The North Karelia project

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Europrevent
Geneva 15.4.2011
Greetings from Finland
History in Finland

- Hardships of war and postwar years
- Increase in standard of living
  - Great increase in CVD
- Attention to extremely high CVD mortality
- Previous studies: East-West study (part of Seven Countries Study)
MORTALITY RATES OF ISCHAEMIC HEART DISEASE AMONG MEN IN SELECTED COUNTRIES

CHD mortality per 100,000 men in 1973

FINLAND  USA  AUSTRALIA  ENGLAND  CANADA  CZECHOSLOVAKIA  NORWAY  HUNGARY  DENMARK  BRD  POLAND  AUSTRIA  HOLLAND  SWEDEN  ITALY  PORTUGAL  FRANCE  JAPAN
North Karelia Project
Principles

• Due to the chronic nature of CVD, the potential for the control of the problem lies in primary prevention

• The risk factors were chosen on the basis of best available knowledge:
  - previous studies
  - collective international recommendations
  - epidemiological situation in North Karelia

• Chosen risk factors:
  - smoking
  - elevated serum cholesterol (diet)
  - elevated blood pressure (diet & treatment)

• Community based approach to change lifestyles
Theory + hard work

• Theory:
  ✓ Medical
  ✓ Behavioural, social

• Hard work: practical and flexible work with the community
From Karelia to National Action

- First province of North Karelia as a pilot (5 years), then national action (1972–77)
- Continuation is North Karelia as national demonstration (1977–97)
- Good scientific evaluation to learn of the experience
- Comprehensive national action
Community-based project
(pilot, demonstration, model)

National programme and policies
Evaluation / Monitoring

- North Karelia – all Finland
- Monitoring systems
  - health behaviour
  - risk factors
  - nutrition
  - diseases, mortality
RESULTS
Milk Consumption in Finland in 1970 and 2006 (kg per capita)

- Whole milk
- Low fat milk
- Whole form milk
- Skim milk

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5/6/2011
Pekka Puska, Director General
Use of Vegetable Oil for Cooking (men age 30–59)

% of men using vegetable oil for cooking in different regions of Finland:
- North Karelia
- Kuopio province
- Southwest Finland
- Helsinki area
- Oulu province
- Lapland province

The graph shows an increase in the use of vegetable oil for cooking from 1972 to 2007, with particular increases in regions like North Karelia and Helsinki area.
Fat Intake as Percentage of Energy in Finland

Year

Sources:
- Hasunen et al. 1976
- Uusitalo et al. 1986
- Kleemola et al. 1994
- Findiet Study Group 1998
- Männistö et al. 2003

Recommendations
- Total fat (~ 30 EN%)
- SFA (~10 EN%)
- MUFA (10-15%)
- PUFA (5-10%)
Salt intake in Finland 1977-2007
FinnDiet Study

Calculated, men
Calculated, women
24 hour urine, men
24 hour urine, women
Lin. (24 hour urine, men)
Lin. (24 hour urine, women)
Lin. (Calculated, men)
Lin. (Calculated, women)
Serum Cholesterol in Men Aged 30–59 Years

FINRISK Studies 1997 & 2002

North Karelia
Kuopio
Turku/Loimaa
Helsinki/Vantaa
Oulu
Lapland

FINRISK Studies 1997 & 2002
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Pekka Puska, Director General
Systolic blood pressure in women (30–59 y)

North Karelia project evaluation and FINMONICA and the National FINRISK Studies 1972 - 2007

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Daily smoking in Finland 1950-2008
Age-adjusted mortality rates of coronary heart disease in North Karelia and the whole of Finland among males aged 35–64 years from 1969 to 2006.

Mortality per 100 000 population

Age-standardized to European population

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Observed and Predicted Declines in Coronary Mortality in Eastern Finland, Men

- Observed vs Predicted
- Cholesterol
- Blood pressure
- Smoking
Mortality Changes in Finland from 1969–71 to 2006 (Men 35–64 Years, Age Adjusted)

<table>
<thead>
<tr>
<th></th>
<th>Rate (per 100,000)</th>
<th>Change from 1969–71 to 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>All causes</td>
<td>1328</td>
<td>583</td>
</tr>
<tr>
<td>All cardiovascular</td>
<td>680</td>
<td>172</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>489</td>
<td>103</td>
</tr>
<tr>
<td>All cancers</td>
<td>262</td>
<td>124</td>
</tr>
</tbody>
</table>
Healthy and sick years of life expectancy of 65 year old Finns in 1980 and in 2000
From Karelia to National Action

Major Elements of Finnish National Action 1.

- Research & international research collaboration
- Health services (especially primary health care)
- North Karelia Project, other demonstration programmes
- Health Promotion Programmes (coalitions, NGO’s, collaboration with media etc.)
- Schools, educational institutions
Major Elements of Finnish National Action 2.

- Industry, business – collaboration
- Policy decisions, intersectoral collaboration, legislation
- Monitoring system: health behaviours, risk factors, nutrition, diseases, mortality
- International collaboration
Examples of intersectoral action

• Tobacco legislation & policy
• Nutrition development
• Interaction with the private sector
• NGO’s
Development of Finnish Rapeseed Oil
Fruits and Vegetables – Supermarkets
Biscuit Example

- Leading Finnish biscuit manufacturer (LU Finland Ltd) has removed some 80,000 kg of SAFA by changing the fats used
- All trans fats removed
- Major change to rapeseed oil
HK Example:
(One of the two main meat/sausage companies in Finland)

- Since 2007 annually:
  - 40,000 kg less salt
  - 10,000 kg less saturated fat in their products
- 87 of their products comply with the Heart Symbol criteria in their category
Change in fat content of Finnish cow milk

Fen: \( y = -0.16x + 362 \)
Gen: \( y = -0.16x + 358 \)
The Finnish Heart Symbol
Social change

Broad change process among the population in interaction with respective policy decisions
FROM PRIORITIES TO IMPLEMENTATION

IDENTIFYING PRIORITIES → IMPLEMENTING THEM
Finland Has Shown

- Prevention of cardiovascular diseases is possible and pays off
- Population based prevention is the most cost effective and sustainable public health approach to CVD control
- Prevention calls for simple changes in some lifestyles (individual, family, community, national and global level action)
- Influencing diet and especially quality of fat is a key issue
- Many results of prevention occur surprisingly quickly (CVD, diabetes) and also at relatively late age
- Comprehensive action, broad collaboration with dedicated leadership and strong government policy support
The North Karelia/Finland experience

• Supports and has interacted much with the WHO NCD strategy:
  – Integrated prevention
  – Diet & physical activity strategy
  – FCTL

• Looks forward to global upgrading of NCD prevention
  – UN NCD Summit in September 2011 in New York
For successful prevention

- Strong leadership combined with
- Good partnership

* * *

- Do the right things
- Do enough of those
Thanks