Evidence based approaches to prevention of cardiovascular diseases

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Cardiovascular Diseases

- What are they?
- Why and how do they develop?
- What is the global burden from CVD?
- How can they be prevented or treated?
Prevention and Control of CVD

CHD
CeVD
HBP/Hyperlipidemia
Rheumatic HD
Cardiomyopathies
CCF
Congenital HD
Global Cardiovascular Disease Epidemic

Deaths - 33%

Disease Burden - 10%

Low and middle income countries
Immersed in a sea of risk
Leading 12 selected risk factors as causes of disease burden

- = **Major NCD risk factors**

## Developing countries

<table>
<thead>
<tr>
<th>High Mortality</th>
<th>Low Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Underweight</td>
<td>Alcohol</td>
</tr>
<tr>
<td>2 Unsafe sex</td>
<td>Blood pressure</td>
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<tr>
<td>3 Unsafe water</td>
<td>Tobacco</td>
</tr>
<tr>
<td>4 Indoor smoke</td>
<td>Underweight</td>
</tr>
<tr>
<td>5 Zinc deficiency</td>
<td>Body mass index</td>
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<tr>
<td>6 Iron deficiency</td>
<td>Cholesterol</td>
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<tr>
<td>7 Vitamin A deficiency</td>
<td>Low fruit &amp; veg intake</td>
</tr>
<tr>
<td>8 <strong>Blood pressure</strong></td>
<td>Indoor smoke - solid fuels</td>
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<tr>
<td>9 <strong>Tobacco</strong></td>
<td>Iron deficiency</td>
</tr>
<tr>
<td>10 Cholesterol</td>
<td>Unsafe sex</td>
</tr>
<tr>
<td>11 <strong>Alcohol</strong></td>
<td>Unsafe water</td>
</tr>
<tr>
<td>12 Low fruit &amp; veg intake abuse</td>
<td>Lead exposure</td>
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World
Deaths in 2000 attributable to selected leading risk factors

- Blood pressure
- Tobacco
- Cholesterol
- Underweight
- Unsafe sex
- Fruit and vegetable intake
- High Body Mass Index
- Physical inactivity
- Alcohol
- Unsafe water, sanitation, and hygiene
- Indoor smoke from solid fuels
- Iron deficiency
- Urban air pollution
- Zinc deficiency
- Vitamin A deficiency
- Unsafe health care injections

Number of deaths (000s)
Global cardiovascular disease burden due to 6 major risk factors

- Systolic pressure > 115mmHg: 45%
- Cholesterol > 3.8 mmol/l: 28%
- Fruit & vegetable < 600g/day: 16%
- Body mass index > 21 kg/m²: 15%
- Tobacco: 12%
- Physical inactivity: 11%

Area proportional to population attributable fraction for global DALYs, overlap approx. proportional to joint effects

World Health Report 2002
Optimal BP and cholesterol levels

- SBP 115 mmHg

- Cholesterol 3.8 mmol/l
Key messages of WHR 2002

- Substantial proportion of CV deaths is attributable to avoidable risks

- Reducing these known risks can provide substantial public health gains

- Cost effective interventions are available to halve the CVD burden in the next 5 years
Costeffective Interventions

- Population wide strategies -
  Fiscal and regulatory interventions
  Health education through mass media

- Absolute risk approach to manage CV risk
- Secondary Prevention of MI and Stroke
Public Health Interventions to Support Prevention

• Agricultural subsidies for fruits and vegetables
• Tax policy with respect to food/tobacco
• Food labelling regulations (sodium, sat. fat)
• Comprehensive banning on advertising tobacco products