

## **FACT SHEET...**

### **Recall Bias: An Argument Used Against the Abortion Breast Cancer Link**

*Recall bias* is the most widely and oft-reported argument used to refute the ABC link. Recall bias is the hypothesis that women who have developed breast cancer will be more likely to admit that they have had abortions than women who are well. Were this true, abortion would seem to be associated with higher breast cancer risk, but this observed risk increase would not be real. The theory is based on the assumption that healthy women are more likely to conceal what could be embarrassing behavior but are more likely to tell the truth should they become ill, seeking a reason for their illness. Recall bias thus supposes that many women who do not have cancer will not report their abortions while those who do have cancer will report them.

Case-control studies in which researchers rely on interviews for their data are those potentially susceptible to recall bias. This is because researchers assume interviewees will not admit, in an interview, to socially unacceptable behavior such as abortion—unless they are sick. However, recall bias has not posed any such problem in other areas of medical research where case control studies have been used to gather data of other socially unacceptable behavior. For instance, in case-control studies testing for a link between alcohol consumption and liver damage, interviewees were assumed to accurately report their alcohol consumption. The same is true for interviews in which interviewees were asked how many sexual partners they had when inquiring into connections with cervical cancer, and whether they were involved in anal intercourse when inquiring into HIV. Abortion would not seem to be a more socially unacceptable act than any of these, yet recall bias is only thought to taint research about abortion.

In point of fact, several studies that have confirmed the ABC link internally controlled for recall bias in their study populations.<sup>1</sup> A study conducted to test specifically for recall bias reported having found evidence supporting it; however, serious methodological problems with the study acknowledged after publication revealed that the study failed to show that recall bias taints abortion-breast cancer research. Their evidence proved to be invalid as follows.

In the Lindefors-Harris study,<sup>2</sup> the researchers had before them both cancer and abortion computer registries in order to verify the responses of the women who were interviewed. Two groups of women were interviewed: those with cancer and those without cancer. The researchers hypothesized that more of those without cancer would deny their abortions while more of those with cancer would admit to them. Such a result would be evidence of recall bias. Instead, they found no statistically significant difference between the responses of the two groups of women. Women with cancer and women without cancer both underreported their abortion in approximately equal numbers (20.8% and 27.2%, respectively); while some healthy women and some sick women lied. However, researchers did find that there were women—precisely seven cancer patients and only one healthy woman—who admitted to having had abortions that were not documented in the abortion computer registry. The researchers labeled this phenomenon *overreporting*, claiming that women who told the researchers that they had had abortions that had not been reported in the computer registry were mistaken or lying. Only with this wrongheaded assumption of overreporting did the authors then conclude that they had significant evidence of recall bias. Overreporting, of course, does not exist. The researchers were forced to acknowledge their error through letters to the editor in a British epidemiology journal.<sup>3</sup> Since most doctors read only the abstract of the paper and do not follow letters to the editor, a false impression of the study's results remains.

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<sup>1</sup> Daling JR, Malone DE, Voigt LF, White E, Weiss NS. Risk of breast cancer among young women: relationship to induced abortion. *J Natl Cancer Inst* 1994;86:1584-92; Lipworth L, Katsouyanni K, Ekblom A, Michels KB, Trichopoulos D. Abortion and the risk of breast cancer: a case-control study in Greece. *Int J Cancer* 1995;61:181-4.

<sup>2</sup> Lindefors-Harris BM, Eklund G, et al. Response bias in a case control study analysis utilizing comparative data concerning legal abortions from two independent Swedish studies. *Am J Epidemiol* 1991; 134:1003-1008.

<sup>3</sup> Meirik O, Adami H-O, Eklund G. Letter Re: Relation between induced abortion and breast cancer. *J Epidemiol Community Health* 1998;52:209. Brind J, Chinchilli VM, Severs WB, Summy-Long J. Reply to letter Re: Relation between induced abortion and breast cancer. *J Epidemiol Community Health* 1998;52:209-11.