12th International Conferences on **Childhood Obesity and Nutrition**

&

3rd World Congress on **Diabetes and Obesity**

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Nudging obesity in the right direction

The global risk of obesity for children has risen from 0.7- 5.6% in girls and from 0.9-7.8% in boys from 1975-2016 (NCD Risk Factor Collaboration (NCD-RisC) 2017). We are proposing a novel method of tackling obesity in young adults using Nudgeomics – a combination of DNA-based dietary guidelines and small nudges in food product recommendations via an app. The app provides both educational information on personalized dietary guidelines, and the nutritional information of the food product, with the advice on whether the food product is good for you based on your DNA or whether another product would be better. The technique is based on Nudge Theory. A meta-analysis of Nudge interventions showed that it improved dietary behaviour in children in 83% of studies. Moreover, dietary nudges were found to be more effective in children in elementary school and adolescence rather than pre-school. Nudgeomics is not only an effective tool to tackle obesity in adolescents; it also harnesses both the agency of the child and the authority of the parent. NudgeShare enables parents to shop for their whole family by integrating the DNA-based guidelines of all family members. The parent, in their position of authority over the diet of their children, is provided with reassurance that they are buying foods that are nutritious. This is complimented by the personalized profile that adolescents have in their own app. This will provide educational information on what is good for them, bad for them and why. Moreover, it will help to explain the reasoning behind their parent's food choices, for example why they chose the green product over the red. It also provides the gaming opportunity for children to try to get more greens than reds each week, which in turn could make them a more active participant in grocery shopping. This easy and fun entry to food education could have a profound effect on informing shopping habits from a young age that may be carried into adulthood.

Recent Publications

1. Chen C H et al. (2018) PERSON-Personalized expert recommendation system for optimized nutrition. IEEE Transactions on Biomedical Circuits and Systems 12(1):151–160.

2. Cork S C et al. (2018) Extracellular pH monitoring for use in closed-loop vagus nerve stimulation. Journal of Neural Engineering 15(1):016001.

3. Mirza K B et al. (2018) Influence of Cholecystokinin-8 on Compound nerve action potentials from ventral gastric vagus in rats. International Journal of Neural Systems 7(27):1850006.

4. Mirza K B et al. (2017) Live demo: platform for closed loop neuromodulation based on dual mode biosignals. IEEE Biomedical Circuits and Systems Conference (BioCAS) IEEE 1–1.

5. Toumazou C et al. (2013) Simultaneous DNA amplification and detection using a pH-sensing semiconductor system. Nature Methods 10(7):641–646.

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Childhood Obesity 2019
Diabetes Conference 2019
March 18-19, 2019

Volume 9

Page 14

Biography

Caroline Golden is working with Professor Chris Toumazou and Dr. Maria Karvela who pioneered the term Nudgeomics at the KMPG Innovation and Information Protection in Digital Health Conference, on 23rd September 2016. The Nudgeomics team is currently conducting a clinical trial to determine the effectiveness of the Nudgeomics technique on reducing the risk of type 2 diabetes in pre-diabetic individuals.

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Childhood Obesity 2019
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Volume 9

Page 15