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HEALTH BENEFITS OF PHYSICAL ACTIVITY

Physical activity is widely accepted as being beneficial to health. However only a minority of the UK population achieves recommended levels of physical activity and levels have declined in recent years. This briefing describes the health benefits of physical activity, looks at trends in activity levels among the UK population and examines policy options for encouraging people to be physically active more frequently.

Physical activity and health

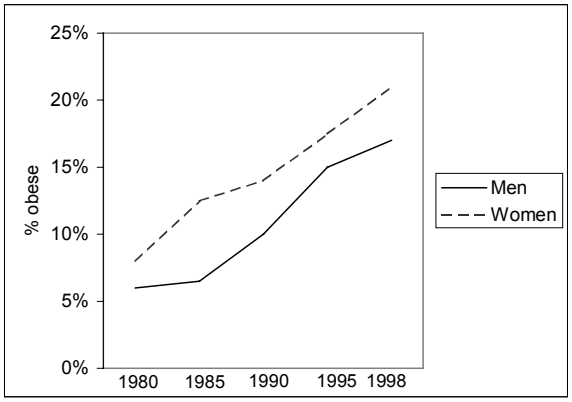
Common disorders

There is strong and growing evidence from the UK and elsewhere that regular physical activity reduces the risk of suffering from various common disorders. Conversely, physical inactivity can increase the risk of a number of such diseases (see box on page 2 for details). For instance, physical inactivity can double the risk of coronary heart disease – the UK's leading single cause of death. As outlined in the box, increasing levels of physical activity also contribute to longer life and protect against conditions such as diabetes, stroke, osteoporosis, as well as certain types of cancer.

General health benefits

In addition to decreasing the risk of certain disorders, physical activity is also associated with more general health benefits. In particular, a planned exercise programme is an effective means of achieving and maintaining long-term weight loss by increasing energy expenditure and metabolising body fat while preserving lean mass and raising metabolic rates. Nearly 7 out of 10 men and 6 in 10 women in the UK are overweight or obese according to the National Audit Office (NAO)[1]. As the figure opposite illustrates, the number of obese people in England nearly doubled between 1980 and the late 1990s. This trend parallels a reduction in physical activity and a rise in sedentary behaviour. NAO estimates the cost of treating obesity and associated disease as ~£0.5 billion to the NHS and as much as £2 billion to the wider economy.

Trends in obesity prevalence (England, 1980-98)



Source: Tackling obesity in England, NAO, February 2000

Regular physical activity also preserves optimum structure and function of muscles, bones, joints and the cardiovascular system, thus enhancing quality of life. This may be important in older people, as research shows that physical activity improves co-ordination, strength and balance and hence reduces falls and fractures. There is evidence that it relieves symptoms of depression and anxiety, improves mood, reduces the risk of developing depression and raises self-esteem.

Potential adverse effects

While the health benefits of regular physical activity are well established, increasing levels may also have potential adverse effects. For instance, the more people take part in competitive sport, the greater the number of

Physical activity and some common disorders

Coronary heart disease (CHD) - research suggests that approximately 40% of CHD deaths are associated with inadequate physical activity, through obesity, stress and raised blood pressure. Other risk factors (smoking, hypertension and high cholesterol) are also known to increase risk of CHD. Overall, physically inactive people have nearly twice the risk of developing CHD than active people; persuading sedentary people to take regular light exercise (e.g. walking) could reduce deaths from CHD by 14%.

Diabetes - physical activity helps lower the risk of developing non-insulin-dependent (type 2) diabetes. For instance, it increases insulin sensitivity by as much as 25% so that circulating concentrations of insulin and adrenaline are much lower in a physically active person. There is evidence that physical activity improves blood glucose levels and thus lowers the risk of developing type 2 diabetes.

Stroke - physical activity reduces the risk of stroke, mainly through beneficial effects on hypertension and blood clotting. Inactivity may be responsible for the observed increase in stroke among middle-aged men in the UK. It is estimated that increasing levels of physical activity could reduce the number of strokes by around one quarter.

Hypertension/blood lipid levels - regular physical activity can prevent or delay the development of high blood pressure. Physical training programmes can reduce blood pressure in 75% of existing cases of hypertension. Research shows that physical activity can also increase levels of beneficial high-density lipoprotein and decrease levels of harmful low-density lipoprotein.

Osteoporosis - weight-bearing physical activity is essential for normal skeletal development during childhood and adolescence and for achieving and maintaining peak bone mass in young adults. Among older people, it has been suggested that up to half of all hip fractures could be avoided with regular physical activity.

Cancer – regular physical activity is associated with a decreased risk of certain types of cancer. For instance, the risk of colon cancer is up to three times higher for sedentary people than it is among the most active members of the population. Studies have identified similar relationships between physical activity and other cancers.

fractures and other sporting injuries expected. This is one reason why groups such as the National Heart Forum (NHF) wish to see policy initiatives focus on increased participation in leisure pursuits such as walking or cycling. Excessive physical activity can lead to joint damage or osteoarthritis, although levels of physical activity recommended for maintaining health are not associated with such conditions. Increasing activity levels might result in increased risk of sudden death through heart attack, although such risks can be minimised by gradually working up to a desired level of physical activity and by avoiding excessive levels.

Levels of physical activity

Current advice from the Department of Health (DH) is to accumulate at least 30 minutes of moderately intensive activity (e.g. brisk walking) on at least five days of a week. Only around 37% of men and 25% of women currently achieve this level of activity[2]. Indeed, a recent survey suggests that 23% of men and 26% of women were sedentary (took less than one 30 minute period of moderate activity per week). However, levels of physical activity vary considerably depending on:

- Age - levels of physical activity decrease with age. For instance, among young adults (16-24), 42% of men and 63% of women do not achieve recommended levels of activity; this increases to 93% of men and 96% of women aged 65 and over. Among younger people, a recent Health Survey for England revealed that 16% of boys and 18% of girls aged 2 to 15 years spent less than one hour per day (5-7 days) on moderate levels of activity. Another survey (the National Diet and Nutrition Survey published in 2000) measured physical activity levels among 7-18 year olds and showed that most people in this age group were inactive, as indicated by time spent in moderate or vigorous intensity activity[3].
- Ethnicity - levels of physical activity vary between different ethnic groups. For instance, adjusting for age, the highest proportions of men reaching the recommended level of activity are found in black Caribbeans and whites, followed by Indian, Chinese, Pakistani, and Bangladeshis. Black Caribbean men are more than twice as likely to be reaching the recommended level of activity as Bangladeshi men. There is a similar overall pattern in women, with black Caribbean women four times more likely to reach recommended levels than Bangladeshi women.
- Social status - the 1996 General Household Survey showed that professionals were almost twice as likely to participate in sport or physical activity, including walking for pleasure, as unskilled manual workers. However, this survey does not measure occupational activity – other surveys which do, show a less distinct variation between different social groupings.

Recent trends

Comprehensive data on recent trends in levels of physical activity are not available. There are indications that such levels have been in decline for some time. For instance:

- The rise in obesity illustrated in the figure on page 1. This is likely to reflect falling levels of physical activity although changing patterns of nutrition also have to be taken into account.
- A study commissioned by Sport England, which showed that young people spend less time doing PE in school than they used to (in 1994, 46% did 2 or more hours per week compared to 33% in 1999).
- Evidence from the Health Survey of England which suggests a slight increase in the number of men and women of all ages doing virtually no physical exercise between 1994-98.
- National travel survey statistics from DETR show there has been a decline in the average distance walked (from 244 miles a year in 1975 to 191 in 2000).

Initiatives to increase physical activity

Recent years have seen a number of initiatives intended to improve public health by encouraging increased levels of physical activity. As outlined in the box on page 3, these involve a number of government departments (e.g. DH, DCMS, DfES, DTLR) as well as local education

Factors behind a decline in physical activity

- Reduction in occupational physical activity
- Greater use of the car
- Decline of walking – personal safely especially of children women and older people
- Increase in energy saving devices in public places – escalators, lifts automatic doors
- Reduction in physical education and sport in some schools
- Adults fears of childrens' safety in unsupervised play
- Substitution of physical activity leisure with sedentary past times like television, computer games and the internet

authorities (LEAs), health authorities and non-governmental organisations. Recent policy initiatives to promote physical activity are discussed in more detail below.

School based initiatives

Current policy for improving levels of physical activity among schoolchildren have been considered recently by the Commons Health Select Committee in its inquiry into Public Health and by the NAO in its report on Tackling Obesity in England. The main issues identified by these bodies are discussed below.

Healthy travel to school

As the NAO report noted, the number of primary school children walking to school decreased from around 2 in 3 in the mid 1980s to around 1 in 2 by the late 90s. Three government departments – DH, DfEE (now DfES) and DETR (now DTLR) – set up the School Travel Advisory Group in 1998 as a forum for debate and co-ordination. They have published guidance for local authorities on building a safe environment to encourage more children to walk or cycle to school. This includes traffic-calming measures in roads near schools, enhancement of foot/cycle-paths and providing facilities for storing bikes. DH/DfEE also launched the Safe and Sound Challenge targeted at Education Action Zones to encourage innovative schemes for travelling to school such as 'walking buses', and cycle clubs.

Promoting sport/physical activity in schools

As noted by the Health Select Committee, the National Healthy Schools Target developed by DH/DfEE sets an '*expectation*' that pupils should have at least 2 hours physical activity each week. However, a recent poll commissioned by Sport England shows that only 1 in 5 primary schools currently meet the 2 hours target. DCMS hosts the School Sports Alliance with DfES and DH to take a strategic overview of initiatives affecting physical education and school sport. It included a 'strategic objective' in its Public Service Agreement to raise year on year the average time spent on all sport/physical activity by 6-16 year olds. Strategies for achieving this will be targeted in every LEA with extra emphasis in the most needy areas and include:

- building/refurbishing school sports facilities which must also be available for community use (£710M in England);

Physical activity – the main players

Department of Health (DH) – the DH's '*Saving Lives: Our Healthier Nation*' White Paper states that physical activity is a key determinant of good health and an important factor in preventing heart disease, stroke and other chronic disease.

Department for Transport, Local Government and Regions (DTLR, formerly the Department of Environment, Transport and the Regions, DETR) – aims to make it easier and safer for people to walk and cycle, thus reducing reliance on cars. Its publication '*Developing a Strategy for Walking*' formed the basis of subsequent guidance for local authorities ('*Encouraging Walking*').

Department of Culture Media and Sport (DCMS) – encourages more participation in sport by more people. Its strategy '*A Sporting Future for All*' recognises sport as a "*powerful tool for social, educational and physical wellbeing*".

Department for Education and Skills (DfES, formerly the Department for Education and Employment, DfEE) – launched a joint '*National Healthy Schools Standard*' in 1999 with DH which consists of ten central themes; physical activity is one of these.

Source: adapted from NAO, Tackling Obesity in England

- creating 200 specialist sports colleges by 2004;
- deploying 1,000 school sport co-ordinators by 2004 to co-ordinate and build links between schools, to develop inter-school competitive sports and after school activities, to co-ordinate training of teachers and work to promote physically active lifestyles.
- award schemes to raise awareness of the health benefits of physical activity and visits to schools by leading sports men and women to encourage participation in sports;
- training up to 50,000 14-19 year old volunteers to lead sports and related activities in their schools and local communities.

Strategies for the general population

Policy options for encouraging greater participation in physical leisure activities – particularly walking and cycling – have been considered by the NAO and by the Environment, Transport and Regional Affairs Select Committee in its report Walking in Towns and Cities. The main issues identified are discussed below.

Promoting walking and cycling as a means of transport

A key aim of policies for encouraging walking or cycling is to make it easier for people to fit such activities into their daily routines. Approaches include the provision of safer, more integrated networks of foot- and cycle-paths, co-ordinated planning to encourage walking and cycling, traffic calming measures and better management of streets (e.g. to reduce the fear of crime). Implementing such policies in practice requires close co-ordination between local providers (health and local authorities) and central government. In July 2000, local authorities had, for the first time, to publish local transport plans covering the period 2001-06. The Environment, Transport and Regional Affairs Committee noted it was "*very concerned*

that with certain exceptions local authorities will not have given sufficient priority to walking in their Local Transport Plans"**.**

At the national level, DETR has a target to quadruple cycling by 2012 compared to the 1996 base. The Highways Agency also has an objective to improve conditions on the road for pedestrians and cyclists but has set no specific performance targets for achieving this. NAO noted that setting such targets would provide an incentive for the Agency to achieve its objective of improving access/safety for cyclists and walkers.

Encouraging more active recreation
The main thrust of policy to increase physical activity lies with DCMS, which takes the lead in encouraging participation in sport and for ensuring that adequate sports facilities are available. It provides funding to Sport England for local authorities and sports clubs. The Sport England Active Communities Programme aims to widen participation in sport and promote its social and health benefits. It is targeted at the disadvantaged, including 12 sports action zones in areas of greatest need. Sport England also has a programme to encourage adults to return to physical activity, while DCMS host a cross-departmental group to look at ways of promoting physical activity for the over 50s.

A number of campaigns have promoted active recreation among the general population. For instance the DH commissioned the Health Education Authority campaign 'active for life' in 1996, which promoted physical activity for all. DETR (in consultation with DH, the national cycle forum, and others), were instrumental in launching the 'are you doing your bit' campaign in the late 1990s, to encourage people to forsake the use of private cars in favour of more active modes of transport.

Policy issues

Sport and other physical activities

The White Paper *Saving Lives: Our Healthier Nation* (1999) indicated that the then, soon to be published, *Sports Strategy* would support better health by promoting participation in sport and physical activity for all. When the *Sporting Future for All* paper was published, its main focus was on competitive sport:

- delivering the Government's 'sports for all' policy - raising participation in all sections of the community;
- realising the Government's ambition for sporting success at the highest level.

Groups such as NHF argue that the current focus is not in itself sufficient to encourage increased physical activity levels among the population in general. It sees the emphasis on competitive sport as excluding many of those who would benefit most from increasing their levels of physical activity (e.g. older people, the overweight). Rather, such groups would like to see policy focus on encouraging regular or increased participation in non-competitive physical activities such as cycling and walking. As discussed below, such groups identify a clear need for a national physical activity strategy.

The role of the DCMS

An issue identified by the Health Committee's inquiry was the role of the DCMS in promoting physical activity in schools. The Committee perceived a lack of co-ordination between DCMS and other departments, recommending that "*the Government appoints advisers specifically to co-ordinate the work of all Government departments to deliver the sport and health agenda as a matter of urgency*". DCMS currently shares a joint adviser with DfES, and works jointly with DfES and DH in a number of fora.

Health lobby groups have suggested that sport could be more effectively used as a means of delivering public health benefits if responsibility for it were passed on to the DH. The Committee considered this issue, noting that "*we are not convinced that DCMS is the appropriate ministry to have responsibility for sport*". However, rather than recommending a reorganisation, the Committee urged the **"***Government to keep under review the location of sport in Government, with a view to creating much closer links with public health*".

A national strategy

Given the health benefits associated with physical activity, many see a need for a national strategy to encourage people to be more physically active. For instance, the NAO recommended that the "*Department of Health should lead the development of a new cross-Government strategy to promote the health benefits of physical activity*". This is supported by groups such as the NHF, Health Development Agency, and the British Association for Sport and Exercise Sciences, all of which argue that such a strategy would save lives and improve the health of the nation, while carrying significant cost-savings. One element of such a strategy would be the development of a national walking strategy. This approach was favoured by virtually all the witnesses giving evidence to the Environment, Transport and Regional Affairs Committee, which identified a number of key advantages of such a strategy. It would:

- galvanise local authorities and others into action, acting as a trigger for them to draw up and implement their own policies;
- inform policies in relevant departments and agencies (e.g. DTLR, DfES, DCMS, and the Highways Agency), thus encouraging a co-ordinated approach to policy;
- assist the diffusion of best practice;
- and, through the setting of national standards, help local authorities monitor their performance.

Endnotes

1 National Audit Office. Tackling Obesity in England. February 2001
2 Joint Health Survey Unit (1999). Health Survey for England: Cardiovascular Disease 1998. The Stationery Office
3 Gregory J et al (2000) National Diet and Nutrition Survey Volume 1: Report of the Diet and Nutrition Survey. The Stationery Office)

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