UNITED RESEARCH FORUM
(CONNECT WITH RESEARCH WORLD)

International E-Conference on

NUTRITION AND FOOD SCIENCE

December 09-10, 2020 | Virtual Webinar

Personalised Molecular Feedback for Weight Loss

Shilpa Tejpal[1], Narinder Sanghera[2], Vijayalaxmi Manoharan[2], Joan Planas-Iglesias[2] & Judith Klein-Seetharaman[2]
[1]Department of Metabolism, Digestion and Reproduction, Imperial College London, W12 0NN, UK
[2]Systems Biology and Biomedicine, Division of Metabolic and Vascular Health, Medical School, University of Warwick, Gibbet Hill, Coventry CV4 7AL, UK

Different diet programs and mobile apps are available to assist weight loss efforts. These interventions are dependent on an individual's willingness and motivation to self report their data. These approaches do not make use of molecular information in providing the feedback to its users. To enable a more quantitative approach, we investigated the use of molecular information in combination with a digital platform for dieting. Here, we studied the three biomolecules, insulin, lactate and Angiotensin Convering Enzyme, as potential bio-markers to provide feedback on an individual's lifestyle. In this study, 52 participants who were 18 years or older were recuruited. They were asked to omit one main meal from the usual three-meal routine. Daily caloric intake was restricted to ~1200KCal with one optional snack of ≤250KCal. An in house mobile health platform (personalhealth.warwick.ac.uk) was used to maintain diaries of food intake, weight, urine collection and volume. Skipping one of the main meal of the day resulted in weight loss in contrast to 3-meal control days regardless of the meal that was skipped, breakfast, lunch or dinner ($p < 0.001$). Total insulin and lactate values were significantly different between healthy and obese groups at $p = 0.01$ and 0.05 respectively. Following a day of dieting, urine ACE levels negatively correlated with weight loss ($p = 0.015$). This reduction was more robust in BMI> 25 group ($p = 0.0025$). In a proof of concept study, we showed that insulin, ACE and lactate values in urine correlate with weight loss, making these molecules potential candidates for quantitative personalised feedback on food intake behaviour to people undergoing dieting.

Keywords: Dieting, Personalised feedback, lifestyle, biomarkers

Biography:

Shilpa Tejpa is a Research Associate at Imperial College London. I have an undergraduate engineering degree in Biotechnology from Jaypee University of Information Technology, India. I was awarded Vice-Chancellor's gold medal for being the top student in the Department of Biotechnology. I was later awarded Warwick-India scholarship by University of Warwick (UoW) to pursue MSc in Biotechnology, Bioprocessing and Business Management. I went on to do PhD Medical Sciences at UoW through Chancellor's International Scholarship. My research interests include integration of molecular information with technology for a personlasied feedback. I am also interested in investigating association between nutrition and gut mirobiome.