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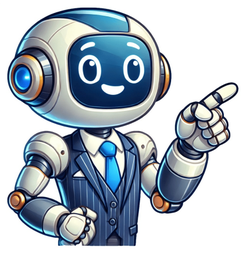

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Explore our latest gallery of Editors’ Picks.Browse Editors' Favorites Skip to main content Regular physical activity provides significant physical and mental health benefits.In adults, physical activity contributes to prevention and management of noncommunicable diseases such as cardiovascular diseases, cancer and diabetes and reduces symptoms of depression and anxiety, enhances brain health, and can improve overall well-being.In children and adolescents, physical activity promotes bone health, encourages healthy growth and development of muscle, and improves motor and cognitive development.31% of adults and 80% of adolescents do not meet the recommended levels of physical activity.The global target set to reduce levels of physical inactivity in adults and adolescents is a 10% relative reduction by 2025 and 15% by 2030, from the 2010 baseline.The global estimate of the cost of physical inactivity to public health care systems between 2020 and 2030 is about US$ 300 billion (approximately US$ 27 billion per year) if levels of physical inactivity are not reduced. WHO defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure. Physical activity refers to all movement including during leisure time, for transport to get to and from places, or as part of a person’s work or domestic activities. Both moderate- and vigorous-intensity physical activity improve health. Popular ways to be active include walking, cycling, wheeling, sports, active recreation and play, and can be done at any level of skill and for enjoyment by everybody. Physical activity is beneficial to health and well-being and conversely, physical inactivity increases risk for noncommunicable diseases (NCDs) and other poor health outcomes. Together, physical inactivity and sedentary behaviours are contributing to the rise in NCDs and placing a burden on healthcare systems. Improving levels of physical activity will benefit health and well-being and contribute to attainment of global NCD targets and a number of the Sustainable Development Goals. However, this will require increased commitments and investments by Member States; innovation and contributions from non-state actors; cross sector coordination and collaboration; and ongoing guidance and monitoring from WHO.Benefits of physical activity and risks of sedentary behaviour and inactivityPhysical inactivity is one of the leading risk factors for noncommunicable diseases mortality. People who are insufficiently active have a 20% to 30% increased risk of death compared to people who are sufficiently active. Regular physical activity is associated with:in children and adolescents, improved physical fitness, cardiometabolic health, bone health, cognitive outcomes, mental health and reduced body fat;in adults and older adults, reduced risk of all-cause mortality, risk of cardiovascular disease mortality, incident hypertension, incident site-specific cancers, incident type-2 diabetes, and falls and improved mental health, cognitive health, sleep and measures of body fat; andfor pregnant and post-partum women, decreased risk of pre-eclampsia, gestational hypertension, gestational diabetes, excessive gestational weight gain, delivery complications, postpartum depression and newborn complications. Physical activity has no adverse effects on birthweight or increased risk of stillbirth.Sedentary behaviour is any period of low-energy expenditure while awake such as sitting, reclining or lying. Lives are becoming increasingly sedentary through the use of motorized transport and the increased use of screens for work, education and recreation. Evidence shows higher amounts of sedentary behaviour are associated with the following poor health outcomes:in children and adolescents, increased adiposity, poorer cardiometabolic health, fitness, and behavioural conduct/pro-social behaviour, and reduced sleep duration; and in adults, increased all-cause mortality, cardiovascular disease mortality and cancer mortality and incidence of cardiovascular disease, cancer and type-2 diabetes.How much physical activity is recommended?The WHO Global guidelines on physical activity and sedentary behaviour provide recommendations for children (age 5 and up), adolescents, adults, older adults, pregnant and post-partum women, and people living with chronic conditions and disabilities. The recommendations detail the amount of physical activity (frequency, intensity and duration) required to offer significant health benefits and to reduce health risks. The guidelines highlight that any amount of physical activity is better than none; all physical activity counts; all age groups should limit the amount of time being sedentary; and muscle strengthening benefits everyone.The WHO Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age provide recommendations on the amount of time in a 24-hour day that young children, under 5 years of age, should spend being physically active or sleeping for their health and well-being, and the maximum recommended time these children should spend on screen-based sedentary activities or time restrained. An infographic summarizes the current WHO guidelines on physical activity and sedentary behaviour for all age groups. WHO develops guidelines through an arduous process of reviewing scientific evidence and expert consultations. Preparations are already underway for the next guidelines, anticipated for publication in 2030. Levels of physical inactivity globally WHO regularly monitors trends in physical inactivity. A recent study (1) found that nearly one third (31%) of the world’s adult population, 1.8 billion adults, are physically inactive. That is, they do not meet the global recommendations of at least 150 minutes of moderate-intensity physical activity per week. This is an increase of 5 percentage points between 2010 and 2022. If this trend continues, the proportion of adults not meeting recommended levels of physical activity is projected to rise to 35% by 2030.Globally, there are notable age and gender differences in levels of physical inactivity. Women are less active than men by an average of 5 percentage points. This has not changed since 2000.After 60 years of age physical inactivity levels increase in both men and women. 81% of adolescents (aged 11–17 years) were physically inactive (2).Adolescent girls were less active than adolescent boys, with 85% vs. 78%, not meeting WHO guidelines.Many different factors can determine how active people are and the overall levels of physical activity in different population groups. These factors can be related to the individual or wider social, cultural, environmental and economic determinants that influence access and opportunities to be active in safe and enjoyable ways. How Member States can increase levels of physical activityThe WHO Global action plan on physical activity provides policy recommendations for countries and communities to promote physical activity and ensure everyone has more opportunities to be regularly active. Examples of these recommendations include policies that ensure access to walking, cycling and non-motorized transport; that increase physical activity opportunities in schools, workplaces, childcare centres and in healthcare service delivery; and that increase accessibility and availability of community sports and public open spaces. Implementing effective policies to increase levels of physical activity requires a collective effort, coordinated across multiple government departments at all levels, including health, transport, education, employment, sport and recreation, and urban planning. It also demands national and local engagement from nongovernmental organizations, various sectors, stakeholders and disciplines to support the implementation of policies and solutions that are appropriate to a country’s cultural and social environment. Priority should be given to policy actions that address disparities in levels of physical activity, promoting, enabling and encouraging physical activity for all.WHO responseWHO supports countries and stakeholders to implement the recommended actions by:developing global policy guidance and guidelines, underpinned by latest evidence and consensus; supporting countries to develop appropriate policies that promote physical activity and multisectoral collaborations;conducting advocacy to raise awareness of the multiple benefits of increasing physical activity and support the development of economic analysis of the impact of increasing physical activity and return on investment of different policy interventions; developing technical tools and training packages to help countries build capacity in the implementation of policy and programmes across key settings and innovations using digital platforms including through WHO Academy courses, multi-country workshops and other knowledge exchange activities;convening, coordinating, and collaborating to strengthen partnerships across sectors and between policy makers, practitioners and researcher communities; andundertaking global monitoring and reporting of progress on implementation of the Global action plan on physical activity, global levels of physical inactivity and progress towards a 15% relative reduction in the prevalence of physical inactivity by 2030.WHO supports countries and stakeholders to implement the recommended actions by developing global policy guidance and guidelines, underpinned by latest evidence and consensus, to help countries develop appropriate policies, investment cases and financing mechanisms.ReferencesStrain, T., Flaxman, S., et al. National, regional, and global trends in insufficient physical activity among adults from 2000 to 2022: a pooled analysis of 507 population-based surveys with 5·7 million participants. The Lancet Global Health (2024).Guthold, R., Stevens, G., et al. Global trends in insufficient physical activity among adolescents: a pooled analysis of 298 population-based surveys with 1.6 million participants. The Lancet Child & Adolescent Health Vol. 4 Iss. 1 (2019). Share — copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt — remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution — You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. 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Learn more: PMC Disclaimer | PMC Copyright Notice . 2019 May 23;7(5):127. doi: 10.3390/sports7050127 Positive effects from sports are achieved primarily through physical activity, but secondary effects bring health benefits such as psychosocial and personal development and less alcohol consumption. Negative effects, such as the risk of failure, injuries, eating disorders, and burnout, are also apparent. Because physical activity is increasingly conducted in an organized manner, sport’s role in society has become increasingly important over the years, not only for the individual but also for public health. In this paper, we intend to describe sport’s physiological and psychosocial health benefits, stemming both from physical activity and from sport participation per se. This narrative review summarizes research and presents health-related data from Swedish authorities. It is discussed that our daily lives are becoming less physically active, while organized exercise and training increases. Average energy intake is increasing, creating an energy surplus, and thus, we are seeing an increasing number of people who are overweight, which is a strong contributor to health problems. Physical activity and exercise have significant positive effects in preventing or alleviating mental illness, including depressive symptoms and anxiety- or stress-related disease. In conclusion, sports can be evolving, if personal capacities, social situation, and biological and psychological maturation are taken into account. Evidence suggests a dose–response relationship such that being active, even to a modest level, is superior to being inactive or sedentary. Recommendations for healthy sports are summarized. Keywords: youth, adolescent, elderly, quality of life, relative age effect, exercise, strength and conditioning Sport is a double-edged sword regarding effects on health. Positive effects are achieved primarily through physical activity, which is the main part of most sports. Many secondary effects of sport also bring health benefits, such as psychosocial development of both young [1] and old [2], personal development [3], later onset, and less consumption of alcohol [4,5]. Finally, those who play sports have a higher level of physical activity later in life [6], and through sport, knowledge of nutrition, exercise, and health can be developed [7]. Negative effects include the risk of failure leading to poor mental health [8,9], risk of injury [10,11], eating disorders [12], burnout [13], and exercise-induced gastrointestinal tract discomfort [14]. In sport, there are unfortunately also reports of physical and psychological abuse [15]. Negative aspects are more common in elite-level sports, where there is a fine balance between maximum performance and negative health. A somewhat unexpected effect of sport participation is that people submitting to planned training in some cases perform less physical activity compared to those who are exercising without a set schedule. One explanation can be a reduced spontaneous physical activity in the latter group [16]. Because physical activity is increasingly executed in an organized manner [17,18,19], sport’s role in society has become increasingly important over the years, not only for the individual but also for public health. In this paper, we describe the health effects of sport from a physiological and psychological perspective, related both to physical activity and added values of sport per se. Initially, brief definitions of various concepts related to physical activity and health are given. This is then followed by: (1) A brief description of how physical activity and training affect our body from a physiological perspective; (2) a report on the health effects of physical activity and training; and (3) sport’s specific influences on the various dimensions of health. We chose to discuss the subject from an age-related perspective, separating children/adolescents, adults, and the elderly, as well as separating for sex in each age group. Definitions and terms are based on “Physical activity in the prevention and treatment of disease” (FYSS, www.fyss.se [Swedish] [20]), World Health Organization (WHO) [21] and the US Department of Human Services [22]. The definition of physical activity in FYSS is: “Physical activity is defined purely physiologically, as all body movement that increases energy use beyond resting levels”. Health is defined according to the World Health Organization (WHO) as: “[…] a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity” [21]. Physical activity can occur spontaneously (leisure/work/transport) or organized and be divided according to purpose: Physical exercise is aimed primarily at improving health and physical capacity. Physical training is aimed primarily at increasing the individual’s maximum physical capacity and performance [23]. Physical inactivity is described as the absence of body movement, when energy consumption approximates resting levels. People who do not meet recommendations for physical activity are considered physically inactive and are sometimes called “sedentary”. Sport can be organized by age, sex, level of ambition, weight or other groupings [24]. Sport can also be spontaneous [7,17] and defined as a subset of exercises undertaken individually or as a part of a team, where participants have a defined goal [7]. General recommendations for physical activity are found in Table 1, not considering everyday activities. One can meet the daily recommendations for physical activity by brief, high-intensity exercise, and remaining physically inactive for the rest of the day, thereby creating a “polarization” of physical activity: Having a high dose of conscious physical training, despite having a low energy expenditure in normal life due to high volumes of sedentary time. Polarization of physical activity may lead to increased risk of poor health despite meeting the recommendations for physical activity [25,26,27]. During most of our lives, energy expenditure is greater in normal daily life than in sport, physical training, and exercise, with the exceptions of children and the elderly, where planned physical activity is more important [28]. Recommendations regarding physical activity for different target groups. Note that additional health effects can be achieved if, in addition to these recommendations, the amount of physical activity increases, either by increasing the intensity or duration or a combination of both. Target Group Recommendations Purpose Children and youth Age 6–17 years All children and adolescents are recommended at least 60 minutes daily physical activity. Longer is better.The physical activity should be primarily of aerobic nature and the intensity moderate (easy/medium pulse increase) to high (marked pulse increase).Aerobic physical activity at high intensity at least 3 times a week.Muscle-strengthening physical activity 3 times a week.Weight-bearing activity, such as running and jumping, is positive for bone mineral density.The physical activity level will gradually be adapted to the individual’s biological and psychosocial maturation. Development of muscles and skeletal and nervous system.Maintain a healthy weight and a good mental health.Social development, integration, good self-esteem, and self-confidence.Enhanced learning ability.Recommendations are universal, but for individuals with illness, there may be special recommendations. Adults Age 18–64 All adults from 18 years of age and above are recommended to be aerobically physically active at least 150 minutes a week at a moderate intensity (medium pulse increase), or at least 75 minutes per week at vigorous intensity (marked pulse increase).The activities should be distributed over at least three separate days.Muscle-strengthening physical activity at least twice a week should be performed. Improvements in aerobic work capacity and muscle strength.Recommendations are universal, but for individuals with illness, there may be special recommendations.Profits from carrying out the activity are lower risk of disease, such as disturbed metabolism and certain cancers and bone fractures. Elderly Age >64 Same recommendations as adults.Muscle strengthening exercises should be performed at a high velocity, if possible.Balance training should be incorporated prior to aerobic and muscle strengthening training. Individuals with impaired ability should perform as much exercise as possible. Improvements in aerobic work capacity, muscle strength, and balance.Recommendations are universal, but for individuals with illness, there may be special recommendations.Medical advice may be required before exercise commences. Benefits of carrying out the activity are the same as for adults, and better functional health and independence. Physical activity is categorized according to FYSS as: (1) Aerobic physical activity and (2) muscle-strengthening physical activity. Physical activity in everyday life and exercise training is mainly an aerobic activity, where a majority of energy production occurs via oxygen-dependent pathways. Aerobic physical activity is the type of activity typically associated with stamina, fitness, and the biggest health benefits [29,30,31]. Muscle-strengthening physical activity is referred to in everyday language as “strength training” or “resistance training” and is a form of physical exercise/training that is primarily intended to maintain or improve various forms of muscle strength and increase or maintain muscle mass [32]. Sometimes, another category is defined: Muscle-enhancing physical activity, important for maintenance or improvement of coordination and balance, especially in the elderly [33]. According to these definitions, muscle-strengthening activities primarily involve the body’s anaerobic (without oxygen) energy systems, proportionally more as intensity increases. Exercise intensity can be expressed in absolute or relative terms. Absolute intensity means the physical work (for example; Watts [W], kg, or metabolic equivalent [MET]), while relative intensity is measured against the person’s maximum capacity or physiology (for example; percentage of maximum heart rate (%HR), rate of perceived exhaustion (RPE), W·kg−1 or relative oxygen uptake in L·min−1·kg−1 (VO2)). In terms of recommendations to the public, as in Table 1, the intensity is often described in subjective terms (“makes you breathe harder” for moderate intensity, and “makes you puff and pant” for vigorous intensity) [27]. While objective criteria such as heart rate and accelerometry will capture the intensity of activity, they may not distinguish between different types of physical activity behaviors [34]. FYSS defines low intensity as 20%–39% of VO2max,