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HAL Authorization

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UNDERSTANDING FOOD BEHAVIOUR IN CHILD THROUGH HIS SALIVARY COMPOSITION: A PROSPECTIVE STUDY ON CHILDREN EXPRESSING ORAL DISORDERS.

In Human, the oral sphere is the first and main place where sensory stimuli are released and perceived. The phenomena occurring during food breakdown and sensory perception are complex and in this system saliva plays a major role. Over the last ten years, the increasing research on human saliva revealed the extreme complexity of this biological fluid, in terms of protein and small molecules composition. As such, saliva may carry the biological signature of an individual.

Related to food, a fundamental question is to understand whether this biological signature is established during early oral exposition to food and whether it reflects the future oral sensitivity of an individual to food. A mean to prove this concept is to follow children who had an oral by-pass during critical phases of early food behavior development that results in the development of so-called oral disorders. Oral disorders are expressed for example by an exacerbated gag reflex, difficulties in chewing and swallowing and high food selectivity and may persist for years after oral by-pass ending.

In this context a population of 21 children who suffered from oral disorders (OD) was compared to a healthy control population (NOD, n=23). The two populations were followed during one year (three samplings over the year) and compared regarding their sensitivity to food (feeding difficulties, food preferences and food habits measured through questionnaires) on one side and their salivary composition (measured with targeted and non-targeted approaches) on the other side.

On feeding difficulty aspects, OD children were separated significantly on 6 dimensions reflecting eating difficulties, oral tactile sensitivity, appetite and interest for food, sensitivity to food texture, sensitivity to tastes, sensitivity to temperature. Moreover, liking, consumption frequency and number of consumed foods were lower for the OD compared to the NOD children for some specific food groups. On saliva, some components identified by biochemical, proteomic, peptidomic and metabolomic analyses were associated specifically to oral disorder.

Despite a large heterogeneity within the groups, this study permitted to discriminate clearly between the two populations on both their food sensitivity and their salivary composition. Further analyses of the data are ongoing in order to identify the relationships between salivary markers and food sensitivity.

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