In the mammography screening trials, the best outcomes in the screened groups were evident in the Swedish Two County and Goteborg trials, which included a large number of premenopausal women, and offered screening to women in the control groups after 7 years. In only three trials (Malmö I, Canada I, and Canada II) were women in the control groups not offered screening, and these trials showed that the screened and control groups had similar outcomes. Several investigators have pointed out that, in the mammography screening trials, premenopausal women had a transient increase in breast cancer mortality during the initial years after the start of these studies. Also, we have reported that, after initiation of mammography screening in the USA, there was a transient excess of breast cancer mortality in African American women (who are more likely than white women to develop breast cancer during their premenopausal years). The reason for the transient excess mortality in premenopausal women invited to screening is not clear, but it has been suggested that the detection of occult cancers and surgery might potentially perturb the natural history of breast cancer in these women.

In both the Swedish Two County and Goteborg trials, the initiation of screening in the control groups might have transiently increased breast cancer mortality in the controls, and thereby made outcomes in the screened groups seem better. Thus, the “improved” long-term outcomes in women in the screened groups might simply be attributable to the transient worse outcomes in the controls.

I declare that I have no conflicts of interest.

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Authors’ reply

These letters variously suggest that the Independent UK Panel on Breast Cancer Screening either understated or overstated the benefits of breast screening and either underestimated or overestimated the risk of overdiagnosis. It was just such divergent views that led to the convening of the panel. The panel heard from expert witnesses who put most of the points contained in these letters to us. Our responses are set out in our full report and we give the relevant page numbers below.

The panel was aware of the concern about bias in the ascertainment of endpoints, but also noted that bias could diminish the apparent benefit of screening as well as enhance it (p 23). Hence, the panel judged that the relevant outcome measure for breast screening was breast cancer mortality, best estimated from all the trials excluding the Edinburgh trial. A 20% reduction in breast cancer mortality would yield only 3.0% and 1.2% relative risk reductions in all-cancer and all-cause mortality. Even an overview of all the trials would be underpowered to show effects on