

# Review: Communication of individualized risk estimates improves uptake of screening procedures

Edwards A, Unigwe S, Elwyn G, Hood K. **Effects of communicating individual risks in screening programmes: Cochrane systematic review.** *BMJ.* 2003;327:703-9.

## QUESTION

In persons who are considering whether to participate in screening programs, is communication of individualized risk estimates more effective than general information on risk for improving knowledge about, and uptake of, screening procedures?

## DATA SOURCES

Studies were identified by searching the Cochrane Consumers and Communication Review Group specialized register (March 2001), MEDLINE (1985 to 2001), EMBASE/Excerpta Medica (1985 to 2001), CANCERLIT (1985 to 2001), CINAHL (1985 to 2001), ClinPSYC (1985 to 2001), and Science Citation Index Expanded (March 2002). Bibliographies of relevant articles were reviewed, and experts in the field were contacted for unpublished data.

## STUDY SELECTION AND ASSESSMENT

Studies were selected if they were randomized controlled trials (RCTs) of persons facing real decisions about participating in screening programs (e.g., mammography or colorectal screening) that compared interventions providing information on individualized risk with those providing information on generalized risk (e.g., average or population risk estimates). Studies of interventions that did

not discuss the risks and benefits of participation compared with nonparticipation were excluded. Study quality of included RCTs was evaluated against methodologic checklists, including the Jadad scale.

## OUTCOMES

The main outcome was uptake of screening tests. Cognitive and affective measures were also assessed to gauge informed decision making.

## MAIN RESULTS

13 RCTs met the selection criteria. Screening programs included mammography or gene testing in relation to breast cancer risk (10 RCTs); and screening for high cholesterol (2 RCTs), cervical cancer (1 RCT), prostate cancer (1 RCT), and colorectal cancer (1 RCT) (some studies covered > 1 topic). Health care professionals who delivered the interventions included physicians, nurses, and staff specifically recruited and trained for

the study. Meta-analysis (using a random-effects model) of 10 RCTs showed that the rate of uptake of screening tests was greater among persons who received individualized risk communication than in those who received general information on risk (Table). Data on cognitive and affective measures were not reported consistently enough to assess the effect of intervention on informed decision making.

## CONCLUSION

In persons who are considering whether to participate in screening programs, communication of individualized risk estimates is more effective than general information on risk for improving uptake of screening procedures.

*Source of funding: Cochrane Health Promotion and Public Health Field.*

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### Communication of individualized risk estimates (IRE) vs general information on risk (GIR) in persons considering participating in screening programs\*

| Outcome                        | Weighted event rates |     | RBI (95% CI)  | NNT (CI)       |
|--------------------------------|----------------------|-----|---------------|----------------|
|                                | IRE                  | GIR |               |                |
| Uptake of screening procedures | 32%                  | 27% | 26% (7 to 48) | 20 (11 to 100) |

\*Abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article using a random-effects model.

## COMMENTARY

The systematic review by Edwards and colleagues shows that providing patients with an individualized risk estimate increases the probability that they will participate in a screening program compared with receiving general information on the risks and benefits of screening interventions.

The review included RCTs reporting an individualized risk score, a risk category (i.e., high-, medium-, or low-risk status), or a list of risk factors relevant to the patient. Studies providing the most detailed risk estimates actually resulted in a reduction in uptake of screening tests (1, 2). Intervention effects seemed greater in higher-risk patients.

Because of insufficient data it was unclear if increased uptake of screening interventions was caused by increased patient knowledge. Unfortunately, this research offers little guidance to practicing clinicians about the best ways of increasing patient awareness. Further studies are

required to identify optimal methods for informing patients of their individual risks and benefits from screening interventions. Should we, for example, use outreach programs to inform patients at higher-than-average risk?

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## References

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