HealthyW8: Evaluation of health parameters related to obesity prevention through saliva

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Abstract

HealthyW8 is a European initiative focused on promoting sustainable lifestyle changes, with the aim of supporting individuals in the adoption and long-term maintenance of healthy habits in vulnerable stages of life. This multidisciplinary project integrates behavioral science, digital health tools, and the monitoring of biological markers to better understand how lifestyle modifications influence health trajectories in real-world contexts.

Within the scope of this project, the use of non-invasive methods for collecting biological samples proves particularly relevance for assessing physiological changes associated with shifts in daily behaviors. Among the available biofluids, saliva stands out as a valuable and still underexplored matrix, offering several advantages: it is easy to collect, non-invasive, and contains numerous analytes that reflect both local and systemic physiological processes. These include inflammatory responses, oxidative stress, enzymatic activity, and proteomic alterations related to metabolic status and general well-being.

This preliminary study, in the context of HealthyW8 project, aims to assess the relationship between salivary protein profile and physical activity parameters, as well as to assess the changes in this profile induced by acute practice of exercise, in children. Saliva samples are collected at two distinct time points — before and after 45 minutes exercise. The application of targeted proteomic and enzymatic analyses, allow to identify the main salivary protein components related with physical activity, in children. This is a starting point for the tasks, considered in HealthyW8 projects, where the feasibility of integrating salivary analysis into broader digital strategies for public health promotion is explored.

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