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Comparison of INTAKE24 (an online 24hr dietary recall tool) with an interviewer-led 24hr recall method in 11–16 year olds

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INTAKE24 is an online 24hr dietary recall system developed for use by 11–24 year olds. The system was developed through an iterative design process. The accuracy and precision of the system compared to the traditional interviewer-led method was tested in 180 people aged 11–24 years living in Scotland. Both methods followed the 24hr multiple pass recall method[(1)]. The results described below are for a subset of the 11–16 year old population.

Forty 11–16 year olds completed INTAKE24 and an interviewer-led 24hr recall on the same day on four occasions. A weighted randomisation was used with 75% of participants completing INTAKE24 first and 25% completing the interviewer-led recall first. All recalls took place at a secondary school in Dundee. Each participant was given a unique login for INTAKE24 and asked to follow the instructions to complete the recall. Once completed, the participant completed a 24hr dietary recall with a researcher (vice-versa for those completing the interviewer-led recall first). The interviewer-led 24hr recalls followed the interview protocol used in the LIDNS[(2)]. Portion size was assessed using the Young Person's Food Atlas[(3)].

The accuracy of estimation of nutrient intakes using INTAKE24 was calculated as a ratio by dividing each participant's estimated nutrient intake from INTAKE24 by the estimated intake from the interviewer-led recall. A ratio of less than 1 indicates an underestimation of intake using INTAKE24 and above 1 represents an over-estimation. The closer the ratio to 1, the more accurate the estimate. The table below indicates the accuracy of the online tool. Limits of agreement were applied so that 95% of the differences would lie between the limits.

	Mean Ratio ($n = 40$)	Limits of agreement		% of INTAKE24 intakes within 10% and 50% of interviewer-led intakes	
	Intake24:Interviewer	Lower	Upper	10%	50%
Energy (kJ)	0·97	0·64	1·47	45	100
Carbohydrate (g)	0·99	0·64	1·51	40	100
Protein (g)	1·01	0·59	1·71	38	90
NMEs (g)	1·03	0·61	1·72	23	93
Fat (g)	0·94	0·59	1·48	33	100
Iron (mg)	1·00	0·60	1·66	33	95

Mean energy intakes using INTAKE24 were underestimated compared with interviewer-led recall estimates by just 3%. Energy intakes ranged from an underestimation of 36% to an over estimation of 47%. Approximately half of the INTAKE24 energy intakes were within 10% of the interviewer-led intakes, and all were within 50%. The results are comparable with other existing online recall systems such as YANA-C, which also underestimated energy intakes by an average of 3% in 11–14 year olds[(4)]. The findings show promising results for INTAKE24 as a low cost dietary recall method for use in 11–16 year olds.

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1. Raper N, Perloff B, Ingwersen L *et al.* (2004) *Journal of Food Composition and Analysis* **17**, 545–555.
2. Nelson M, Erens B, Bates B *et al.* (2007) *Low Income Diet and Nutrition Survey. Volume 1: Background, Methods and Sample characteristics.* London: The Stationary Office.
3. Foster E, Matthews JN, Lloyd J *et al.* (2008) *Br J Nutr* **99**, 175–84.
4. Vereecken CA, Covents M, Sichert-Hellert W *et al.* (2008) *Int J Obes (Lond)* **32**, S26–34