Balanced and correct communication of benefits and risks of screening undoubtedly is extremely important when offering screening examinations and in examining public knowledge on them. Unfortunately, Gigerenzer et al. (1) seriously violated these principles in several respects. First, the authors interviewed women about the value of breast cancer screening. However, the question the authors asked refers to women aged 40 years and older and involved a time span of 10 years of biannual screening, which does not reflect the screening programs of the countries in question. European screening programs largely offer biannual screening for a period of 20 years starting at age 50 years (2), rather than screening for 10 years starting at age 40 years.

Second, the authors asked about breast cancer mortality reduction among women who actually participate in screening every 2 years. However, they compared the responses with data from randomized studies, where reduction of breast cancer mortality was calculated comparing women who were offered biannual screening with those who were not. They thereby entirely miss issues of noncompliance (ie, nonparticipation of a substantial proportion of women offered mammography) and of contamination (ie, mammography among a substantial proportion of women in the control group). The benefits of the very situation the authors addressed in their question are expected to be much larger than the estimated benefits cited from the literature that they use for judging the appropriate value of screening.

Third, as pointed out in the accompanying editorial (3), presentation of the response categories is biased by asymmetry, giving the answer that the authors defined as correct at the extreme end of the choices (considering that 0 is not a reasonable choice). Thus, overestimation became the most likely answer given by the presumably very large proportion of women who essentially guessed the answer.

Finally, the distribution of the answers reported by Gigerenzer et al. suggests that the question about how many fewer women die of breast cancer within 10 years has been misunderstood by many of the participants as referring to women affected by breast cancer. If the interviewed persons had understood that the question referred to 1000 women aged 40 years or older from the general population, it would not be reasonable to answer that 100 or 200 fewer women died from breast cancer within 10 years (the answer given by more than 30% of women in this study). This very misunderstanding was even more evident in a similar study by the authors in which no response categories were used and the median number given by the participants was 500 (4). The latter answer would imply that more than 500 of every 1000 women would die of breast cancer within 10 years after their 40th birthday in the absence of mammography screening.

Research on communication of the benefits and risks of screening is important, but, as the report by Gigerenzer et al. demonstrates, may be strongly misleading in the case of unbalanced and misunderstood questions and inappropriate comparisons.

HERMANN BRENNER
SYLVIA HEYWANG-KOBRUNNER
NIKOLAUS BECKER

References

Notes
Affiliations of authors: Division of Clinical Epidemiology and Aging Research (HB) and Division of Cancer Epidemiology (NB), German Cancer Research Center, Heidelberg, Germany; Center for Breast Diagnosis, Radiology Haidhausen, Munich, Germany (SH-K).