EUROACTION

A model for secondary and primary preventive care to achieve ‘25 by 25’

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The Fifth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of nine societies and by invited experts)

Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR)†
Cardiopulmonary rehabilitation

“Cardiac rehabilitation is a branch of rehabilitation medicine dealing with optimizing physical function in patients with cardiac disease”

Wikipedia September 2nd 2013
## Randomised controlled trials of cardiac rehabilitation and secondary prevention

<table>
<thead>
<tr>
<th></th>
<th>Cardiac rehab §°</th>
<th>95% CI</th>
<th>Secondary prevention ¶</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total mortality</strong></td>
<td>0.80</td>
<td>0.68, 0.93</td>
<td>0.85</td>
<td>0.77, 0.94</td>
</tr>
<tr>
<td><strong>CHD mortality</strong></td>
<td>0.74</td>
<td>0.61, 0.90</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Myocardial re-infarction</strong></td>
<td>0.79</td>
<td>0.57, 1.09</td>
<td>0.83</td>
<td>0.74, 0.94</td>
</tr>
</tbody>
</table>

° Heran B S, et al Cochrane Database of Systematic Reviews 2011
## Secondary prevention
### All cause mortality

<table>
<thead>
<tr>
<th>Programme with no exercise</th>
<th>Treatment</th>
<th>Control</th>
<th>Relative Risk</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4598</td>
<td>4604</td>
<td>0.87</td>
<td>0.76, 0.99</td>
</tr>
<tr>
<td>Programme with exercise</td>
<td>2404</td>
<td>2251</td>
<td>0.88</td>
<td>0.74, 1.04</td>
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<tr>
<td>Exercise only</td>
<td>1165</td>
<td>1120</td>
<td>0.72</td>
<td>0.54, 0.95</td>
</tr>
<tr>
<td>Overall*</td>
<td>8167</td>
<td>7975</td>
<td>0.85</td>
<td>0.77, 0.94</td>
</tr>
</tbody>
</table>

*p=0.001

Clark A M et al Annals of Internal Medicine 2005;143:659-672
Secondary Prevention
Recurrent myocardial infarction

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Control</th>
<th>Relative Risk</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme with no exercise</td>
<td>2787</td>
<td>2742</td>
<td>0.86</td>
<td>0.72, 1.03</td>
</tr>
<tr>
<td>Programme with exercise</td>
<td>2075</td>
<td>1922</td>
<td>0.62</td>
<td>0.44, 0.87</td>
</tr>
<tr>
<td>Exercise only</td>
<td>1124</td>
<td>1073</td>
<td>0.76</td>
<td>0.57, 1.01</td>
</tr>
<tr>
<td>Overall*</td>
<td>5986</td>
<td>5737</td>
<td>0.83</td>
<td>0.74, 0.94</td>
</tr>
</tbody>
</table>

* *p=0.002

Clark A M et al Annals of Internal Medicine 2005;143:659-672
Cardiac rehabilitation + Secondary prevention
Cardiac rehabilitation is a branch of rehabilitation medicine dealing with optimizing physical function in patients with cardiac disease.

While the ‘glue’ of cardiac rehabilitation is exercise, programmes are evolving to become comprehensive prevention centers where all aspects of preventive cardiology care are delivered.

Wikipedia September 2nd 2013
Comprehensive prevention centers where all aspects of preventive cardiology care are delivered.
Preventive Cardiology

- Lifestyle (smoking cessation, diet, physical activity) intervention, taking account of psycho-social factors, and using a behavioural approach
- Measuring, monitoring and managing other risk factors (blood pressure, lipids and glucose) to target
- Understanding of, and adherence with, cardioprotective drug therapies for life
“To salvage the acutely ischaemic myocardium without addressing the underlying causes of the disease is futile; we need to invest in prevention.”
SCORE: the European Risk Prediction System

Data from:
- 12 European cohort studies
- wide geographic spread of countries at different levels of cardiovascular risks
- 3-million person-years of observation
- 7,934 fatal cardiovascular events

Score enabled HeartScore, an interactive tool
SCORE: the European Risk Prediction System

Total risk assessment

- 12 European cohort studies
- Wide geographic spread of countries at different levels of cardiovascular risks
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SCORE: the European Risk Prediction System

Total risk assessment

- 12 European cohort studies
- Wide geographic spread of countries at different levels of cardiovascular risks
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Total risk management

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Preventive Cardiology

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- Understanding of, and adherence with, cardioprotective drug therapies for life
Primary Prevention

Secondary Prevention

Zebra illustration
EUROACTI ON

A European Society of Cardiology demonstration project: 8 countries and 24 hospital and general practice centres

General hospitals and general practices

Dr Antonio Salvador, Cristina Buigues, Ana Bonet, Arancha Ruescas and Rosario Cuevas

Hospital General de Dr. Peset

Dr Jorge Navarro and Gemma Medez Perez
Centro de Salud de San Pau
Ambulatory nurse-coordinated multidisciplinary approach

The EUROACTION team in Boldrini Hospital, Thiene, Italy

The EUROACTION nurse and the lead GP in Hoensbroek, The Netherlands
Lifestyle change in families

- No smoking
- Saturated Fat: <10% total Energy
- Fruits and vegetables: >400g/day
- Fish: >20g/day
- Oily Fish: >3 times/week
- 30-45 minutes of physical activity at 60–75% of the average maximum heart rate on four-five days of the week
- Weight reduction ≥ 5%
- Waist <94 cm in men and <80 cm in women
Family based lifestyle programme

Sweden

Poland
Health promotion workshops

Gemona, Italy

Valencia, Spain
Supervised hospital and home based physical activity programme

Halmstad, Sweden

Valencia, Spain

Thiene, Italy
A CLUSTER RANDOMISED CONTROLLED TRIAL

Randomisation

Identification

INT

2778 PATIENTS

1632 PARTNERS

2613 PATIENTS

1634 PARTNERS

UC

Initial assessment

2179 PATIENTS

910 PARTNERS

580 SUB-SAMPLE

Intervention

PROGRAMME
16 week hospital
1 year primary care

One year assessment

1965 PATIENTS

626 PARTNERS

1999 PATIENTS

698 PARTNERS
EUROACTION: Hospital

Smoking cessation at one year in coronary patients who were smokers in the month prior to their event

+ 10% ( - 0.3% to + 21% )

p = 0.06
EUROACTION: Hospitals
Smoking status at baseline, 16 weeks and one year (validated breath CO) in coronary patients
Proportions of patients achieving the European targets for a healthy diet

Hospital

- Saturated fat < 10% of total energy: 55% intervention, 40% usual care, p = 0.009
- Fruits and vegetables >400 g/day: 72% intervention, 35% usual care, p = 0.004
- Fish > 20 g/day: 55% intervention, 54% usual care, p = 0.04
- Oily fish > 3 times/week: 16% intervention, 8% usual care, p = 0.91

General Practice

- Fruits and vegetables >400 g/day: 78% intervention, 39% usual care, p = 0.005
- Fish > 20 g/day: 56% intervention, 46% usual care, p = 0.26
- Oily fish > 3 times/week: 6% intervention, 6% usual care, p = 0.13

Diagram showing the proportion of patients achieving each target in the hospital and general practice settings, with p-values indicating statistical significance.
Proportions of partners achieving the European targets for a healthy diet

Hospital

- Saturated fat < 10% of total energy: 60% (Intervention), 42% (Usual Care), p = 0.31
- Fruits and vegetables > 400 g/day: 72% (Intervention), 37% (Usual Care), p = 0.002
- Fish > 20 g/day: 55% (Intervention), 51% (Usual Care), p = 0.98
- Oily fish > 3 times/week: 11% (Intervention), 8% (Usual Care), p = 0.77

General Practice

- Fruits and vegetables > 400 g/day: 77% (Intervention), 54% (Usual Care), p = 0.002
- Fish > 20 g/day: 52% (Intervention), 45% (Usual Care), p = 0.42
- Oily fish > 3 times/week: 20% (Intervention), 7% (Usual Care), p = 0.09

Intervention

Usual Care
Proportion of patients achieving European Guidelines for physical activity

Hospital
+ 36% (+20% to + 51%)

General Practice
+ 29% (+ 11% to + 48%)

\( P = 0.002 \)  \( P = 0.001 \)
Proportion of partners achieving European Guidelines for physical activity

Hospital
+ 19% (-0.6% to +38%)

General Practice
+ 27% (+4% to +50%)

P = 0.06
p = 0.03
Proportion of patients achieving the European target for blood pressure

**Hospital**

+ 10% (+0.6% to +20%)

- Intervention: 65
- Usual Care: 55

- **P = 0.04**

**General Practice**

+ 17% (+2% to +32%)

- Intervention: 58
- Usual Care: 41

- **p = 0.03**
Proportion of patients achieving European target for blood pressure

Patients without diabetes

+ 17% (+ 0.5% to + 33%)

Patients with diabetes

+ 19% (+ 1% to + 37%)

p = 0.04*

* random effects modelling
Proportion of patients on cardiovascular protective drug therapy

Hospital

General Practice

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>Intervention</th>
<th>Usual Care</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-platelet</td>
<td>93</td>
<td>92</td>
<td>0.28</td>
</tr>
<tr>
<td>Beta blockers</td>
<td>80</td>
<td>52</td>
<td>0.16</td>
</tr>
<tr>
<td>ACE inhibitors</td>
<td>56</td>
<td>52</td>
<td>0.26</td>
</tr>
<tr>
<td>Ca antagonists</td>
<td>19</td>
<td>21</td>
<td>0.53</td>
</tr>
<tr>
<td>Statins</td>
<td>86</td>
<td>80</td>
<td>0.04</td>
</tr>
</tbody>
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</tr>
</thead>
<tbody>
<tr>
<td>Anti-platelet</td>
<td>13</td>
<td>10</td>
<td>0.19</td>
</tr>
<tr>
<td>Diuretics</td>
<td>33</td>
<td>18</td>
<td>0.91</td>
</tr>
<tr>
<td>B-blockers</td>
<td>17</td>
<td>16</td>
<td>0.02</td>
</tr>
<tr>
<td>ACE</td>
<td>29</td>
<td>20</td>
<td>0.24</td>
</tr>
<tr>
<td>CA</td>
<td>9</td>
<td>8</td>
<td>0.03</td>
</tr>
<tr>
<td>Statins</td>
<td>38</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>
Nurse-coordinated multidisciplinary, family-based cardiovascular disease prevention programme (EUROACTION) for patients with coronary heart disease and asymptomatic individuals at high risk of cardiovascular disease: a paired, cluster-randomised controlled trial

D A Wood, K Kotsesva, S Connolly, C Jennings, A Mead, J Jones, A Holden, D De Bacquer, T Collier, G De Backer, O Faergeman, on behalf of EUROACTION Study Group

‘EUROACTION set a new standard for preventive cardiology – in both secondary and primary prevention
Terminology

Cardiac rehabilitation
Cardiovascular rehabilitation
Rehabilitation and secondary prevention
Cardiac rehabilitation and prevention
Cardiovascular prevention and rehabilitation
NICE Guideline: MI - secondary prevention

Cardiac rehabilitation programme is defined as:

Exercise
Health education and information
Psychology and social support
NICE Guideline: MI - secondary prevention

Cardiac rehabilitation does NOT include:

Lifestyle changes after MI:
- Smoking cessation
- Changing dietary regimen
- Alcohol consumption
- Weight management
- Drug therapy after MI
Terminology

Cardiac rehabilitation
Cardiovascular rehabilitation
Rehabilitation and secondary prevention
Cardiac rehabilitation and prevention
Cardiovascular prevention and rehabilitation
Preventive Cardiology

Cardiac rehabilitation and secondary prevention for patients with established atherosclerotic disease

+ Primary prevention for asymptomatic individuals at high risk of developing CVD including patients with diabetes mellitus, CKD and other high risk diseases
Integrate secondary and primary prevention in one programme
Prevention Centre

MyAction in public leisure facilities

MyAction: an innovative approach to the prevention of cardiovascular disease in the community
MyAction is a modern preventive cardiology programme integrating secondary and primary prevention in prevention centres.
MyAction
Community based
Integrates secondary and primary prevention
Nurse led and multidisciplinary: dieticians, physiotherapists, psychologist, community cardiologist
Family centred
Protocol based
Measures outcomes
The MyAction Teams
Prevention Centres

Prevention

Recovery

Well being
Todays service is preventive cardiology

MyAction

for our hearts®

Prevention Centres

“Prevention, recovery and well being”
Cardiovascular health and disease prevention in clinical practice