Evidence-based general practice:
prevention among healthy people

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Content of presentation

- Interventions: benefits and harms
- Primary and secondary prevention
- What evidence do we have?
- Do we need a paradigm shift in prevention among healthy people?

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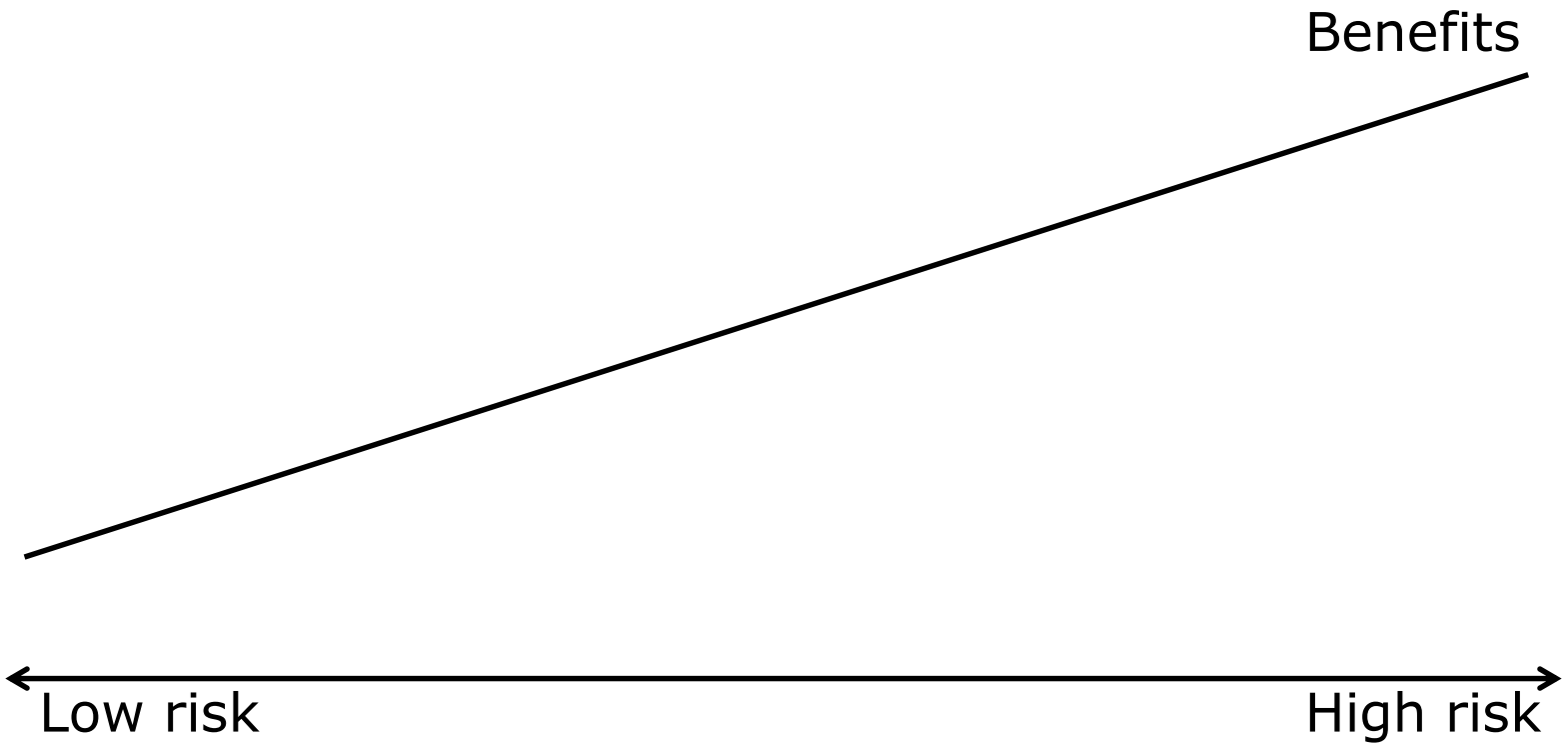
Any medical intervention: Balance of benefits & harms



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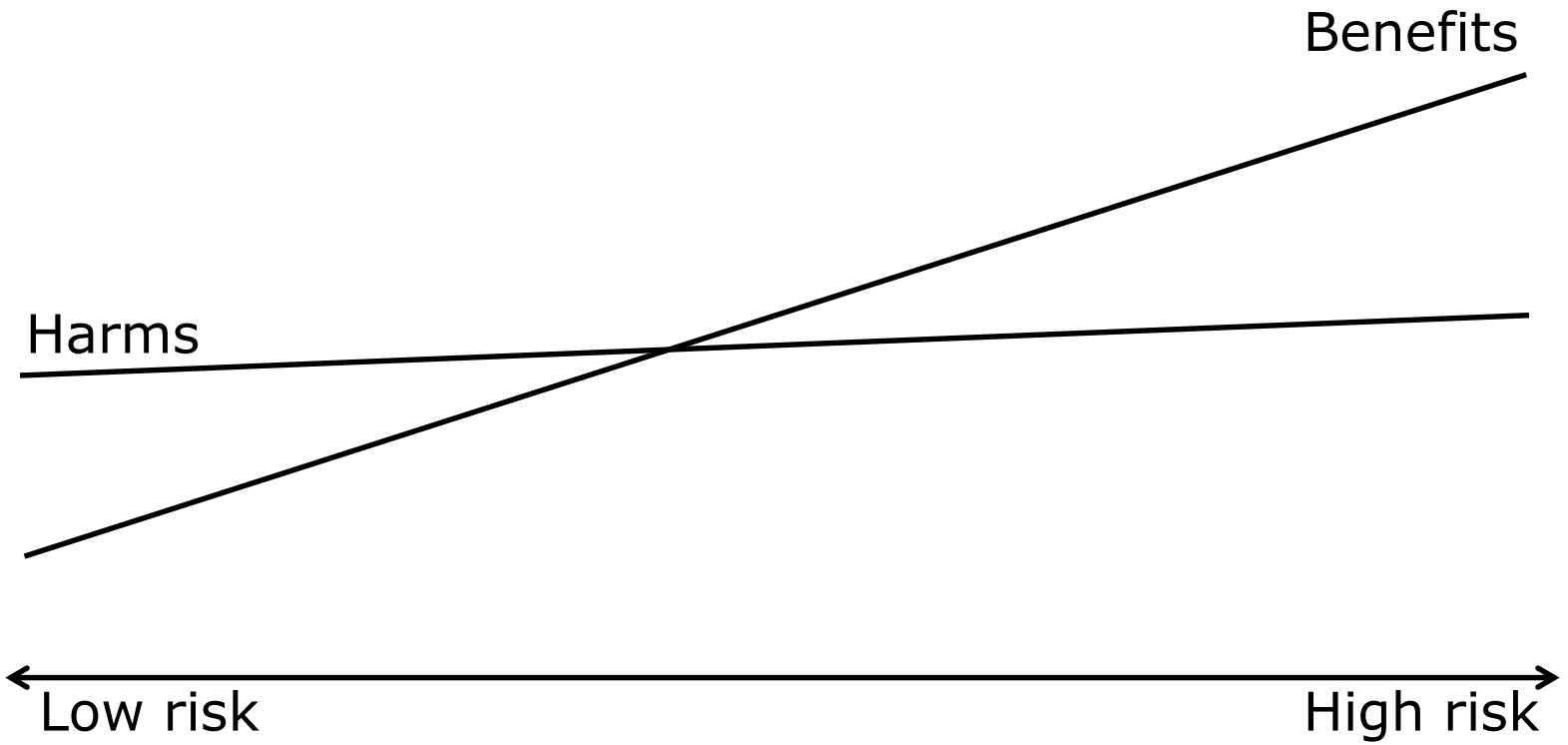

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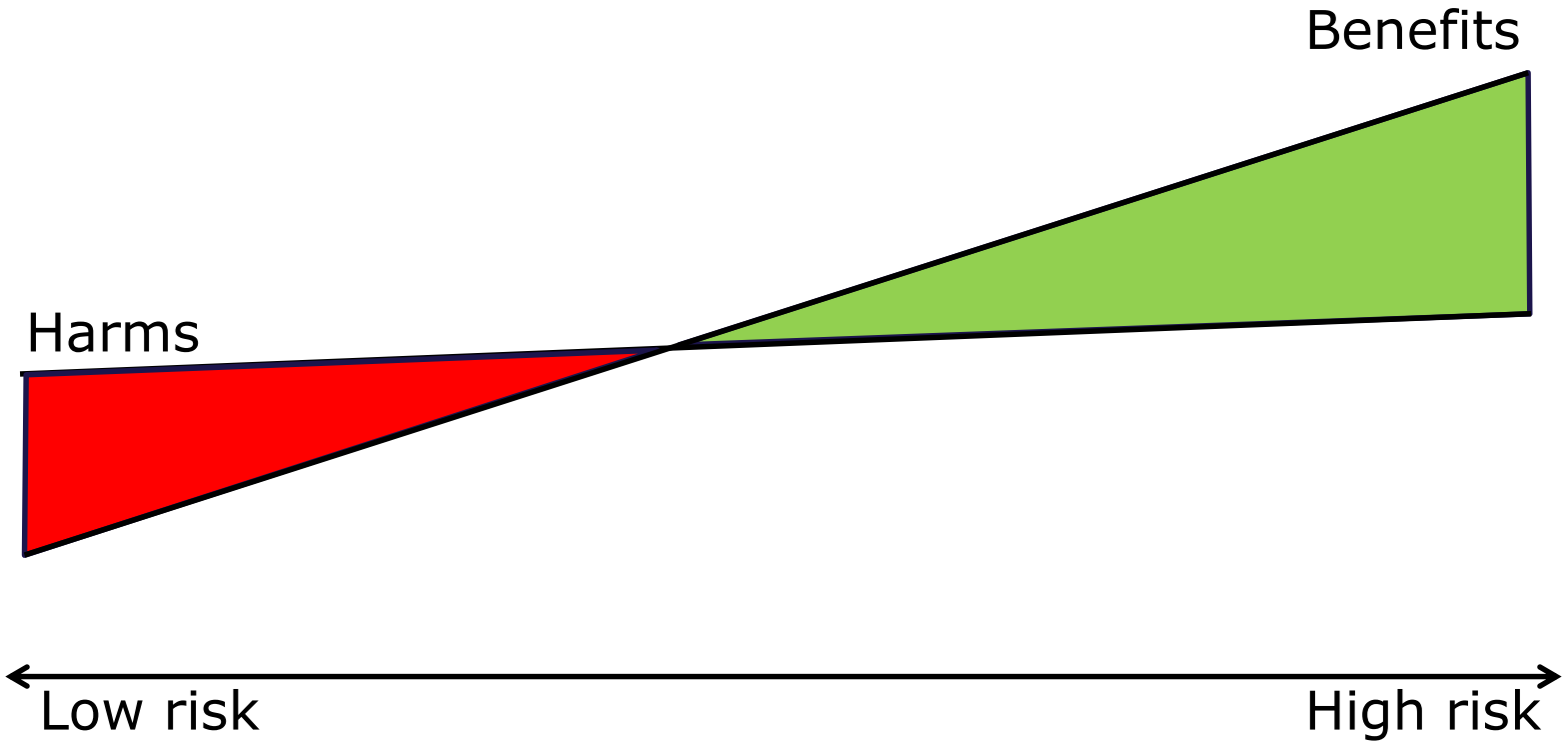

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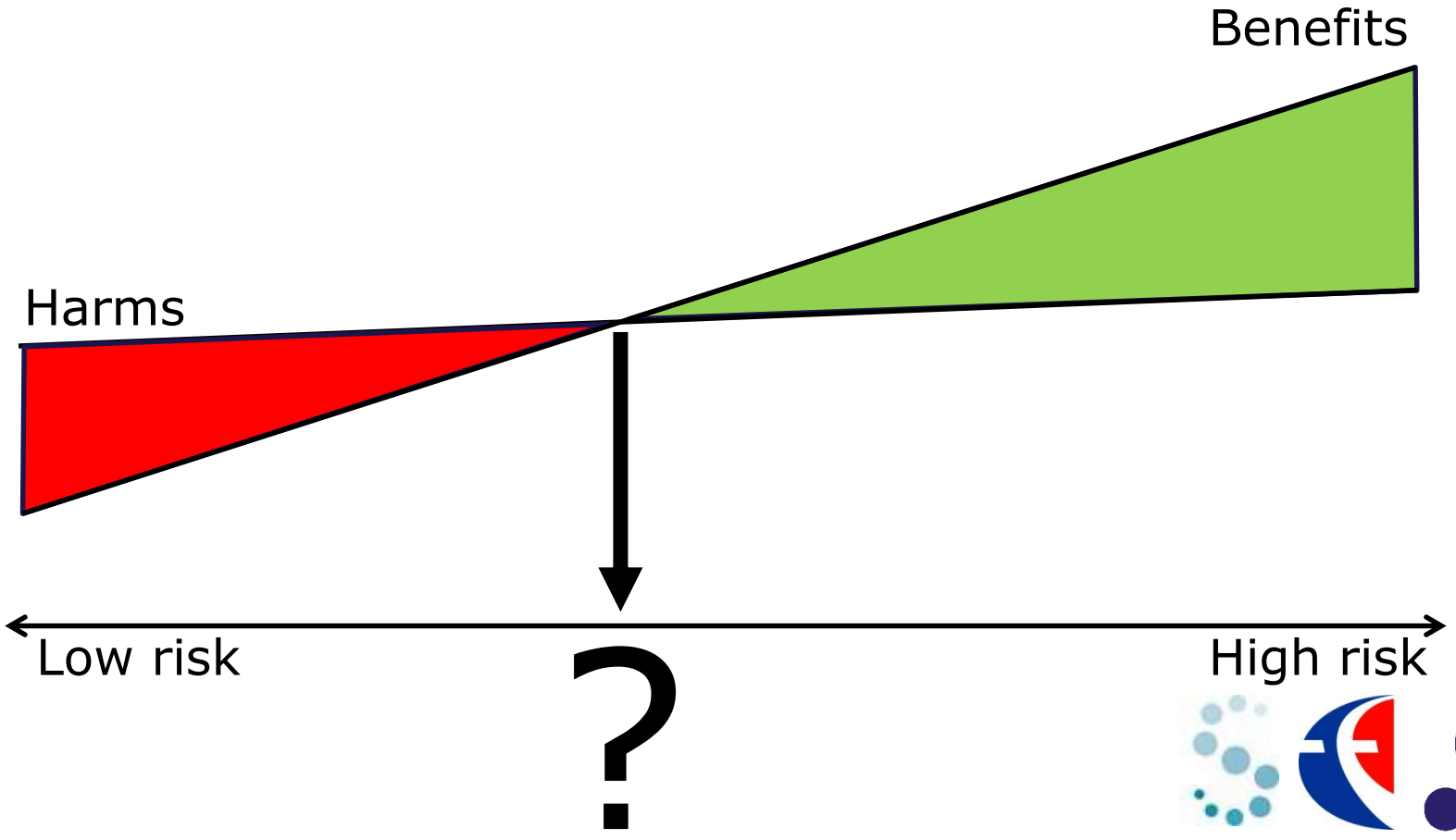

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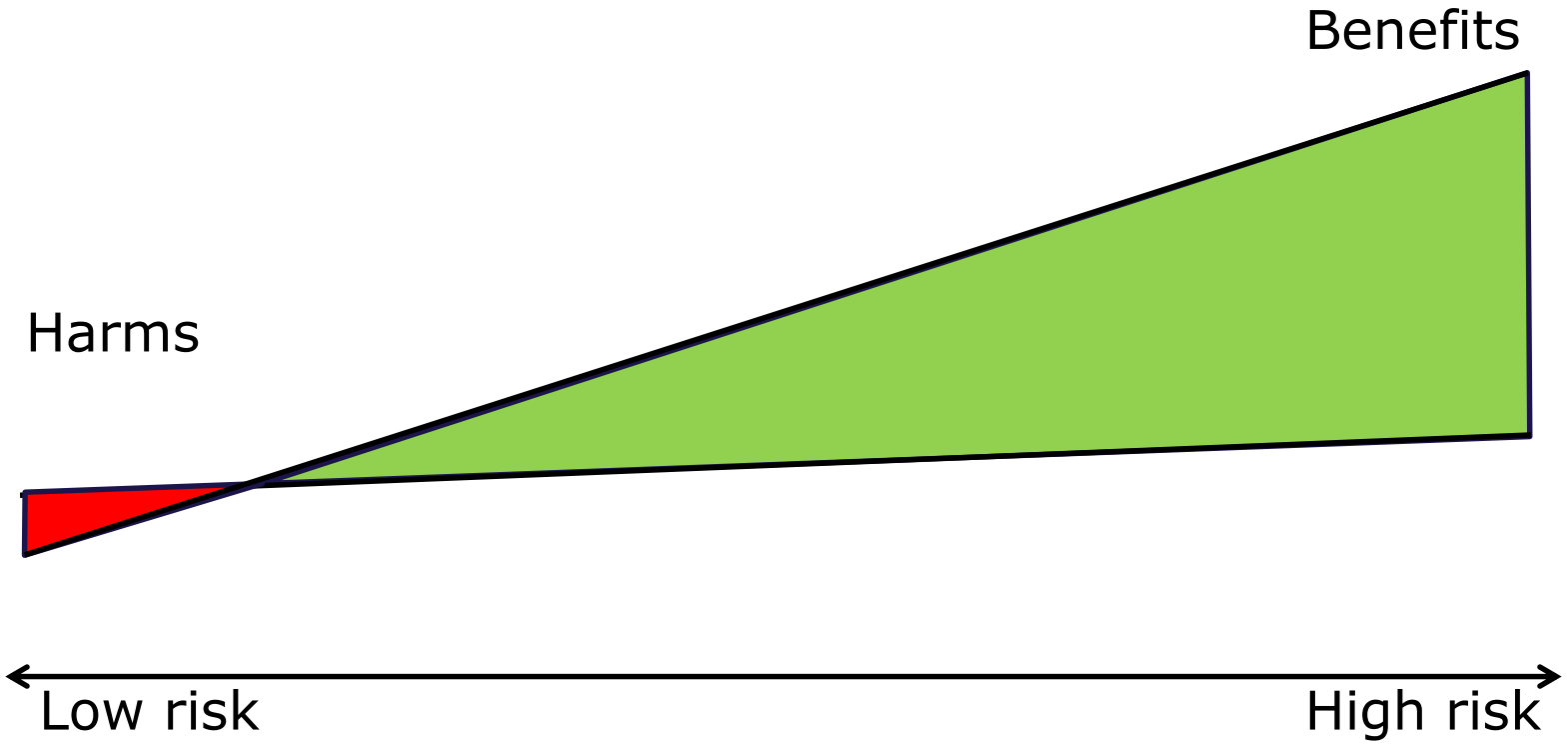

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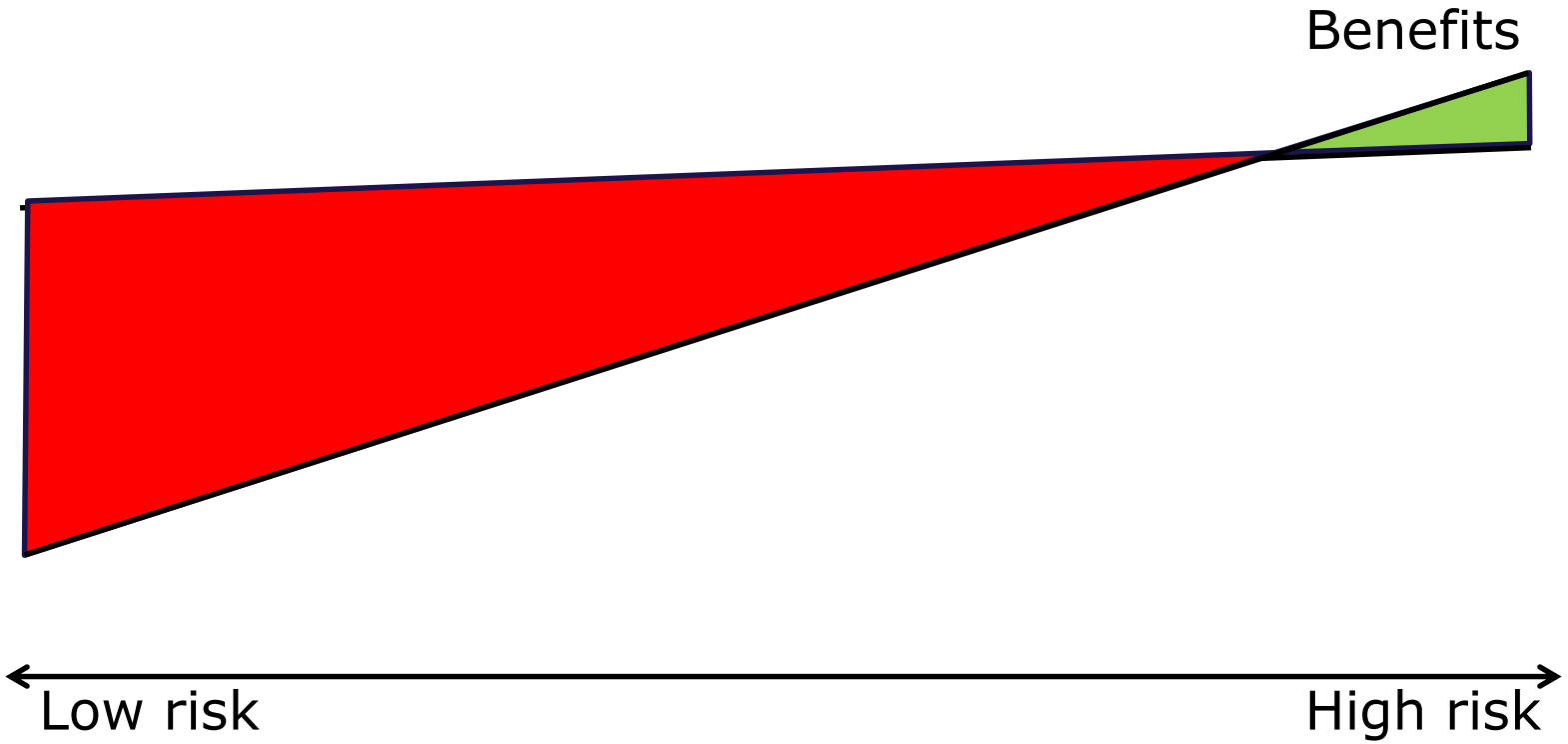

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Prevention with low risk of disease

- Primary prevention, e.g. vaccination
- Secondary prevention, e.g. screening

Primary prevention

- Action taken to avoid or remove the cause of a health problem in an individual or a population before it arises. Includes health promotion and specific protection (e.g.immunization)

Bentzen N. Wonca Dictionary of General/Family Practice, Copenhagen:Månedsskrift for Praktisk Lægergerning, 2003.

Secondary prevention

- Action taken to detect a health problem at an early stage in an individual or a population, thereby facilitating cure, or reducing or preventing it spreading or its long-term effects (e.g. screening and case finding)

Bentzen N. Wonca Dictionary of General/Family Practice, Copenhagen:Månedsskrift for Praktisk Lægergerning, 2003.

Medical screening

Benefits

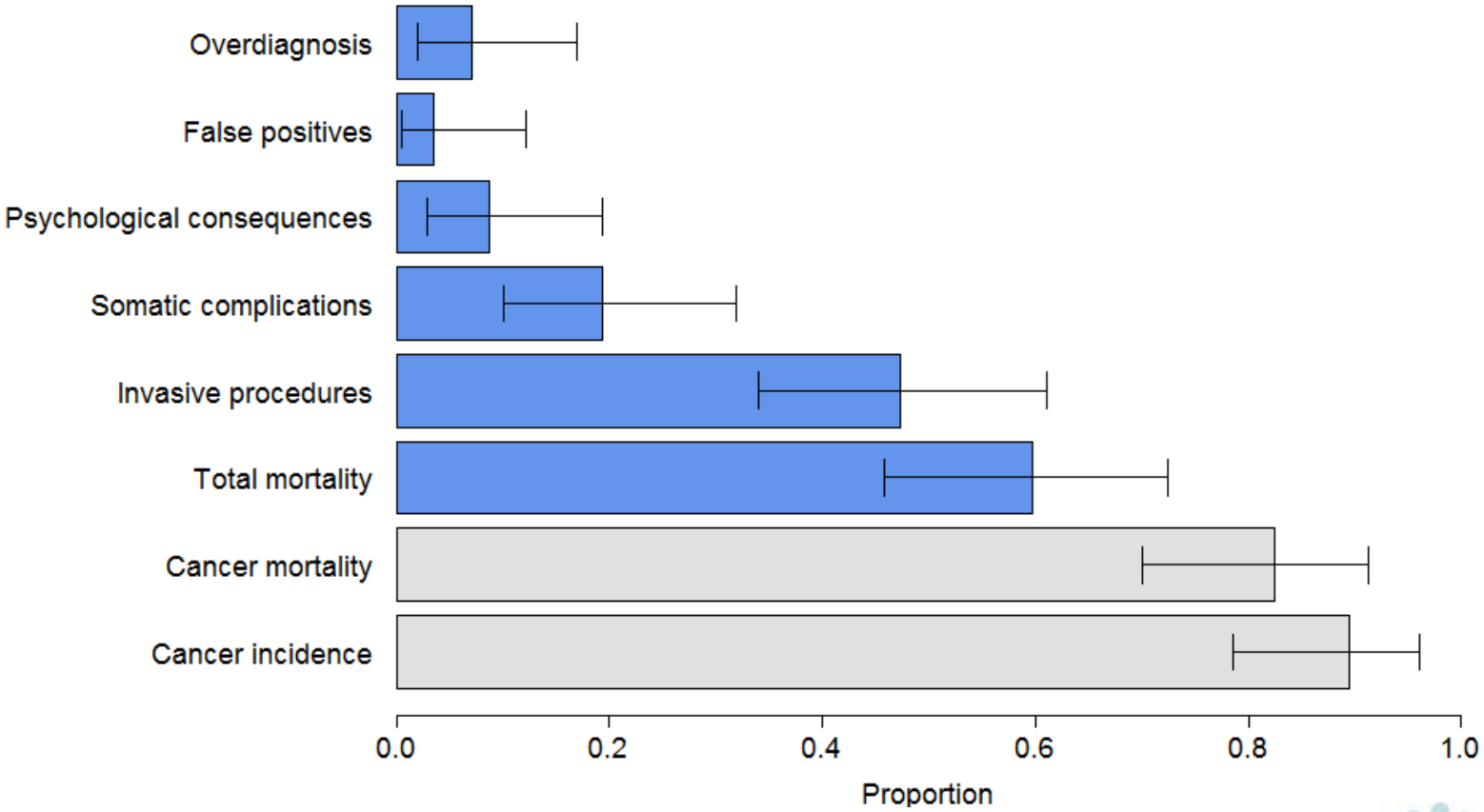
- Reduced mortality
- Less radical treatment
- Reduced morbidity
- Reassurance – normal results
- Reduced incidence

Harms

- Longer morbidity
- Overdiagnosis
- False-negative results
- False-positive results
- Overtreatment
- Induced morbidity
- Induced mortality

J. Brodersen, K.J. Jørgensen, P.C. Gøtzsche. The benefits and harms of screening for cancer with a focus on breast screening. *Pol.Arch.Med.Wewn. 120 (3):89-94, 2010.*

Benefits & harms in cancer screening trials



B. Heleno, M. F. Thomsen, D. S. Rodrigues, K. J. Jørgensen, J. Brodersen. Quantification of harms in cancer screening trials: literature review. *BMJ. 347:f5334, 2013.*

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Studies on cervical screening

- No high quality RCTs
- Meta-analysis of observational studies:
  - 56% reduction in incidence
  - 35% reduction in mortality

Peirson L, Fitzpatrick-Lewis D, Ciliska D, Warren R. Screening for cervical cancer: a systematic review and meta-analysis. Syst Rev. 2013;2:35

RCTs on HPV vaccination

- Included women not all sexual naïve and not 12 years old
- Industry sponsored
- Contamination of control group
- Potential unintended harms not comprehensively investigated

GP: Before and after HPV vaccination

	Before HPV vaccination	After HPV vaccination
Positive tests	8.7 %	6.5 %
False-positive tests	5.5 %	4.3 %
Positive predictive value	23 %	19 %

Hestbech, Lynge, Kragstrup, Siersma, Vazquez-Prada, Brodersen. "The impact of HPV vaccination on future cervical screening: a simulation study of two birth cohorts in Denmark." BMJ Open **5**(8): 2015.

Intention to be screened: vaccinated vs. unvaccinated

- OR: 3.89 (2.50 - 6.06)

Hestbech, Gyrd-Hansen, Kragstrup, Siersma, Brodersen. How does HPV vaccination status relate to risk perceptions and intention to participate in cervical screening? a survey study. BMC Public Health. 2016;15:708

Journal of the Royal Society of Medicine; 2016, Vol. 109(7) 274–281
DOI: 10.1177/0141076816643324

Do invitations for cervical screening provide sufficient information to enable informed choice? A cross-sectional study of invitations for publicly funded cervical screening

Sie Karen Kolthoff[1], Mie Sara Hestbech[1], Karsten Juhl Jørgensen[2] and John Brodersen[1,3]

Results: We contacted 21 coordinating units from 11 countries and 20 (95%) responded. Of these, four units did not issue invitations, but the remaining 16 coordinating units in 10 different countries supplied a sample. The invitations for cervical screening were generally information poor and contained a median of only four out of 23 information items possible (17%), ranging from 0 to 12 (0–52%). The most important harms of cancer screening, overdiagnosis and overtreatment, were typically downplayed or unmentioned. The same applied to other important harms, such as false-positive results and the psychological consequences from an abnormal test result. The majority of invitations took a paternalistic approach. While only two invitations (17%) included a pre-assigned appointment date, eight (70%) of the invitations contained strong appeals for participation.

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Conclusions: Invitations to cervical cancer screening were information poor and biased in favour of participation. This means that informed choice is not possible, which is in conflict with modern requirements for personal involvement in medical decisions.

Effects of numerical information on intention to participate in cervical screening among women offered HPV vaccination: A randomised study

Results: A significantly lower proportion intended to participate in screening in the two groups of women receiving numerical information compared to controls with absolute differences of 10.5 (95% CI: 3.3 - 17.6) and 7.7 (95% CI: 0.4 – 14.9) percentage points respectively. Among HPV vaccinated women, we found a significantly lower intention to participate in screening after numerical information specific to vaccinated women (OR of 0.38).

Hestbech, Gyrd-Hansen, Kragstrup, Siersma, Brodersen. Effects of numerical information on intention to participate in cervical screening among women offered HPV vaccination: A randomised study. Scand. J. of Primary Health Care, accepted f. publ. 2016

Effects of numerical information on intention to participate in cervical screening among women offered HPV vaccination: A randomised study

Conclusions: Women are sensitive to numerical information about the benefits and harms of cervical screening. Specifically, our results suggest that HPV vaccinated women are sensitive to information about the expected changes in benefits and harms of cervical screening after implementation of HPV vaccination.

Hestbech, Gyrd-Hansen, Kragstrup, Siersma, Brodersen. Effects of numerical information on intention to participate in cervical screening among women offered HPV vaccination: A randomised study. Scand. J. of Primary Health Care, accepted f. publ. 2016

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Hormone relacement therapy

The arrogance of preventive medicine

David L. Sackett

CMAJ • AUG. 20, 2002; 167 (4) 363

- Preventive medicine displays all 3 elements of arrogance.

Hormone relacement therapy

The arrogance of preventive medicine

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CMAJ • AUG. 20, 2002; 167 (4) 363

- First, it is *aggressively assertive*, pursuing symptomless individuals and telling them what they must do to remain healthy.

Hormone relacement therapy

The arrogance of preventive medicine

David L. Sackett

CMAJ • AUG. 20, 2002; 167 (4) 363

- Second, preventive medicine is *presumptuous*, confident that the interventions it espouses will, on average, do more good than harm to those who accept and adhere to them.

Hormone relacement therapy

The arrogance of preventive medicine

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CMAJ • AUG. 20, 2002; 167 (4) 363

- Finally, preventive medicine is *overbearing*, attacking those who question the value of its recommendations.

Do we need a paradigm shift in prevention among health people?

- Higher quality in trials?
  - Inclusion criteria
  - Follow-up time
  - No financial COI
- Another statistical significance level?
- Adequate focus on potential unintended harms?