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Does participating in a fruit and vegetable intervention trial alter longer term fruit and vegetable consumption and barriers to fruit and vegetable consumption? A follow-up of the ADIT study

C. E. Neville[1], M. C. McKinley[1], C. Draffin[1], N. E. Gallagher[1], K. M. Appleton[2], I. S. Young[1], J. D. Edgar[3] and J.V. Woodside[1]

[1]*Nutrition and Metabolism Research Group, Centre for Public Health, Queen's University Belfast, Belfast, BT12 6BJ, UK,* [2]*Bournemouth University, Fern Barrow, Poole, Dorset, BH12 5BB, UK and* [3]*Regional Immunology Service, Belfast Health and Social Care Trust, Belfast, BT12 6BN, UK*

Fruit and vegetable (FV) based intervention studies can be effective in increasing short term FV consumption[(1)]. However, the longer term effect of such interventions on FV intake is still unclear. In a previous study we demonstrated that taking part in a FV intervention was effective in increasing FV consumption after 16 weeks[(2, 3)]. The current study aimed to examine the maintenance of change in FV consumption and changes in perceived barriers to FV consumption 18 months after cessation of the intervention.

The present study was a follow-up of a randomised controlled trial (the Ageing and Dietary Intervention Trial (ADIT)) conducted in 83 adults aged ≥65 years who were habitually consuming ≤2 portions of FV/day. Participants were randomised to one of two groups (≤2 portions FV/day or 5 portions FV/day) for 16 weeks. FV were delivered to participants each week, free of charge. FV intake and barriers to FV consumption were assessed at the start and end of the intervention by diet history and self-report questionnaire, respectively. A follow-up telephone assessment was conducted with each participant 18 months after the intervention ended and included a repeat assessment of current dietary intake, including FV intake, and barriers to FV consumption. Ethical approval was obtained from the Office for Research Ethics Committees Northern Ireland.

Eighty-two participants completed the intervention while 80 participants took part in the follow-up. There were significant within group improvements in FV intake at follow-up, in both the 2 portions/day group and 5 portions/day group ($p < 0{\cdot}001$). The significant between group differences observed in change in FV consumption from baseline also remained at follow-up, with the 5 portions/day group continuing to show greater increases in fruit consumption, vegetable consumption and total FV consumption from baseline compared to the 2 portions/day group ($p = 0{\cdot}01$, $p = 0{\cdot}02$ and $p < 0{\cdot}01$ respectively).

At follow-up, relative to baseline, there was a greater liking of FV in both the 2 portions/day group ($p = 0{\cdot}01$) and 5 portions/day group ($p < 0{\cdot}001$). Perceived ease in consuming FV increased in both groups ($p = 0{\cdot}02$ and $p < 0{\cdot}01$ in the 2 portions/day group and 5 portions/day group, respectively) while perceived difficulties associated with consuming FV decreased ($p < 0{\cdot}001$ and $p < 0{\cdot}01$ in the 2 portions/day group and 5 portions/day group, respectively). Participants in the 2 portions/day group reported greater awareness of FV recommendations at follow-up compared to baseline but showed a decrease in willingness to change (both $p = 0{\cdot}02$). No betweengroup differences in changes in barriers to FV consumption were observed at follow-up.

	2 portions/day ($n_{max} = 40$)						5 portions/day ($n_{max} = 42$)					
	Baseline		Week 16		18 month follow-up		Baseline		Week 16		18 month follow-up	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
FV (portions/d)	1·4	0·7	1·8	0·6	2·6***	1·5	1·4	0·5	6·0	1·3	3·6***	1·3
Liking (score)	0·8	0·9	1·3	0·7	1·2*	0·9	1·1	0·8	1·7	0·5	1·5***	0·5
Ease (score)	1·3	0·6	1·6	0·5	1·6*	0·5	1·3	0·7	1·6	0·5	1·7**	0·4
Difficulties (score)	−0·9	0·8	−0·8	0·9	−1·5***	0·5	−1·0	0·7	−1·3	0·6	−1·5**	0·5
Awareness (score)	1·7	0·6	1·6	0·9	2·0*	0·2	1·7	0·6	2·0	0·2	1·8	0·7
Willingness to change(score)	1·8	0·6	1·4	0·6	1·1*	0·8	1·4	0·6	1·5	0·6	1·3	0·6

*$p < 0{\cdot}05$; **$p < 0{\cdot}01$; ***$p < 0{\cdot}001$ for within group difference between baseline and follow-up (paired t-test).

This study suggests that participating in a FV intervention is effective in bringing about longer term changes in FV consumption and reducing barriers to FV consumption. Such an observation may help guide future interventions aimed at changing dietary behaviour.

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