

Press Release
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Breastfeeding benefits dental occlusal development in young children

A survey by the Faculty of Dentistry at the University of Hong Kong has shown that breastfeeding may benefit dental occlusal development in young children and result in less dental abnormalities and disorders.

The cross-sectional study on more than 850 kindergarten children aged 2 – 5 years old showed that infants who were breastfed are less likely to have increased overjet (horizontal distance between upper and lower anterior teeth more than 3.5mm) or Class II incisal relationship (lower anterior teeth bite behind the cingulum plateau of upper anterior teeth).

Data were collected on the children's duration of full-time breastfeeding, history of non-nutritive sucking habits (eg. thumb sucking and pacifier use) by means of questionnaires completed by their parents. Oral examination was performed on the children to assess their dental arch relationship in three dimensions.

The findings reinforced some other studies conducted worldwide that associated breastfeeding with the development of a normal occlusion. The project started in 2012 and lasted over one year.

Sagittally, infants who were purely breastfed for more than 6 months were less likely to have increased overjet (horizontal distance between upper and lower anterior teeth more than 3.5mm).

For those who were exclusively breastfed for more than 6 months, the prevalence of increased overjet was 12%, compared to 14.8% for those who were breastfed for equal or less than 6 months. For those who were never breastfed, the prevalence was 20.8%. There is a difference of more than 8% between those who were breastfed for over 6 months and those had never been breastfed.

In terms of Class II incisal relationship (lower anterior teeth bite behind the cingulum plateau of upper anterior teeth), only 18.8% of those who were breastfed for more than 6 months developed Class II relationship, compared to 25.4% for those who were breastfed for equal or less than 6 months; and nearly one third (32.9%) of those who had never breastfed had such malocclusion.



Vertically, the duration of breastfeeding was found to have no association on the overbite (i.e. vertical overlapping between upper and lower incisors) in primary dentition.

Transversely, the study showed that children who received more than 6 months of pure breastfeeding had greater intercanine and intermolar widths than those who were purely breastfed for less than or equal to 6 months.

The difference in intercanine and intermolar widths between these 3 cohorts of children as follows:

Difference in Intercanine width in Primary Dentition: for >6month vs \leq 6 months is 0.541mm; for > 6 months vs never is 0.608mm

Difference in Intermolar width in Primary Dentition: >6month vs \leq 6 months is 0.813mm, and for > 6 months vs never is 0.857mm.

A wider dental arch is deemed more favourable for dental development as the chances of dental crowding are reduced.

According to the overseas studies (References 1, 2, 3, 4), the benefits of breastfeeding could be attributed to the different sucking motion involved in breastfeeding compared with bottle-feeding. Sucking a bottle requires the tongue to exert a piston-like action that compresses the artificial teats against the hard palate.

In contrast, both the nipple and areola are put into the mouth during breastfeeding and the tongue compresses the soft breast nipple in a peristaltic action to draw the milk. (References 2, 3, 4)

The lip and tongue movement in bottle-feeding is believed to cause an increased overjet in primary dentition, while the lip and tongue movement in breast feeding result in a more squeezing rather than sucking action. (References 2, 3, 4)

The teats of bottles and pacifiers are harder, which may force the infants' mouth to change around them, as different from the soft breast which can be easily adapted to the shape of the infants' mouth. (References 3, 4)

The association between longer breastfeeding duration and wider intercanine and intermolar widths is likely to be due to the reduction in the posterior-acting forces of the buccinators during breastfeeding compared with bottle feeding, pacifier use, and digit sucking habits. (Reference 5)

Despite the evidence that correlates breastfeeding and the development of a normal occlusion, one should not overlook genetic factors and their interactions on the development of the craniofacial complex.

While Asian people present more convex profile than Caucasians and the prevalence of Class II malocclusion in Chinese is about 20%, and that longer duration of breastfeeding was associated with Class II incisal relationship, breastfeeding should be promoted as it is associated with reduction in Class II incisal relationship especially when taken into account the craniofacial growth pattern of the Asian Population.

Normal occlusion in infants is likely to make way for a better development of the permanent dentition.

Advice for parents:

Breastfeed your baby for at least 6 months, which is recommended by WHO.

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References

1. *Salone LR, Vann WF, Dee DL. Breastfeeding: An overview of oral and general health benefits. JADA. 2013;144(2):143–51.*
2. *Viggiano D, Fasano D, Moncaco G, Strohmenger L. Breast feeding, bottle feeding and non-nutritive sucking; effects on occlusion in deciduous dentition. Arch Dis Child. 2004;89(12):1121–3.*
3. *Agarwal M, Ghousia S, Konde S, Rai S. Breastfeeding: nature’s safety net. Int J Clinical Pediatr Dent. 2012;5(1):49–53.*
4. *Willis S, Kurlander R. The benefits of breastfeeding. The J Prof Excell Dimens Dent Hyg. 2013;11(9):46–50.*
5. *Lopez Del Valle LM, Singh GD, Feliciano N, Machuca MC. Associations between a history of breast feeding, malocclusion and parafunctional habits in Puerto Rican children. P R Health Sci J. 2006;25(1):31–4.*

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