

# Physical activity and health in Europe



**EVIDENCE  
FOR  
ACTION**

**Physical activity and  
health in Europe:  
evidence for action**

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# **Physical activity and health in Europe: evidence for action**

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Nick Cavill, Sonja Kahlmeier and Francesca Racioppi



# Foreword

*Physical activity is a fundamental means of improving physical and mental health. For too many people, however, it has been removed from everyday life, with dramatic effects for health and well-being. Physical inactivity is estimated to account for nearly 600 000 deaths per year in the WHO European Region. Tackling this leading risk factor would reduce the risks of cardiovascular diseases, non-insulin-dependent diabetes, hypertension, some forms of cancer, musculo-skeletal diseases and psychological disorders. In addition, physical activity is one of the keys to counteracting the current epidemic of overweight and obesity that is posing a new global challenge to public health.*

*While evidence of the importance of physical activity for health continues to accumulate, we at WHO work with our partners to support Member States in tackling the urgent challenge of reversing the present negative trends in the Region, and bringing physical activity back into people's lives. The scale of the problem requires developing a new understanding and new, effective, population-based approaches. It also requires raising the awareness and securing the commitment and support of a broad range of actors and stakeholders within and beyond public health. This implies strengthening existing partnerships, such as those with the education and sports sectors, and developing new ones with others that play a major role in shaping environments and communities,*

*such as transport, environment, urban planning, employers and civil society. Health systems can contribute by providing evidence on what works, supporting the exchange of experience and knowledge, advocating physical activity with other sectors and providing them with the tools that can facilitate its integration into a range of policies, and ensuring that physical activity enters the mainstream in health policies.*

*This publication was developed as a contribution to the WHO European Ministerial Conference on Counteracting Obesity (in Istanbul, Turkey, in November 2006). It aims to provide European policy-makers and stakeholders in different sectors and levels of government and in civil society with a brief overview of the links between physical activity and health, the factors that influence physical activity and the approaches that can make it part of daily life. We hope that this will help to establish a common understanding and a healthy dialogue between the many actors that can help to promote active living. Across the European Region, physical activity can once more be seen as a valuable and enjoyable element of healthy daily life, as people travel to school and work, learn, enjoy their neighbourhoods, and rest and have fun in leisure time.*

Marc Danzon  
WHO Regional Director for Europe

## Key messages

Enough is known about effective and promising strategies to justify action now, to design and implement comprehensive programmes and policies to strengthen active living.

Physical activity is a fundamental means of improving people's physical and mental health. It reduces the risks of many noncommunicable diseases and significantly benefits society by increasing social interaction and community engagement.

In the 21st century, however, everyday life offers fewer opportunities for physical activity, and the resultant sedentary lifestyles have serious consequences for public health.

Two thirds of the adult population (people aged 15 years or more) in the European Union do not reach recommended levels of activity. Socioeconomic status tends to be directly related to participation in leisure-time physical activity. Poorer people have less free time and poorer access to leisure facilities, or live in environments that do not support physical activity.

Society is responsible for creating conditions that facilitate active living. In the 21st century, promoting physical activity should be seen as a necessity, not a luxury. Action should:

- focus on physical activity in its broadest sense
- be multisectoral
- employ population-level solutions
- improve the environment for physical activity
- increase equity in access and possibilities for physical activity.

There is a need to ensure that physical activity is monitored at the population level, using consistent measures over time. This will ensure the most effective targeting and planning of health promotion programmes.

Three types of determinants of physical inactivity need to be tackled: individual factors (such as attitudes to physical activity, or belief in one's ability to be active), the micro environment (the conduciveness to physical activity of the places where people live, learn and work) and the macro environment (general socioeconomic, cultural and environmental conditions).

Health systems can foster multilevel coordinated action to improve participation in health-enhancing physical activity by, for example:

- providing evidence on what works;
- supporting the exchange of experience and knowledge;
- advocating physical activity to other sectors and providing them with the tools to facilitate its integration in a range of policies; and
- ensuring that physical activity becomes part of the mainstream of health policies.

Physical activity is not just a public health issue; it also addresses the well-being of communities, protection of the environment and investment in future generations. Countries need to reverse the trend towards inactivity and create conditions across the WHO European Region in which people can strengthen their health by making physical activity part of everyday life. Action should be large-scale, coherent and consistent across different levels of government and different sectors.



# Introduction



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Physical activity is one of the most basic human functions. The human body has evolved over millions of years into a complex organism capable of performing an enormous range of tasks, from using large muscle groups to walk, run or climb, to performing detailed actions involving fine manual dexterity.

As hunter-gatherers, people needed to walk great distances to find food, and to run fast and far to escape attack. Food was often scarce and difficult to obtain, causing the human body to adapt by conserving energy to use during times of famine. As civilization developed, human strength and movement continued to be used for farming, building

and transport. At the start of the 21st century, however, so much physical activity has been removed from life that people may begin to ignore how essential it is for health and well-being. With food now plentiful and easily available to most people in western countries, many countries are experiencing a worrying increase in the prevalence of obesity.

Declining levels of physical activity may seem at odds with the popular perception that western countries in particular are filled with fitness fanatics. While sports clubs and facilities and items in the mass media on health and fitness are more numerous than ever, much of the knowledge about physical activity seems not to be translated into behaviour change.

Sedentary lifestyles have serious consequences for public health. The most visible is the sharp rise in obesity across the Region in recent years. Obesity is not simply a cosmetic issue, but associated with serious health conditions: notably increased risks of diabetes and cardiovascular diseases (CVD). As Chapter 1 points out, physical inactivity contributes substantially to the global burden of disease, death and disability.

Surveys from countries across the European Region, described in Chapter 2, show low levels of overall physical activity in many populations. Physical activity seems to be disappearing from life. People drive more – and further – than ever, work at increasingly sedentary jobs and spend their leisure on increasingly sedentary pastimes. Technological advances mean that even the simplest tasks are becoming mechanized, and people do not need to use as much energy to survive. In short, as outlined in Chapter 3, they can lead extremely sedentary lives, and societies seem to support this trend.

Tackling these issues is not solely an individual responsibility. Society is responsible for creating conditions that facilitate active living. In the 21st century, promoting physical activity should be seen as a necessity, not a luxury.

Addressing this societal issue is not the task of public health professionals and politicians alone. It requires action from and partnership across a broad range of sectors and professions, many of which do not have physical activity as a core element of their missions. These include town planners, teachers, environmentalists, transportation engineers, architects, sports professionals and employers in the public and private sectors.

Action must be stronger and go beyond the traditional approaches of health promotion, such as personal counselling, mass marketing or advice in primary care. At best, these can only address the needs of a small minority of the population. Alongside these approaches, concerted action should be taken to change the environment so that it better supports active lifestyles. Because many of these

environmental changes fall outside its responsibility, the health sector needs to show strong leadership to win the support of others. In particular, it can help other sectors to become more engaged in promoting physical activity by setting the example and highlighting opportunities for win–win approaches, as further highlighted in Chapter 4.

Promoting health-enhancing physical activity can be an important way to respond to the challenge. It stresses the importance of physical activity as part of everyday life, not an optional extra to tack on at the end of a busy day. This booklet is written for policy-makers, leaders and stakeholders in different sectors that can promote physical activity, including health, sports and recreation, transport, urban planning, education and the mass media. It sets out the facts about health-enhancing physical activity, provides examples of approaches already deployed, and makes the case for concerted action across the European Region. Annex 1 suggests further reading for more detailed information.

## Principles for action

The main principles for action (adapted from those in a Swedish action plan (1)) are discussed in more detail in Chapter 4. In summary, however, action should:

- use a broad definition of physical activity;
- take a population health approach and work through programmes based on the population's stated needs;
- engage multiple sectors and work at multiple levels, from international to local;
- improve the environment for physical activity;
- work for equity in opportunities to be active; and
- be based on the best available evidence on what works.

## Definitions

The technical definition of **physical activity** used in this booklet is: “any force exerted by skeletal muscles that results in energy expenditure above resting level” (2). This deliberately broad definition means that virtually all types of physical activity are of interest, including walking or cycling for transport, dance, traditional games and

pastimes, gardening and housework, as well as sport or deliberate exercise. Thus, sport and exercise are seen as particular types of physical activity: sport usually involving some form of competition, and exercise usually being taken to improve fitness and health.

The term **health-enhancing physical activity** is frequently used across the European Region. It emphasizes the connection with health by focusing on “any form of physical activity that benefits health and functional capacity without undue harm or risk” (3).

**Active living** is a way of life that integrates physical activity into daily routines. The goal for the general adult population is to accumulate at least half an hour of activity each day (4).

Physical activity can vary widely in **intensity**: the amount of effort made by an individual. Intensity varies according to the type of activity and the capacity of the individual. For example, running is usually of a higher intensity than strolling, and a young, fit person is likely to walk at a given pace more easily than an older, less fit person.

In general, health-enhancing physical activity comprises activities that are classed as of at least moderate intensity. **Moderate-intensity physical activity** raises the heart-beat and leaves the person feeling warm and slightly out of breath. It increases the body’s metabolism to 3–6 times the resting level (3–6 metabolic equivalents – METs).

For most inactive people, 3 METs is equivalent to brisk walking. For more active and fit people, fast walking or slow jogging constitutes moderate-intensity physical activity. Most public health recommendations on physical activity focus on activities of at least moderate intensity; this ensures inclusion of a broad range of activities.

**Vigorous-intensity physical activities** enable people to work up a sweat and become out of breath. They usually involve sport or exercise: for example, running or fast

cycling. Vigorous-intensity activities raise the metabolism to at least six times its resting level (6 METs).

## How much physical activity do people need to keep healthy?

A general consensus has been reached in recent years on the amount and type of physical activity recommended to improve and maintain health (5–7). While there is no official recommended level of physical activity for the European Region, international expert opinion has supported the accumulation of at least half an hour of moderate-intensity physical activity on most days of the week. According to the WHO Global Strategy on Diet, Physical Activity and Health (6):

... it is recommended that individuals engage in adequate levels [of physical activity] throughout their lives. Different types and amounts of physical activity are required for different health outcomes: at least 30 minutes of regular, moderate-intensity physical activity on most days reduces the risk of cardiovascular disease and diabetes, colon cancer and breast cancer. Muscle strengthening and balance training can reduce falls and increase functional status among older adults. More activity may be required for weight control.

In general, recommendations for children and young people support the principle that they should be active for longer periods. For example, the Chief Medical Officer in the United Kingdom recommended the following levels of activity, based on international consensus (5):

Children and young people should achieve a total of at least 60 minutes of at least moderate intensity physical activity each day. At least twice a week this should include activities to improve bone health (activities that produce high physical stresses on the bones), muscle strength and flexibility.

These are general guidelines only, and are likely to be modified to suit the needs and circumstances of individuals, and to reflect the values and cultures of different countries. Table 1 lists examples of health-enhancing physical activity for people of all ages.

**Table 1. How people of all ages could reach the recommended levels of physical activity**

<b>Person</b>	<b>Activities</b>
Young child	Daily walk to and from school Daily school activity sessions (breaks and clubs) 3–4 afternoon or evening play opportunities Weekend: longer walks, visits to park or swimming pool, bicycle rides
Teenager	Daily walk (or cycle) to and from school 3–4 organized or informal midweek sports or activities Weekend: walks, cycling, swimming, sports activities
Student	Daily walk (or cycle) to and from college Taking all small opportunities to be active: using stairs, doing manual tasks 2–3 midweek sports or exercise classes, visits to a gym or swimming pool Weekend: longer walks, cycling, swimming, sports activities
Adult with paid job	Daily walk or cycle to work Taking all small opportunities to be active: using stairs, doing manual tasks 2–3 midweek sport, gym or swimming sessions Weekend: longer walks, cycling, swimming, sports activities, home repairs, gardening
Adult working in the home	Daily walks, gardening or home repairs Taking all small opportunities to be active: using stairs, doing manual tasks Occasional midweek sport, gym or swimming sessions Weekend: longer walks, cycling, sports activities
Adult, unemployed	Daily walks, gardening, home repairs Taking all small opportunities to be active: using stairs, doing manual tasks. Weekend: longer walks, cycling, swimming or sports activities Occasional sport, gym, or swimming sessions
Retired person	Daily walking, cycling, home repairs or gardening Taking all small opportunities to be active: using stairs, doing manual tasks Weekend: longer walks, cycling or swimming

Source: Adapted from (5).

# 1. Why is physical activity important for health?



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Although the effects of diet and physical activity on health often interact, particularly in relation to obesity, there are additional health benefits to be gained from physical activity that are independent of nutrition and diet ...

– Global Strategy on Diet, Physical Activity and Health (6)

In 2002, two thirds of the adult population (aged 15 years and over) in the European Union (EU) did not reach recommended levels of activity (8). Across the WHO European Region as a whole, one in five people takes little or no physical activity, with higher levels of inactivity in the eastern part of the Region. Physical inactivity is estimated to cause 600 000 deaths per year in the Region (5–10% of total mortality, depending on countries) and leads to a

loss of 5.3 million years of healthy life due to premature mortality and disability per year (9).

Physical activity is a critical public health issue because:

- adequate physical activity is important for many aspects of health; and
- few people participate in regular health-enhancing physical activity.

## Health effects

Physical activity has major beneficial effects on most chronic diseases (Table 2). These benefits are not limited



**Table 2. Summary of the health effects associated with physical activity**

Condition	Effect
Heart disease	Reduced risk
Stroke	Reduced risk
Overweight and obesity	Reduced risk
Type 2 diabetes	Reduced risk
Colon cancer	Reduced risk
Breast cancer	Reduced risk
Musculoskeletal health	Improvement
Falls in older people	Reduced risk
Psychological well-being	Improvement
Depression	Reduced risk

to preventing or limiting the progression of disease, but include improving physical fitness, muscular strength and the quality of life (10). This is particularly important for older people, as regular physical activity can increase the potential for independent living.

WHO recently reviewed the evidence for the health effects of physical activity (11). It is summarized here.

### **CVD**

The strongest evidence indicates that the greatest benefit of physical activity is in the reduction of CVD risk (12,13). Inactive people have up to twice the risk of heart disease of active people. Physical activity also helps to prevent stroke (14,15) and improves many of the risk factors for CVD, including high blood pressure and high cholesterol (16).

### **Overweight and obesity**

Low levels of physical activity are a significant factor in the dramatic increase in obesity prevalence in the European Region. Obesity occurs when energy intake (dietary intake) exceeds total energy expenditure, including the contribution of physical activity (11).

Body weight normally increases with age, but habitual, lifetime physical activity can reduce weight gain. Participation in appropriate amounts of activity can support healthy weight maintenance or even weight loss (17). It is

also extremely important for people who are already overweight or obese (5).

### **Diabetes**

Diabetes is an increasing concern in the Region, as rates of type 2 (non-insulin-dependent) diabetes increase. Type 2 diabetes typically occurs in adults aged over 40, although cases are emerging among children and young people as obesity rates rise.

Strong evidence indicates that physical activity helps to prevent type 2 diabetes (18); the risk for active people is about 30% lower than that for inactive people (19). Both moderate- and vigorous-intensity physical activity reduce the risk (20–22), but must be taken regularly.

### **Cancer**

Physical activity is associated with a reduction in the overall risk of cancer. Numerous studies have shown the protective effect of physical activity on the risk of colon cancer (23–25); the risk for active people is around 40% lower.

Physical activity is also associated with a reduced risk of breast cancer among postmenopausal women (26–29), and some evidence shows that vigorous activity may provide a protective effect against prostate cancer in men (30).

### **Musculoskeletal health**

Participation in physical activity throughout life can increase and maintain musculoskeletal health, or reduce the decline that usually occurs with age in sedentary people (31). Participation by older adults can help maintain strength and flexibility, helping older people to continue to perform daily activities (31–33). Regular activity can also reduce older adults' risk of falls and hip fractures (34–37).

Participation in weight-bearing activities (such as jumping or skipping) helps to increase bone density (38) and prevent osteoporosis (5). This is particularly important for the development of bone density in adolescents (39) and for middle-aged women (40).

### Psychological well-being

Physical activity can reduce symptoms of depression and, possibly, stress and anxiety (41–44). It may also confer other psychological and social benefits that affect health. For example, it can help build social skills in children (45), positive self-image among women (46) and self-esteem in children and adults (47), and improve the quality of life (43,48,49). These benefits probably result from a combination of participation itself and the social and cultural benefits of physical activity.

### Consequences for communities and societies

In addition to direct effects on health, physical activity can benefit society, the economy and, indirectly, other health behaviour.

#### Positive social effects

Active living offers people the opportunity to interact with others, the community and the environment. In particular, sport and active leisure pursuits offer the chance to develop new skills and meet new people, and may help to reduce levels of crime and antisocial behaviour. Support for physical activity can be a positive force for the regeneration of an area, for example, through creating parks and green spaces or walking or cycle paths in previously neglected neighbourhoods (50).

Unfortunately, access to leisure and exercise opportunities tends to be unequal across the social spectrum. Poorer people are less likely to have access to transport to reach

some facilities, and are more likely to live in environments that do not support physical activity (51).

#### Economic impact

Besides the costs in terms of mortality, morbidity and quality of life, inactivity exacts high financial costs from countries across the Region. For example, the annual costs in England – including those to the health system, days of absence from work and loss of income due to premature death – have been estimated to be €3–12 billion (50). This excludes the contribution of physical inactivity to overweight and obesity, whose overall cost might run to €9.6–10.8 billion per year (52). Similarly, a Swiss study estimated the direct treatment costs of physical inactivity at €1.1–1.5 billion (53). On the basis of these two studies, physical inactivity can be estimated to cost a country about €150–300 per citizen per year.

Increasing current levels of activity could significantly reduce the costs to society, but even maintaining them can result in savings. For example, the Swiss study estimated the savings on direct treatment costs for the physically active at about €1.7 billion (53).

#### Influence on health behaviour

Finally, physical activity tends to be associated with other types of positive health behaviour, such as healthy eating and nonsmoking, and can be used to help make other behavioural changes (5). Overall, it is such a positive health behaviour – with so much potential to improve public health and so few risks – that it deserves to be central to any future public health strategy.

## 2. What is known about current levels of physical activity and inactivity?



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Only in recent years have internationally comparable data on levels of physical activity across the European Region begun to be collected. Thus, few comprehensive figures are available about trends and prevailing patterns of physical activity in many countries.

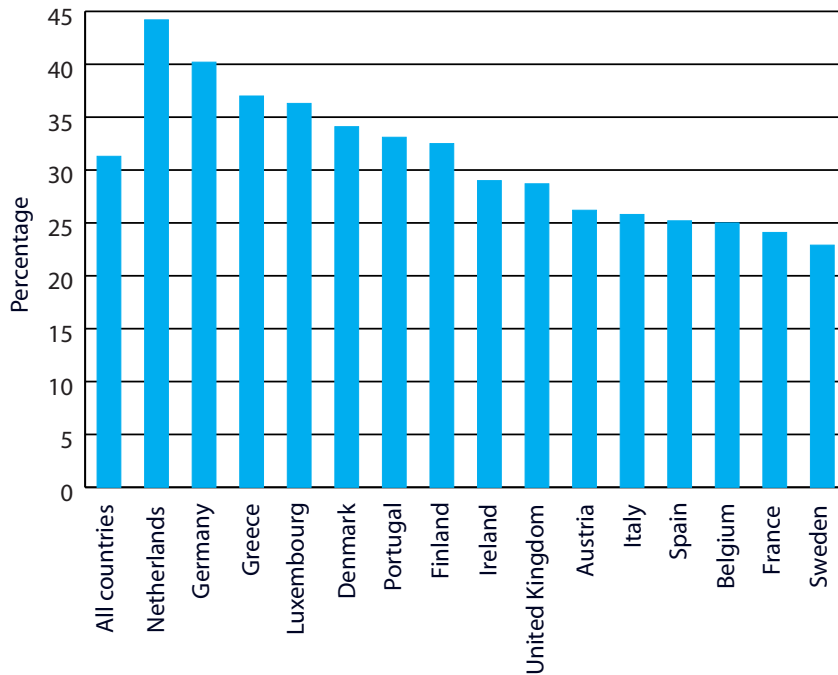
### **How active are people in the European Region?**

#### **Current activity levels**

An analysis of a survey of EU countries in 2002 (8) showed that two thirds of the adult population did not reach recommended levels of physical activity. On average, only 31% of respondents reported sufficient physical activity (Fig. 1).

A survey of health behaviour among young people aged 11, 13 and 15 years across Europe, in 2001–2002, measured participation in physical activity (54). It found that about a third (34%) reported enough physical activity to meet current guidelines: one hour or more of at least moderate intensity on five or more days a week. In most countries, boys were more active than girls and activity declined with age in both sexes. Activity varied widely between countries, however, ranging from 11% of girls and 25% of boys in France to 51% of girls and 61% of boys in Ireland among 11-year-olds. Similar variations existed among all age groups; for example, the proportion of active 15-year-old boys was 49% in the Czech Republic and 25% in Portugal.

**Fig. 1. Proportion of adults (aged 15 years or over) in the EU classified as sufficiently active, 2002**



Source: Sjöström et al. (8).

### Trends

Few surveys have been carried out across the Region with sufficiently consistent data collection to enable reliable assessments of trends. For example, a 2004 Eurobarometer survey (55) asked similar questions to the 2002 survey (8), and included the 10 new EU Member States. The follow-up survey focused on sport and showed an increase in the proportion of people claiming to do sport once a week, from 30% to 38%, between 2002 and 2004. This survey should be viewed with caution, however, as it analysed answers to a single question across two time points. As the second survey focused heavily on sport, it is not possible to use the surveys to investigate more general participation in physical activity.

Because of the uneven availability of data on levels of physical activity in countries and the lack of harmonized measures and indicators to be used, it is not possible to draw a clear picture of overall trends across the Region

(see Box 1 for examples). The scarcity of data from repeated surveys across the European Region highlights an important issue for policy-makers: the need to ensure that physical activity is monitored at a population level using consistent measures over time. This will ensure the most effective targeting and planning of health promotion programmes.

### Measuring physical activity

Physical activity is a complex behaviour with four main dimensions, which can be abbreviated as FITT:

- frequency of the activity, usually measured in occasions per week;
- intensity at which the activity is carried out;
- time: the duration of the bout of activity; and
- type of activity.

### Box 1. Examples of trends in European countries

The Swiss Health Survey shows that the proportion of people classed as physically inactive increased from 35.7% in 1992 to 39.4% in 1997, but then decreased to 36.8% in 2002 (56).

Physical activity has been measured in annual surveys in Finland since 1979 (57). From the late 1970s to mid-1990s, Finland saw an overall increase in the proportion who are active twice a week from about 40% to about 60%, with women starting from a slightly lower level but ending at slightly higher levels. Since the mid-1990s, the general increase in activity has levelled off, and the rise in women's leisure-time activity slowed.

In the United Kingdom, the best trend data come from the National Travel Survey. It showed that the average distance travelled per person per year on foot and by bicycle declined by 26% and 24% between 1975 and 1999 and 2001, respectively (5).

All four need to be measured to make an accurate assessment of overall activity levels. In general, questionnaire-based surveys present the best option for assessments covering large numbers of people. The most reliable surveys use validated questionnaires among random probability samples, allowing the findings to be generalized to the population. If repeat surveys use the same methods, trends can be analysed.

Two international physical activity questionnaires have

been developed to assess health-related physical activity. First, the International Physical Activity Questionnaire (58) allows direct comparison of levels of physical activity between countries. Two versions (short and long) have been developed and validated, and are available in a number of languages. Second, the WHO Global Physical Activity Questionnaire (59) aims at allowing comparisons in developing countries with culturally diverse populations, and has been translated and validated.

### 3. What factors and conditions influence physical activity?



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Why are some people active and others not? A complex range of factors – in the individual and the micro and macro environments (Fig. 2) – influences the likelihood that an individual, group or community will be physically active. Factors in the macro environment include general socioeconomic, cultural and environmental conditions. Influences from the micro environment include the conduciveness of living and working environments to physical activity, and the supportiveness of social norms and local communities. Such individual factors as attitudes towards physical activity, belief in one's ability to be active or awareness of opportunities in daily life can influence the likelihood that someone will try a new activity (60).

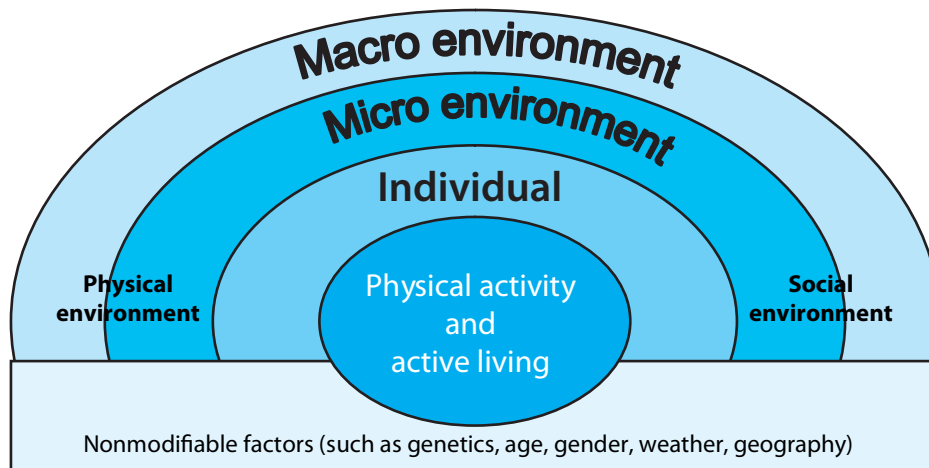
Some of the determinants of active living – such as the weather or people's genetic make-up – are difficult or impossible to modify. A combination of short- and long-term action, however, can be used to tackle most factors. Bringing these actions together in a comprehensive strategy should be a key priority for policy-makers (see spotlight on Finland).

#### **Macro environment**

##### **Socioeconomic status**

Socioeconomic conditions can affect physical activity in many ways. Participation in leisure-time physical activity tends to be directly related to socioeconomic status. Poorer people

Fig. 2. Determinants of physical activity



Source: adapted from Dahlgren (61).

have less free time, poorer access to leisure facilities or living environments that do not support physical activity (63).

#### Spotlight. “Finland on the Move” (62)

Extensive policy development for sports and for health took place in Finland in the early 1990s, resulting in two national programmes. The first, called “Finland on the Move”, used financial support, training and consultation services, and media promotion to stimulate new local projects for physical activity. The evaluation of the programme found that it had led to the creation of many successful local projects and identified a number of keys to success.

Building on this experience, the “Fit for Life” programme was launched. It focuses on the group aged 40–60 years, and uses a social marketing approach through the mass media.

The two programmes have created new local initiatives and provided a national framework for the promotion of physical activity across Finland.

Fear of traffic can be a powerful deterrent to parents’ allowing their children to walk or cycle to school or play outdoors, especially in deprived areas. For example, in the United Kingdom, children from lower social classes are five times more likely to be killed on the road than those from higher classes. Much of this can be attributed to environmental conditions: poorer children are more likely to live in urban areas with poor road safety and high-speed traffic (64).

#### Increased car use

One of the biggest economic and cultural influences has been the growing demand for mobility in the last 20 years or so. The increased use of private cars has largely satisfied this demand, leading car transport to grow by almost 150% since 1970 (65). During this time, however, the distances walked and cycled have remained largely stable (66).

The ability to travel long distances has in turn played an important role in promoting urban sprawl. This increases the dependence on motorized transport to reach jobs, shopping centres and other amenities, and thus reduces opportunities for walking and cycling.

## Micro environment

### Problems of urbanization

The immediate environment in which people live and work strongly influences the ability to be physically active. The European Region is becoming increasingly urbanized: by 2004, 80% of the population in high-income countries and 64% in medium- and low-income countries in the Region lived in urban areas (67). One would expect this to have a positive impact on physical activity, as levels of physical activity are usually higher in urban environments, where mixed use of land and high density of services, residences and workplaces allow people to walk and cycle as part of everyday life because distances between destinations are short (68). In many cities across Europe, however, living, working, shopping and leisure activities increasingly take place in different areas. This results in a greater demand for motorized mobility and reduced opportunities for activity in the neighbourhood.

As urban densities increase and open spaces are built on, little space may be left for recreational and leisure activities. For example, while two thirds of the population had access to green spaces within 15 minutes' walking distance in Amsterdam, this share was as low as 40% in Bratislava and 36% in Warsaw (69).

### Social support and trends toward sedentary activities

Communities can strongly influence people's levels of physical activity, particularly through the social support offered, and cultural attitudes towards and stereotypes of different forms of activity (70). The Eurobarometer survey (71) showed the variations across the EU in the extent to which people recognize support for activity in their local areas. For example, 90% of people in the Netherlands agreed that "local sport clubs and other providers offer many opportunities for physical activity", compared to 45% in Portugal and 54% in Italy.

Many social trends increasingly support sedentary behaviour. Manual jobs are fewer, and sedentary leisure pursuits are increasing. Ownership of washing machines, tumble driers and dishwashers has risen over the past 30 years. These devices have been instrumental in alleviating

fatigue from daily domestic chores (72) and helped to free valuable time for other activities. This time, however, seems not to be used for physical activity in other areas of life. Other labour-saving devices, including escalators and lifts, also discourage activity. Although few data are available, there appears to be a trend away from visible stairs in buildings and towards the provision of lifts.

In addition, participation in sedentary leisure activities has increased, with children spending most of their free time outside school watching television and videos and using the Internet (73). This increase in screen time is likely to continue as the Internet and video games become more popular leisure pursuits. Further, parents worried about safety spend a great deal of time driving their children around from one activity or club to the next, removing the opportunity for physical activity for adult and child alike.

Finally, the image of physical activity can have an important influence. Activities such as golf or squash may be more likely to be associated with high social status, and some people view walking or cycling for transport as a low-status activity. Young people in some countries see walking or cycling as what they must do until they are old enough to get a car or a motorcycle.

## Individual factors

Although the environment is a key influence on levels of physical activity, some psychosocial factors influence people's decisions about their lifestyles and their choices of healthy or unhealthy behaviour.

### Positive factors

Personal factors that are positively associated with physical activity (60,74) include:

1. self-efficacy (belief in one's own ability to be active);
2. intention to exercise;
3. enjoyment of exercise;
4. level of perceived health or fitness;
5. self-motivation;
6. social support;
7. expectation of benefits from exercise; and
8. perceived benefits.



## Barriers

People are less likely to be active if they recognize many barriers (74). A review showed the key barriers to physical activity (75) to include:

- perception of lack of time;
- perception that one is not “the sporty type” (particularly for women);
- concerns about personal safety;
- feeling too tired or preferring to rest and relax in spare time; and
- self-perceptions (for example, assuming that one is already active enough).

The perceived lack of time was the most common reason given in the Eurobarometer survey, with a third of EU citizens (34%) saying that is why they never practise sport (71). As in general there are few differences in the time available to active and inactive people, this is likely to have more to do with the priority people give to physical activity (see spotlight on Slovenia).

## Spotlight. “Let’s live healthy”, a health promotion programme in rural Slovenia

The Institute of Public Health Murska Sobota has developed an innovative pilot programme to tackle lack of physical activity and poor nutrition in the Pomurje region in north-eastern Slovenia.

“Let’s live healthy” aims to promote healthy lifestyles and encourage individual responsibility for health. In conjunction with a range of partners from different sectors, it tries to reach adults in rural communities through mass-media communications and public events. Activities include workshops in each community, a fitness test and events organized by the participants.

So far, 70 local communities in Slovenia have taken part in the programme, reaching an estimated 30 000 people. The early results are encouraging: 8 out of 10 participants say that they have changed their lifestyles. The programme is now concentrating on extending to other areas, and exploring innovative ideas such as establishing a centre for Nordic walking.

## 4. What can the health sector and others do to increase physical activity?



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### Strategies

Action on physical activity should be based on a number of key principles, adapted from a Swedish plan (1):

1. taking a population health approach;
2. using a broad definition of physical activity;
3. engaging multiple sectors;
4. improving the environment for physical activity;
5. working at multiple levels;
6. basing programmes on the stated needs of the population;
7. improving equity; and
8. using the best available evidence.

### Taking a population health approach

Physical activity promotion should focus on the health needs of the population as a whole, rather than particular high-risk groups. Creating more opportunities for activity for everyone and improving the environment to support it are likely to lead to greater public health benefit than programmes that target only small groups. Multilevel, coordinated action is urgently needed to improve participation in health-enhancing physical activity (see spotlight on Spain).

### Using a broad definition of physical activity

Using a broad definition offers far greater potential to engage a range of sectors. Physical activity includes

### Spotlight. Developing comprehensive national policies in Spain (76)

After an assessment of the situation, the Ministry of Health and Consumer Protection decided to develop an overall strategy, including physical activity and nutrition, to tackle rising obesity. The main goal is substantially to reduce morbidity and mortality attributable to chronic diseases by promoting a healthy diet and physical activity.

The strategy targets all citizens, but particularly children, in view of the worrying obesity trends in the younger age groups. It includes recommendations for action and identifies the different sectors to be involved. Intervention will take place in different settings and at different levels, including families and communities, schools, the food industry and the health system. Goals and recommendations for physical activity were formulated for all settings.

To evaluate and monitor the strategy, an obesity observatory is expected to be created, to make regular analyses of prevalence in the population, especially in children and adolescents, and to measure the progress of prevention activities.

walking, cycling, dance, play, sport, work, leisure activity and exercise. This means that it should be seen as a shared task of not only the health, sport or leisure sectors but also others, such as transport and the environment (77).

#### Engaging multiple sectors

Public health professionals have an important leadership role in coordinating multisectoral action (see spotlight on Switzerland), but the broad focus needed means that they must forge strong alliances with professionals from other sectors such as urban planners, transport planners, traffic engineers, architects, employers and those from voluntary and nongovernmental organizations. This can have the added benefit of increasing interest in such issues as active travel, neighbourhoods' conduciveness to walking,

attractive green space and enhanced building design, which is likely to result in positive and sustainable environmental outcomes.

#### Improving the environment for physical activity

As mentioned, people find it easier to be active when they can walk or cycle to everyday destinations and when they are close to parks, pleasant environments or attractive facilities. Effective action on physical activity includes working with urban planners and architects to create environments conducive to a physically active life. **A complementary WHO publication (79)** offers more information.

#### Working at multiple levels

Governments and national agencies can provide national leadership on physical activity, and play a vital role in coordinating multisectoral action. Effective public health action means working simultaneously at a number of different levels, as shown in Table 3. Securing the commitment of local government and local alliances with shared priorities is critical. They can influence decision-making in the private sector through regulations (for example,

### Spotlight. National sport concept in Switzerland (78)

A new concept for a national sports policy in Switzerland was prepared in 2000. An expert group developed a strategy document for the promotion of health-enhancing physical activity that included a summary of the scientific evidence for its health effects.

When the Federal Government accepted the concept at the end of 2000, it defined health as the first priority of the national sports policy in Switzerland and "more physically active people" as its main objective. This was in line with public opinion, as surveys have consistently shown that more than 90% of the Swiss population know that physical activity is important for health. The concept also emphasizes creating new partnerships across sectors and levels of government, and between government and the private sector and mass media.

**Table 3. Examples of action from different sectors on determinants of physical activity**

Determinant type	Action from key sectors		
	Health	Sport and leisure	Transport and urban planning
Macro environment	<p>Providing stewardship for multidisciplinary action</p> <p>Delivering public health programmes to increase opportunities for physical activity for people on low incomes</p>	<p>Planning and delivering strategies for sport for all that reduce the cost of participation for people on low incomes and celebrate cultural diversity</p>	<p>Developing regional spatial plans that maximize public health and provide opportunities for active living</p>
Micro environment	<p>Representing the health sector on multidisciplinary planning committees</p> <p>Promoting physical activity among health-sector employees and service users</p>	<p>Improving access to sport and leisure opportunities for pedestrians and cyclists</p>	<p>Prioritizing access by pedestrians and cyclists in urban planning and designing communities conducive to walking</p>
Individual	<p>Delivering counselling for physical activity in primary care</p>	<p>Delivering targeted community sport programmes</p>	<p>Delivering targeted social marketing programmes for walking and cycling</p>

requiring new developments to have footpaths and cycling routes) and public pressure to provide environments in which people can make healthy choices. **A complementary WHO publication (79)** explores many of these issues in more depth.

### **Basing programmes on the stated needs of the population**

Policies and programmes must take local conditions into consideration, and the public must be involved in their development (1). Action on physical activity may vary enormously, depending on the cultures and norms in a country, as well as the available information, economic factors, social developments and patterns of mobility and transport. Planning for a coordinated programme of action should take account of all of these (80).

### **Improving equity**

Participation in physical activity shows significant inequalities, with the poorest population groups usually the least active in leisure time. Many groups suffer unequal access to environments that support physical activity or have worse

access to facilities. Action should be taken to reduce these inequities in access, to support activities of low or no cost (such as walking), and to improve environments for, social attitudes towards and perceptions of physical activity.

### **Using the best available evidence**

A key public health principle is to take action based on the best available evidence. In comparison to nutrition or tobacco control, for example, physical activity is a relatively young topic, and the evidence base for effective interventions, although growing fast, is still relatively small. In addition, there is a need to assess the effects of not only interventions explicitly designed to promote physical activity (such as programmes for patients at risk) but also action taken outside the health sector that may affect levels of physical activity at the population level (such as policies promoting cycling and walking) (81).

Taking action based on one particular type of research evidence is therefore impossible. Instead, one must review many different types of evidence and select the best, as described in the next section.

## Role of the health sector

While action on physical activity often lies in the domain of professionals in sectors such as urban planning, transport and sport, the health sector can make a unique and important contribution. In particular, it should provide leadership or stewardship for the subject of physical activity. Because it is such a multidisciplinary issue, the danger is that it will fall between the cracks, with no one sector taking responsibility. The health sector is best placed to forge the right alliances and to take forward effective action.

In addition to this broad leadership role, the health sector can take the lead in six areas:

- making physical activity part of primary prevention;
- documenting effective interventions and disseminating research;
- demonstrating the economic benefit of investing in physical activity;
- connecting relevant policies;
- advocacy and exchange of information;
- leading by example.

### Making physical activity part of primary prevention

Physical activity should have a stronger role in primary prevention, for example, by ensuring that general practitioners (GPs) and other primary care professionals offer counselling and advice on physical activity, and are well trained to do so (see spotlight on Sweden).

### Documenting interventions and disseminating research

Public health professionals are in a strong position to take the lead in synthesizing research evidence on what works in promoting physical activity. They are trained in such relevant techniques as critically appraising research evidence and conducting literature reviews.

The health sector can also draw on a strong tradition of evidence-based medicine and apply these principles to public health (83), ensuring that relevant research evidence is effectively disseminated to all relevant stakeholders.

## Demonstrating the economic benefit of investing in physical activity

Decision-makers are very interested in information on the balance of the potential cost and benefits of any proposal. The health sector can do much to develop tools to conduct more precise cost–benefit and cost–effectiveness analyses. One of the most important issues is the inclusion of health effects in the assessment of transport and urban planning interventions. These can create powerful arguments for investment in physical activity. For example, the Nordic Council used cost–benefit analysis to demonstrate that the benefits of investment in cycling infrastructure far outweigh the costs (84).

### Connecting relevant policies

At both national and international levels, the health sector can take the lead in identifying synergy among and making stronger connections between the main policy frameworks and initiatives relevant to the promotion of physical activity. Frameworks and initiatives developed by various sectors that would thus gain added value include:

1. the WHO Global Strategy on Diet, Physical Activity and Health, which affirms that multisectoral policies are needed to promote physical activity (6);

### Spotlight. Physical activity promotion in primary health care in Sweden (82)

The county of Östergötland, Sweden has implemented a comprehensive approach. In 2005, all primary care units in Östergötland took part in prescribing physical activity using a population approach, collaborating with local partners.

An evaluation found that 3344 patients received such prescriptions in 2004, corresponding to 1.6% of all people visiting primary care units during that year. After 12 months, 49% of the sample reported following the prescription, while an additional 21% were regularly active, but in a different form than that prescribed. The intervention also helped to reduce the proportion of the population classed as sedentary.

2. the charter on obesity and the document on physical activity (85) presented to the WHO European Ministerial Conference on Counteracting Obesity (86) in late 2006;
3. the Children's Environment and Health Action Plan for Europe, which contains commitments by Member States to protect children's health in priority areas, including the promotion of physical activity through supportive environments (87);
4. the EU platform on diet, physical activity and health aimed at catalysing voluntary action across the EU by business, civil society and the public sector (88);
5. the European Commission's Green Paper on promoting healthy diets and physical activity, which sets out key issues for debate with the Member States and civic society and will serve as a basis for the development of the new health strategy (89);
6. the United Nations Economic Commission for Europe (UNECE)/WHO Transport, Health and Environment Pan-European Programme, which provides a framework for action on priority areas including the promotion of safe cycling and walking in urban areas (90);
7. the European network for the promotion of health-enhancing physical activity, an international collaborative project that works for better health through physical activity (91); and
8. the WHO Healthy Cities project, which engages local governments and promotes comprehensive policy development, including on physical activity and active living (92).

### Advocacy and exchange of information

The health sector can play a strong role in convening networks and mechanisms for the effective exchange of information. A good example is the European network for the promotion of health-enhancing physical activity (91) mentioned above. It provides a platform for exchanging experience with the development of policies, strategies and approaches for physical activity promotion, and supports multisectoral action.

### Leading by example

Finally, the health sector should set the example by promoting physical activity among employees and users of

health systems, by such means as providing facilities for employees to walk and cycle to work, or to be active in their lunch breaks.

### Action justified

Enough is known to justify action. A recent report (93) pointed out that the general lack of a solid evidence base for the effectiveness of public health interventions should not be seen as an excuse for inaction. This view is especially pertinent to physical activity.

This section therefore summarizes evidence and experience from a range of sources and styles of research. They include reviews undertaken for WHO (81), consensus statements, systematic reviews, cross-sectional research and some case studies. This is far from an exhaustive review of the literature on physical activity interventions: the aim is to provide useful guidance to policy-makers, based on the best available evidence. It groups the evidence according to the three types of determinants.

### Macro environment

#### The built environment

A growing evidence base supports the relationship between the environment and physical activity (68,94). It includes investigations of the influence of the built environment (such as street connectivity and town layout) and the natural environment (such as access to green, open space). Attributes such as aesthetics, convenience and access have been found to be associated with an increased likelihood of physical activity. Perceived convenience of facilities for walking (pavements, trails), accessibility of destinations (shops, parks), and perceptions about traffic and busy roads are associated with walking for particular purposes (68,95,96). **A complementary WHO publication (79)** explores many of these issues in more depth.

A recent review of attempts to change the environment for physical activity found evidence that health education posters are effective at the point of choice between escalator and stair use. Some studies evaluated the impact of policy changes, improvements to cycle paths and exercise facilities, and provision for cycling and walking to work,

alongside educational events. These resulted in some small but positive changes in physical activity (97).

### Transport

The transport system can strongly influence opportunities to be physically active, both by facilitating walking and cycling and by enabling people to get to places to be active. A recent systematic review of walking and cycling as an alternative to using cars (98) found evidence that targeted programmes can change the behaviour of motivated subgroups. For example, the TravelSmart study in Perth, Australia found a shift of 5.5% of all trips from car travel to walking, cycling or public transport in the intervention area after six months, compared with a 2% shift towards the car in a neighbouring control area (99). These projects also promoted increased use of public transport, which can often result in increased walking compared to trips by car.

Some significant transport interventions in recent years have not yet been included in systematic reviews, but offer some interesting lessons. A report (100) showed that levels of cycling increased following the introduction of the congestion charge in central London, United Kingdom (see spotlight). Evidence from large-scale cycling interventions such as those in Odense, Denmark

#### Spotlight. The congestion charge in London, United Kingdom (100,101)

In 2003, London introduced a congestion charging scheme in which cars were charged to enter a zone in the centre of the city. In 2006 the charge is €11.60 per day. The primary objective of the scheme was to reduce traffic congestion in and around the charging zone, but it has also affected physical activity: there has been an observed 20% increase in cycle journeys and a 7% reduction in crashes. There may also have been an increase in journeys walked – both as trips but also as part of the increased number of journeys on public transport. London's example shows how transport interventions can have positive (and sometimes unforeseen) benefits to public health.

(see spotlight) and Norway have also demonstrated how cycling can be increased without increasing road traffic injuries (103). In addition, some evidence indicates that health impact assessment can be used to emphasize the health-enhancing aspects of transport policy (104).

### Opportunities for action

- The health sector should join forces with town planners, transport officials and architects to help create places where physical activity is easier and safer.
- Health promotion programmes should link to specific elements of the environment. For example, programmes such as TravelSmart link to key cycling or walking routes, or promote use of the stairs in key buildings where this is a viable option.

### Micro environment

#### Working conditions

Current physical activity levels at work are generally low: in 2002, half of the respondents in an EU survey reported that they took little or no physical activity at work (71). Nevertheless, the workplace has great potential to influence levels of

#### Spotlight. Odense, Denmark's national cycling city (102)

Odense was Denmark's official National Cycle City from 1999 to 2002. The Ministry of Transport and the National Road Directorate invested significant funding to demonstrate how coordinated effort could increase cycling. During the four years of the overall programme, 50 projects were developed and implemented, including physical improvements, campaigns and changes in regulations, with an emphasis on trying out innovative ideas.

By the end of 2002, cycling traffic in the municipality of Odense had increased by 20% and the number of accidents involving cyclists had been reduced by 20%, compared to 1996/1997. The evaluation estimated savings for the health sector, mostly attributed to increased safety and reduced noncommunicable diseases.

physical activity. Workers spend a large share of their waking hours in an environment that is largely controlled by the employer and can be modified to be more supportive of physical activity.

The evidence on what works in the workplace is conflicting (105,106), but the workplace appears to be a suitable setting for creating or improving access to facilities for physical activity, implementing supportive policies and distributing information. These general approaches have been shown to be effective in increasing physical activity in other settings (107). In particular, the workplace appears to have potential to promote physical activity by providing facilities and implementing policies to encourage walking and cycling to work (108,109), and policies to restrict workplace parking (65).

#### **Social and community influences: the mass media**

Reviews have concluded that – while mass-media campaigns have great potential to influence community norms related to health behaviour, including physical activity, and can reach large populations at relatively low cost – they can rarely demonstrate a population-level effect on behaviour. Campaigns are, however, usually effective in raising awareness of an issue and affecting knowledge (110), and so can be a useful component of a comprehensive package of interventions.

#### **Community-level interventions**

Communities can bring people together to promote physical activity and create and improve local conditions for it. Community approaches include some of the large CVD programmes, such as the Stanford Five-City Project (111), and community-wide campaigns using the mass media to promote physical activity. These programmes are sometimes linked to changes to the physical environment (70).

Although larger community programmes had some positive results, they did not tend to demonstrate population-level impact. More positive results came from smaller programmes that translated to the community setting behaviour-change techniques normally used in primary care (see spotlight on the Netherlands). In addition, highly

visible campaigns linked to community action tend to be quite successful, especially if they are well targeted and work at an appropriate community scale (70).

#### **Schools**

Schools can provide many opportunities for physical activity through pursuing the core physical education curriculum, opening up playing fields and gymnasias for use by the wider community and providing a focus for initiatives such as programmes for safe routes to school (see spotlights on the Czech Republic and Norway). These combine infrastructure changes (such as installing cycle parking) with promotional programmes, such as a walk-to-school day, and policy changes, such as school travel plans (115).

#### **Leisure and sports infrastructure**

Regularly participating in sports activities has a positive effect on people's health and is therefore an important area of health promotion. Finland provides a strong example of a shift in emphasis from competitive and elite sports to health-enhancing physical activity for all. Multisectoral

#### **Spotlight. Heartbeat Limburg, the Netherlands (112)**

Heartbeat Limburg is a community-based CVD prevention programme integrated with a high-risk-group approach in general practices and a hospital. The project aimed to decrease the prevalence of CVD in the general population of the Maastricht region by encouraging the inhabitants to become more active, reduce their fat intake and stop smoking. From 1999 to 2003, 790 interventions were implemented; 361 of them focused on physical activity, including creating walking and bicycling clubs, and conducting walking and cycling campaigns.

The programme is being evaluated, but preliminary results are very encouraging. The intervention group showed increased time spent both walking and cycling, compared to a reference group not involved in the programme.



### Spotlight. “Walk with Our School”: Kvasice, Czech Republic (113)

International Walk to School is an annual month-long event that gives children, parents, school teachers and community leaders an opportunity to take part in a global event as they celebrate the benefits of walking. In the elementary school in Kvasice, Czech Republic, 40% of pupils are from nearby villages and many travel to school by bus. The “Walk with Our School” project stressed the environmental, educational and emotional aspects of walking to school, alongside the health benefits.

The project connects with as many school subjects as possible: science, geography, art, crafts and music. Half-day walks are held on Saturdays for children and their parents, visiting local sites of historical interest and linking health and educational objectives. The walks are kept fun through treasure hunts, competitions and challenges. The aim is to promote walking and to connect people to their local environment.

### Spotlight. A comprehensive school approach in Nordland, Norway (114)

In 2004, the county of Nordland started a comprehensive school programme to provide pupils in all 210 primary schools with at least 60 minutes physical activity during every school day. In the implementation of the programme, school authorities had to be informed and educated about the benefits to health and cognitive capacities resulting from physical activity, especially in inactive children. Schools willing to participate can develop activity programmes based on their resources and opportunities to combine, for example, physical education, outdoor education in different disciplines, provision of more motivating school playgrounds, and walking and cycling to and from school. By 2006, 144 schools, in cooperation with other sectors, were implementing or had prepared activity programmes.

policies have led to substantial changes in the public funding of sports organizations, services and the construction of sports sites. Finland has launched three successive five-year national programmes for physical activity promotion (116). The Netherlands has made a similar shift:

- to reinforce the local sports infrastructure to support both the intrinsic and social aims of sport;
- to use sport to contribute to solutions to local social issues; and
- to make links between various sport providers and between them and sport-related sectors at the local level, such as education, recreation, welfare, work and health care (117).

### Opportunities for action

- The health sector, employers and the education sector should use the workplace and school settings as a focus for physical activity. They should organize campaigns and events to raise awareness, make policy changes in the workplace and school, and provide facilities for activity, such as cycle parking, gymnasias and changing rooms.
- The health and the sport and recreation sectors should develop programmes that use physical activity and sport as a focus for community-wide mobilization: bringing people together under the banner of health-enhancing physical activity.

### Individual factors

The strongest evidence of benefit for interventions at an individual level is within the primary care setting. Recent recommendations from the United Kingdom (118) focused on the strong evidence for brief interventions in primary care and concluded that “primary care practitioners should take the opportunity, whenever possible, to identify inactive adults and advise them to aim for 30 minutes of moderate activity on 5 days of the week (or more)”. An earlier review (119) identified the following factors as part of effective programmes:

- targeting individuals in community settings (see spotlight on Italy);

### Spotlight. A community on the move: the experience of San Mauro Pascoli, Italy (120)

This project targeted sedentary adults, particularly women and elderly people, to prevent CVD, decrease the number of sedentary people, raise awareness about the health benefits of physical activity and provide an opportunity for social interaction through organized physical activities. The activities took place outdoors during spring and summer and indoors during autumn and winter. Nearly 200 people took part, mostly middle-aged women, and a plan was implemented for the long-term, self-sustained continuation of the programme. The project involved GPs, community representatives, sports associations, social workers, local grass-roots organizations and the private sector.

A key finding was that, while most participants were reported to be well aware of the health benefits of physical activity, they lacked opportunities to be physically active in their own community (for example, using the local parks). They also greatly enjoyed the opportunity for social interaction. The study concluded that information and motivation are insufficient to prompt changes in behaviour without being accompanied by interventions that facilitate physical activity.

- using theories of behaviour change to teach skills and tailor interventions to individual needs;
- promoting moderate-intensity physical activity, particularly walking, and activities that are not dependent on particular facilities; and
- incorporating regular follow-up and contact with an exercise specialist.

### Children and young people

Perhaps surprisingly, the evidence on the effectiveness of interventions to promote physical activity among young people is more limited than that for adults. A systematic

review of the available evidence (121) suggested a number of potential interventions in:

1. regional and local spatial planning, such as:
  - better cycle paths;
  - improved parks and play areas;
  - improved provision of youth clubs;
  - strong links between leisure services and schools to give children access to information about availability of facilities;
2. local health services, such as:
  - primary care interventions to promote physical activity, including advice about reducing television viewing;
3. schools, such as:
  - strengthening school-based physical education and physical activity (for example, spending more time on physical education and encouraging walking and cycling to school);
  - education on physical activity, the reduction of sedentary activity (television viewing, playing video games) and the potential impact of inactivity;
  - making school facilities accessible outside school hours;
  - improved extracurricular activities.

### Opportunities for action

- The health sector should ensure that the promotion of physical activity is an integral part of primary care practice. This includes assessing patients' physical activity levels and delivering tailored advice and follow-up.
- The education, health, transport and urban planning sectors should consider that young people have a right to be physically active, and prioritize the creation of facilities and opportunities for them.

## 5. What next?



Multilevel, coordinated action is urgently needed to improve participation in health-enhancing physical activity. This is not just a public health issue; it concerns the well-being of communities, protection of the environment and investment in future generations. Enough is known about effective and promising strategies to act now to design and implement comprehensive programmes and policies to promote active living.

Physical activity has enormous potential to improve health and well-being. It is a positive behaviour: starting and maintaining a habit that benefits health. Efforts to

increase physical activity can almost be seen as ideal public health measures because:

- they influence several of the most common problems;
- there is evidence of effectiveness and little evidence of potential harm;
- they are accessible and affordable by the majority of the population; and
- the overall benefit is so great that it justifies investment.

More research will increase understanding, but should not delay action. In particular, innovative strategies to create and enhance the environment for physical activity should be implemented and tested.

At present, more is known about interventions at a personal level (for example, in primary care) than about action upstream, on the environmental determinants of physical activity. The latter type of action appears to have greater potential. Researchers should work to correct this imbalance. More knowledge is needed in a number of areas, such as the relationship of physical activity to the environment, and the best ways to transfer and disseminate knowledge and good practice.

Action needs to be large scale, coherent and consistent across different levels of government and across different sectors in countries. The health sector needs to join with new partners to capitalize on the multiple dimensions of active living. Such intersectoral partnerships are vital to help countries across the WHO European Region to reverse their populations' trend towards inactivity and create conditions in which they can strengthen their health through physical activity as part of everyday life.

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# Annex 1. Further reading

## Overview of physical activity

*The obesity issue in Europe: status, challenges, prospects.* Copenhagen, WHO Regional Office for Europe (in press) (especially chapters 5, 11 and 16, on physical activity).

Oja P, Borms J, eds. *Health enhancing physical activity.* Oxford, Meyer & Meyer Sport, 2004 (Perspectives – The Multidisciplinary Series of Physical Education and Sport Sciences, Vol. 6).

## Evidence for the relationship between physical activity and health

*At least five a week. Evidence on the impact of physical activity and its relationship to health. A report from the Chief Medical Officer.* London, Department of Health, 2004 (<http://tinyurl.com/332mf>, accessed 28 July 2006).

Pedersen PK, Saltin B. Evidence for prescribing exercise as therapy in chronic disease. *Scandinavian Journal of Medicine and Science in Sports*, 2006, 16(Suppl. 1):3–63.

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## Evidence for the effectiveness of interventions

*Effectiveness of public health interventions for increasing physical activity among adults: a review of reviews (evidence briefing),* 2nd ed. London, National Institute for Health and Clinical Excellence, 2005 (<http://www.publichealth.nice.org.uk/page.aspx?o=505281>, accessed 28 July 2006).

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## Strategies and approaches

Active living research [web site]. San Diego, Active Living Research, 2006 (<http://www.activelivingresearch.org>, accessed 28 July 2006).

*A physically active life through everyday transport with a special focus on children and older people and examples and approaches from Europe.* Copenhagen, WHO Regional Office for Europe, 2002 ([http://www.euro.who.int/transport/modes/20030121\\_1](http://www.euro.who.int/transport/modes/20030121_1), accessed 28 July 2006).

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Physical activity is a fundamental means of improving people's physical and mental health. It reduces the risks of many noncommunicable diseases and benefits society by increasing social interaction and community engagement. Unfortunately, more than half the population of the WHO European Region is not active enough to meet health recommendations, and the trend is towards less activity, not more.

A potentially important way to respond to this challenge is the promotion of health-enhancing physical activity. This concept stresses the importance of physical activity as part of everyday life, not an optional extra to be added at the end of a busy day.

This booklet is written for European policy-makers and leaders from different sectors that can promote physical activity, including health, sports and recreation, transport, employment, urban planning, education and the mass media. It sets out the facts about health-enhancing physical activity, provides examples of action already being taken, highlights the contributions that can be made by health and other sectors and makes the case for concerted action across the WHO European Region.

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**The WHO Regional  
Office for Europe**

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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