Recommendations for clinical practice. This study shows how complex this "simple" question is and why it remains incompletely answered. If it were clear that the patients chosen for this study were similar to those on whom you order a urinalysis to evaluate for infection, then the diagnostic guidelines would probably be appropriate to follow.

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EFFICACY OF SCREENING MAMMOGRAPHY

TITLE: Efficacy of screening mammography: a meta-analysis
AUTHORS: Kerlikowske K, Grady D, Rubin SM, Sandrock C, Ernster VL.
JOURNAL: *JAMA*
DATE: January 1995; Volume 273:149–54

Clinical question. How effective is screening mammography at reducing mortality from breast cancer?

Background. In clinical trials, screening mammography has been shown to reduce mortality from breast cancer among women aged 50 years and older. It is unclear whether women aged 40 to 49 years also receive the benefit of reduced mortality from screening mammography. Individual studies have included too few women to detect a statistically significant difference in this age group.

Population studied. Women betweem 35 and 74 years of age were the subjects of the literature reviewed. A comprehensive literature search of English-language studies conducted from January 1966 to October 31, 1993, was performed using the MEDLINE database. Further published and unpublished articles were identified by a manual literature search of reference lists and from consultation with experts.

Study design and validity. A meta-analysis is a rigorous type of review article that combines the results from a number of studies in a statistically valid way. It is especially useful in the event that studies have conflicting results or inadequate sample size, which is the case for mammography among women aged 40 to 49. Also, because results are included for a variety of populations, the findings may be more generalizable than those obtained from a single group of patients.

Studies were included in this meta-analysis if they met the following criteria: (1) randomized controlled trial, prospective cohort with internal controls, or case-control with population-based controls, all with the main outcome of breast cancer death; (2) follow-up of at least 5 years and a minimum of 10 breast cancer deaths; (3) appropriate statistical evaluation of the risk of breast cancer mortality; and (4) risk calculation adjusted for age or based on controls that were age-matched to cases. Thirteen studies met these criteria; an updated analysis of one unpublished trial also was included. Two authors abstracted data from each article, and any disagreements between the two were settled by a third author. The authors were not blinded to the journal, year of publication, or authors, and did not state whether the original studies were assessed individually for validity with appropriate criteria. As a group, results of the original studies were homogeneous, ie, the findings were consistent from study to study. The latter is important because it supports the validity of the meta-analysis.

Outcomes measured. The primary outcome was a summary relative-risk estimate for the effect of screening mammography on breast cancer mortality. Secondary outcomes included "subgroup" analyses by patient age, number of mammographic views, screening interval, duration of follow-up, duration of screening, whether clinical breast examination was included, and the date the study began. The number of subgroup analyses is of some concern, as it increases the chances for a spurious outcome.

Results. The summary relative-risk estimate for breast cancer death among woman aged 50 to 74 years who underwent screening mammography compared with those who did not was 0.74 (95% confidence interval, 0.66 to 0.83).

That is, among woman in this age group, those undergoing mammography were only 74% as likely to die from breast cancer as those who did not undergo mammography. However, the summary relative-risk estimate for breast cancer death among woman aged 40 to 49 years was 0.93 (95% confidence interval, 0.76 to 1.13). Because this confidence interval included 1.0, you cannot conclude that screening mammography in women aged 40 to 49 reduces mortality attributable to breast cancer. While there appeared to be some benefit for screening women aged 40 to 49 after at least 10 years of follow-up, this may have occurred either by chance or because some of the women developing cancer became postmenopausal during the 10-year interval. In subgroup analyses, similar risk reductions were obtained from trials in which screening mammography was performed every 12 months vs every 18 to 33 months, and from trials in which clinical breast examination was performed in conjunction with screening mammography vs screening mammography alone. Studies that were initiated before 1980 had a lower risk reduction than did studies begun after 1980, although the differences were not statistically significant.

Recommendations for clinical practice. The results of this excellent and comprehensive meta-analysis confirm the usefulness of screening mammography for woman older than 50 years. Relying on clinical breast examination alone will fail to optimally detect cases of potentially curable cancer. This should encourage us all to work hard at motivating our patients aged 50 years and older to undergo mammography. However, screening more frequently than every 2 years does not appear to add extra benefit in reducing breast cancer mortality.

Results for women aged 40 to 49 years remain inconclusive. This cumulative meta-analysis was unable to show that mammography for this age group results in any improvement in survival rates. The individual studies in this analysis that demonstrate lack of screening efficacy have been criticized for using outdated mammographic equipment. However, more recent studies using more technologically advanced equipment also fail to demonstrate an increase in survival benefit, not only for this age group but for all others as well.

Screening mammography may be effective at reducing breast cancer mortality only for postmenopausal women. Our best approach should be to direct screening efforts toward women aged 50 and older and possibly for postmenopausal women younger than 50 years. Women younger than 50 deserve the best information available to allow them to make their own informed choice about screening mammography.

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USE OF THE PERIODIC HEALTH EVALUATION BY FAMILY PHYSICIANS

TITLE: Periodic health evaluation of adults: a survey of family physicians
AUTHORS: Luckmann R, Melville SK
JOURNAL: *The Journal of Family Practice*
DATE: June 1995, Volume 40:547-554

Clinical question. What is the current pattern of use and content of the periodic health evaluation (PHE) in primary care practice?

Background. The PHE was first popularized over 70 years ago. It is only recently that the content of these examinations has been critically appraised.[1–7] Groups that have investigated the utility of the items traditionally included in the PHE have concluded that many items are not useful for healthy adults in whom specific risk factors are absent.

Population studied. A random sample of 698 subjects drawn from a list of 1345 self-identified family physicians practicing in New England made up the targeted group for this survey. Of these physicians, 131 could not be located or were no longer actively practicing primary care medicine. The response rate for the remaining physicians was 60.1% (341/567).

Study design and validity. A strength of this study is that the survey instrument was pretested before being mailed. This procedure improves the instrument by identifying questions that are confusing or do not collect the intended information. A weakness is that the survey relied on physician self-report about the PHE without a means of validating the responses, by direct observation or review of medical records, for example.

A valid survey instrument should collect information that helps us decide whether the sample studied reflects the population being studied, which in this case was all family physicians. In the current study, two thirds of the physicians who returned questionnaires were residency-trained