

Review Article

Educating Parents about Pros and Cons of Using Pacifiers

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Abstract:

Many times parents are seen worriedly reporting the dentist about the malocclusion of their child. But they are usually not aware that pacifiers adopted by them to satisfy their wards are the reason behind this. So it is the need of the hour to make parents aware of the exact time for intervention of the non-sucking habits and thus preventing the potential harm to the oral structures. Thus, having an oral habit is not a tragic situation, but needs to be stopped at the appropriate time with an appropriate method to get a good long-term result.

Keywords: Non-nutritive sucking habits; Malocclusion; Orofacial complex.

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Introduction

Suckling is a reflex occurring in the oral stage of development and disappears during normal growth between the ages 1 and 3 ½ years.^{1,2} It is the first coordinated muscular activity of the infant, which helps in breast-feeding.¹ Non-nutritive sucking is probably the earliest sucking habit adopted by infants in response to frustration and to satisfy their urge and need for contact.² The need for sucking is very strong during the first three months of life but it decreases around a infant's seventh month; by this time, the neuromuscular structures of the oral cavity are prepared for eating, drinking, and, ultimately, mastication. To allow for the infant's need for sucking while allowing for timely intervention prior to a malocclusion developing, the ideal time for cessation of non-nutritive sucking is during the second or third year of life; after this time, non-nutritive sucking is considered to be a

prolonged sucking habit.³ Because of the adverse effect of unbalanced muscle activity on dental arch development, the continuation of a pacifier habit beyond what is considered to be a normal developmental stage is discouraged.

Pros and cons

Pressure against the teeth must exist for at least six hours a day to cause tooth movement. Variations in terms of the amount of the time spent with a pacifier in the mouth (and the intensity of the child's sucking) may explain why some children do not develop a posterior crossbite. Pacifier use should be discouraged as soon as canine interference is noted.⁴

Many studies have been conducted to know the effect of non-nutritive sucking habits on the developing occlusion. Degan and Puppin-Rontani⁵ in their study found a linear relationship between breast feeding and pacifier use, demonstrated that more

the child was breast fed, the less the pacifier was used. Another study conducted by Viggiano et al.⁶ concluded that non-nutritive sucking activity rather than the type of feeding in the first months of life is the main risk factor for the development of altered occlusion and open bite in deciduous dentition. Children with non-nutritive sucking activity and being bottle fed had more than double the risk of posterior cross bite. Breast feeding seems to have a protective effect on development of posterior cross bite in deciduous dentition. Warren and Bishara⁷, studied that pacifier and digit habits produced different malocclusions. Although both habits were associated with an increase in open bite, pacifier habits were associated more often with posterior crossbite, while digit habits were associated with greater overjet, higher palatal vaults, and more diminished maxillary arch widths.

Manufacturers have created pacifiers that are designed to imitate a mother's breast, purporting that the muscular movements of sucking simulate those of nursing and that this, in turn, encourages normal arch development in the primary dentition. The nipple of the conventional pacifier has a cherry-like shape and is thicker than the physiological pacifiers. Adair et al tested two physiological pacifiers against a conventional pacifier and found that they offered no significant advantage in terms of protection against a malocclusion.⁸

Multiple studies have noted another possible detrimental effect concerning pacifier introduction and breastfeeding: pacifier use during the first week of life has been shown to reduce exclusive and overall time spent breastfeeding by a significant amount.⁹ A 2003 study by Ullah and Griffiths reported that infants who did not use a pacifier had an overall breastfeeding duration of 10 months, compared to 7.5 months for infants who used pacifiers; however, they concluded that occasional pacifier use could not be blamed definitively for reducing the duration of breastfeeding among infants.¹⁰ Howard et

al recommended delaying use of a pacifier until the infant was at least one month old.⁹ Pacifier use among infants and toddlers has been associated with an increase in the occurrence of otitis media. Pacifier use should be restricted to the time when the infant is falling asleep.¹¹ Warren *et al* assessed pacifier use as a risk factor for otitis media from birth to 12 months of age and reported similar findings.¹²

The pacifier, in combination with sucrose solutions, has been determined to be a safe and effective method for relieving pain in neonates.¹³ Pacifier sucking in combination with sweet solutions has been shown to provide a synergistic analgesic effect in newborn infants during minor painful procedures.¹⁴

The association between pacifier use and early childhood caries (ECC) also has been questioned. Pressini reported in 2003 that pacifiers did not have a strong or consistent association with ECC; in fact, pacifiers offered a mildly protective effect.¹⁵

Safety considerations for the use of pacifiers also should be included in the infant/toddler examination. Severe laceration could occur if the shield is held inside the lips, with the edges of the flanges touching the maxillary and mandibular mucobuccal folds. Pacifiers have been implicated in death from asphyxia, due to their becoming lodged in the pharynx.¹⁶

Recently, pacifiers have been suggested as another measure to reduce the risk of sudden infant death syndrome (SIDS). Babies who sleep in their parents' bedroom (not in the parents' bed) and are offered a pacifier do not sleep as deeply as those who sleep in a separate bedroom without a pacifier.¹⁷ Pacifiers should be offered for all sleep (including daytime naps) for all children up to one year of age to include the peak ages for SIDS risk and the time when an infant's need to suck is highest.¹⁸ In addition, pacifier sucking during sleep lowers the auditory arousal threshold, making it possible for the infant to be aroused from a deep sleep that could result in episodes of apnea.¹⁹ Cardiac autonomic

controls are modified and could be regulated with pacifier use during sleep. These controls could be associated with mechanisms implicated in SIDS, which suggests that non-nutritive sucking may confer a protective effect.²⁰

Management

The levels of treatment possibilities that are usually considered are age appropriate explanations to the child by clinical photography's and the explanations with the consideration of physical appearance and social acceptance which may be sufficient for the child to decide to give up the behaviour. For a child who is ready to quit the habit and just needs a reason to stop, positive reinforcement may be helpful tool. Posting a calendar on the refrigerator or in some other noticeable location and keeping a track of habit free days can give the child a sense of pride. Placement of a reminder on the digit involved in the habit helps the child to immediately become conscious of the habit as soon as the child performs it and hence remove the digit from the mouth. Hot tasting, bitter preparations or distasteful agents can be applied on the digit involved in the habit. These agents help the children to keep the digit out of the mouth. Simple devices for controlling thumb or finger sucking is the application of adhesive tape to the thumb or finger. For more deeply ingrained habits or for parents who are more reluctant to let go of the habit, an intraoral appliance serves as the most effective deterrent. The various appliances used to break the habit and correct the palatal crib, rakes, oral screen, lingual arch appliance blue grass appliance, soldered W arch and quad helix.²¹

Prevention

Health professionals should consider the teaching of the subject of oral habits as part of dental programs. Specific recommendations must be addressed to parents on the child's sucking need and its role in oral muscular activity. Breast feeding must be considered as an best method of feeding and prevention of

malocclusion is one additional benefits of breast-feeding. For bottle feeding always use of physiologically designed nipples should be preferred than conventional nipples. Prenatal dental education is necessary for the parents.²¹

Summary

The non-sucking habits mostly disappear when children reaches the school. But if these habits persist the muscular imbalance can result in malocclusion. Parents should be educated about benefits of the exclusive breast feeding in the first 6 months of age on mixed dentition. The activity of non-nutritive sucking should be diagnosed in a timely manner in order to reduce the development of posterior cross bite, anterior open bite, and Class II molar relationship. So it is the need of the hour to make parents aware of the exact time for intervention of the non sucking habits and thus preventing the potential harm to the oral structures. With all issues considered, the time for intervention may be at approximately two years of age to minimize occlusal disharmonies.

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