Food Friend

Actionable insights on nutritional intake

To combat diet-related diseases, the ITEA project Food Friend (Autonomous and easy-to-use tool for monitoring of personal food intake and personalised feedback) will develop a toolset to measure food intake and provide personalised feedback, enabling a clear overview of dietary behaviour for patients and practitioners.

Addressing the challenge

Unbalanced food intake is a factor in many health issues, ranging from malnutrition and obesity to diabetes and cancer. Reducing the risks of diet-related diseases is difficult due to the varying nutritional requirements of individual patients and the same patient over time. Methods to monitor intake are not yet commonplace and typically involve cumbersome manual effort. Combined with privacy challenges, this means that researchers and practitioners face a lack of usable data; feedback can therefore be unclear for the end-user, resulting in limited change.

Proposed solutions

Food Friend is focused on two aspects of diet-related disease: malnutrition prevention for patients who require tube feeding and nutritional transmural care for chronic diseases. The toolset will combine hardware in the form of sensors and software in the form of an application or web portal. The feasibility of existing sensor modalities (such as wearables) will be examined in the context of food intake, while real-time analytics will be developed to manage multi-modal data flows from heterogeneous sensors. Recommendation techniques like self-determination theory will provide personalised dietary suggestions for endusers and gamification concepts should promote long-term adherence. Dieticians will be able to steer this process with the aid of visualisation techniques; mobile device implementation will ensure accessibility and secure identity management will safeguard

privacy. Finally, Food Friend will create an open-access research database and nutrition-specific ontology for modelling nutritional behaviour in order to further increase dissemination.

Projected results and impact

For the consortium, Food Friend is an opportunity for growth in the global wellness market, worth USD 4.2 trillion in 2017 and expected to increase by a compound annual growth rate of 5.9% until 2026. Most importantly, however, Food Friend will increase the well-being of patients with diet-related diseases. The project's insights should also result in better-informed decisions by dieticians with less time required. In addition to

better health outcomes, personalised care and self-management are expected to reduce the costs of healthcare by reducing readmissions and allowing people to live independently for longer.

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