Commentary: What is the best way to promote healthy eating?

Eric Brunner

Recent findings from two pan-European cohorts of older participants are consistent with the view that dietary patterns have a profound effect on mortality risk, even in the eighth decade of life.1,2 Leaving aside residual doubts about the size of the protective effects of a healthy diet,3 there is a long-standing question about how best the epidemiological evidence can be converted into dietary change in the population as a whole. Policy options range from market laissez-faire and choice to some controls on food availability and advertising, witness the current campaign on school food provision in the UK and concerns about the global epidemic of obesity.4

The effect of dietary advice given to healthy adults is an important dimension of the evidence in the debate on dietary change strategies. Sacerdote et al.3 have contributed substantially in this respect, showing small but significant net increases in consumption of fruit and vegetables (0.19 servings/day), fish (0.24 servings/week), and olive oil (15% increase in persons consuming) and reduction in red meat consumption (0.22 servings/week) 1 year after a 15 min personalized intervention. In addition to these self-reported outcomes, the intervention resulted in significant weight reduction (mean BMI change -0.41 kg/m²) against no change in the control arm of the trial.

Dietary advice to healthy people

A recent Cochrane systematic review of the effect of dietary advice was able to identify few randomized controlled trials lasting 3 months or more that recruited individuals without a chronic disease diagnosis.5 To limit bias, studies were included only if loss to follow-up did not exceed 20%, yielding a total of 23 published trials up to the year 2000. The modal duration was 6 months of follow-up, and only nine studies followed-up on their participants for 12 months or more. The mean effects of intervention, combining all trials providing data for each outcome (Table 1), are variable in size but useful. If such changes were obtained and sustained at the population level they would reduce the incidence of cardiovascular and other chronic disease, bearing in mind Rose’s insight that ‘a measure that brings large benefits to the community offers little to each participating individual’.6

Trials of dietary advice show several influences on the size of the response to intervention. One influence is associated with the wish to avoid serious disease, which may or may not be coupled with anxiety. Those without a diagnosis but who have...
been given a high-risk label, following mammography or removal of colorectal adenomas do appear to be highly motivated, particularly when the dietary intervention involves counselling and multiple contacts. The power of this combined influence is well illustrated by a trial recruiting in a gastroenterology clinic that obtained a large mean net increase in fruit and vegetable consumption over 1 year (5.1 servings/day). Such studies indicate the dietary changes that may be achieved among highly motivated adults, in contrast to those who do not have immediate concerns for their health.

A strategic question is whether dietary advice given by healthcare personnel has special effectiveness. Subgroup analysis based on the setting of the intervention suggests there is little difference in dietary changes in healthcare as opposed to other settings. For trials of advice aiming to reduce dietary fat intake, there was considerable heterogeneity among those conducted in primary care and other clinical settings. Interventions based in community centres and workplaces obtained reductions in fat intake that were comparable with those obtained in healthcare settings among participants drawn from the general population.

Evaluating complex behavioural interventions

Behavioural interventions are difficult to evaluate. It is relatively straightforward to test a new drug in a placebo-controlled randomized trial. With the willingness of participants, integrity on the part of the trialists, and the necessary resources, a near-perfect experiment is within easy reach. The same is not true for tests of interventions designed to change behaviour.5

At least three methodological difficulties arise in trials of dietary advice. First, the ‘intervention’ consists of several separate elements including the context in which it takes place and the motivation of those delivering it. It is consequently difficult to identify the active ingredients within the intervention package. Second, outcome measures, such change in food intake, are usually subjective and prone to reporting bias, whether or not there has been a validation process. Such outcomes are a pragmatic but far from ideal substitute for long-term follow-up, which would measure the intended improvement in health status. Third, elimination of what can be called expectation bias through blinding of provider and participant to active or control group allocation is challenging if not impossible in dietary and other behavioural interventions.

Sacerdote et al. were judicious in designing their trial to address the last of these difficulties. By using a basic non-personalized intervention instead of a no-intervention control group, this trial is a useful test of the effect of tailored advice from general practitioners (GPs) promoting dietary changes among healthy and, therefore, relatively unmotivated adults. There can be little doubt that the carefully considered encouragement given by the GPs was not wasted.

Agents of dietary change

Food consumption and dietary patterns are socially and culturally patterned. Dietary intake and food purchase surveys show that there are characteristic national and regional consumption patterns and that there are socioeconomic differences in these patterns.6 Within the overall stability of dietary habits seen year-on-year, increasing and declining trends in consumption can be rapid. This is illustrated by the remarkable increase in preference for olive oil seen in the Italian trial over only 1 year (22% in the control group, 37% in the intervention group). Critically, dietary changes occur for many reasons apart from concerns for health. Household economic factors, and food marketing and promotion are among the important contextual determinants of dietary patterns.

How is health promotion to be seen against this background? Just as health professionals can drive positive change, so countervailing influences can act against it. Individually, financial difficulties are a barrier to healthy eating.7 Structurally, the globalized food system (which has presided over the unprecedented increase in obesity prevalence) tends to encourage excessive consumption at the expense of health.8 Without wider social and commercial engagement, health promotion fights a difficult battle.

The opportunity-cost of dietary advice given on a routine basis in primary care may be substantial. One way to visualize this is based on the contact time GPs in the UK have with their patients. Applied systematically to a 1000 registered adults on a GP list, a single 15 min consultation as used by Sacerdote et al. would require a commitment of 250 h. For a GP offering six 3 h weekly clinics over 44 weeks of the year, the intervention would

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No. of trials</th>
<th>No. of participants</th>
<th>Effect size [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic blood pressure (mm Hg)</td>
<td>4</td>
<td>1846</td>
<td>−2.10 [−2.83 to −1.37]</td>
</tr>
<tr>
<td>Diastolic blood pressure (mm Hg)</td>
<td>4</td>
<td>1846</td>
<td>−1.63 [−2.71 to −0.56]</td>
</tr>
<tr>
<td>Urinary sodium output (mmol/24 h)</td>
<td>3</td>
<td>1533</td>
<td>−44.2 [−54.7 to −33.6]</td>
</tr>
<tr>
<td>Total cholesterol (mmol/l)</td>
<td>10</td>
<td>1042</td>
<td>−0.13 [−0.23 to −0.03]</td>
</tr>
<tr>
<td>LDL cholesterol (mmol/l)</td>
<td>8</td>
<td>899</td>
<td>−0.13 [−0.25 to −0.01]</td>
</tr>
<tr>
<td>HDL cholesterol (mmol/l)</td>
<td>8</td>
<td>956</td>
<td>0.01 [−0.02 to 0.04]</td>
</tr>
<tr>
<td>Total dietary fat (% Kcal)</td>
<td>11</td>
<td>4328</td>
<td>−6.18 [−8.36 to −4.00]</td>
</tr>
<tr>
<td>Dietary saturated fatty acids (% Kcal)</td>
<td>6</td>
<td>2381</td>
<td>−3.28 [−4.64 to −1.92]</td>
</tr>
<tr>
<td>Fruit and vegetables (servings/day)</td>
<td>12</td>
<td>3952</td>
<td>1.24 [0.43 to 2.05]</td>
</tr>
</tbody>
</table>

Summary statistics are weighted mean differences [95% CI] based on random effects meta-analysis.

* Test for heterogeneity of effects P < 0.0001.

Source: Reference (6).
consume almost a third of the GP’s available time (32%). It seems unlikely that GPs would regard such a strategy as an appropriate use of their medical skills.

Conclusion
Current evidence suggests that resource-intensive modes of intervention that include detailed dietary advice given by health professionals are appropriate for high-risk individuals but not the general, healthy population. The Choosing Health action plan, involving brief medical interventions supported by accredited health trainers, targets deprived communities. This is a progressive initiative designed to reduce diet-related health inequalities. Future evaluations should seek to shed light on the effectiveness of this well-intentioned policy, in particular by trying to dissect out the dietary changes owing to health care intervention from those attributable to wider influences on food consumption.

References