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The comparison of nutrient intakes from a web-based 24 hour recall tool (Foodbook24) to an interviewer led 24 hour recall

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Technology based dietary intake assessment methods are proving popular alternatives to traditional paper based methods[(1)]. Several web based 24 hour recall tools have already been developed and validated in countries such as the USA[(2)] and France[(3)]. Foodbook24 is a web based 24 hour dietary recall tool which has been developed for use in the Irish adult population. The aim of this study is to examine nutrient intakes derived from Foodbook24 in comparison to a traditional interview led 24 hour recall.

This study received ethical approval from the UCD Human Research Ethics Committee (LS1526). A total of 40 participants aged 18–64 years (50 % female) visited UCD on 3 separate occasions as part of this study. On the first visit, participants gave informed written consent and completed a demographics questionnaire. On the second visit, participants were randomised (75 % to complete either an online recall at home in the morning using Foodbook24, and then the 2nd recall of the same 24 hour period with an interviewer in the study centre later that day or vice versa). After a two week wash out period, another interview led and online recall were carried out on the same day but in the opposite order to the previous visit. Data was analysed in 2 different ways; firstly the self-administered Foodbook24 dietary recalls were automatically analysed by the tool itself. Secondly, the interviewer led recall was entered into the Foodbook24 tool by a researcher. Mean nutrient intakes from the different analysis were compared using Spearman's correlation and Wilcoxon Signed Rank tests. All statistical analyses were performed in SPSS (Version 20.0).

Nutrient	Foodbook24 Mean (SD)	Interviewer led 24 hour recall Mean (SD)	Correlation coefficient (*r*)	Significant difference (*p*)
Energy (kcal/day)	1891·98 (578·35)	2025·45 (530·83)	0·683**	0·005**
% Energy Carbohydrate	50·02 (8·72)	48·06 (8·05)	0·706**	0·143
% Energy Protein	16·92 (4·90)	17·04 (5·00)	0·816**	0·968
% Energy Total Fat	34·09 (8·01)	35·01 (6·98)	0·833**	0·136
Vitamin D (µg/day)	2·36 (1·86)	2·61 (2·01)	0·853**	0·798
Iron (mg/day)	11·39 (3·66)	11·88 (3·65)	0·846**	0·276

Data presented are raw means + SD's. P-values carried out on log transformed data ** Significant at 0·01

Spearman's correlations for all macronutrients and micronutrients were strong and statistically significant (ranging from R = 0·595 for sodium mg/day to R = 0·956 for folic acid µg/day) between the recalls recorded using Foodbook24 and the interviewer led recalls, however there were some significant differences e.g. Energy which require further investigation. These initial results suggest that Foodbook24 compared well to the interviewer led recall and may provide an alternative approach to dietary assessment/nutrition surveillance in Ireland in the future.

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