a digit sucking habit. The effects of prolonged digit sucking can have a detrimental effect on a developing occlusion. And yet the effects of thumb sucking are usually reversible up until the ages of 6-7 years, because children still have their deciduous teeth. If thumb sucking continues beyond the age of seven, when the secondary teeth are erupting, permanent dental damage can occur. Persistent (more than 6 hours per day) thumb sucking can also lead to speech problems such as lisping and imprecise pronunciation (especially of Ts and Ds). Once the habit has been broken natural improvement of the teeth can occur within six months. If the habit breaks before the adult dentition becomes established (age 7/8) the child is unlikely to have caused any long term damage to their teeth.

In 2010 I co-founded a Thumb Sucking Clinic in London. After years of treating both children and adults who had sucked their thumbs well into their teens and subsequently endured long complex courses of orthodontics, often involving extractions of adult teeth, it made sense that prevention was better than cure. The clinic was incredibly successful with patients attending from far and wide. At its core, however, was an oral health education message.

Role of hygienists and therapists

Dental hygienists and dental therapists are in an ideal position not only to spot these malocclusions but also in being able to offer help and support to the child and parent in breaking the habit. As part of oral health education, this can make a huge impact on patient experience, and is also a wonderful practice builder.

The majority of dental experts agree that a thumb sucker younger than five should not be pressured to stop. Most children will simply grow out of the habit. As the secondary dentition begins to erupt at around age 6-7 years, the developing occlusion often exhibits classic features common to digit-suckers (Figure 1).

The effects have been summarised as follows:

- proclination of maxillary incisors,
- retroclination of mandibular incisors
- reduced overbite or anterior open bite, which is frequently asymmetric
- posterior crossbites due to narrowing of the upper arch.¹

The openness of the bite can manifest in a protrusive tongue activity during swallowing. If the protrusive tongue activity is the cause rather than the result of the anterior malocclusion, elimination of the habit results in correction of the anterior malocclusion.²

Persistent digit sucking causes largely dentoalveolar change, together with some minor effects on the skeletal pattern.³ Indeed, Bowden⁴ found that there was a statistically increased proportion of Skeletal II dental base relationships in children with a digit-sucking habit.

Significantly, 61% of 10-year-old digit suckers have a serious malocclusion.⁵ Thus in addition to the oral health benefits, early elimination of a digit sucking habit is recommended on health economic grounds.⁶

A Northamptonshire study revealed that even mild anterior open bite can have both aesthetic and functional implications for a child as well as requiring complex and prolonged orthodontic treatment.⁶

In severe cases future orthognathic surgery may even be necessary - combined orthodontic/orthognathic treatment not only carries risks for the patient, but is costly to the NHS.⁷

Many of the children who attend my clinic wish to give up the habit though most persistent thumb suckers find it extremely hard and the older the child the more ingrained the habit becomes. I often hear parents say their child has tried several times to give up but becomes very distressed, and unable to fall asleep.

There are generally two groups of digit-suckers you will see in practice. The first wish to give up their habit but need help – these children are usually very responsive to any advice from a health professional. The second group are often unaware that their persistent habit is wreaking havoc to their occlusion. Their parents may view the habit as ‘cute’ and see no harm in their 8 year old sucking their thumbs. If the occlusion shows any of the classic features, offering advice and support can be invaluable.

Essential advice to parents and children

1. Show the child and parent the effects of their habit using a hand-held mirror;
2. Take intra-oral photos to chart the effects of cessation;
3. Discuss the habit with the child – explain clearly what might happen to the teeth if he keeps sucking his thumb;
4. Home remedies such as placing a glove, sock or thumb guard (Figure 2) before bedtime, painting the thumb with various foul tasting substances can be successful if combined with positive reinforcement and encouragement; advise parents to praise the child when they are not sucking their thumb rather than scolding them when they are;
5. Recommend a progress chart;
6. As most children suck their thumbs when they are tired or bored, advise keeping their hands busy!

Whatever your method of delivery, always remember that the child needs your and their parents’ support and understanding during the process of breaking the thumb sucking habit. It is amazing what a

few words from a dental health expert can do for a child! I often get parents call up the next day to say that whatever I said to their child has magically made them break their habit overnight. Most children are unaware how their little thumbs can affect their mouth and teeth and react in a very positive manner when this is demonstrated to them (Figures 3 & 4).

If the child is unsuccessful in breaking the habit after a few sessions with you, recommend they see a dentist or orthodontist – consideration may be given to fitting a habit breaker (Figure 5). Habit breakers vary in design – a tongue crib is the most common. It is a fixed appliance that keeps the tongue positioned posteriorly and also prevents the thumb resting against the palate. The habit usually stops within days but I normally recommend the appliance remain in the mouth for approximately six to nine months to ensure the habit is completely buried. In cases where the patient has an openbite, this reduces spontaneously after treatment with a habit breaker.

About the author: Runa Mowla-Copley practises orthodontics in a specialist practice, Quadrant Orthodontics in Knightsbridge and Richmond. Runa co-founded a Thumb Sucking Clinic in 2010 and has been interviewed as an expert on the effects of thumb sucking by BBC and European radio, American television as well as national press. She is also author of the successful children’s fiction ‘Charlie’s Thumb’ – an illustrated story on the perils of thumb sucking.

Address for correspondence: runamc19@gmail.com

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Figure 1 - Classic features common to digit-suckers



Figure 2 - Thumb guard



Figure 3 – Thumb sucker aged 7 years at initial orthodontic assessment



Figure 4 - Same thumb sucker 4 months later at review appointment. Only oral health message delivered to child and parent. No appliance was fitted.



Figure 5 - Habit breaker