Cost effectiveness of health checks

Effect of intervention was sustained

EDITOR,—The two papers on the cost effectiveness of health checks in the Oxcheck study emphasise the importance of the duration of the effect after the intervention.[1 2] The principal benefit resulting from the health checks, which had the largest effect on reducing the risk of coronary heart disease, was the lowering of serum total cholesterol concentrations.[3] The economic predictions were that health checks would become cost effective if the benefit was sustained for at least five years. The Oxcheck study group (of which we are members) does not have data to address this. It does have data (some previously unpublished) that are compatible with the changes in cholesterol concentrations being sustained beyond the three years of the follow up in the study.

The Oxcheck study included an invitation for annual re-examinations for a random half of those subjects seen in the first two of the four years of the trial. This enables data from these re-examinations to be compared with control data from participants having first health checks during the same year. This was the basis of our report on the effects of health checks after a single year of intervention.[4] The data from re-examinations two and three years after the intervention can similarly be compared with control data. The study therefore offers three randomised controlled trials—of the effect of health checks after one, two, and three years. Figure 1 summarises these outcomes for mean serum total cholesterol concentrations. In these analyses baseline data were substituted for subjects who did not attend for re-examination; an analysis excluding these subjects showed a similar trend, with the reduction in cholesterol concentration being about 1% greater after intervention in both sexes.

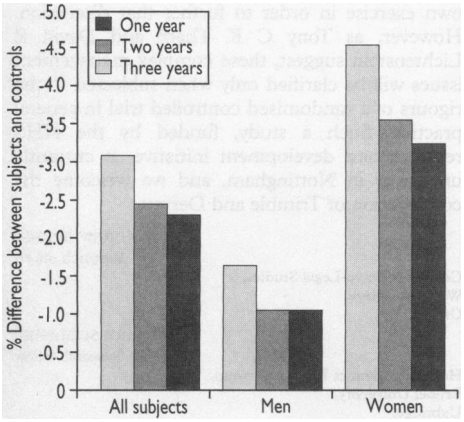

Fig 1—*Mean percentage difference in serum total cholesterol concentrations between subjects one, two, and three years after health check and controls*

Comparing the three trials emphasises that cholesterol lowering was sustained. Importantly, the changes tended to become greater over time, though more so in women than men. This effect was not confined to those who attended the annual re-examinations (and therefore possibly received more intervention), because in the analyses after three years we found no difference between the half of the subjects who had entered the study in the first year and been randomised to invitation for annual re-examination and those not reviewed until the fourth year.[3] The benefit was also not simply due to lipid lowering drugs changing values in a population subgroup and thereby the population mean, because the reduction in total cholesterol concentration was found throughout the population.[3]

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1 Wonderling D, Langham S, Buxton M, Normand C, McDermot C. What can be concluded from the Oxcheck and British family heart studies: commentary on cost effectiveness analyses. *BMJ* 1996;**312**:1274-8. (18 May.)
2 Langham S, Thorogood M, Normand C, Muir J, Jones L, Fowler G. Cost and cost effectiveness of health checks conducted by nurses in primary care: the Oxcheck study. *BMJ* 1996;**312**:1265-8. (18 May.)
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Factoring in effect on mortality from stroke increases cost effectiveness

EDITOR,—When evaluating the Oxcheck and British family heart studies David Wonderling and colleagues did not factor in the effect of reductions in blood pressure on mortality from stroke.[1] There are, however, data that allow this effect to be estimated.[2] For men aged 50 the Oxcheck intervention costs £2900 per life year saved (the undiscounted figure). The programme resulted in a 1.5 mm fall in diastolic blood pressure, which is likely to reduce mortality from stroke by 10%; taking this into account reduces the cost to £2600. The undiscounted figure is preferred because it more closely reflects the 1.5-2% discount rate that is recommended.[3]

Both programmes effectively lower the risk of disease. The British family heart study confined follow up to one year; after this the duration of its effect remains uncertain. The Oxcheck study's three year follow up allows us to pinpoint the key result from this whole body of work: the intervention is cost effective in men from the age of 50, even if it has to be repeated every three years. The figure of £2600 per life year saved stands comparison with figures for other uses of health care resources. In fact, this estimate is based on conservative assumptions, and the benefit is likely to be enjoyed for longer, giving better value for money. The Oxcheck intervention is likely to be even more cost effective in older patients as the same percentage reduction in risk is applied to a higher absolute risk. In a 55 year old man the cost is £1700 per life year saved. The Oxcheck intervention is less cost effective in women, among whom it might preferably be started at a later age.

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1 Wonderling D, Langham S, Buxton M, Normand C, McDermott C. What can be concluded from the Oxcheck and British family heart studies: commentary on cost effectiveness analyses. *BMJ* 1996;**312**:1274-8. (18 May.)
2 Collins R, Peto R, MacMahon S, Hebert P, Fiebach NH, Eberlein KA, *et al.* Blood pressure, stroke, and coronary heart disease. Part 2. Short-term reductions in blood pressure: overview of randomised drug trials in their epidemiological context. *Lancet* 1990;**335**:827-38.
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Authors' reply

EDITOR,—John Muir and colleagues acknowledge the importance of the duration of the effect of the intervention. They provide some additional unpublished data, which confirm our conclusion that in the Oxcheck study the effect seems to have lasted at least three years. The reservation is that the data provided relate only to that part of the overall reduction in risk due to lowering of serum total cholesterol concentrations.

Jeffrey Graham points us to evidence that would enable us to incorporate into our modelling an estimate of the additional life years gained from the reduced mortality from stroke resulting from the observed reduction in blood pressure. In a modelling exercise of this sort it is a matter of judgment how much detail to include. Graham suggests that the effect of allowing for the life years gained from the reduction in stroke would be to reduce the undiscounted cost per life year saved from £2900 to £2600. We cannot replicate his figures, but our calculations confirm the broad order of effect, which is small. It certainly would not change the conclusions that might appropriately be drawn on the basis of inevitably crude estimates of cost per life year gained. Graham goes on to point out that the intervention would be even more cost effective for a 55 year old; again our unpublished calculations suggest that this may indeed be the case, but, without estimates of the use of resources (and hence cost) for each age group, we would be reluctant to propose a specific estimate as he does.

We acknowledged, but chose not to reopen in our paper, the continuing debate about discounting benefits, and we referenced the document Graham cites that gives the Department of Health's current position. For purposes of comparison, we thought it more useful to discount benefits at the more common rates of 0% and 6%. In fact, the undiscounted £2900 per life year gained from which Graham starts his calculations would be £3800 after discounting at 1.75%.

Graham may be right in believing that the Oxcheck intervention is cost effective, but we believe that, while substantial uncertainty about our estimates remains, our caution is justified. It is good to see, however, that our analysis in terms of cost per life year gained facilitates comparison and focuses debate.

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Government advice on sensible drinking does not conflict with the data

EDITOR,—Ian White draws attention to two points of controversy arising from the government's report *Sensible Drinking*.[1 2] One is the report's "effective increase in sensible drinking levels," and the other is "whether specific alcoholic beverages carry more benefit than others."

The debate on whether specific alcoholic beverages carry more cardioprotective benefit than others will continue as new data come in. The most recent papers examined by White support the view that the French paradox is a complex phenomenon with many diverse factors that still need to be clarified, but the evidence suggests that the bulk of the cardioprotective effect is probably due to alcohol itself and not specific to a beverage.[1] There is therefore no conflict with the conclusions arrived at in *Sensible Drinking*, which was based on evidence reviewed to mid-1995.