

## Screening and Breast Cancer Mortality—Letter

Robin J. Bell and Robert C. Burton

We write in relation to the article by Nickson and colleagues "Mammographic Screening and Breast Cancer Mortality: A Case-Control Study and Meta-analysis" (1).

The 2002 International Agency for Research on Cancer (IARC) monograph on breast cancer advised (page 91) that: "...The case-control approach is appealing in terms of its simplicity and cost; however, even if such a study is perfectly designed and conducted, the inherent bias is important potential baseline differences in the screened and unscreened groups with respect to factors that are associated with the risk for fatal breast cancer. There is empirical evidence that the survival rate of women who decline screening is worse than that of women who accept screening" (2). Problems with the case-control methodology in this context are highlighted by the results of the nested case-control studies conducted within 2 of the randomized trials (RCT) of screening mammography. The results of both of these case-control were not in accord with the relative risks obtained in these RCT (2).

Nickson and colleagues, who reported a 52% lower breast cancer mortality in women ages 50 to 69 years participating in screening (1), commented negatively

about our study of age-specific breast cancer mortality trends, where we reported that the greatest breast cancer relative mortality reduction (RMR) was in women aged in their 40s who are not invited for screening (44%), as compared with the RMR in women aged 60 to 69 years (19%), who are invited for screening (3). Although they did not take account of treatment in their study (1), they stated that the greater decline in mortality for younger women in our study (3) could have been due to "age differences in treatment access and efficacy" (1). We agree that the improved mortality in young women is likely due to treatment, but we suggest that the impact of treatment does stop at age of 50 years. The most recent findings of the Early Breast Cancer Trialists Collaborative Group are that modern chemotherapy reduces breast cancer mortality on average by one third, independent of age, nodal status, tumor characteristics, or use of tamoxifen (4), and that in women with hormone receptor-positive disease, tamoxifen also reduces breast cancer mortality by one third (5).

Even if screening is responsible for a modest contribution to the recent breast cancer mortality decline in Australia, there is a responsibility to weigh the balance of any benefit of screening against the harm of overdiagnosis and unnecessary treatment. Nickson and colleagues did not measure harms and so could not address this balance.

**Authors' Affiliation:** Monash University, Melbourne, Victoria, Australia

**Corresponding Author:** Robin J. Bell, Monash University, Level 6, The Alfred Centre, 99 Commercial Road, Melbourne, Victoria 3004, Australia. Phone: 61-399030825; Fax: 61-399030828; E-mail: robin.bell@monash.edu

**doi:** 10.1158/1055-9965.EPI-12-1088

©2012 American Association for Cancer Research.

**Disclosure of Potential Conflicts of Interest**

No potential conflicts of interest were disclosed.

Received September 24, 2012; accepted September 25, 2012; published OnlineFirst October 23, 2012.

**References**

1. Nickson C, Mason KE, English DR, Kavanagh AM. Mammographic screening and breast cancer mortality: a case-control study and meta-analysis. *Cancer Epidemiol Biomarkers Prev* 2012;21:1479-88.
2. International Agency for Research on Cancer (IARC). IARC handbooks of cancer prevention, volume 7, breast cancer screening. Lyon, France: IARC Press; 2002.
3. Burton RC, Bell RJ, Thiagarajah G, Stevenson C. Adjuvant therapy, not mammographic screening, accounts for most of the observed breast cancer specific mortality reductions in Australian women since the national screening program began in 1991. *Breast Cancer Res Treat* 2012;131:949-55.
4. Peto R, Davies C, Godwin J, Gray R, Pan HC, Clarke M, et al. Comparisons between different polychemotherapy regimens for early breast cancer: meta-analyses of long-term outcome among 100,000 women in 123 randomised trials. *Lancet* 2012;379:432-44.
5. Davies C, Godwin J, Gray R, Clarke M, Cutter D, Darby S, et al. Relevance of breast cancer hormone receptors and other factors to the efficacy of adjuvant tamoxifen: patient-level meta-analysis of randomised trials. *Lancet* 2011;378:771-84.

# Cancer Epidemiology, Biomarkers & Prevention

## Screening and Breast Cancer Mortality—Letter

Robin J. Bell and Robert C. Burton

*Cancer Epidemiol Biomarkers Prev* 2012;21:2275. Published OnlineFirst October 23, 2012.

**Updated version** Access the most recent version of this article at:  
doi:[10.1158/1055-9965.EPI-12-1088](https://doi.org/10.1158/1055-9965.EPI-12-1088)

**Cited articles** This article cites 4 articles, 1 of which you can access for free at:  
<http://cebp.aacrjournals.org/content/21/12/2275.full#ref-list-1>

**E-mail alerts** [Sign up to receive free email-alerts](#) related to this article or journal.

**Reprints and Subscriptions** To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at [pubs@aacr.org](mailto:pubs@aacr.org).

**Permissions** To request permission to re-use all or part of this article, use this link  
<http://cebp.aacrjournals.org/content/21/12/2275>.  
Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.