

# Postscript

## LETTERS TO THE EDITOR

### Milk and coronary heart disease mortality

The self completed questionnaire study by Ness *et al*<sup>1</sup> found that men who reported drinking more than a third of a pint of milk each day were not at increased risk of death from coronary heart disease (CHD) in comparison with those drinking less than this or none.

The study inappropriately equates daily milk consumption with the answers the participants gave to the single question that asked how many pints of milk the men usually drank each day. This was in 1970 or 1973, when in Britain milk was normally delivered to households in pint bottles. The meaning of the question lacks precision, and may have caused some of the participants to exclude milk taken out of the home in hot beverages and in milk drinks such as milk shakes. The authors note that the question did not ask about milk used in food preparation, so some answers could have excluded regular milk intake in porridge, with cereals, and as milk puddings or custard. Milk in milk chocolate and milk or constituents in ready made foods would certainly have been excluded. It is feasible that some participants who drank less than a third of a pint of milk as such consumed more milk from these other sources than did those who reported drinking more than this amount.

Five years, on average, after the initial screening, about half of the participants returned for a second screening, which apparently showed "a reasonable level of stability in reported milk consumption." This does not necessarily translate into the same relation with CHD mortality of the reported milk drinking of the whole cohort at the initial screening and of the half at the second screening. The latter results should therefore have been included in the published paper.

The follow up period took place against a background of falling milk consumption<sup>2</sup> and CHD mortality<sup>3</sup> in the United Kingdom. The significance of relating levels of milk intake in 1970 and 1973 to CHD mortality up to 25 years later is therefore questionable, especially

If you have a burning desire to respond to a paper published in *JECH*, why not make use of our "rapid response" option?

Log on to our web site ([www.jech.com](http://www.jech.com)), find the paper that interests you, and send your response via email by clicking on the "eLetters" option in the box at the top right hand corner. Providing it isn't libellous or obscene, it will be posted within seven days. You can retrieve it by clicking on "read eLetters" on our homepage. The editors will decide as before whether to also publish it in a future paper issue.

as lifestyle changes that include restriction of milk to one cup daily can bring about regression of coronary atherosclerosis in one year.<sup>4</sup>

In the discussion, Ness *et al* state that the Caerphilly cohort study showed a striking inverse association between milk consumption and CHD risk, but they fail to refer to the final report on this study, which shows that none of the nutrients considered was significantly associated with major CHD events when standardised for energy.<sup>5</sup>

The authors refer to the possible CHD protective effect of dietary calcium, but not to an experimental dyslipidaemic effect of defatted skimmed milk, which provided a high calcium intake.<sup>6</sup> This apparent paradox can be explained by the enhancing effect of lactose on the absorption of calcium, which reduces the availability of intestinal calcium for forming insoluble calcium salts of fatty and bile acids. This action of lactose supports ecological evidence that a high intake of this disaccharide could be the dietary risk factor for CHD in milk.<sup>7</sup>

Elwood in his commentary<sup>8</sup> considers that the avoidance of cow's milk in adults would be a formidable undertaking for a randomised clinical trial. However, a RCT for secondary prevention of CHD to compare usual dietary

advice with this plus the exclusion of lactose (and galactose) should not present undue difficulties.

J J Segall

308 Cricklewood Lane, London NW2 2PX, UK; [j.segall@doctors.org.uk](mailto:j.segall@doctors.org.uk)

### References

- 1 Ness AR, Davey Smith G, Hart C. Milk, coronary heart disease and mortality. *J Epidemiol Community Health* 2001;55:379-82.
- 2 Organisation for Economic Cooperation and Development. *Food consumption statistics, 1979-1988*. Paris: OECD, 1991:380-81.
- 3 Heller RF, Hayward D, Hobbs MS. Decline in rate of death from ischaemic heart disease in the United Kingdom. *BMJ* 1983;286:260-2.
- 4 Ornish D, Brown SE, Scherwitz LW, *et al*. Can lifestyle changes reverse coronary heart disease? *Lancet* 1990;336:129-33.
- 5 Fehily AM, Yarnell JWG, Sweetnam PM, *et al*. Diet and incident ischaemic heart disease: the Caerphilly Study. *Br J Nutr* 1993;69:303-14.
- 6 Kelm NL, Marlett JA, Amundson CH. The cholesterolaemic effect of skim milk in young men consuming controlled diets. *Nutr Res* 1981;1:429-42.
- 7 Segall JJ. Epidemiological evidence for the link between dietary lactose and atherosclerosis. In: Colaco CALS, ed. *The glycation hypothesis of atherosclerosis*. Austin, TX: Landes Bioscience, 1997:185-209.
- 8 Elwood P. Milk, coronary disease and mortality. *J Epidemiol Community Health* 2001;55:375.

### Authors' reply

We accept, as we discussed in our paper, that our assessment of milk consumption was crude and may have affected our ability to detect associations.<sup>1</sup> Even so, the available epidemiological evidence, in our opinion, does not lend support to Segall's view that milk (by virtue of its lactose content)<sup>2</sup> consumed in moderation is harmful to health.

We did not refer to the 1993 report of the Caerphilly study<sup>3</sup> as this did not include any data on milk consumption and coronary heart disease.

We did look at the associations between milk consumption measured on two

**Table 1** Relative rates of mortality by milk consumption on two screenings in 2686 men from the Collaborative study in the 21 year follow up period after the second screening

	Milk consumption (1st/2nd screening)			
	Some/Some	Some/None	None/Some	None/None
Number of men	979	481	337	889
All cause				
No of deaths	366	176	158	395
Age adjusted relative rate	1	1.00 (0.84 to 1.20)	1.22 (1.01 to 1.47)	1.14 (0.99 to 1.31)
Fully adjusted relative rate*	1	0.88 (0.74 to 1.06)	1.17 (0.97 to 1.41)	1.00 (0.87 to 1.16)
CHD				
No of deaths	143	75	60	152
Age adjusted relative rate	1	1.09 (0.82 to 1.44)	1.19 (0.88 to 1.61)	1.14 (0.90 to 1.43)
Fully adjusted relative rate*	1	0.90 (0.68 to 1.19)	1.17 (0.86 to 1.58)	0.99 (0.78 to 1.24)

\*Adjusted for age, smoking, diastolic blood pressure, cholesterol, body mass index, adjusted FEV<sub>1</sub>, social class, father's social class, education, deprivation category, siblings, car user, angina, ECG ischaemia, bronchitis, and alcohol consumption.

occasions and mortality and included it in our original submission but were advised by one of the referees to remove it. We are happy to publish it with this letter (table 1). The men who reported some milk consumption on both occasions experienced the lowest mortality, although differences were small and not statistically robust.

We agree that trials could be carried out to confirm whether these associations are causal. Based on experience with previous

food based secondary prevention trials, however, we believe that such trials would have to be large, intensive and run for some years to provide a definitive answer.

**A R Ness, G Davey Smith**

Department of Social Medicine, University of Bristol, UK

**C Hart**

Department of Public Health, University of Glasgow, UK

#### References

- 1 **Ness AR**, Davey Smith G, Hart C. Milk, coronary heart disease and mortality. *J Epidemiol Community Health* 2001;**55**:379–82.
- 2 **Segall JJ**. Dietary lactose as a possible risk factor for ischaemic heart disease: review of epidemiology. *Int J Cardiol* 1994;**46**:197–207.
- 3 **Fehily AM**, Yarnell JWG, Sweetnam PM, *et al*. Diet and incident ischaemic heart disease: the Caerphilly Study. *Br J Nutr* 1993;**69**:303–14.



# Browsing made easy

## Collections

With a single click Collections allows you to find all articles that have been published in your chosen subject. Select from over 200 clinical and non-clinical topic collections and/or cross search other specialist journals, the BMJ and Cochrane Reviews

[www.jech.com](http://www.jech.com)