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Effects of DNA-based recommendations on health-related behaviour changes

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Nutritional recommendations can lead to improved health outcomes, but evidence shows that different individuals react to the same recommendations in different ways.[1] Providing personalised nutritional recommendations, whether that includes genetics or not, has been shown more likely to result in health-related behaviour changes.[2–4] The main objective for this study is to assess behavioural and anthropometric changes upon providing personalised nutritional recommendations in comparison to generic recommendations. Our hypothesis is that individuals who are given personalised recommendations based on their DNA results are more likely to change their behaviours, to comply with the recommendations and, therefore, to improve anthropometrics measures and health outcomes. Here we report the preliminary qualitative data of the first half of the samples. Recruitment of additional 24 participants is currently in progress. A random sample of 26 healthy volunteers, over 18 years of age, were recruited from the database of BodyMeasure, a Sydney based clinic that specialises in body composition. Participants were randomly divided into a DNA group ($n = 13$) and a control group ($n = 13$). Each participant received a DEXA scan at baseline and at the end of the 8 weeks of the trial. In addition, participants of the DNA group received a DNA test. The DNA group was given macronutrient personalised recommendations and specific foods to modulate the intake of, based on their DNA results. The control group was given generic macronutrient distribution based on healthy eating guidelines and no other guidance. Food diaries and behavioural questionnaires which included food frequency questionnaires, were collected before, during and after the trial. A follow-up post trial behavioural questionnaire will be submitted 6 months from completion of the trial, to track behaviour changes in the longer term. Throughout the 8 weeks, more participants lost motivation in the control group v. DNA group (40% v. 11%, respectively), as self-reported. Committed participants in the DNA group changed their behaviour 18% more than the control group, as highlighted by the food questionnaires. In addition, and possibly because of the above-mentioned results, participants in the DNA group lost on average 3.4% more body weight than the control group over the 8 weeks. DEXA scan parameters for visceral fat and android/gynoid fat % ratio showed more favourable results in the DNA group. Overall, the preliminary results support our hypothesis that providing personalised recommendations based on an individual's DNA is more likely to induce higher compliance, higher number of changed habits and improved anthropometric measures and health outcomes. The completion of the study will add to the current knowledge on the matter.

References

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