

THE SALIVA METABOLOME: A REFLECTION OF EARLY CHILDHOOD

Saliva is a biological fluid which plays many roles. First and foremost, it protects the oral cavity against pathogens, helps maintain the teeth integrity and contributes to how we perceive and digest our food. Saliva is complex in its composition which reflects its varied functions but in particular it contains a large number of proteins and metabolites. Metabolites are small molecules that reflect an organism's *metabolism*, *i.e.* the set of chemical reactions that take place in it. The metabolism can be affected by diseases but also by natural processes like ageing, physical activity, diet... The whole set of metabolites which are present in a biological fluid or tissue is called the '*metabolome*'.

CSGA researchers have been studying the saliva metabolome for several years now, particularly in relation to taste perception and diet. Recently, these researchers have been focusing on how the salivary metabolome evolves during the first few months of life. For this purpose, they collected the saliva of 32 young children with different milk feeding experiences involving breast milk or infant formula milk. Saliva collection were done at 3, 5, 11 and 15 months. The results did not show any difference between the saliva metabolome of breast-fed compared to formula-fed infants. However, the concentration of 14 metabolites was found to increase with age while the concentration of 4 other metabolites decreased. These changes are thought to reflect two major events - a change in the diet with the gradual introduction of foods other than milk (*i.e.* complementary feeding) and a change in oral metabolism. This latter is thought to be partly due to natural changes in the bacterial metabolism which are possibly caused by the introduction of new foods and teething. Indeed, the bacteria present in the mouth actively contribute to the production of the metabolites detected in saliva... but much remains to be learnt about the function of this oral flora!

Contact

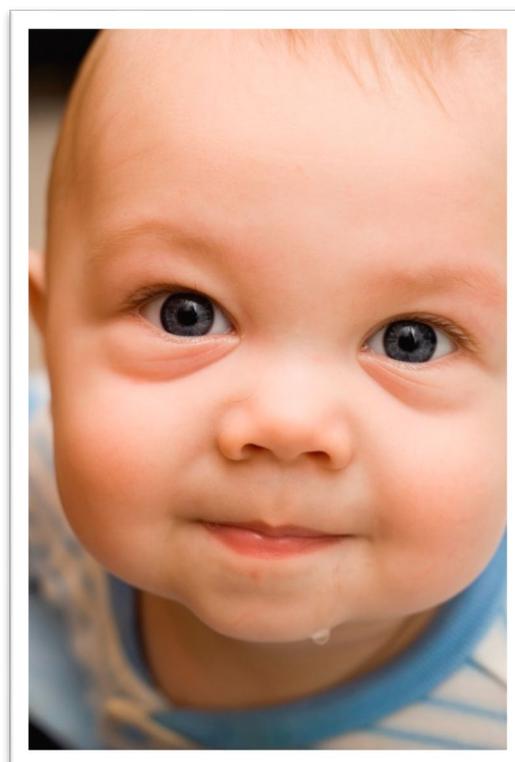
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To know more

Neyraud E, Schwartz C, Brignot H, Jouanin I, Tremblay-Franco M, Canlet C & Tournier C (2020). Longitudinal analysis of the salivary metabolome of breast-fed and formula-fed infants over the first year of life. *Metabolomics*, 37. doi.org/10.1007/s11306-020-01661-7

Key-words

Saliva; infant; metabolome; milk feeding; complementary feeding; oral cavity



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