

## The Comparison of Oral Microbial Diversity between Infants and their Parents

**Mohammad Karimi\***

*Pediatric Department, Sepideh Dental Clinic, Iran*

**\*Corresponding Author:** Mohammad Karimi, Pediatric Department, Sepideh Dental Clinic, Iran.

**Received:** November 12, 2021; **Published:** November 26, 2021

The prevalence of oral and dental diseases is related to the oral microorganisms of the mouth. The transmission of these microbiomes from the mother to the infant may contribute to the onset of oral diseases in the child.

Comprehensive research that was conducted in Japan revealed the oral microbiome of the parents could influence that of their children aged less than 18 months. The researchers collected saliva from forty 18-month-old infants and their parents and compared the variety and composition of their oral microbiome. This study [1] revealed that the oral microbiota of 18-month-old infants was less diverse than that of adults. This result pointed to the consistency of other studies related to salivary microbiome in infants from birth to 5 years of age to adulthood that indicate the infant's oral microbiome is still immature at 18 months of age. These bacteria, which are very common between infants and parents, include not only the commensal bacteria but also disease-related bacteria in which oral bacteria can be passed from parents to infants before 18 months of age. These results also indicate that the mother's oral microbiome affects the child's oral microbiome up to 18 months of age.

Besides, another study [2] reported that the microbial diversity of the tongue in 18-month-old infants was comparable to that in adults. These results indicate that the maturity of the oral microbiome varies depending on the position in the oral cavity.

Research shows that the oral microbiota differs between active caries and free caries teeth in children and change from a symbiotic microbiome to a dysbiotic microbiome is associated with the first appearance of caries in childhood [3-5].

Some studies pointed that the most common shared oral commensal bacteria in infants with their parents are *Streptococcus*, *Veillonella*, *Neisseria*, *Haemophilus*, *Fusobacterium nucleatum* and *Rothia* [6,7].

The researchers found this result that the oral microbiome of parents may influence the shift of the oral microbiome of their children from symbiotic to the dysbiotic microbiome [8]. Interestingly, they pointed that mothers' oral microbiota could have a greater effect on the formation of their children's oral microbiome than fathers which could be the result of intimate contact with the mother during breastfeeding or kissing [8,9].

These studies indicated that oral microbiomes were significantly similar between infants and their mothers. The shared bacteria between infants and parents included not only commensal bacteria but also disease-related bacteria. However, further studies are needed to proceed so that we reach the effects of these factors on the similarity of the oral microbiome between infants and their parents.

### Bibliography

1. Jo R., *et al.* "Comparison of oral microbiome profiles in 18-month-old infants and their parents". *Scientific Reports* 11 (2021): 861.
2. Kageyama S., *et al.* "Transition of bacterial diversity and composition in tongue microbiota during the first 2 years of life". *mSphere* 4 (2019): e00187-19.

**Citation:** Mohammad Karimi. "The Comparison of Oral Microbial Diversity between Infants and their Parents". *EC Paediatrics* 10.12 (2021): 69-70.

3. Dashper SG, *et al.* "Temporal development of the oral microbiome and prediction of early childhood caries". *Scientific Reports* 9 (2019): 19732.
4. Teng F, *et al.* "Prediction of early childhood caries via spatial-temporal variations of oral microbiota". *Cell Host and Microbe* 18.3 (2015): 296-306.
5. Childers NK, *et al.* "Association between early childhood caries and colonization with *Streptococcus mutans* genotypes from mothers". *Pediatric Dentistry* 39.2 (2017): 130-135.
6. Obata J, *et al.* "Identification of the microbiota in carious dentin lesions using 16S rRNA gene sequencing". *PLoS One* 9.8 (2014): e103712.
7. Han YW. "*Fusobacterium nucleatum*: A commensal-turned pathogen". *Current Opinion in Microbiology* 23 (2015): 141-147.
8. Kilian M, *et al.* "The oral microbiome - an update for oral healthcare professionals". *British Dental Journal* 221.10 (2016): 657-666.
9. Kort R, *et al.* "Shaping the oral microbiota through intimate kissing". *Microbiome* 2 (2014): 41.

**Volume 10 Issue 12 December 2021**

**©All rights reserved by Mohammad Karimi.**