Regular physical activity – at least 150 minutes of moderate-intensity physical activity per week for adults – reduces the risk of cardiovascular disease, diabetes, cancer and all-cause mortality.

Children and young people aged 5–17 years should accumulate at least 60 minutes of physical activity of moderate to vigorous intensity daily, in order to maintain and improve lung and heart condition, muscular fitness, bone health, cardiovascular and metabolic health biomarkers and mental health.

Globally, in 2010, 20% of adult men and 27% of adult women did not meet WHO recommendations on physical activity for health. Amongst adolescents, aged 11–17 years, 78% of boys and 84% of girls did not meet these recommendations.

Under the leadership of the health ministries, strategies to improve physical activity should be developed and implemented through multiple sectors, in order to create an enabling environment for active living.

Supportive built environment, multicomponent programs including mass media campaigns and use of settings are key to achieving this target.

The attainment of this target will contribute to attainment of targets on reducing the prevalence of hypertension, on a 0% increase in diabetes and obesity and, ultimately, on reducing premature mortality from NCDs.
Insufficient physical activity and its impact on health

Insufficient physical activity is one of the 10 leading risk factors for global mortality, causing some 3.2 million deaths each year (1). In 2010, insufficient physical activity caused 69.3 million DALYs – 2.8% of the total – globally (1).

Adults who are insufficiently physically active have a 20–30% increased risk of all-cause mortality compared to those who do at least 150 minutes of moderate-intensity physical activity per week, or equivalent, as recommended by WHO (2). Regular physical activity reduces the risk of ischaemic heart disease, stroke, diabetes and breast and colon cancer. Additionally, regular physical activity is a key determinant of energy expenditure and is therefore fundamental to energy balance, weight control and prevention of obesity (2).

The prevalence of insufficient physical activity in men and women aged 18 years and over in different parts of the world is shown in Figs. 3.1 and 3.2 respectively.

Fig. 3.1 Age standardized prevalence of insufficient physical activity in men aged 18 years and over, comparable estimates, 2010

Prevalence of insufficient physical activity [%]*

- <20
- 20–29
- 30–39
- ≥40
- Not applicable
- Data not available

* Less than 150 minutes of moderate-intensity physical activity per week, or equivalent
In 2010, 23% of adults aged 18 years and over were insufficiently physically active – i.e. they had less than 150 minutes of moderate-intensity physical activity per week, or equivalent (2). Women were less active than men, with 27% of women and 20% of men not reaching the recommended level of activity.

Overall, older people were less active than younger people: 19% of the youngest age group did not meet the recommended level, compared to 55% of the oldest age group. However, young women were slightly less active than middle-aged women.

The WHO Eastern Mediterranean Region (31%) and Region of the Americas (32%) had the highest prevalence of insufficient physical activity, while the prevalence was lowest in the South-East Asia (15%) and African (21%) Regions. Across all regions, women were less active than men, with differences in prevalence between men and women of 10% and greater in the Eastern Mediterranean Region and the Region of the Americas (see Fig. 3.3).

Insufficient physical activity increased according to the level of country income (see Fig. 3.5). The prevalence in high-income countries (33%) was about double that in low-income countries (17%). Nearly 28% of women from upper-middle-income countries and 38% in high-income countries did not reach WHO’s recommended level of physical activity.

The higher levels of activity in low-income and lower-middle-income countries may be explained by high levels of occupational and transport activity in these countries (4). In addition to rising income levels, factors such as increased ownership and use of vehicles, different occupation types, urbanization and industrialization seem to be important determinants of levels and patterns of physical activity (5,6).

Insufficient physical activity among adolescents

Compared to their inactive peers, children and adolescents doing at least 60 minutes of physical activity of moderate to vigorous intensity daily have higher levels of cardiorespiratory fitness, muscular endurance and strength. Documented health benefits of regular physical activity among young people also include reduced body fat, more favourable

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1. The definition of “insufficient physical activity” differs from that used in the Global status report on noncommunicable diseases 2010 (3). The previous definition was “less than five times 30 minutes of moderate activity per week, or less than three times 20 minutes of vigorous activity per week, or equivalent”. The new definition reflects new evidence on the recommended amount of physical activity for health.
cardiovascular and metabolic disease risk profiles, enhanced bone health, and reduced symptoms of anxiety and depression (2).

Globally, 81% of adolescents aged 11–17 years were insufficiently physically active in 2010 – i.e. they had less than the 60 minutes of moderate-to-vigorous daily physical activity, as recommended by WHO. Adolescent girls were less active than adolescent boys, (see Fig. 3.4, 3.6 and 3.7) with 84% versus 78% not meeting WHO recommendations. Estimates of physical activity of adolescents, are for school going adolescents due to lack of data on adolescents in the general population in most countries.

As with adults, adolescents from the WHO South-East Asia Region showed by far the lowest...
Figure 3.5 Age-standardized prevalence of insufficient physical activity in adults aged 18 years and over (%), by individual country and World Bank income group, comparable estimates, 2010

High-income

Low-income
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Low-middle-income

Upper-middle-income
prevalence of insufficient physical activity (74%). Levels of insufficient physical activity were highest in the Eastern Mediterranean Region, the African Region and the Western Pacific Region (88%, 85% and 85% respectively). Adolescent girls were less active than adolescent boys in all WHO regions (see Fig. 3.7).

There was no clear pattern of insufficient physical activity among adolescents across income groups; the prevalence was highest in upper-middle-income countries and lowest in lower-middle-income countries (see Fig. 3.7).

**What are the cost-effective policies and interventions for reducing insufficient physical activity?**

Evidence shows that many effective interventions – focusing on policy and environment, mass media, school settings, workplaces, the community and primary health care – can be implemented by policy-makers to increase people’s physical activity (7). Across these categories, multicomponent interventions adapted to local cultural and environmental contexts are the most successful (see Box 3.1). Interventions that use the existing social structures and participation of all stakeholders reduce barriers to implementation.

The physical or built environment plays an important role in facilitating physical activity for large portions of the population, by ensuring that walking, cycling and other forms of non-motorized transport are accessible and safe for all (8). The physical environment also provides sports, recreation and leisure facilities and ensures there are adequate safe spaces for active living, for both children and adults (9). Health messages on stairs promote physical activity, while the use of stairs decreases when no message is displayed. A recent study showed that individual preferences and/or the lack of effort required in using escalators or elevators may lead people to avoid using stairs as a physical activity (10).

School-based physical activity interventions show consistent improvements in knowledge, attitudes and behaviour of children and, when tested, in physical and clinical outcomes (8). Workplaces may also reduce individual risk-related behaviours, including physical inactivity, with the potential to reach more than 3.6 billion economically active persons in 2020 (11).
Monitoring insufficient physical activity

The global monitoring framework (see Annex 1), includes two indicators for monitoring insufficient physical activity (12):

1. Prevalence of insufficient physical activity in adolescents, defined as less than 60 minutes of physical activity of moderate to vigorous intensity daily;

2. Age-standardized prevalence of insufficient physical activity in persons aged 18 years and over, defined as NOT meeting any of the following criteria:
   - 150 minutes of moderate-intensity physical activity per week;
   - 75 minutes of vigorous-intensity physical activity per week;
   - An equivalent combination of moderate- and vigorous-intensity physical activity, accumulating at least 600 MET-minutes\(^1\) per week.

\(^1\) MET refers to metabolic equivalent. It is the ratio of a person’s working metabolic rate relative to the resting metabolic rate. One MET is defined as the energy cost of sitting quietly, and is equivalent to a caloric consumption of 1 kcal per kg per hour.

Progress achieved

WHO’s NCD country capacity assessment survey of 2013 showed that, while 80% of countries reported having policies, plans or strategies for addressing physical inactivity, only 56% indicated that these were operational (13). Only a few countries (8%) reported using tax incentives to promote physical activity – including tax exemptions or rebates on sports equipment, fitness programmes or gym membership, and higher taxation on items such as home entertainment equipment that encourage sedentary lifestyles.

As a result of implementation of national policies and programmes to improve physical activity, several high-income countries, including Canada and Finland, have reported increased physical activity over the last decade (14,15). In recent years more low- and middle-income countries have set up initiatives to address physical inactivity (see Boxes 3.1–3.3).

Actions required to attain this target

All ministries of health need to take leadership in, and responsibility for, implementing national NCD...
action plans consistent with the Global NCD Action Plan (16) and the Global strategy on diet, physical activity and health (17). Achieving the physical activity targets requires multisectoral collaboration and partnership. It is critical to develop a costed national physical activity plan and convene a national physical activity committee or task force with high-level support and resources and with representation from multiple sectors, agencies, NGOs and the private sector to provide leadership and guidance in implementing the plan.

A comprehensive set of policy options to improve physical activity is listed in the Global NCD Action Plan (16). In 2010 WHO developed global recommendations on physical activity for health (2). Countries are urged to adapt these recommendations to

**Box 3.1 Walkability is positively associated with physical activity: Curitiba, Brazil**

In Curitiba, Brazil, adults living in high-walkability areas were found to be more likely to achieve recommended levels of physical activity, both for transport walking and leisure-time physical activity. The proportion of those who walk for transport for \( \geq 150 \) minutes per week was 21.1% in low-walkability areas, and ranged from 33.5% to 35.0% in high-walkability areas. A total of 12.6% of residents were found to walk for leisure for \( \geq 150 \) minutes per week. No relationship was found between walkability and income, indicating that walkability is associated with physical activity, regardless of neighbourhood income level. The results of the study confirm findings from high-income countries that walkability plays an important role in physical activity as daily transport. Thus, policies that influence the built environment may promote population-level physical activity.

*Sources: see references (18).*

**Box 3.2 Partnership and social marketing to promote physical activity in women: Tonga**

Women in Tonga are more sedentary and obese than men, owing to a range of cultural and socioeconomic factors – such as the fact that sporting activities are often designed for and dominated by men. Recognizing the seriousness of women’s sedentary behaviour, the Tongan ministry of health and Ministry of Internal Affairs, with the support of the Australian Sports Outreach Program, joined with the Tonga Netball Association in a campaign that brought together a broad range of technical skills and networks to deliver a highly targeted intervention.

Guided by the Tonga National Strategy to Prevent and Control Non-Communicable Diseases (2010–2015), the partners adopted a social marketing and community mobilization approach known as strategic health communication. This approach aimed to understand the perspective of the target audience and to promote physical activity as “easy, exciting, enjoyable and everywhere”. The campaign used netball as a means of encouraging sport, with benefits to the sports sector. The campaign, branded Kau Mai Tonga: Netipol (Come on Tonga, let’s play netball!), was launched in June 2012 and since then has been delivered in annual phases of community mobilization, large-scale advertising and communication, and interpersonal education. Since the first phase, there has been increased participation of women, with more than 20 netball clubs registered, and increased knowledge and awareness of the benefits of physical activity among participants.

*Sources: see references (19).*
the national context as tools for education, measurement, and policy decisions and interventions, while incorporating physical activity into surveillance systems and setting national targets for change. Policy development should be encouraged at national and subnational levels, in cooperation with relevant sectors, to promote physical activity through activities of daily living.

Urban planning and active transport policies can improve community walking and cycling opportunities, and education policies can mandate quality physical education and physical activity programmes throughout the school years.

Sustainable transport policies provide opportunities for active and non-motorized travel (see Box 3.4). Urban planning policy and built environment strategies, supported by efforts from parks and recreation authorities, create facilities and opportunities for people to be active. Crime prevention policies create safe environments, and new urban design creates walkable communities and environments that promote physical activity.

Policies and programmes to create and preserve built and natural environments that support physical activity are best implemented through settings such as schools, universities, workplaces,

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**Box 3.3 Bicycle hire to improve physical activity: Islamic Republic of Iran**

Tehran, the capital of the Islamic Republic of Iran, has introduced a bicycle-sharing scheme, funded by the municipal government. The scheme aims to reduce congestion on the city’s streets, decrease pollution and provide additional transport. Twelve bicycle “hubs” are positioned across the city in various administrative districts, with each hub having around 40 bicycles. Over 6000 people have subscribed to the scheme, which allows the use of a bicycle for up to 4 h for the equivalent of US$ 2.

For many, “Bike House” has made travel through the congested streets of Tehran fast and convenient. However, because of Islamic and cultural considerations, women are unable to participate in the programme. The city of Isfahan has developed a similar scheme and the city-wide travel card includes the option of bicycle hire, along with use of the train, tram and buses.

*Sources: see references (20,21).*

**Box 3.4 Sustainable transport: Freiburg, Germany**

There is growing evidence that dependence on automobile travel contributes to insufficient physical activity, transport-related carbon dioxide emissions, traffic congestion, air pollution and road traffic accidents. The city of Freiburg in southwestern Germany has been successful in implementing sustainable transport policies that may be transferable to car-oriented countries around the world. Over the last three decades, transport policies in Freiburg have encouraged more walking, cycling and use of public transport. During this period, the number of bicycle trips has tripled, travel by public transport has doubled, and the proportion of journeys by automobile has declined from 38% to 32%. Since 1990, motorization rates have levelled off and per capita carbon dioxide emissions from transport have fallen, despite strong economic growth.

*Sources: see references (22,23).*
health-care services, and the local and wider community. Partners in the education sector can create physical activity programmes before, during and after school, and create supportive built environments in schools. The sports sector can encourage regular structured activities, especially among children and adolescents, and can strengthen the link between physical activity, sports and health. Partnerships with communities, the private sector and NGOs can also contribute to developing facilities for physical activity. Partnerships with workplaces and occupational settings can help develop healthy environments, promote physical activity at work and provide incentives and opportunities for active commuting to and from work.

As part of the national programme, there is also a need to advocate for physical activity through political engagement, and to mobilize communities through social marketing and mass media campaigns – including education of the public on the benefits of physical activity (e.g. NCD prevention, less air pollution as a result of reduced traffic, sustainable development).

Evaluation and validation efforts are required to promote best practices, monitor implementation and assess population reach.

**References**


