

# Effect of process indicators on the episode sensitivity of mammography

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# Background (Sarkeala et. al. 2004, 2005)

- screening coverage 100% (50-59), 25% (60-69)
- recall rate differences fourfold (0.9-3.5%)



differences in screening sensitivity?

# Screening sensitivity

- test
  - screening mammogram
- episode
  - screening mammogram and further assessments
- programme
  - non-attenders

# Episode sensitivity in Finland, aim

- to examine the episode sensitivity using the interval cancer definitions recommended by the European Commission and the IARC
- to explore associations between the episode sensitivity and process indicators (recall rate)
- to assess relations between the episode sensitivity and mortality (on-going)

# Episode sensitivity in Finland, definitions (Sarkeala et. al. 2006)

- episode sensitivity:
  - $\text{screen-detected breast cancers} / (\text{screen-detected} + \text{interval breast cancers})$
  - $1 - (\text{incidence of interval breast cancers} / \text{breast cancer incidence in the absence of screening})$
- interval cancers:
  - breast cancers identified between two successive screens or within 27 (23) months since the previous screen among women, whose previous screening episode was negative

# Episode sensitivity in Finland, material

- ten centres of the Cancer Society of Finland
- women aged 50-64
- study period 1991-2001
- 721 000 screening visits
  - 2716 screen-detected breast cancers
  - 1390 interval breast cancers

# Episode sensitivity in Finland, methods

- breast cancers confirmed and identified from the nationwide Finnish Cancer Registry
- linkage with a personal identifier
- background trend
  - incidences from 1980-1986 by area
  - 2.7% annual increase in risk
- Poisson regression for statistical evaluation

# Episode sensitivity in Finland, overall results (subsequent screens)

- by the detection method the episode sensitivity was 65% and by the incidence method 54%
- within the first follow-up year the episode sensitivity was 70%, within the second year 38% (incidence method)
- the episode sensitivity decreased towards the end of the study period

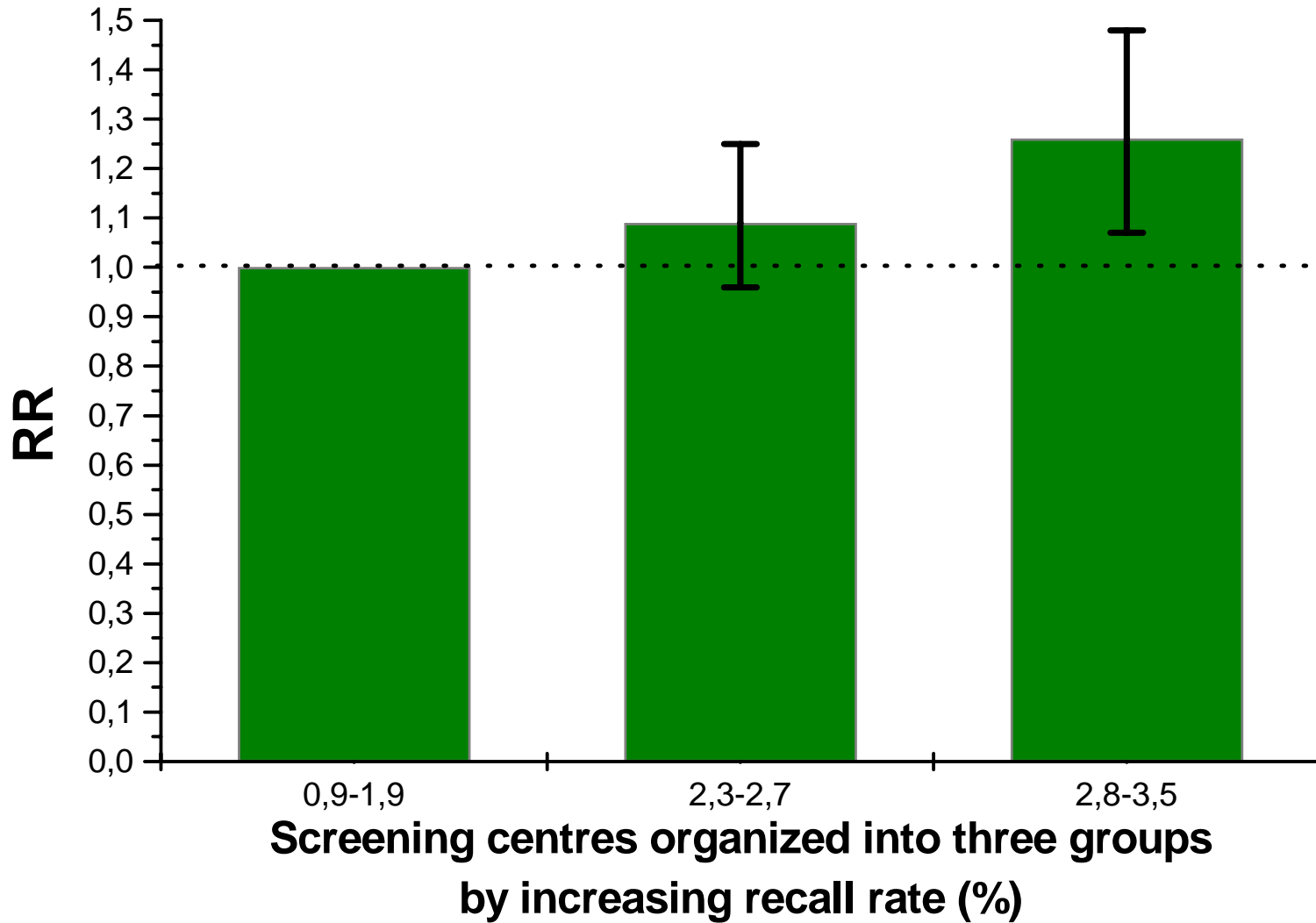


# Episode sensitivity in Finland, discussion

	<b>Finland 50-64</b>	<b>Denmark 50-69</b>	<b>The Netherlands 50-69</b>	<b>Norway 50-69</b>	<b>EU 50-69</b>
<b>0-11</b>	<b>70% (63-78)</b>	<b>68%</b>	<b>74%</b>	<b>78%</b>	<b>&gt;70%</b>
<b>12-23</b>	<b>38% (35-41)</b>	<b>39%</b>	<b>45%</b>	<b>36%</b>	<b>&gt;50%</b>

**Subsequent screens**

**p=0.006  
for the trend**



# Episode sensitivity in Finland, associations

- in the centre-specific analysis, the episode sensitivity increased 13% per one percent absolute increase in the recall rate ( $p=0.008$ )

# Episode sensitivity in Finland, discussion

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# Episode sensitivity in Finland, discussion

- detection method is potentially biased due to lead time and overdiagnosis
- incidence method is sensitive to correct estimation of background incidence and to selection of screening attendants

# Episode sensitivity in Finland, conclusions

- overall estimates are comparable with those from other European countries
- centre-specific variation is large and it is connected with variation in recall rates
- whether the variability in episode sensitivity reflects variability also in the effectiveness of mammography is yet unknown