

The 13th European Nutrition Conference, FENS 2019, was held at the Dublin Convention Centre, 15–18 October 2019

## Brief support and personalised feedback on food shopping to encourage saturated fat reduction: the PC-SHOP randomised controlled trial

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### Abstract

Reducing saturated fat (SFA) intake can lower low-density lipoprotein (LDL)-cholesterol and thereby cardiovascular disease (CVD) but there are no brief interventions sufficiently scalable to achieve this. The Primary Care Shopping Intervention for Cardiovascular Disease Prevention (PC-SHOP) study developed and tested a behavioural intervention to provide health professional (HP) advice alone or in combination with personalised feedback on food shopping, which was delivered using a bespoke tool that created a nutritional profile of the grocery shopping based on loyalty card data from the UK largest supermarket.

Participants with raised LDL-cholesterol were randomly allocated to one of three groups: 'No Intervention' (n = 17), 'Brief Support' (BS, n = 48), 'Brief Support plus Shopping Feedback' (BSSF, n = 48). BS consisted of a 10-minute consultation with a nurse to inform and motivate participants to reduce their SFA intake. The BSSF group received brief support as well as personalised feedback on the SFA content of their grocery shopping including lower SFA swaps. The primary outcome was the between-group difference in the change between baseline and 3 months in SFA intake (% total energy intake) adjusted for baseline SFA intake and GP practice. The trial was powered to detect a reduction in SFA of 3% (SD3).

There was no evidence of a difference between the groups. Changes in SFA intake from baseline to follow-up were: -0.7% (SD3.5) in BS, -0.9% (SD3.6) in BSSF and -0.1% (SD3.3) with no intervention. Compared to no intervention, the adjusted difference in SFA intake was -0.33%; 95%CI -2.11, 1.44 with BS and -0.11%; 95%CI -1.92, 1.69 with BSSF. There was no significant difference in total energy intake (BS: -152kcal; 95%CI -513, 209; BSSF: -152kcal; 95%CI -516, 211); body weight (BS: -1.0 kg; 95%CI -2.5, 0.5; BSSF: -0.6 kg 95%CI -2.1, 1.0); or LDL-cholesterol (BS: -0.15mmol/L; 95%CI -0.47, 0.16; BSSF: -0.04mmol/L; 95%CI -0.28, 0.36) compared to no intervention.

This trial shows that it is feasible to deliver brief advice in primary care to encourage reductions in SFA intake and we have developed a system to provide personalised advice to encourage healthier choices using supermarket loyalty data. This small trial showed no evidence of large benefits but we are unable to exclude more modest benefits. Even a reduction of 1% in SFA intake when replaced by polyunsaturated fat may reduce CVD incidence by 8%, suggesting that a larger trial to assess whether benefits of this size may occur is now warranted.

### Conflict of Interest

There is no conflict of interest