Nutrition and Exercise in Acute Medicine: Why is it so important?

Dr Richard Leach
Dept. of Respiratory /Critical Care Medicine
Guy’s and St Thomas’ NHS Trust
Nutrition in Acute Medicine

• Provision of adequate nutrition is a hallmark of compassionate medical care.

• Many recent reports (e.g. Nutrition screening weeks, Age UK’s ‘Hungry to be heard’) suggest that this basic human need is neglected in every type of healthcare facility.

• In her report to Parliament ‘Care and Compassion?’ 2011 the NHS ombudsman’s report concluded that it was:
  ‘incomprehensible that the NHS should have to be held to account for such basic failures in healthcare provision’

• It’s not a new problem........first reported in 1976!
Why is nutrition so important?

• Poor nutrition has a profound effect on medical outcomes
  - ↑ morbidity and mortality x 12\textsuperscript{1}
  - ↑ in infection x 3\textsuperscript{2}
  - ↑ post-operative complications (e.g. healing, pneumonia)
  - elderly more frail (↓ mobility, ↑ falls, ↓ independence)

These effects arise swiftly, may precede weight loss and increase hospital length of stay (LoS)

• Malnourished patients require more health care:
  - ↑ GP visits x 2\textsuperscript{3}
  - ↑ in hospital admissions x 3 times (+ LoS 3 days longer)

• Estimated excess UK health costs are \(~\£13\text{ billion annually}\textsuperscript{3}.

• NICE have identified improved nutritional care as the 4\textsuperscript{th} largest potential NHS saving

3. Elia M, Russell CA. Combating malnutrition; BAPEN, 2009
Opportunities to improve nutritional care

- Implementation of 2006 NICE guidance ‘Nutrition support in adults’
- Appropriate malnutrition screening (e.g. MUST score) and subsequent actions to address detected malnutrition (or risk)
- Education of frontline staff on importance of nutrition
- Local policy setting, nutrition lead, nutrition support team and ‘policing’
- Appropriate advice: beware misleading research and associated public scepticism
Physical Activity in Acute Medicine

The Lancet

“The pandemic of physical inactivity: global action for public health”

“Physical inactivity is the fourth leading cause of death worldwide. The high prevalence of physical inactivity, its harmful health consequences, and the evidence of effective physical activity promotion strategies, make this problem a global public health priority.

It is well established that physical activity has a greater impact on disease incidence, morbidity or mortality than weight

Attributable fractions (%) for all cause Deaths In 40,842 (3333 deaths) men and 12,943 (491 deaths) women
Impact of Physical Activity on Disease

• Physical Inactivity
  - ↑ hypertension + metabolic risk (in children as young as 8 years old)
  - ↓ mental health in children

• Physical Activity
  - ↑ bone density in teenagers (~8%) + may reduce hip fractures in the elderly
  - ↓ depression, anxiety, dementia + cardiovascular mortality in diabetes

• Cancer and Physical Activity
  - Breast cancer: ↓ all cause mortality by 41% + disease recurrence by 24%
  - Prostate cancer: ↓ all cause mortality by up 50%
  - Colon Cancer: improves survival by ~25%

Health Benefits of Physical activity

• Patients who are inactive have:
  - 38% more days in hospital, 5.5% more GP visits and 12% more nurse visits
## Health Benefits of Physical Activity

<table>
<thead>
<tr>
<th>Disease</th>
<th>Risk reduction</th>
<th>Strength of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death</td>
<td>20-35%</td>
<td>Strong</td>
</tr>
<tr>
<td>CHD and Stroke</td>
<td>20-35%</td>
<td>Strong</td>
</tr>
<tr>
<td>Type 2 Diabetes</td>
<td>35-50%</td>
<td>Strong</td>
</tr>
<tr>
<td>Colon Cancer</td>
<td>30-50%</td>
<td>Strong</td>
</tr>
<tr>
<td>Breast Cancer</td>
<td>20%</td>
<td>Strong</td>
</tr>
<tr>
<td>Hip Fracture</td>
<td>36-68%</td>
<td>Moderate</td>
</tr>
<tr>
<td>Depression</td>
<td>20-30%</td>
<td>Strong</td>
</tr>
<tr>
<td>Alzheimer’s Disease</td>
<td>45%</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Fitness rather than obesity determines mortality

Cardiorespiratory fitness and Body Mass Index as predictors of cardiovascular disease mortality among men with diabetes

How fast does the Grim Reaper walk? Analysis in healthy men aged >70.

Answer:
No men walking at speeds of ≥3 mph were caught by Grim Reaper.

5.4 million adults in England (20%) would take vigorous exercise by walking at a speed of 3mph.

Summary

• Nutrition has a major impact on clinical outcomes and NHS costs.

• Inactivity is an important health problem: equal to smoking and more so than obesity.

• Only 10% of the benefits of physical activity are due to weight loss.

• Be active and eat less but weight should no longer be the main outcome measure of success.