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2020 Decade of Health & Wellbeing

Investing in Physical Activity

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Physical inactivity is the fourth leading factor for global mortality accounting for 6% of deaths globally. This follows high blood pressure (13%), tobacco use (9%) and high blood glucose (6%). Obesity is responsible for 5% of deaths globally. Physical inactivity is a serious and increasing issue for public health[1].

This quick reference guide aims to support investing in physical activity.

What is physical activity?

Strategies to increase physical activity are a key public health priority. Physical activity is defined as *'Any force exerted by skeletal muscles that results in energy expenditure above resting level'*[17]. In practice this includes all sorts of activities, from walking or cycling for transport, gardening, housework, play and dance as well as sport or deliberate 'exercise'. Physical activity is a critical public health issue due to two inter-related factors:

- There is a high prevalence of physical inactivity.
- Lack of physical activity is associated with significant risks to many aspects of health.

Why increase levels of physical activity?

- Reduces the risk of Cardio Vascular Disease/ Coronary Heart Disease.
- Reduces the risk of breast and colon cancer.
- Reduces the risk of Type 2 Diabetes and Metabolic Syndrome.
- Reduces the risk of moderate/severe functional limitations and role limitations in middle and older age people.
- Reduces the risk of falls.
- Reduces the risk of hip/vertebrae fracture.
- Promotes mental health and wellbeing by preventing mental health problems and improving the quality of life of those experiencing mental health problems.

Just how active are we?

Two thirds of men and three quarters of women are not active enough to benefit their health. In addition a third of men and between a third and a half of women are inactive or sedentary.

The Active People Survey[2] is the largest survey of its kind in Europe and is undertaken each year. The sports participation indicator measures the number of adults (aged 16 and over) participating in at least 30 minutes of exercise at moderate intensity at least three times a week. It does not include recreational walking or infrequent recreational cycling but does include cycling if done at least once a week at moderate intensity and for at least 30 minutes.

Table 1 shows participation in at least 30 minutes of exercise three times a week by local area.

How much is inactivity costing us?

- The estimated annual direct cost of physical inactivity to the NHS across the UK is between £1 billion and £1.8 billion[1].
- Inactivity also creates costs for the wider economy, through sickness absence and through the premature death of productive individuals and has been estimated to be £6.5 billion annually[3].
- Taken together, the total cost of inactivity is approximately £8.3 billion.
- Inactivity costs for local areas (shown in **Table 2**) vary from £3.5 million to £10 million[4].

How much should we be doing?

- For **adults (19 years +)** the minimum recommended levels of activity are 150 minutes (two and half hours) each week of moderate intensity physical activity, in bouts of 10 minutes or more (for example 30 minutes moderate activity on at least 5 days a week).
- **For all adults up to age 65 and for those older adults who are already regularly active** at moderate intensity, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous intensity activity.
- **All adults** are advised to minimise the time spent being sedentary for extended periods.

Table 1: Participation in at least 30 minutes of exercise three times a week. *Source: Sport England*

Area	Participation Rate
England	16.3%
North West	17.1%
Cheshire East	16.7%
Cheshire West and Chester	19.7%
Halton	25.5%
Knowsley	19.4%
Liverpool	21.1%
Sefton	19.6%
St Helens	21.1%
Warrington	19.0%
Wirral	25.5%

Table 2: Estimates of the healthcare costs (primary and secondary) attributable to physical inactivity for PCTs in Cheshire & Merseyside.
Source: Department of Health

Locality	Cost of Physical Inactivity
Central and Eastern Cheshire	£7,478,590
Halton and St Helens	£5,978,070
Knowsley	£2,209,930
Liverpool	£10,078,710
Sefton	£5,947,150
Warrington	£3,509,380
Western Cheshire	£3,867,440
Wirral	£5,090,940
Cheshire and Merseyside	£44,160,210

Data not available for local authorities

Cost effective interventions

In 2010, The Liverpool Public Health Observatory was commissioned to undertake a comprehensive literature review of the cost effectiveness and potential cost savings gained from physical activity interventions and programmes. Based upon the current evidence, the following interventions are cost effective and can increase levels of physical activity. The full report – *"no83. Prevention Programmes Cost Effectiveness Review: Physical Activity"* is available on the Liverpool Public Health Observatory website: www.liv.ac.uk/PublicHealth/obs

Mass media

- Mass media campaigns were the most cost-effective intervention of the 6 compared, and restored 23,000 healthy life years. Net costs were a saving of £260.

Primary Care

Brief interventions involve opportunistic advice or discussion, ranging from basic advice to extended, individually-focused attempts to increase levels of physical activity. They are delivered by a range of primary and community care professionals[5].

- A brief intervention for physical activity in primary care costs **between £20 and £440 per quality-adjusted life year (QALY)** when compared with no intervention. This is significantly below the **£30,000** threshold per QALY which NICE set to determine whether an intervention is cost effective.
- Brief interventions could be delivered in 1 in 9 primary care consultations, so an average NHS organisation with a population of 131,000 would incur costs of £39,000[6].
- In adults with existing health problems in areas of socio - economic deprivation, face to face brief interventions (£10,005 per QALY) and telephone interventions (£24,184) were both cost effective.
- Brief interventions were more cost effective than statins in preventing coronary health events in both primary and secondary prevention.

Built environment

- There is strong evidence to affirm the importance of the built environment. Long term economic and health benefits of active travel (walking and cycling) outweigh the costs by up to 11 times. £11 saved for every £1 invested[8].
- Green space offers an alternative and motivating environment that supports people's mental and physical health. For every £1 invested in Green Gym infrastructure, £2.55 is saved in the treatment of inactivity related illness (based on life cost averted savings)[9].
- NICE Guidance (2008)[10] on physical activity and the environment recommends:

  - Increasing active travel through planning.
  - Developing and maintaining safe public spaces.
  - Ensuring staircases are designed to encourage their use.
  - Ensuring primary school playgrounds encourage varied, active play.

School

- Walking buses and dance classes deemed to be cost effective at £4,007 and £27,570 per QALY respectively. Assumptions were made regarding the long term effectiveness[11].

Free swimming

- Pringle et al (2010) found that free swimming was cost effective, at £103 per QALY[15]. Other studies demonstrated for every £1 invested, 82p and 53p is saved for under 16 years and over 60s respectively[16].

Workplace based interventions

- A workplace 30 minute health promotion consultation followed by a 30 minute follow-up telephone consultation by an occupational health nurse, cost £57 per employee (a total of £57,000) and achieved a £484,944 net NHS cost saving (lifetime NHS costs averted) with QALY gains of 0.12[12].
- A workplace walking programme reviewed by NICE costs a total of £56,000 and saved £311,547 with QALY gains of 0.08[13].

Glossary

QALY: Quality adjusted life year.
Used in assessing the value for money of an intervention, based on the number of years of life that would be added by the intervention. Each year in perfect health is assigned the value of 1.0 down to a value of 0.0 for death. One QALY is equal to a year of life in perfect health.

Cost effectiveness is expressed as '£ per QALY'. Each intervention is considered on a case-by-case basis. Generally, however, if an intervention costs more than £20,000 per QALY, then it would not be considered cost effective[18].

DALY: Disability-adjusted life year.
While a QALY is a year of perfect health gained, a DALY is a year of perfect health lost.

References

1. Department of Health 2011. **Start active, stay active: a report on physical activity from the four home countries.** A report from the Chief Medical Officers. London. Department of Health.

2. Active People Survey 2011. http://www.sportengland.org/research/active_people_survey.aspx

3. Department of Health 2004. **At least five a week: Evidence on the impact of physical activity and its relationship to health.** London. Department of Health.

4. Department of Health 2009. **Be Active Be Healthy.** London. Department of Health.

5. NICE (2006). **Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling.** Public Health Guidance PH2. London.

6. NICE (2006b). **Costing Template for Public Health Intervention Number 2. Four commonly used methods to increase physical activity.** http://guidance.nice.org.uk/PH2/CostingTemplate/xls/English. Last accessed March 2012.

7. Ward et al, 2007. **A systematic review and economic evaluation of statins for the prevention of coronary health events.** Health Technology Assessment 11 (14).

8. Beale et al, 2007. March 2007. University of York. **A Rapid Review of Economic Literature Related to Environmental. Interventions that Increase Physical Activity Levels in the General Population.** PDG Report. http://www.nice.org.uk/nicemedia/pdf/word/Economics%20evidence%20review%20summary.pdf

9. BTCV (2010) Cost-effective health. Estimated cost effectiveness of the BTCV Green Gym between 2005 – 2009. Doncaster. http://www2.btcv.org.uk/Cost-effective-health.pdf. Last accessed March 2012.

10. NICE (2008). **Physical activity and the environment: Public Health Guidance PH8.** London.

11. Fordham et al. (2008). **Promoting physical activity for children: Cost effectiveness analysis.**

12. Purath et al, 2004. **A brief intervention to increase physical activity in sedentary working women.** Canadian Journal of Nursing Research 2004; 36: 76-91.

13. Chyou P, Scheuer D, Linneman JG. **Assessment of female participation in an employee 20-week walking incentive program at Marshfield Clinic, a large multispecialty group practice.** Clinical Medicine & Research 2006; 4: 256-265.

14. Cobiac et al, 2009. **Cost-effectiveness of interventions to promote physical activity: a modelling study.** PLoS Medicine 2009; 6(7):e100011.

15. Pringle et al, 2010. **Cost-effectiveness of interventions to improve moderate physical activity: A study in nine UK sites.** Health Education Journal, Volume 69, Issue 2, June 2010, Pages 211-224.

16. Government and Public Sector, 2010. **Evaluation of the Impact of Free Swimming.** Year 1 report – main report. Government and Public Sector. London

17. Caspersen CJ, Powell KE, Christensen G (1985) Physical activity, exercise and physical fitness: definitions and distinctions of health-related research. Public Health Reports 100: 126–13

18. NICE, January 2009. Promoting physical activity, active play and sport for pre-school and school-age children and young people in family, pre-school, school and community settings. NICE public health guidance 17 http://guidance.nice.org.uk/PH17/Guidance/pdf/English

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