Physical activity for the management and prevention of disease

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Physical Activity Clinical Champions 2019-20
Learning Outcomes

This training session will help you:

1. Understand the benefits of physical activity for improving patient health and outcomes.
2. Learn the UK Chief Medical Officers’ physical activity guidelines.
3. Develop knowledge, skills and confidence to deliver brief advice.
Introductions

Portfolio GP
Consultant in Public Health
CCG clinical lead diabetes prevention
PHE SW Physical Activity Clinical Champion

And you?
Clinical?
Expert amateur?
Keen exerciser
Plan for the Session

1. Setting the scene
2. Key concepts in physical activity
3. Benefits of physical activity
4. How active are we?
5. Supporting people to become more active
Plan for the Session

1. **Setting the scene**
2. Key concepts in physical activity
3. Benefits of physical activity
4. How active are we?
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Scale of the Problem

Decreasing activity levels
- Adults are at least 20% less active than in 1960s
- By 2030 it’s predicted that we will be 35% less active

Physical inactivity contributes to:
- 1 in 6 UK deaths
- Up to 40% of many long-term conditions
- Around 30% of later life functional limitation and falls

Estimated annual cost to UK……..£7.4 billion

Physical activity across policies and guidance
Plan for the Session

1. Setting the scene
2. Key concepts in physical activity
3. Benefits of physical activity
4. How active are we?
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What is Physical Activity?

Physical activity

- Active living
- Active travel
- Active recreation
- Active sport
  - Informal sport
  - Organised sport
Intensity of exercise

As the intensity increases, heart rate, respiratory rate and energy consumption also increase further

- **Sedentary**: To not moving, working at a desk
- **Light**: Cleaning, carrying out rubbish, yoga
- **Moderate**: Walking, cycling, shopping
- **Vigorous**: Playing football, dancing, swimming
- **Very vigorous**: Sprinting up hills, weight exercises, press ups

UK Chief Medical Officers (2019)
**UK Chief Medical Officers Guidelines**

- Muscle-strengthening activity on at least two days a week
- 150 minutes of moderate intensity activity
  - Or 75 minutes of vigorous intensity activity
  - Or a combination of both
- Minimise sedentary time and break up periods of inactivity
- For older adults (65+) - Balance and flexibility activities at least two days a week

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Every minute counts.
Some is good, more is better!

UK Chief Medical Officers (2019)
Who gains the most?

Greatest gains are in those who go from doing nothing to doing something.

Moore et al. (2012) PLOS Medicine

150 Minutes moderate intensity activity

Years of life gained
(Years gained after age 40)

Biggest gain in years

Leisure time physical activity (MET-hr/wk)
All physical activity has benefit

Systematic review and meta analysis covering 8 studies and 36,383 people

All physical activity regardless of intensity associated with substantially reduced risk of death

Magnitude of association about twice as great as previously reported from self-report

Aligns with UK CMOs’ guidance that “Any activity is better than none, and more is better still”

Key message:

- SIT LESS
- MOVE MORE
- MOVE MORE OFTEN

Plan for the Session

1. Setting the scene
2. Key concepts in physical activity
3. **Benefits of physical activity**
4. How active are we?
5. Supporting people to become more active
Benefits of Physical Activity

- What are the health benefits?
- Which patients would benefit?
- Which conditions does it prevent and manage?
- What are the physiological mechanisms at work?
The wider well-being benefits of physical activity

Sport England (2017)  Sport Outcomes evidence review, summary of the review and findings
# What conditions

<table>
<thead>
<tr>
<th>Endocrinology</th>
<th>Cancer</th>
<th>Mental Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diabetes</td>
<td>• All cancers can help in treatment</td>
<td>• Depression</td>
</tr>
<tr>
<td>• obesity</td>
<td></td>
<td>• Dementia</td>
</tr>
</tbody>
</table>

| Prevent                       |                             |                           |
| • Bowel                       |                             |                           |
| • Breast                      |                             |                           |
| • Prostate                    |                             |                           |

| CVD                           |                             |                           |
| • BP                          |                             |                           |
| • Stroke                      |                             |                           |
| • MI                          |                             |                           |
| • Respiratory                 |                             |                           |
| • COPD                        |                             |                           |

| MSK                           |                             |                           |
| • Arthritis                   |                             |                           |
| • Fibromyalgia                |                             |                           |
| • Fractures                   |                             |                           |

| Osteoporosis                  |                             |                           |
| • Back pain                   |                             |                           |

| Gynae                         |                             |                           |
| • Period pain                 |                             |                           |
| • Menopause                   |                             |                           |
| • PCO                         |                             |                           |
| Other                         |                             |                           |
| • sleep                       |                             |                           |
Physical activity reduces the risk of which of the following conditions by at least 20%?

<table>
<thead>
<tr>
<th>All cause mortality</th>
<th>Colorectal cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast cancer</td>
<td>Bone fractures</td>
</tr>
<tr>
<td>Depression</td>
<td>Hypertension</td>
</tr>
<tr>
<td>CHD and stroke</td>
<td>Reduction in cognitive function</td>
</tr>
</tbody>
</table>
Physical activity reduces mortality and morbidity

<table>
<thead>
<tr>
<th>Disease</th>
<th>Risk Reduction (Up to)</th>
<th>Strength of evidence (Prevention)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-Cause Mortality</td>
<td>30%</td>
<td>Strong</td>
</tr>
<tr>
<td>Bone fractures</td>
<td>66%</td>
<td>Strong</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>20%</td>
<td>Strong</td>
</tr>
<tr>
<td>CHD and stroke</td>
<td>30%</td>
<td>Strong</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>20%</td>
<td>Strong</td>
</tr>
<tr>
<td>Depression</td>
<td>50%</td>
<td>Strong</td>
</tr>
<tr>
<td>Hypertension</td>
<td>30%</td>
<td>Strong</td>
</tr>
<tr>
<td>Type 2 diabetes</td>
<td>35%</td>
<td>Strong</td>
</tr>
<tr>
<td>Reduction in cognitive function</td>
<td>40%</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Physical Activity Guidelines Advisory Committee Scientific report (2018); Department of Health & Human Services - USA
How is physical activity protective?

Physical activity → Muscle → Anti-inflammatory myokines → Systemic inflammation → Visceral fat → Physical activity

Kushner et al. (2010) Arthritis Care Research
Visceral fat for the same BMI

Stefan Häring et al. (2013) *Lancet Diab Endocrinol.* with permission from Elsevier
Physical Activity and Blood Pressure - 6 weeks - does it really make much difference?
## What treatment? Which one has best outcomes?

<table>
<thead>
<tr>
<th>Intervention</th>
<th>All-cause mortality</th>
<th>Cardiovascular mortality</th>
<th>Myocardial infarction</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACE-I *</td>
<td>10%</td>
<td>19%</td>
<td>NR</td>
</tr>
<tr>
<td>Thiazide *</td>
<td>9%</td>
<td>NR</td>
<td>22%</td>
</tr>
<tr>
<td>β-blocker *</td>
<td>6% (NS)</td>
<td>NR</td>
<td>8% (NS)</td>
</tr>
<tr>
<td>Ca2+ channel blockers *</td>
<td>-6% (NS)</td>
<td>NR</td>
<td>29% (NS)</td>
</tr>
<tr>
<td>Regular physical activity (self-reported)*</td>
<td>29%</td>
<td>30%</td>
<td>NR</td>
</tr>
<tr>
<td>Regular physical activity (fitness tests)</td>
<td>41%</td>
<td>57%</td>
<td>NR</td>
</tr>
</tbody>
</table>
Strength & Balance

Sedentary behaviour

Sitting or lying awake is an independent risk factor for health by disrupting metabolism (muscle, lipid, glucose) and circulation.

Many adults spend >7 hours per day sedentary (increasing with age or limiting illness).

Just two minutes walking has a physiological effect.

UK Chief Medical Officers’ recommend:
Minimise time sedentary and where possible break up periods of inactivity.

UK CMOs (2029); Dunstan DW et al. (2012) Diabetes Care
Plan for the Session

1. Setting the scene
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How active are we? In England...

34% of men are not active enough for good health

42% of women are not active enough for good health

21% of men and 25% of women are 'physically inactive'

44% of disabled adults are physically inactive

Health Survey for England 2016;
Inactivity is as dangerous as smoking

- 1 in 3 inactive in Cornwall
- Much more likely to be inactive if have LTC
- Contributes to 800 deaths a year in Cornwall
- Always known it is important - since Hippocrates, bus driver/conductor study
- Now we really do understand what a ‘wonder drug’ it is
Activity Across the Lifecourse

Proportion meeting both the aerobic and muscle-strengthening guidelines, by age and sex

Health Survey for England 2016
Plan for the Session

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The majority of people with a long-term health condition want to be active.

Richmond Group of Charities (2016)
What are the perceived barriers for people with LTCs

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain before, during or after physical activity</td>
<td>59%</td>
</tr>
<tr>
<td>Feeling tired before, during or after physical activity</td>
<td>40%</td>
</tr>
<tr>
<td>Breathlessness before, during or after physical activity</td>
<td>36%</td>
</tr>
<tr>
<td>Lack of motivation</td>
<td>33%</td>
</tr>
<tr>
<td>Not knowing what types of activity are right for them / their condition</td>
<td>33%</td>
</tr>
<tr>
<td>Fear of hurting themselves</td>
<td>28%</td>
</tr>
<tr>
<td>Lack of suitable facilities</td>
<td>11%</td>
</tr>
<tr>
<td>Lack of time</td>
<td>8%</td>
</tr>
<tr>
<td>Feeling embarrassed</td>
<td>8%</td>
</tr>
<tr>
<td>Feeling unsafe in public spaces</td>
<td>7%</td>
</tr>
<tr>
<td>Cost</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
<tr>
<td>None of the above</td>
<td>5%</td>
</tr>
</tbody>
</table>

Reassure and empower!

Richmond Group of Charities (2016)
Understanding risk

Points to consider before starting to exercise or increasing exercise intensity:

1. Current activity level
2. Signs/symptoms* of certain diseases
3. Planned exercise intensity

* Elevated level of risk for those symptomatic with cardiac, metabolic or renal disease

3 A’s of brief advice

**Ask**

Identify Activity levels
‘One of the things we can do to stay and feel healthy is to be active. How physically active are you?’
‘In the past week, how many days have you done a total of 30 minutes or more physical activity? Does this add up to 150 minutes?’

**Assess**

Discover your patients ideas and perspective
‘What is your understanding of how physical activity can benefit you?’
‘Are you interested in being more physically active?’
‘How confident do you feel about increasing your physical activity level?’

**Advise**

Plan and set goals
‘What goals would you like to set?’
‘How will you monitor your progress?’

Consider specific suggestions applicable to your patients goals and situation.

Based on Haseler C et al. (2019) British Medical Journal
Key Resources

Guidance
UK CMOs guidance and infographics
NICE guidance

National public campaigns
We are UndefeatABLE 15 UK Health Charities
Love Activity, Hate Exercise? Chartered Society of Physiotherapy
One You / Change4Life / Active 10 Public Health England
Couch to 5K NHS

Evidence-based resources
E-learning for Health Health Education England
Moving Medicine
All Our Health Health Education England

Royal Colleges/Professional bodies
RCGP Active Practice Charter
RCGP toolkit
Local Opportunities

parkrun organise free, weekly, 5km timed runs around the world. They are open to everyone, free, and are safe and easy to take part in.

Walking for Health is England’s largest network of health walks with over 360 active walking schemes

43 Active Partnerships across England, using the power of sport and physical activity to transform lives.
Available in Cornwall

- Exercise through programmes like healthy weight, NDPP, cancer rehab
- GLL - exercise on prescription - £20 pm - individual training and full access to centres
- Swim for health (free)
- Park run Penzance, Helston and Heartlands. Trellisick
- Multiple other - dance, swimming open water, U3A, tai chi, see www.getactivecornwall.co.uk
QUESTIONS?
• What opportunities do YOU have to promote PA in your own clinical setting?

Training certificate
• To access your training certificate go to https://tinyurl.com/y2hhtowc

Share good practice
• Keep in touch and let us know how this training has helped you and your patients
About Public Health England
Public Health England exists to protect and improve the nation’s health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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About Sport England
Sport England is a public body and invests up to £300 million National Lottery and government money each year in projects and programmes that help people get active and play sport. It wants everyone in England, regardless of age, background, or level of ability, to feel able to engage in sport and physical activity. That’s why a lot of its work is specifically focused on helping people who do no, or very little, physical activity and groups who are typically less active - like women, disabled people and people on lower incomes.

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