Physical activity and surgery

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Do surgeons ask about physical activity?

Audit of 100 consecutive orthopaedic outpatients

40% asked about walking

0% asked about 30 minutes of physical activity per day
Barriers

- Lack of knowledge
- Lack of resources
- Lack of time
How does this impact on patients?

• We’re missing a key factor in care delivery and potentially focussing on the wrong things

• Eg. BMI and surgery rationing

• Eg. Cancer staging/ work up
Fat and Fit

FROM HERE, HEALTH

Risk of CVD mortality

Low Moderate High Low Moderate High Low Mod/high

18.5 < BMI < 25.0  25.0 ≤ BMI < 30.0  30.0 ≤ BMI < 35.0

p for trend < 0.0001  p for trend < 0.0001  p for trend < 0.002
### Bowel Cancer (C18-C20): 2012
Number of Deaths, Crude and European Age-Standardised (AS) Mortality Rates per 100,000 Population, UK

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Wales</th>
<th>Scotland</th>
<th>Northern Ireland</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
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<tr>
<td>Deaths</td>
<td>7,200</td>
<td>525</td>
<td>837</td>
<td>233</td>
<td>8,795</td>
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<tr>
<td>Crude Rate</td>
<td>27.3</td>
<td>34.8</td>
<td>32.5</td>
<td>26.0</td>
<td>28.1</td>
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<tr>
<td>AS Rate</td>
<td>20.0</td>
<td>23.0</td>
<td>23.3</td>
<td>22.2</td>
<td>20.5</td>
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<tr>
<td>AS Rate - 95% LCL</td>
<td>19.5</td>
<td>21.1</td>
<td>21.7</td>
<td>19.3</td>
<td>20.1</td>
</tr>
<tr>
<td>AS Rate - 95% UCL</td>
<td>20.4</td>
<td>25.0</td>
<td>24.8</td>
<td>25.0</td>
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<td><strong>Female</strong></td>
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<tr>
<td>Deaths</td>
<td>6,036</td>
<td>387</td>
<td>784</td>
<td>185</td>
<td>7,392</td>
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<tr>
<td>Crude Rate</td>
<td>22.2</td>
<td>24.7</td>
<td>28.7</td>
<td>19.9</td>
<td>22.8</td>
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<tr>
<td>AS Rate</td>
<td>12.6</td>
<td>13.1</td>
<td>16.2</td>
<td>12.8</td>
<td>13.0</td>
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<td>AS Rate - 95% LCL</td>
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<td>11.8</td>
<td>15.1</td>
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<td>AS Rate - 95% UCL</td>
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<td>14.4</td>
<td>17.4</td>
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<td><strong>Persons</strong></td>
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<tr>
<td>Deaths</td>
<td>13,236</td>
<td>912</td>
<td>1,621</td>
<td>418</td>
<td>16,187</td>
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<tr>
<td>Crude Rate</td>
<td>24.7</td>
<td>29.7</td>
<td>30.5</td>
<td>22.9</td>
<td>25.4</td>
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</table>

95% LCL and 95% UCL are the 95% lower and upper confidence limits around the AS Rate

Please include the citation provided in our Frequently Asked Questions when reproducing this table: http://info.cancerresearchuk.org/cancerstats/faqs/#How

Prepared by Cancer Research UK

Original data sources:
2. General Register Office for Scotland, Deaths Time Series Data, Deaths in Scotland
3. Northern Ireland Statistics and Research Agency, Deaths by cause

![Cancer Research UK Logo](https://cancerresearchuk.org/content/dam/CRUK/cr-2020-000120/cancer-research-uk-sidebar-logo-small.png)
Costs of physical inactivity

Vancouver consensus statement 2014- £8.3 billion minimum in UK attributable to inactivity.

£50 million prescription charges in Scotland attributable to inactivity associated conditions
Prevention - making every contact count

• Primary
  • Prevent disease from occurring

• Secondary
  • Prevent symptoms occurring once disease present

• Tertiary
  • Reduce progression / symptoms of disease

• Reduce mortality, improve patient outcome
What surgical conditions can be improved with physical activity?

- Vascular
- Colorectal
- Urological
- Orthopaedic
- Gynaecological
- Breast
- Transplant
- Cardiothoracic
- Neurosurgery
Reducing need for surgery

Vascular- walking programmes
Orthopaedic- strengthening, weight loss in OA
  reduce osteoporotic fracture
  reduced need for THR in hip OA (Jensen 2013)
Prostate ca- reduced incidence associated with increased level of physical activity- meta-analysis 2001!
Colorectal cancer- 25% reduction (Trude 2013)
Breast cancer- 25% reduction (Freidenreich 2011)
Gastric cancer- 21% reduction (Singh 2014)
Improving recovery

- Reduced length of stay by 45% if better cardiorespiratory fitness in colorectal surgery. (Lai 2013)
- 6 times more likely to be discharged home rather than to ongoing care in upper GI surgery (Dronkers 2012)
- Reduced length of stay following hip and knee replacement associated with preop physical activity programme
Reducing complications

**Bariatric surgery** - reduced complication rate associated with a preop physical activity programme (McCullough 2006)

**Breast cancer** - reduced side effects of chemotherapy if undertaking a physical activity programme postoperatively (Carayol 2013)

**Colorectal cancer** - reduced side effects of chemotherapy (Yang 2011)

**Knee replacement** - reduced early complications associated with preoperative physical activity regime (Jack 2011)

**Prostate cancer** - reduced postoperative pain scores associated with increased physical activity (Griffith 2013)

- reduced erectile dysfunction postoperatively (Jaszowski 2009)
Outcomes- survival

- Colorectal ca- 3 x greater 2 year survival if fit according to CPET (Lai 2013), 3x greater 5 year survival if active preop (Yamauchi 2013)
- CABG- 30% greater 3 year survival if high levels of physical activity (Rengo 2010)
- Oesophageal ca- 5x greater 30 day mortality reduction if physically active preop (Dronkers 2012)
- Breast cancer-ongoing trials
- Prostate ca- ongoing trials
Outcomes-Patient orientated

Preop and postop regimes
Bariatric surgery- improved outcomes (King 2013)
Breast cancer- improved QOL (Haines 2010, Degroot 2010)
Prostate cancer- improved QOL (Keogh 2010)
Lung ca- improved QOL (Li 2013)
TKR- improved OKS (Rosal 2011), improved WOMAC score (Nunez 2013)
THR- improved OHS (Fujita 2013), improved postop activity compared with non exercise group (Lubbeke 2011)
RCSEd role - National

Harness the leadership potential of 20,000 Fellows and Members within hospitals worldwide to deliver the physical activity message.

Host resources aimed specifically at surgeons and their patients.

Information leaflet, video content, patient case study.

Work with other national organisations to improve physical activity.

Improve undergraduate and postgraduate teaching of physical activity.
Local actions

Change pathway for patients with knee pain, linking with local non-health service resources.

Educate other groups within hospital

Change hospital paperwork- social history includes physical activity question

CPET testing rather than BMI
Future development

Publications in surgical literature

Research - there is no orthopaedic evidence!

Change patient and doctor expectations
Thank you

www.rcsed.ac.uk