

Briefing paper: Oral aspects of dummy and digit sucking

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Dummy sucking usually ceases before permanent teeth erupt but digit sucking may persist beyond this stage producing a permanent disturbance and should be discouraged.

Dummy and digit sucking habits are referred to as non-nutritive sucking (NNS). There are two theories — emotional and learned behaviour. The emotional theory is Freudian based and relates NNS to the oral phase of child development. If NNS continues beyond the oral phase of development then it has become a fixation and if a child reverts to NNS at a later stage this is sign of regression. Both fixation and regression are considered to be signs of emotional disturbance.

The learned behaviour theory suggests that sucking is an innate urge in infants and that NNS is an outlet for an excess sucking urge because of efficient feeding, either breast feeding by a nutritionally competent mother or bottle feeding. The innate nature of sucking is supported by ultrasound picture of fetuses in-utero. When feeding is quickly and efficiently satisfied, the excess sucking urge is expressed as NNS. This theory has now gained most favour.

Prevalence

Prevalence of NNS is very variable and depends on many factors, eg culture. In many western countries it is very common, with up to 95% of infants displaying some habit. However, in parts of Africa and Asia it is uncommon and for the Inuit (Eskimos) it is unknown. Initially, dummy sucking is a far more common habit, but prevalence declines rapidly and is rare after 3 years. Digit sucking is less common in babies but tends to decline slowly with age; after 18 months it becomes the dominant form. One study showed that 40% of digit suckers still had the habit at 9 years of age. Digit sucking is said to be more common in the higher socioeconomic groups and in girls.

Dental disturbances

Dummy sucking produces an anterior open bite in the deciduous dentition, which is usually symmetrical. A space between the upper and lower incisors of 0.5 cm is not uncommon. With the completion of the deciduous dentition by 30 months, a posterior cross-bite sometimes develops, with the upper molars inside the lowers on one side. This is probably because of a reduction in the width of the upper arch in these children caused by palatal tilting of the upper molars resulting from the tongue being displaced downward by the digit. The upper and lower canine teeth then meet on closing and the infant must deviate to one side or another in order to close fully. These disturbances usually disappear once the habit is broken, however a posterior cross-bite may persist.

Digit sucking produces a more variable picture depending upon the digit(s) used and the angle of insertion. In the deciduous dentition, the anterior open bite is usually asymmetrical. However, as the habit often persists after the permanent incisors erupt, these may be displaced forwards and the lower incisors backwards, resulting in an anterior open bite, often asymmetrical. This invariably disappears on cessation of the habit providing that the child is still growing. If the habit persists beyond this stage and especially if a forward tongue thrust on swallowing develops, then improvement is likely to be slight and fixed appliance therapy will be needed for correction.

Other effects of NNS

Caries levels are reported to be higher among digit suckers than dummy suckers, possibly because of greater saliva stimulation, although the habit of dipping a dummy into a sugar-sweetened liquid such as concentrated fruit juice or honey is linked to rapid decay. In persistent digit sucking, deformation of the digit can occur and sev-

eral severe cases have been reported.¹ There appears to be a higher incidence of oral candidosis in dummy suckers.² While this may be related to cleanliness, *Candida albicans* is an oral commensal in about 50% of infants but significantly more in dummy suckers.³ Candidosis may be related to a debilitating condition which makes the baby fretful and more likely to be pacified with a dummy. There is no clear evidence that NNS is related to problems of speech development.

Management

As dummy sucking is less likely to cause long-term problems than digit sucking, it has been suggested that a dummy should be substituted at the first sign of digit sucking. However, this practice is not universally supported. It is generally agreed that a persistent digit sucking habit should be treated and various mechanical devices, usually a modified orthodontic appliance, with a palatal bar or 'roller' have been advocated. Some form of finger stall or bitter flavoured agent can be applied. However, various non-physical methods have been reported to provide good results. These include: positive reinforcement by reward; habit reversal where the child is taught to carry out an alternative activity when the urge to suck arises; and reframing. This procedure turns habit into duty by suggesting that all the other fingers are being neglected and all fingers must be sucked for an equal length of time.

There is no consensus as to which method is more effective, but clearly the various non-physical methods should be tried first.

- 1 Campbell Reid D A, Price A H K, Digital deformities and dental malocclusion due to finger sucking. *Br J Plast Surg* 1984; 37: 445-452.
- 2 Manning D *et al.* Candida in mouth or on dummy? *Arch Diseases Child* 1985; 60: 381-382.
- 3 Darwazeh A M, al-Bashir A. Oral candidal flora in healthy infants. *J Oral Path Med* 1995; 24: 261-364.

Further reading

- 1 Moore M B. Digits, dummies and malocclusion. *Dent Update* 1996; 23: 415-422.

The author is grateful to Mr D P Roberts-Harry for advice.

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REFEREED PAPER
Received 29.08.97; accepted 22.06.98
© British Dental Journal 1999; 186: 108