Noakes misses the point

To the Editor: We are writing to point out inaccuracies in Professor Noakes' critique of the Women's Health Initiative (WHI) trial of dietary modification.[1] Difficult as it may be for proponents of low carbohydrate, high fat diets to accept, it is an inconvenient truth that the findings from the WHI trial negate their thesis that diets higher in carbohydrates and lower in fats lead to obesity and insulin resistance and increase diabetes risk. Instead, the lower fat diet rigorously tested in a large number of participants in the WHI led to less weight gain, improved insulin resistance (at 1 year), and no increase in diabetes risk compared with the control diet.[2-4] Diabetes risk appeared to be reduced proportionately to decreases in fat intake and weight.[4] These findings are in agreement with findings from the Diabetes Prevention Trial (of people with pre-diabetes treated with a low-fat, calorie-restricted diet plus exercise) that reduction in diabetes risk was proportional to reduction in fat intake and weight loss.[5]

Throughout his critique, Professor Noakes focuses on subgroup findings rather than the robust overall findings from the WHI randomised trial. Subgroup analyses are less reliable because they have insufficient power *a priori* due to small numbers, and because when multiple subgroups are tested, the chance of spurious findings increases. Nonetheless, we will address some of the subgroups he finds of interest. Contrary to his implications, those who started with the leanest body weight gained less weight on the diet than did the control group;[2] the subgroup with least insulin resistance was not at significantly greater risk of developing diabetes (and was comprised of a grand total of 19 cases);[4] and while the subgroup with diabetes at baseline (n=216) had greater elevations in glucose, this observation was inconsistent with findings in the subgroups with baseline impaired fasting glucose or insulin resistance.[3]

As emphasised throughout the first report,[6] the WHI trial was not designed to test the diet-heart hypothesis. Rather, the trial was designed to test whether reducing total dietary fat would reduce the risk of cancer; a secondary aim was 'to test whether such a dietary intervention, which did not focus on the intake of specific fats, would also reduce the risk of cardiovascular disease.'[6] Although the overall result showed no effect on coronary heart disease (CHD) risk, subgroup analyses found reduced risks in women who achieved the greatest reductions in saturated fat or *trans* fat intakes.[6] Small changes in low-density lipoprotein (LDL)-cholesterol measured in a random 4.3% sample were consistent with the overall null finding for CHD; while the larger decreases in LDL-cholesterol in women who achieved the greatest reductions in saturated and *trans* fat intakes also were consistent with the subgroup findings for CHD.[6] Taken together, these findings are consistent with the diet-heart hypothesis.

Professor Noakes makes much of the increased risk of CHD in the small (3.4%) sub-cohort with baseline disease.[6] This increased risk is likely to be a chance finding, because there is no biologic basis for expecting a different outcome in this subgroup, as shown in cholesterol-lowering trials of women with prior disease.[7]

Finally, the cost of the WHI diet trial was not $700 million – that figure represents the cost of the entire multifaceted WHI programme, which included 161 808 women (48 835 in the diet trial) over a period of 14 years. The WHI diet trial and the overall WHI programme continue to generate extraordinarily valuable findings that inform women's health.

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