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Physical activity guidelines Switzerland

Core document

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Commissioned by the Federal Office of Sport FOSPO, hepa.ch network.
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1. Key messages: Every move counts

The key message of the Swiss physical activity guidelines is:

Every move counts.

Activity is good for bodies and minds.

- People can be active during leisure time or while doing sport, at work or in school, by being mobile (walking, cycling/e-biking) or in and around the home (e.g. working in the house or garden).
- Regular activity can prevent and help manage cardiovascular diseases, type 2 diabetes and cancer. These illnesses account for almost three-quarters of fatalities in Switzerland. Physical activity can also reduce symptoms of depression and anxiety, and enhance thinking, learning, overall well-being and independence in old age.

Minutes that can change your life: Any amount of physical activity is better than none, and more is better.

- For health and well-being, WHO recommends that
  - all adults engage in at least 150–300 minutes of moderate-intensity activity per week (or 75–150 minutes of vigorous intensity),
  - for children and adolescents, the minimum is an average of 60 minutes of moderate-intensity activity per day spread over the week,
  - for children under the age of 5, it is 180 minutes of activity daily and
  - for toddlers, 30 minutes of activity daily depending on their stage of development.

It's never too late to take the first step.

- You can start being active or increase your amount of physical activity at any age (in a way that works for you).

Muscle strengthening benefits everyone.

- People should undertake varied muscle-strengthening activities starting in childhood. For adults, that involves muscle-strengthening exercises at least two days a week incorporating all the main muscle groups. Additional balance and coordination-enhancing activities are recommended for older adults. This helps prevent falls and is good for health and long-term independence in old age.

The less time spent seated, the better; prolonged sitting can be unhealthy.

- Prolonged sitting can increase the risk of cardiovascular diseases, cancer and type 2 diabetes. Limiting and regularly interrupting prolonged sitting through physical activity of any intensity (for example standing up when on the phone) is healthy.

More activity and less sitting is good for everyone.

- Everyone benefits from increasing physical activity and spending less time seated, including pregnant and postpartum women and people living with chronic conditions or disability.

2. Introduction

2.1 Development process of the physical activity guidelines

Health-enhancing physical activity guidelines in Switzerland date back to 1999 for **adults** [1] and to 2006 for **children and adolescents** [2]. In 2013, these two guidelines were revised based on those of the World Health Organization (WHO) from 2010 [3], and the older adults target group was added [4]. Moreover, guidelines for **infants and toddlers** [5] in Switzerland were introduced in 2016 and for **pregnant and postpartum women** [6] in 2018.

At the end of 2020, the WHO updated the 2010 global physical activity guidelines to include the latest evidence-based reviews and added guidelines for managing sedentary behaviour. Physical activity guidelines were also added for more sections of the population including pregnant women and people living with chronic conditions or disability [7].[1]

The process of updating the Swiss physical activity guidelines included:

- an analysis of the evidence-based need to change the previous guidelines to align them with the latest WHO guidelines;
- inviting feedback from the Swiss Health and Physical Activity Network hepa.ch members at their 2021 meeting as well as benchmarking and discussion with Swiss expert associations in a separate workshop;
- consolidating the Swiss physical activity guidelines as well as the relevant brochure "Physical Activity Guidelines Switzerland – Core document" with the hepa.ch steering committee and the scientific project team, with selective input from expert associations.

[1] This is in accordance with the key principles and goals of the "Global Action Plan on Physical Activity 2018–2030 (GAPPA)" [8], namely to reduce inequalities and support everyone in being more physically active every day. Through the GAPPA plan, WHO set a goal in 2018 to achieve a 25 % reduction in physical inactivity by 2030.

2.2 What's new in the physical activity guidelines?

The updates to the Swiss physical activity guidelines include the following:

- **"Every move counts"** as the main slogan instead of 10-minute bouts. The requirement of physical activity **being accumulated in bouts of at least 10 minutes no longer applies**. This was a methodological artefact. The 10-minute bouts were to help former study participants to recall their bouts of exercise. However, the research results of cohort studies now show that any physical activity is good for health, irrespective of its duration. In addition, the greater emphasis on "Every move counts" is especially for the most inactive among us, people who can achieve a positive health outcome by being just a bit more active.
- The updated physical activity guidelines for adults and older adults now focus on a **target range** of **150–300** minutes of moderate-intensity aerobic physical activity or **75–150 minutes** of vigorous-intensity aerobic physical activity. By contrast, the previous guidelines stipulated a **minimum recommendation** (150 or 75 minutes respectively). This change takes account of current evidence stating that the positive overall health effects of physical activity peak within this range.
- **Muscle-strengthening activities** on at least two days per week is a new basic recommendation for adults and older adults in addition to aerobic physical activity. All older adults are also advised to combine muscle strengthening with balance-enhancing physical activity to enhance functional capacity and to prevent falls. The latter recommendation has hitherto only applied to people with restricted mobility.
- **Limiting** and regularly **interrupting prolonged seating** is recognised as an important health-enhancing element of the physical activity guidelines for all population groups. Prolonged sitting is another relevant risk factor for negative health outcomes besides a low amount of physical activity.
- There are new **age-specific specifications on physical activity and screen time** for children under the age of 5.
- For children and adolescents from 5-17 years of age, the new physical activity recommendation is to do **"at least an average of 60 minutes (one hour) per day of moderate to vigorous-intensity, mostly aerobic physical activity across the week"** instead of "one hour per day".
- There are also guidelines specifically for people with chronic conditions or disability.

2.3 Rationale and purpose of the physical activity guidelines

The past 10 years have seen a significant increase in the body of evidence on the health impact of different types, amounts, durations and intensities of physical activity, as well as on the impact of prolonged sitting and its interrelationship with levels of physical activity and health.

The overarching purpose of these guidelines is to provide evidence-based public health recommendations on how much and what type of physical activity children and adolescents, adults, older adults and subpopulations such as pregnant women and those living with chronic conditions or disability, should do for significant health benefits and mitigation of health risks. The guidelines also provide evidence-based recommendations on the associations between sedentary behaviour and health outcomes. The guidelines provide professionals who work with the target groups mentioned with relevant information on physical activity and health. Addressing people living with chronic conditions or disability underscores their relevance to policy makers with regard to the planning and implementation of measures to promote physical activity for everyone.

The guidelines on physical activity and sedentary behaviour in this core document should be used as a basis for raising awareness and for the education and training of health professionals, physical activity, exercise and sports professionals, education professionals and other relevant stakeholders. Advice or further physical activity guidelines for specific target groups, whether directed towards individuals or particular population groups, should be based on the guidelines outlined in this document and adapted to the specific target group in content and form.[2] They should be clear, practical and address motivations and barriers.

[2] See for example, "Gesundheitswirksamen Empfehlungen für Schwangere und Frauen nach der Geburt" by Health Promotion Switzerland [6].

2.4 Target group of the physical activity guidelines Switzerland

The physical activity guidelines and this brochure are mainly for:

- **decision-makers** in offices for health, education, youth, sport, transport, spatial planning and/or social roles in municipalities, cantons, the Federation, parliament and the Federal Council. The core document serves these persons in formulating national, cantonal or communal plans and initiatives to encourage physical activity and in making recommendations to reduce sedentary behaviour among population groups.
- persons working in **non-governmental organisations, education and training organisations** or in **research**. They include, for example, professionals and students/trainees in medical professions (e.g. doctors, carers, physiotherapists), involved in promoting health and physical activity, in universities of teacher education, in spatial and traffic planning, landscape architecture, business administration, sports associations and training for trainers.
- **students** in those disciplines as well as people undergoing education and training in *Jugend+Sport* (J+S) (youth and sport) and *Erwachsenensport Schweiz* (esa) (adult sport Switzerland).
- other persons involved in **health promotion** (e.g. course providers, HR managers, business managers, health coaches, people in marketing, influencers).

2.5 Basic concepts explained

There is a basic distinction between sedentary behaviour – inactivity – and physical activity. Physical activity entails health-enhancing physical activity and sport involving lots of steps (see Chart 1):

- **Physical activity** refers to any bodily movement produced by skeletal muscles that requires energy expenditure above the resting metabolic rate. Physical activity is the overarching term covering health-enhancing physical activity and sport. **Health-enhancing** is any physical activity that improves health with minimum undesired side effects. Examples include active mobility (e.g. walking, cycling), dancing, gardening – for example raking leaves, yoga, fitness training, jogging, Nordic walking, swimming or cross-country skiing. Physical activity must be carried out correctly to ensure it is health-enhancing, safe and gentle. Gardening, for example, is usually a very good activity, but it can cause back problems if done with poor posture. Types of physical activity involving lots of contact or very intensive training over an extended period can also be detrimental to health (e.g. concussion in football or arthritis after a sporting career). Thus, recommended physical activity normally means health-enhancing physical activity. Activity is usually divided according to the domains in which it takes place:
  - in leisure time (e.g. a walk, sports training, dancing)
  - at work (e.g. manual workers, service, stand-up desks)
  - at school/college (e.g. physical education lessons, active breaks)
  - in active mobility going from A to B (e.g. running errands by foot or by bike/e-bike)
  - at home (e.g. cleaning, working in the garden)

  It is easy to incorporate activity into daily routine in these settings: for example, by taking the stairs instead of the lift, standing up to take calls or when working or cycling to work.
- **Sport** covers a variety of activities that may or may not have a certain playful or competitive character: nowadays, many leisure activities involving physical activity are classified as sport, such as hiking, yoga or dancing (see "Sport Schweiz 2020" study [9]) (published in French, German and Italian). The boundary between sport and activity is thus something of a grey area.

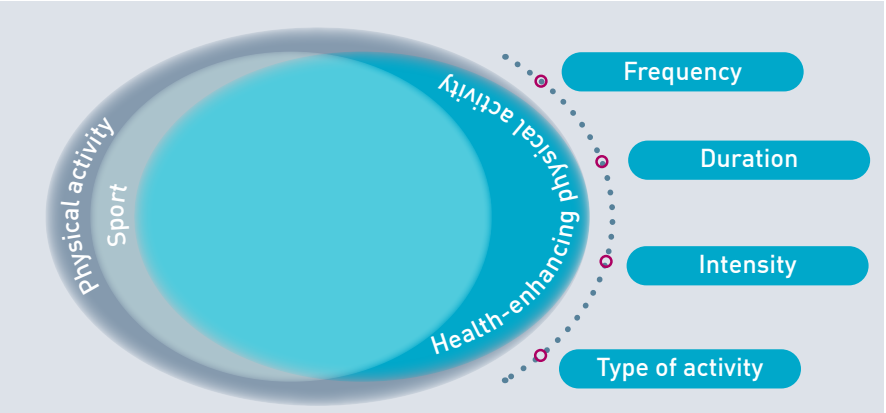

Chart 1: Connection between health-enhancing physical activity and sport. Sport for the most part also involves health-enhancing physical activity, but from a certain frequency, duration, intensity and type, it can also be detrimental to health. Both terms are a subset of physical activity, which is distinct from sedentary behaviour.

2.6 Components of health-enhancing physical activity and sport in fulfilling the physical activity guidelines

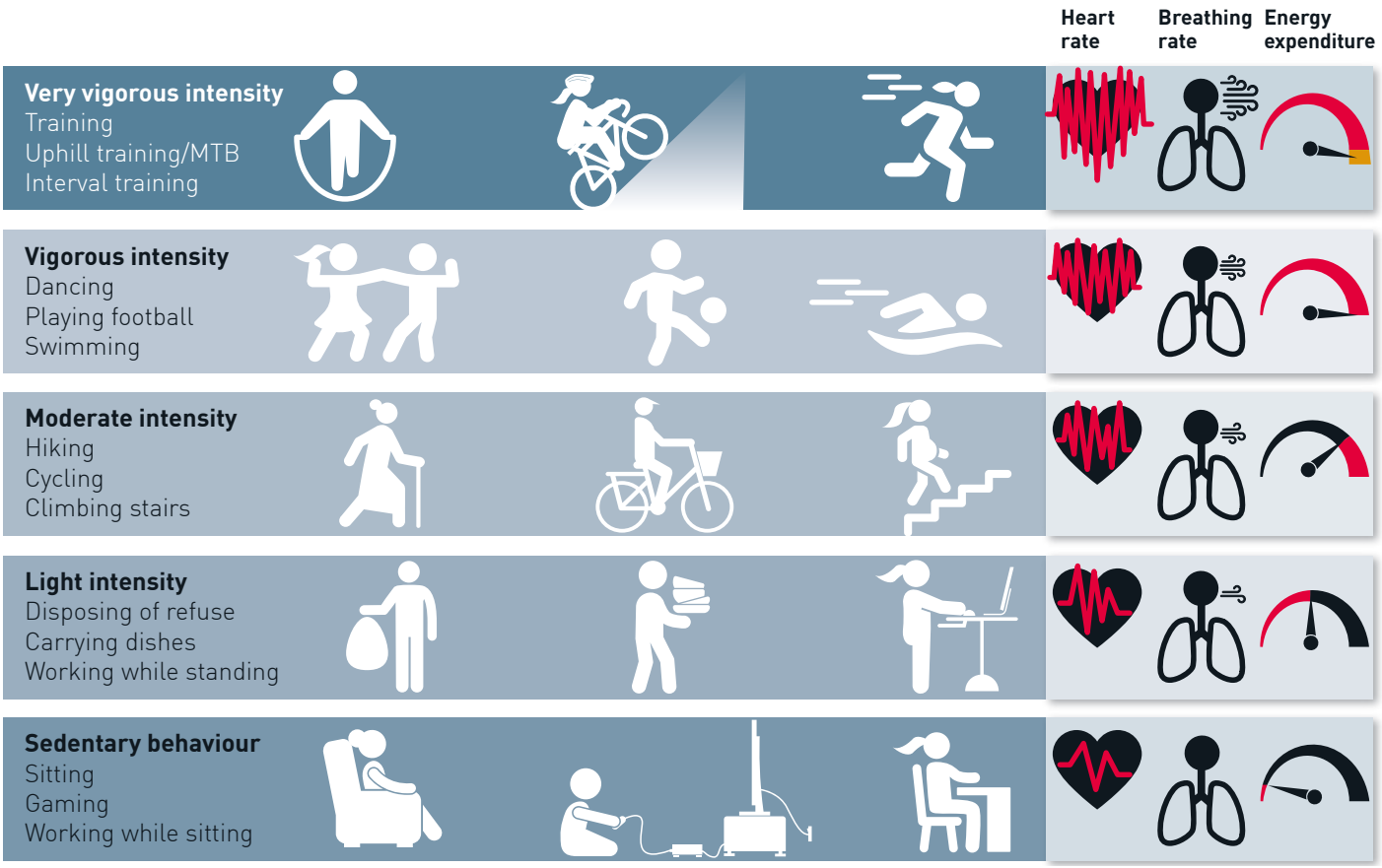

Chart 2: Intensity areas with examples of everyday, physical and sporting activities (adapted from [12], on the basis of [13])

The time spent on a type of activity per week (aerobic activity, strength, etc.) is a factor in meeting the physical activity guidelines. The amount of exercise is a product of the frequency and duration of an activity in a given intensity range.

Frequency refers to the number of sessions per week. Physical activity guidelines mainly comprise ways of stressing the cardiovascular system plus other exercises that exert the muscles. Aerobic activity four times per week could be "cycling to work three times a week and jogging once a week". Strength training twice a week could be "one session in the gym and one session at the vitaparcours (fitness trail)."

The **duration** of an activity is the time spent on a specific activity. It is counted in hours, minutes or seconds for aerobic physical activity, for example "30 minutes of cycling". Analogous to the duration, the number of repetitions measures strength training – for example "12 squats".

The physical activity guidelines include details of the **intensity** of the activities. There is usually a distinction between "light", "moderate" and "vigorous" **intensity** (see Chart 2) as well as "sedentary behaviours":

- At the lowest end of the intensity range is **sedentary behaviour** meaning any behaviour when awake involving low energy expenditure (below 1.5 MET[3]) [10]. That includes most types of sedentary office work, watching television, computer games or driving. Prolonged sitting is a health risk factor.

[3]A MET (metabolic equivalent of task) is a person's estimated energy metabolism. At rest this is defined as an oxygen intake of 3.5 ml/min/kg corresponding to energy expenditure of 1 kcal pro kg of body weight per hour (4 kJ/kg/h). If a person weighing 80 kg does sport for one hour at an intensity of 7 MET, that person uses an estimated 7 kcal/kg/h * 80 kg * 1h = 560 kcal compared to an estimated 80 kcal/h when resting.

- **Light-intensity physical** activity covers activities that do not significantly increase breathing or heart rate, e.g. walking slowly, doing the dishes or other casual movements. The energy expenditure is between 1.5 and 3 METs. On the 10-point Foster scale of individually perceived exertion[4] (0 means "no exertion whatsoever", 10 means "maximum exertion") based on a person's fitness level, light-intensity physical activity normally corresponds to a value of 4 on the scale of individual exertion. Although light-intensity physical activity does not count towards achieving the physical activity guidelines, it is still important as it marks the transition from inactivity/sedentary behaviour to health-enhancing physical activity.
- **Moderate-intensity physical** activity accelerates breathing, but (as a general rule) does not involve breaking sweat, and one will still have enough breath to talk but not to sing. Brisk walking, cycling, strength training with small weights, snow-shovelling or gardening are just some of the many examples of moderate-intensity activity in leisure time, everyday activities or during sports. Energy expenditure is 3-6 METs. This corresponds to a value of 5 or 6 on the 10-point Foster scale of individually perceived exertion. Any activity on this level and upwards counts as health-enhancing.
- **Vigorous-intensity physical** activities cause slight sweating and accelerated breathing so only brief exchanges of words are possible. They include activities and sports that use major muscle groups, such as jogging, cycling fast to work or in free time, swimming or cross-country skiing, as well as combined cardiovascular and strength training on exercise machines or strength training with own body weight (e.g. press-ups, sit-ups, pull-ups). The energy expenditure exceeds 6 METs. This corresponds to 7 or 8 on the 10-point Foster individual exertion scale.
- Activity involving **very vigorous or maximum intensity** covers the most strenuous forms of exercise, such as uphill sprints, strength training with large weights or on exercise machines at full capacity or running for the train. This corresponds to 9 or 10 on the 10-point Foster scale of individually perceived exertion. This activity occurs at brief intervals during training (a few seconds) with breaks or in combination with lower-intensity activities (high-intensity interval training [HIIT]). This could entail combining aerobic with muscle-strengthening exercises. Physical activity of very vigorous or maximum intensity has been proven to be health-enhancing for healthy, active persons (children and adolescents, active adults, trained persons) [11], but there are currently only very few findings on the benefit and risks for older people. Very vigorous intensity is always included under vigorous intensity in this document, with regard to children, adolescents and adults without mobility issues.

***"Concept of relative intensity"**: differentiate between physical activities of moderate and vigorous intensity with the speaking test. If you are able to talk but not sing, that indicates moderate intensity, while having difficulty speaking without a break indicates vigorous intensity.*

*The intensity of an activity comes from the degree of exertion caused to the individual. **The intensity thus does not vary depending on the type of activity or sport, but according to the individual**. For example, Nordic walking could be a moderate-intensity activity for a well-trained person, whereas it would be a vigorous-intensity activity for an older person or someone with health restrictions. The examples mentioned above of types of sport or activity corresponding to moderate or vigorous intensity are thus suitable for the majority of the population. Adjustments to the individual requirements can be made as part of an appropriate clarification and consultation.*

[4] You can find a template for a Foster scale at https://www.mobilesport.ch/assets/lbwp-cdn/mobilesport/files/2016/06/06_16_FosterSkala.pdf

Types of physical activity

The physical activity guidelines refer to the following types of physical activity, which are relevant for individual health.

Types of physical activity	Features	Examples
Aerobic activity (also called endurance activity)	– Cyclical use of major muscle groups for an extended period, whereby the muscles receive adequate oxygen (approx. up to vigorous intensities) – As an everyday or sporting activity	– Leisure time: brisk walking, jogging, dancing, playing basketball, swimming – Work: bicycle courier, climbing stairs – School/education: Aerobic physical activity and games – Active mobility: walking shops, cycle to work
Muscle-strengthening activity	– Physical activity and exercise that increase skeletal muscle strength, power, endurance and mass – As many as possible of the body's major muscle groups (legs, hips, chest, back, abdominals, shoulders and arms) should be incorporated – With strength training, the intensity (e.g. weights used) should be such that a maximum of 8 to 12 correctly performed repetitions are possible. The set is then repeated two to three times following a 2-3 minute rest. – As an everyday or sporting activity	– Leisure time: strength training exercises with elastic bands, exercises using own body weight, such as press-ups, pull-ups or abdominal muscle training as well as use of free weights or exercise machines, climbing – While at work: carrying heavy things, climbing stairs – School/education: exercises with own body weight – Active mobility: cycling uphill – At home: climbing stairs, carrying shopping bags, working in the garden, snow-shovelling
Bone-strengthening activity	– Activities that produce an impact or tension force on the bones that promotes bone growth and strength.	– Leisure time: jogging, skipping rope, walking/hiking, dancing, strength training (including upper body) – While at work: lifting heavy things – School/education: skipping, for example when playing games – At home: going down stairs, lifting heavy objects
Coordination/balancing exercises/training	– Coordination exercises improve the interaction between the nervous system and musculature, which improves motion control – Balance is a coordination ability – Requirement for secure and efficient action in foreseeable and unforeseeable situations (fall prevention) – Basis for quickly learning new activities	– Leisure time: dancing to music, reaction games, group games where people have to continually react to changing situations – While at work: standing on one leg/ balance board – School/education: active games in different places or with unusual space requirements, juggling – Active mobility: walking over uneven surfaces – At home: doing different things with both hands at the same time
Flexibility exercises/ training	– Helps maintain or enhance the ability of a joint to move through its full range of motion – Influences the stretch tolerance of the musculature and connective tissue	– Exercises that are performed over the entire pain-free maximum achievable range of motion in one or more joints – Leisure time: gymnastic or stretching exercises (e.g. yoga) and suitable types of play – While at work as well as in school/ education: stretching exercises at the workplace/desk

Table 1: Types of physical activity (adapted from the Austrian physical activity recommendations [14])

Sample calculation for reaching the physical activity guidelines

The amount of physical activity per week (frequency and duration of activity) and intensity are counted together to determine whether the physical activity guidelines are being met. The easiest thing is to **count the accumulated minutes spent being active**. If someone spends 30 minutes being active on seven days a week or 70 minutes on three days a week at moderate intensity, that amounts to 210 minutes per week. Generally speaking, every physical activity at moderate intensity or higher counts towards the weekly total. Short activities throughout the week can also be accumulated.

The following rule applies: before counting the time spent per week on aerobic activity, **double the number of minutes spent being active at vigorous intensity**. Then add the number of minutes of activities at moderate intensity. For example, 60 minutes spent walking at a brisk pace (moderate intensity) and 60 minutes of cross-country skiing (vigorous intensity) per week amount to 180 minutes of physical activity in that week: the 60 minutes of vigorous-intensity activity count double.

3. Why physical activity is healthy

3.1 How regular physical activity affects health

Regular activity and sport are important to all age groups and sections of the population in maintaining and improving their health and wellbeing throughout their lives. This is now broadly recognised and scientifically proven [15, 16].

Chart 3 outlines the health benefit that can be expected from staying active from early childhood right through to old age.

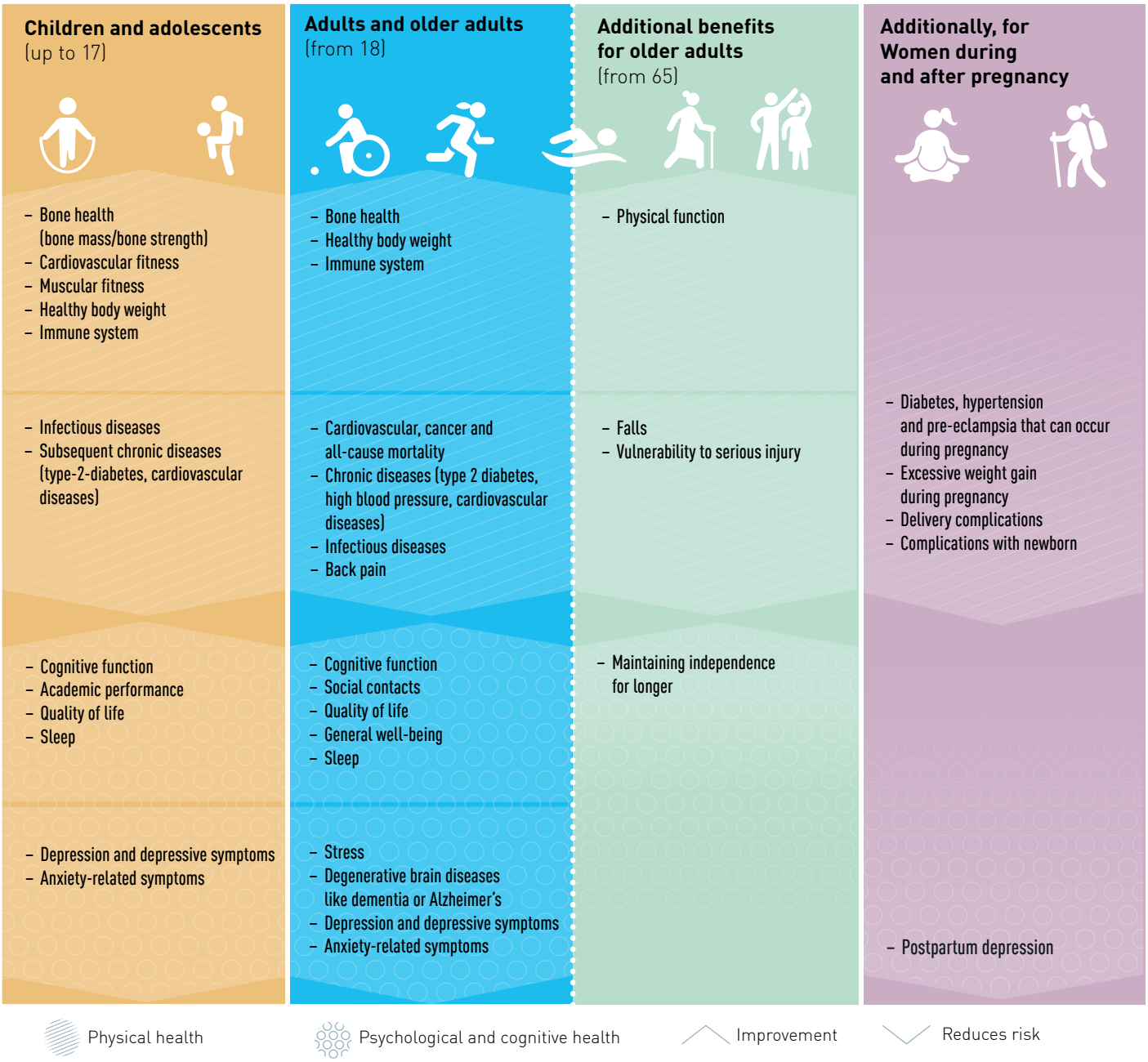

Chart 3: Health effects of regular health-enhancing activity [12, 14, 17, 92] with medium to strong scientific evidence (older adults and adults)

3.1.1 Children and adolescents

There is extensive evidence backing the numerous health benefits of physical activity and sport for young people. Sufficient physical activity is essential for the physical, motor, psychological, social and mental development of children and adolescents [3].

Better risk profile: Physically active children and adolescents have higher endurance and muscular strength than children who do not engage in adequate physical activity [15,18]. Physical activity reduces the body fat percentage and the risk of becoming overweight [15,18], increases bone mass and improves bone strength [15], strengthens the immune system and counters infectious diseases [92]. In addition, physical activity has a positive impact on a variety of risk factors preventing later diseases such as type 2 diabetes and cardiovascular diseases [15,19–21]. Physically active young people also experience fewer anxiety-related symptoms and are less susceptible to depression [15]. In addition, regular physical activity improves their academic performance [15,18,22].

Sedentary behaviour and health: Extended sitting, especially in front of a screen during leisure time, negatively impacts the health of children and adolescents [15, 23]. Extended screen exposure, including television, is, for example, linked to poorer fitness and cardiovascular and metabolic health [23]. This is exacerbated by unhealthy nutrition habits [24, 25]. Moreover, there is a negative association between **sedentary behaviour** and well-being or quality of life and between screen exposure and depression [26, 27][5], as well as between television viewing and video game use with pro-social behaviour among children and adolescents [23][6] and sleeping time [29]. There is more scientific evidence on the adverse health effects of exposure to television or screen time during leisure time than about sedentary behaviour in general.[7]

Sleep and health: There is also a proven link between sleep and health: sleep is essential for physical, psychosocial and mental development [30, 31], especially for young children. Short sleep duration is associated with metabolic disorders, obesity and adiposity in children [32] and adolescents [33]. This association has also been found longitudinally where chronic sleep deficiency up to the age of 7 led to increased obesity in later childhood and during adolescence [34].

Physical activity for children and adolescents involves **play, sport, active mobility, sports training or other structured physical activities with the family, during leisure time or at school**. However, there have been few studies on the different physical activity patterns and types of physical activity for children and adolescents.[8] It thus remains unclear whether the association between physical activity and health varies by activity type (e.g. aerobic versus muscle-strengthening activity) or domains of physical activity (e.g. active mobility like walking or cycling versus physical education lessons versus sport and physical activity during leisure time).

With regard to **strength training**, there is moderate evidence that muscle-strengthening activities on at least three days a week are beneficial for health. However, given the heterogeneity of the intervention studies it is unclear to what extent the duration and intensity of strength training are relevant for health benefits [15, 18]. There is even less evidence in support of the positive effect of strength training for children relative to adults with regard to cardiovascular and metabolic health.

Early childhood is a time of **rapid physical and mental development** and a time when a child's habits are forming and the family lifestyle is open to change and adaptation. Habits acquired during early childhood can influence the extent and type of physical activity over an **entire lifetime** [35]. Active play and opportunities to engage in structured and unstructured physical activity can help develop motor skills and explore the physical environment. Encouraging physical activity and healthy sleep patterns among young children will contribute to their physical health, reduce the risk of childhood obesity and is associated with non-communicable diseases and improved mental health and well-being in later life [35].

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[5] These scientific findings from mainly cross-sectional studies require confirmation in longitudinal studies that ascertain the cause-effect relationship.
[6] Means helpful behaviour not motivated by professional commitments and not performed by an organisation (except for a charitable organisation). [28]
[7] This may also be due to better measurability.
[8] For further information on types of physical activity as a basis for lifelong physical and sporting activity, see https://www.Jugendundsport.ch/de/sportarten/kindersport.html

3.1.2 Adults and older adults

Protection against disease and premature mortality: Regular physical activity is a known protective factor for the prevention and management of non-communicable diseases: physical activity of any intensity, including light intensity, has a significant protective effect on all types of widespread conditions and diseases including high blood pressure and other cardiovascular diseases, type 2 diabetes, infectious diseases and back pain [3,15,36]. Research results also indicate that regular physical activity can be good for the immune system [92], mental health (e.g. reduction of symptomsand development of depression [37–40] and anxiety-related symptoms [38,41,42]), cognitive health (esp. cognitive function, memory) [15], sleep [15], stress regulation, health-related quality of life and general well-being [15, 43] (see Table 2). Physically active people suffer less frequently from degenerative brain diseases such as dementia or Alzheimer's [44–48]. On the whole, they feel both physically and mentally healthier and need to see a physician and visit a hospital less often. The average length of their stays in hospital is also shorter, and they are less frequently absent from work [49].

Impact	Age groups	Effect	Short-term	Long-term
Cognitive function	Children aged 6 to 13	Improved cognitive function (better development of skills and knowledge; improved goal orientation; better processing speed; better memory)	✔	✔
	Adults	Reduced risk of developing dementia disorders (including Alzheimer's)		✔
	Adults aged 50 and over	Improved cognitive function (better focus; improved alertness, memory and ability to recall and apply information; better processing speed)		✔
Quality of life	All	Better quality of life		✔
Depression und depressive Verstimmung	All	Reduced risk of depression and depressive symptoms		✔
Ängste	Adults	Fewer brief episodes of anxiety	✔	
	Adults	Reduced long-term episodes of anxiety among persons with or without anxiety disorders		✔
Schlaf	All	Improved sleep (better efficiency and quality of sleep; deeper sleep; reduced somnolence during the day; less use of sleep-inducing medicines)		✔
	All	Improved sleep (short-term effect)	✔	

Table 2: Effects of physical activity on mental and cognitive health (see [14] based on [15,16])[9]

Prolonged sitting has a negative impact: New findings indicate that prolonged sitting is associated with cardiovascular diseases and type 2 diabetes as well as cardiovascular, cancer and all-cause mortality [15, 36, 50–53]. The general recommendation for all ages is to limit prolonged sitting or interrupt it regularly with activity of any kind as the negative health effects of sitting more than eight hours a day can hardly be offset by a higher amount of physical activity [51].

Physical activity can be good for developing social contacts: Whether in a sports club or during everyday activities with friends, walking to run errands or to the office, for example, it is known that people who actively cultivate friendships fall ill less often. This social aspect of physical activity is particularly significant for older people, as contacts made through work may not all last beyond retirement [54].

[9]Only impacts supported by a strong or moderate body of evidence are included.

Live better and longer: Physically active persons over 65 are more autonomous, mobile, less in need of care and mentally fitter than their largely inactive counterparts [55]. Physical activity, especially when it is combined with exercises for balance, strength, aerobic physical activity and motor-cognitive skills, reduces the risk of falling and falling accidents among older people by up to a quarter [55]. It also reduces the risk of bone fractures, traumatic brain injury or other injuries requiring treatment or hospitalisation.

Good health behaviour: Physical activity is often part of a healthy lifestyle: physically active persons smoke less, eat more healthily and are less overweight [56], and vice versa.

3.1.3 Women during and after pregnancy

Physical activity before and during pregnancy can help **reduce the risk of common pregnancy complications**. This includes a lower risk of hypertension, pre-eclampsia [57], diabetes [58] and excessive weight gain during pregnancy [58], delivery complications [59] and fewer complications with the newborn. Moreover, increased physical activity has no adverse effects on the newborn [61], nor does it entail an increased risk of stillbirth [58, 59].

While more physical activity (frequency, duration and/or amount) generally leads to greater health benefits, further research is required on the dose-response curve, particularly with regard to different types of physical activity and intensity levels for women during and after pregnancy. Nonetheless, it is reasonable to assume the responses will be similar to those of adults in general [7].

Generally speaking, the **benefit** of physical activity for women during and after pregnancy outweighs any potential adverse effects, and the risks are low. Depending on the fitness level and progress of the pregnancy, it is recommended that the frequency, duration, intensity and type of physical activity are individually adapted.

3.2 Significance of the amount of physical activity

There is a direct link between the **amount of physical activity performed and the extent of its impact upon health** (see Chart 4): the more physical activity a person does, the greater the health benefits a person can expect. Physical activity also reduces all-cause mortality, whereby the dose-response curve starts out steeper and flattens out the more physical activity increases [36], as with mortality from cardiovascular diseases, type 2 diabetes [62] and the occurrence of cancer among adults [63]. 150-300 minutes of moderate-intensity activity or 75-150 minutes at vigorous intensity covers the physical activity amount offering the greatest positive health outcomes [15, 36, 64].

There is, however, no lower threshold for the health benefits of physical activity. In keeping with the key message "Every move counts", people who have hitherto been largely or entirely inactive can expect to derive the greatest health benefit from increasing the time spent on physical activity, as the dose-response curve is steepest at the lower end [36].

It is also worth noting that going beyond the recommended 150-300 minutes of physical activity at moderate intensity or 75-150 minutes at vigorous intensity per week entails extra health benefits [15, 36, 63, 65], although the added benefit decreases with increased amount of physical activity. The precise amount of physical activity where the health benefit actually decreases for adults remains unclear [7].

"Short-term and long-term effects"
Physical activity entails some direct benefits, e.g. experiencing the physical strain, the feeling of enhanced well-being immediately afterwards or the change in the vital signs (e.g. heartbeat, blood pressure, blood glucose concentration). Long-term effects, e.g. lower heartbeat from repeated physical activity or stronger leg muscles from cycling only appear after repeated sessions of physical activity at moderate to vigorous intensity.

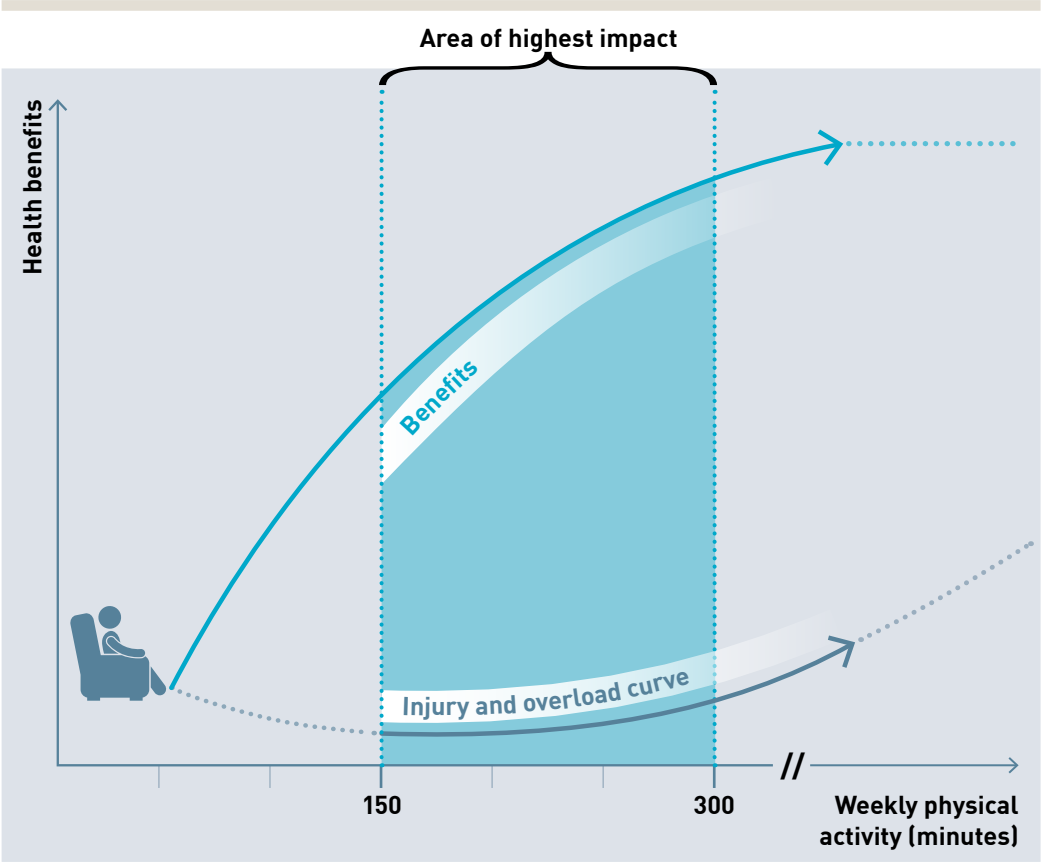


Chart 4: Dose response curve (adapted from [7]) Every increase in the amount of physical activity brings a greater health benefit. Individuals who were previously barely active or not active at all can expect to derive the greatest additional benefit. The precise form of the curve at its upper and lower ends for the benefits and undesired risks remains unknown.

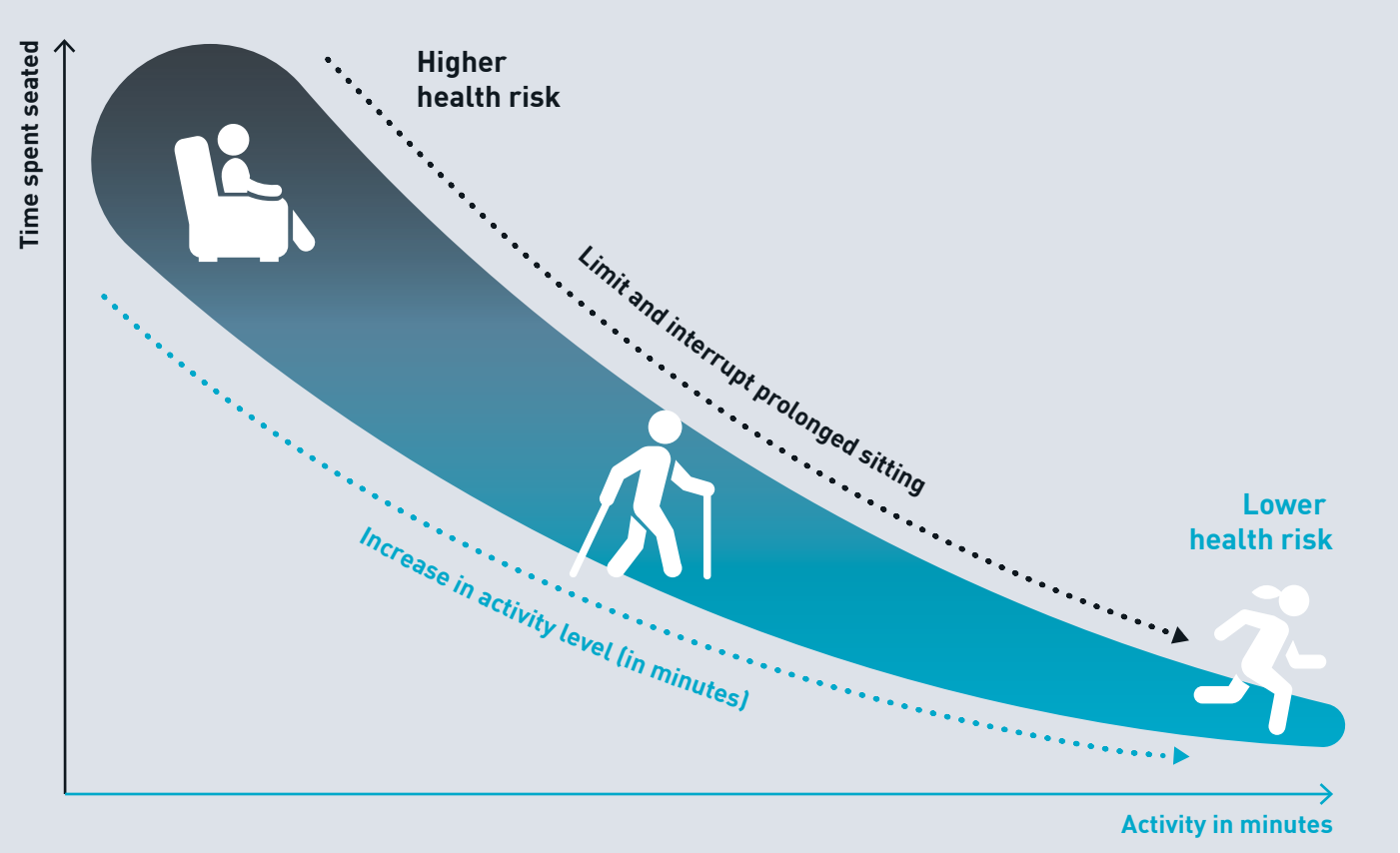


Chart 5: Relationship between prolonged sitting and physical activity [7]

The chart shows the amount of physical activity at moderate to vigorous intensity on the horizontal axis and the daily sitting time on the vertical axis. Black represents a higher all-cause mortality risk and blue a lower all-cause mortality risk.

The risk of developing chronic diseases increases for people who are not physically active enough. However, the potential undesired effects also grow with the increasing amount of physical activity. Accidents are the biggest numerical risk associated with physical activity and sport [66]. The risk of injury varies depending on the type of activity. Active people suffer more injuries through physical activity and sport than inactive people; however, these injuries are usually less serious than for inactive people [67]. The risks can be kept low through precautionary measures, e.g. slow increase in the amount and intensity of the activity, recovery breaks, performing the activity correctly as well as having the right equipment.

Overall, the health benefits of physical activity and sport outweigh the possible downside. Physical activity can also reduce the risks of sedentary behaviour and physical inactivity11[10] with harmful health outcomes (e.g. mortality, development of chronic diseases) [15,50,51]. This relationship varies depending on the amount of physical activity (see Chart 5).

As a priority, repeated and prolonged sitting combined with low levels of physical activity is thus to be avoided. It is particularly important for people whose work makes them spend a lot of time sitting (e.g. checkout staff in the supermarket or chauffeurs) to balance out the effects of their work through regular physical activity. The latest studies show that an amount of physical activity of about 30-40 minutes at a moderate to vigorous intensity per day is enough to offset the increased risk of premature mortality from spending about ten hours a day seated [51, 68].

[10]Physical inactivity is defined as not complying with the physical activity guidelines.

3.3 Physical activity – better late than never

Any step **away from low levels of activity** – however small – is important and benefits health. It's also never too late to take this first step: even older individuals who have never been very active can do a lot for their health, their well-being and their fitness if they incorporate regular physical activity into their daily routine (see Chart 6) [69].

On the other hand, research has shown that the health effects of physical activity and sport cannot be stored up for the future. This means that individuals who were endurance athletes at the age of 30 no longer derive any benefit from this activity at 50 if they have been inactive in the meantime. If the physical activity guidelines are no longer met, the positive effects of physical activity on longevity disappear [70]. This underlines the need to remain physically active for as long as possible and for activity being important at any age.

With bone and muscle health, however, the situation is different. Deficits in the build-up of peak bone mass during childhood can only be partially compensated later in life. Strength exercises during childhood help develop muscle strength and build healthy bones, while they help adults and older people maintain their strength and delay the natural ageing-related decrease in muscle mass and bone density that occurs from the age of about 30 onwards[12]. This is why it is important for children and adolescents to get sufficient physical activity and to engage in weight-bearing and strength-building activities. Nonetheless, the risk of falling and breaking bones can be reduced at any age – even in the case of individuals with osteoporosis [71, 75]. The key is regular strength and balance training following consultation with experts [55, 69].

This shows that lifelong physical activity and sport is important to health. It is thus recommended to undertake varied physical activity from childhood onward in order to strengthen the muscles. Older people should also incorporate physical activity to improve balance and coordination. This helps to prevent falls and improves health and long-term independence in old age.

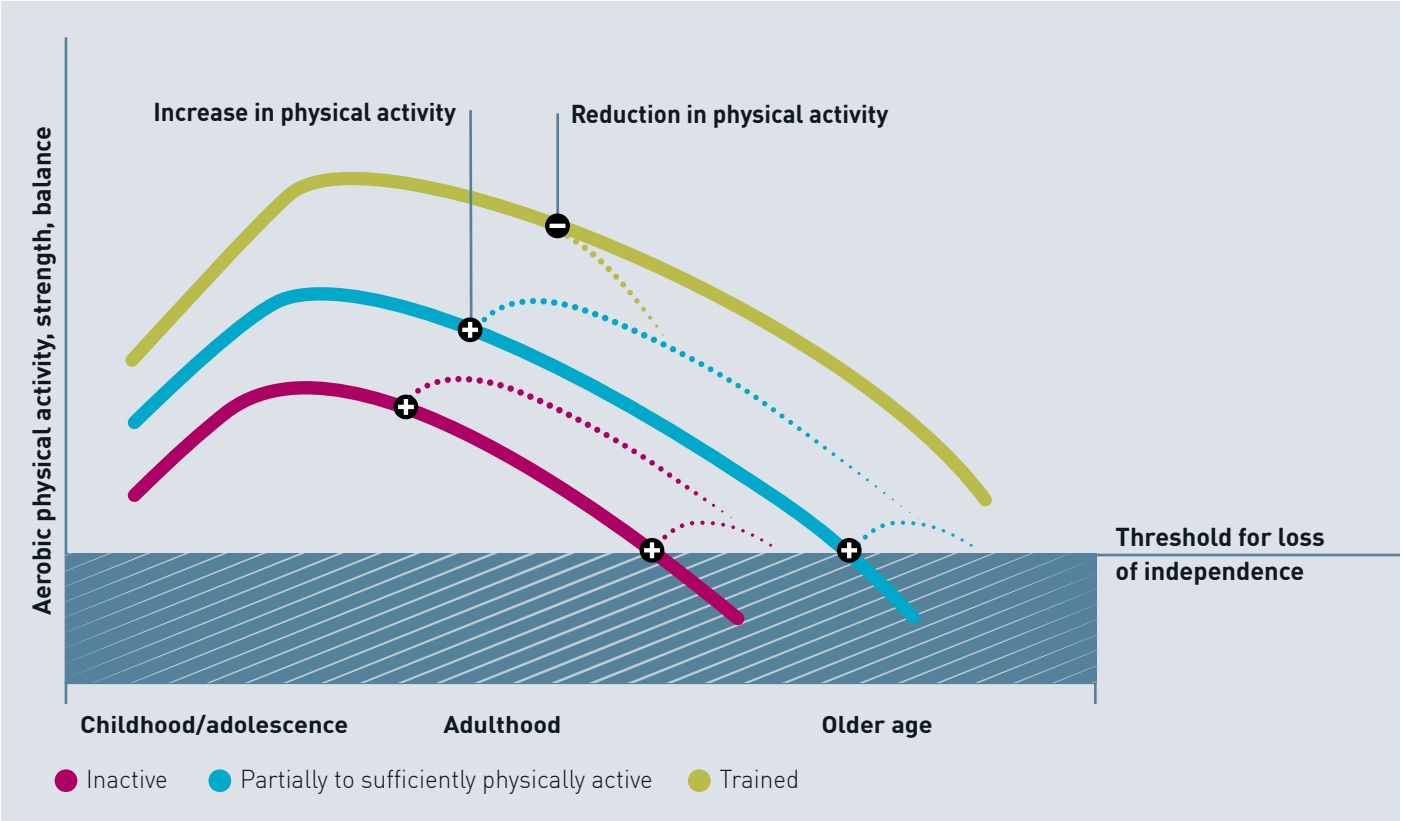


Chart 6: Health and performance throughout life: physically active individuals are fitter and healthier during their entire life. Inactive individuals can, however, approximate the state of health of more active individuals at any time by engaging in regular physical activity (in accordance with [12,71–74]).

4. Physical activity guidelines

4.1 Physical activity guidelines for infants, toddlers and children under 5 years of age

Early childhood (under 5 years of age) is a time of rapid physical and mental development and a time in which a child's habits are forming and habits within the family are open to change and adaptation. Chapter 3.1.1 outlines the positive impact of physical activity on a child's development and health at any age and stage of life.

Target group for guidelines

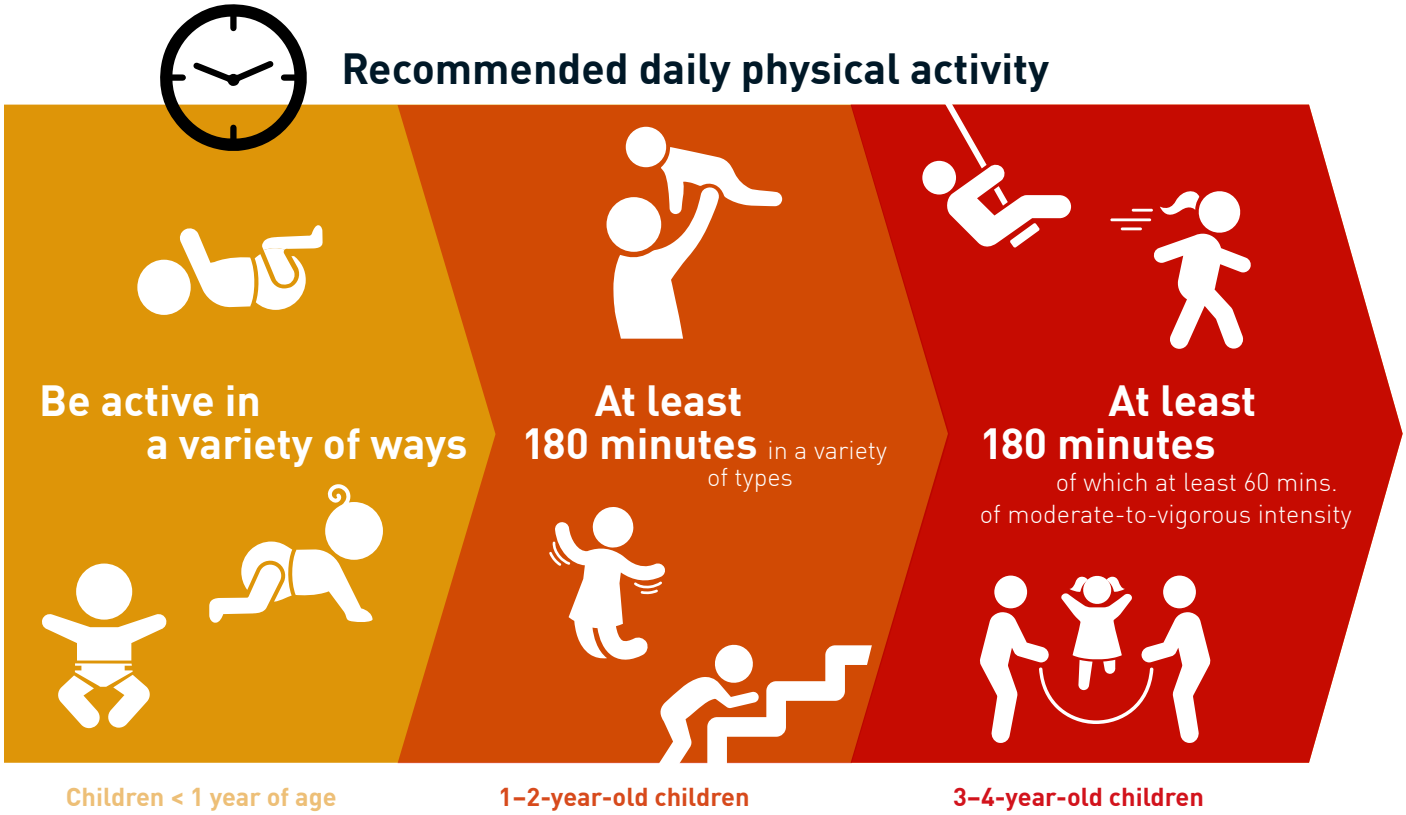
These guidelines are for all children under the age of 5, irrespective of gender, motor skills and motor abilities.

Basic guidelines

Children under the age of 5 should follow all the guidelines for movement, sedentary behaviour and sleep within a 24-hour cycle to maximise the health benefits as described below.

Replacing time spent sitting or in front of a screen, especially when combined with high-energy food, with physical activity while also getting enough sleep can bring additional health benefits.

Children under the age of 5 with specific needs, including chronic health problems, movement restrictions or disabilities *(sensory handicap, physical, mental or psychological disability) also benefit from regular physical activity and should aim to meet the basic guidelines as far as possible. Personalised advice from an expert and an individualised adaptation of the physical activity guidelines in line with personal circumstances regarding frequency, duration, intensity and type of physical activity depending on the condition, disability and personal situation should be considered. Relevant expert organisations (e.g. healthcare leagues, Procap bewegt, PluSport, Swiss Paraplegics Association) are available to assist with the required adaptations. Young children who have to remain seated for long periods due to a walking impairment are advised to regularly change their seated position (e.g. raise their arms and stretch their upper body, move their body sideways, curl up/stretch their upper body). The individually possible range of motion of the joints should be used to adopt alternating positions.*



Enough good quality sleep with regular wake-up and sleeping times.
When awake, children should not be restrained for more than 1 hour at a time.

Chart 7: Recommended times for daily physical activity for infants, toddlers and children under 5 years of age.

- **In a 24-hour day, it is recommended that infants (less than 1 year):**

– **are physically active several times a day in a variety of ways**, particularly through interactive floor-based play; more is better. For those not yet mobile, this includes at least 30 minutes in prone position (tummy time) spread throughout the day while awake. The duration is incrementally increased in line with the baby's development to a minimum of 30 minutes.
  · Examples of these movement types include kicking when lying on the back, reaching for things or own feet, using the forearms for support in prone position, rolling onto the stomach and back again, sitting up, sitting independently, creeping, crawling, standing up with support, cruising, etc.

– are **not to be restrained for more than 1 hour at a time in the same position** (e.g. in the pram/stroller, car seat/bicycle trailer, highchair, baby walker or bouncer) when awake; this should be interrupted by physical activity. Screen time is not recommended. When sedentary, active interaction with a caregiver and the surroundings is encouraged.

– **get sufficient good-quality**[11] **sleep** (including naps).

- **In a 24-hour day, it is recommended that children 1-2 years of age:**

– **spend at least 180 minutes (3 hours)** in a variety of individually chosen types of physical activities at any intensity, including moderate to vigorous-intensity physical activity, spread throughout the day; more is better.
  · Examples of these types of physical activities include using furniture to stand up, walking independently, crawling or walking up the stairs, running, hopping, climbing, moving upwards, transporting and moving objects in an age-appropriate way, throwing and catching a ball.

[11] Good quality refers here to sleep duration and bedtime. Night and day-time naps also count for children under the age of 5.

– **are not restrained for more than 1 hour at a time** (e.g. in the pram/stroller, car seat/bicycle trailer, in highchairs or strapped on a caregiver's back) or sit for an extended period of time.
  · Up to 2 years: no regular screen and television time – there is nothing wrong with the occasional age-appropriate film, broadcast or app or looking at digital photo albums or videochats with relatives and acquaintances. Parents/guardians determine how much time the child can spend in front of a screen daily and supervise the child. Every child is different. The impact of digital media on the individual and a child's attention span thus need to be monitored.[12]
  · When sedentary, **active interaction with a caregiver** and the surroundings is encouraged.
– **get sufficient good-quality sleep**[13] (including naps), including regular sleep and wake up times.

● **Children 3-4 years of age are recommended to do the following within a 24-hour day**

– **At least 180 minutes** (3 hours) in a variety of types of physical activities at any intensity, of which at least 60 minutes (1 hour) of moderate to vigorous-intensity physical activity, spread throughout the day; more is better.
  · Examples of these types of physical activity include walking, running, exploring the surroundings, staying balanced in different postures (standing on one leg, on all fours, balancing), sliding, swinging, rhythmic back and forth movements, climbing, jumping, dancing, turning, doing somersaults, throwing, catching, kicking, etc.
– **Not to be restrained for more than 1 hour at a time (e.g. prams/strollers) or to sit for extended periods of time**.
  · Regarding seated screen time: the less, the better, ideally not every day, supervised and age appropriate. There is nothing wrong with the occasional child-appropriate film, broadcast or app or viewing digital photo albums or videochats with relatives and acquaintances. Parents/guardians determine how much time the child spends in front of a screen and supervise the child to ensure age-appropriate content. Every child is different. That's why the individual impact of digital media and the child's attention span need to be monitored.[12]
  · When sedentary, **active interaction with a caregiver** and the surroundings is encouraged.
– **Get sufficient good-quality sleep**[13] (including naps) including regular sleep and wake up times.

Implementing the guidelines for children under 5 years of age[14]

Parents or guardians need to be informed of the physical activity guidelines, as they, for the most part, encourage their children to be physically active during the day. Equally important is rolling out these guidelines to playgroups, daycare centres and kindergartens so that the physical activity guidelines are observed as an integral part of the day at these childcare facilities. That way the guidelines reach most children, including those who would not otherwise be involved. Municipalities, the federal government and cantons can also contribute to implementing these guidelines, by facilitating varied physical activity options or an activity-friendly environment (e.g. play areas, play streets, family activity offers, intergenerational physical activity projects, educating child carers).

Varied surroundings – varied physical activity

Many places are conducive to physical activity – some may need minor adjustments to make the play area accessible and secure and eliminate any threats that a child would not recognise. With adult support, a child should be physically active as often and for as long as possible, whether outside (park, woods, garden, playground, in water, etc.) or indoors (at home, day nursery, etc.). The aim is to get children interested in being physically active as early as possible and to integrate physical activity in as many everyday situations as possible.

What should be considered when promoting physical activity in children under 5 years of age?

Improving health through physical activity and promoting and maintaining motor skills through a wide range of activities will work when the types of physical activity are suitable for the age group, provide a sense of achievement and mastery and are enjoyable.

[12] Swiss experts see age-appropriate content and adult supervision as central, which is why this report refrains from naming the (in their view rather high) maximum daily screen times recommended by WHO. Recommendations on how to handle digital media are available from Youth and Media: https://www.youthandmedia.ch/recommendations
[13] Good quality refers here to sleep duration and bedtime. Night and day-time naps also count for children under the age of 5.
[14] Adapted from the Austrian physical activity recommendations [14]

During active play, children ideally switch between different types of physical activity (e.g. balancing, jumping, running, climbing, sliding, dancing, throwing), motor performance types (especially aerobic physical activity, strength, speed and coordination) as well as intensities. The application of varied types of physical activity is fundamental to having new sensory experiences, developing the range of motor skills needed to be able to assimilate spaces and conveying joy. Active, free play can also be expanded through structured and guided forms of physical activity.

Children under the age of 5 also strengthen their muscles through activities, which involve active muscle use (crossing bars or ropes, standing up, moving on all fours, climbing). Children under the age of 5 therefore do not need any guided strength training. Further information and physical activity tips for children with parents can be found in age-adapted Paprica brochures (in German, French and Italian)[15] and in the Purzelbaum brochures (also in German, French and Italian).[16]

What else do I need to consider with respect to screen time?

It's important to distinguish between entirely passive activities (watching television) and socially or educationally valuable forms of communication (video communication, didactic games). Children must always be supervised when these media are being used. Recommendations on how to handle digital media are available from Youth and Media.[17]

4.2 Physical activity guidelines for children and adolescents (aged 5–17 years)

Regular physical activity is important for health and fitness throughout life. Physical activity benefits children and adolescents in terms of physical fitness, cardiovascular and metabolic health (i.e. counters high blood pressure, diabetes, high blood lipids), supports the immune system to prevent infectious diseases, enhances bone health, cognitive function (such as ability the ability to learn, concentration, memory), mental health (greater resistance to depression, anxiety and stress), as well as maintaining a healthy body weight.

Target group for guidelines

The physical activity guidelines are for all children and adolescents (aged 5–17 years), irrespective of gender or motor skills and motor abilities.

Basic guidelines for children and adolescents

Children and adolescents are recommended to do at least **60 minutes (1 hour) per day** of moderate to vigorous-intensity, mostly aerobic, physical activity across the week; more is better. That includes, for example, playing inside or outside, running, scootering, biking or inline skating plus everyday physical activities, for example in the garden. Vigorous-intensity physical activity and sport should be integrated **at least three days a week**, including those that **strengthen the muscles and bones** (e.g. jogging, running around, skipping rope, fast cycling or biking, intense swimming, ball games, dancing).

Children and adolescents (5-17) with specific needs, including chronic health problems, movement restrictions or disabilities *(sensory handicap, physical, mental or psychological disability) also benefit from regular physical activity and should aim to meet the basic guidelines as far as possible. Personalised advice from an expert and an individualised adaptation of the physical activity guidelines in line with personal circumstances regarding* ***frequency, duration, intensity and type of physical activity depending on the condition, disability and personal*** *situation should be considered. Relevant expert organisations (e.g. Procap bewegt, PluSport, Swiss Paraplegics Association) are available to assist with the required adaptations. Children and adolescents who have to remain seated for long periods due to a walking impairment are advised to regularly change their seated position (e.g. raise their arms and stretch their upper body, move their body sideways, curl up/stretch their upper body). The individually possible range of motion of the joints should be used to adopt alternating positions.*

[15] See https://gesundheitsfoerderung.ch/kantonale-aktionsprogramme/ernaehrung-und-bewegung/kinder-und-jugendliche/empfehlungen/bewegungstipps-paprica.html (in German, French and Italian

[16] See https://www.radix.ch/de/gesunde-schulen/angebote/purzelbaum-schweiz/elternbroschueren/ (in German, French and Italian)

[17] Parents/guardians determine how much time the child can spend in front of a screen and supervise the child to ensure the content is age appropriate. Every child is different. That's why the individual impact of digital media and the child's attention span need to be monitored. See Youth and Media at https:/https://www.youthandmedia.ch/recommendations

Limit the amount of time spent being sedentary and regularly interrupt sedentary time.

Chart 8: Recommended times for daily physical activity for children and adolescents (aged 5-17 years).

Varied types of physical activity and sport are important for the optimal development of children and adolescents. Physical activity with the following effects is thus recommended **several times per week**:

- **Stimulate the cardiovascular system**: through aerobic sport activities such as jogging, swimming or cross-country skiing; in the form of games or through physical activities such as cycling.
- **Strengthen muscles**: through varied types of physical activities such as climbing or crossing monkey bars or ropes, through exercises involving own body weight, or – for adolescents under professional instruction – a targeted programme of strength training using the person's own body weight, free weights or exercise machines.
- **Strengthen bones**: through running, skipping, jumping, for example through games.
- **Improve agility** (coordination): through varied sports training as well as specific games and exercises.
- **Maintain flexibility**: through gymnastic exercises, stretching and suitable games.

Good to know

- **Any physical activity is better than none**. It's never too late to take the first step.
- Any physical activity benefits the health of children and adolescents, even if not meeting the guidelines.
- Children and adolescents who have been largely or completely inactive are advised to start with gentle physical activity and gradually increase frequency, duration and intensity over time.
- It is important that all children and adolescents have the same opportunities to participate in physical activity and sports that are enjoyable, offer variety and are appropriate to their age and abilities.
- Opportunities to meet the guidelines arise in sports classes and other school activities, on the way to school, at home with family members and friends and during leisure time, for example in a sports club or through playing outdoors.

Sedentary behaviour

Prolonged sitting among children and adolescents is connected to poorer cardiovascular health, poorer physical fitness, behavioural problems and reduced sleep duration. Children and adolescents are recommended to limit and regularly interrupt prolonged sitting, especially in front of a screen during leisure time, with physical activity of any intensity, including light intensity.[18]

Implementation of guidelines for children and adolescents[19]

Parents or caregivers need to be informed of the physical activity guidelines, as they, for the most part, encourage their children to be physically active during the day. Equally important is the rolling out of these guidelines to kindergartens and schools. These physical activity guidelines should be an integral part of the day at all childcare facilities. That way the guidelines reach most children, including those who would not otherwise be involved. Municipalities, the federal government and cantons can also contribute to implementing these guidelines by facilitating varied physical activity options or an activity-friendly environment (e.g. play areas, play streets, bike paths, family exercise offers, sports programmes for the young, expert teachers to promote physical activity) (see also chapter 8).

What should be considered when promoting physical activity in children and adolescents?

Improving health through physical activity and developing and maintaining motor skills through a wide range of activities will work when **types of physical activity are suitable for the age group, are enjoyable over the long term** and enable a **sense of achievement**.

Age-appropriate and therefore suitable types of physical activity for children and adolescents are movement-based games that involve or teach motor skills such as cycling, swimming, series of movements on the floor or machines, ball games, etc. All age groups must have the opportunity to be physically active without pressure to perform. During breaks or free time children and adolescents switch between the types of physical activities and games (e.g. running and jumping, climbing and supporting themselves, throwing and catching, etc.), motor performance types (especially aerobic physical activity, strength, speed and coordination) as well as intensities.[20] This broad movement repertoire is reached if children and adolescents have the space to do so.

How can physical activity intensity be identified?

Moderate-intensity physical activity means being able to speak during the activity while not having the breath to sing. Vigorous-intensity physical activity means that only brief exchanges of words are possible.

How can children and adolescents become more active?

Largely inactive children and adolescents must be motivated to **gradually increase** their physical activity volume, whereby they can choose the activities they enjoy. Physical activity is suitable with playful components and the involvement of peers, for example an orienteering run presented as a treasure hunt. Children and adolescents who are already physically active must be motivated by their social environment to maintain the amount of physical activity. The goal is to support them in learning (more) types of physical activity and sports or join a sports club to participate in structured physical activity programmes [17].

Physical activity behaviour changes in adolescence. Adolescents organise themselves to do sport, exercise or train alone or in a group. During this time, however, there may also be a marked decline in the amount of physical activity. Due to the gender difference in the amount of physical activity, the recommendation is to promote appealing programmes specific to male adolescents and above all to adolescent girls [17]. Young people can use the sport compass to find which sports best suit them.[21]

Further information and physical activity tips for children with parents can be found in the Paprica brochures (in German, French and Italian)[22] and in the Purzelbaum brochures (in German, French and Italian).[23]

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[18] Parents/guardians determine with their child how much time the child spends in front of a screen each day and supervise the child to ensure age-appropriate content. Every child is different. That's why the individual impact of digital media and the child's attention span need to be monitored. Agreeing on periods spent away from a screen is usually more appropriate for older children and adolescents. Recommendations on how to handle digital media are available from Youth and Media.

[19] Adapted from the Austrian physical activity recommendations [14]

[20] For additional information see 'Kindersport' in Youth+Sport at https://www.jugendundsport.ch/de/sportarten/kindersport.html

[21] The 'Sportarten-Kompass' (sport compass) is available (in German and French) at https://www.feel-ok.ch/de_CH/jugendliche/themen/bewegung_sport/ressourcen/sportarten-kompass/ sportarten-kompass.cfm

[22] See https://gesundheitsfoerderung.ch/kantonale-aktionsprogramme/ernaehrung-und-bewegung/kinder-und-jugendliche/empfehlungen/bewegungs-tipps-paprica.html (in German, French and Italian)

[23] See https://www.radix.ch/de/gesunde-schulen/angebote/purzelbaum-schweiz/elternbroschueren/ (in German, French and Italian)

4.3 Physical activity guidelines for adults (aged 18-64 years)

Regular physical activity is important for health and physical performance throughout life. Physical activity among adults also has a beneficial effect on:

- all-cause mortality, cardiovascular disease mortality, high blood pressure, various types of cancer, type 2 diabetes and infectious diseases as well as
- the immune system, mental health (fewer anxiety and depression symptoms), cognitive health and sleep, and helps maintain a healthy body weight.

Target group for guidelines

The activity guidelines are for all adults from 18 to 64, irrespective of gender.

Basic guidelines for adults

Regular physical activity is recommended for all adults.

The following is recommended for adults:

- **At least 150 minutes (2½ hours) to 300 minutes (5 hours) of moderate-intensity aerobic physical activity throughout week** (e.g. brisk walking, cycling, snow-shovelling or gardening)
  - or **at least 75 minutes (1¼ hours) up to 150 minutes (2½ hours) of vigorous-intensity aerobic physical activity or sport per week** (e.g. jogging, fast cycling, swimming or cross-country skiing, as well as cardiovascular training on exercise machines or carrying shopping/furniture up the stairs).
  - or an equivalent combination of moderate and vigorous-intensity physical activity.
- **Plus on two or more days per week muscle-strengthening activity** at moderate or vigorous intensity that involves all major muscle groups, as these activities provide additional health benefits (e.g. press-ups, squats or abdominal muscle training, complementary everyday activities such as climbing stairs or moving weights when gardening or in the home).

Adults with specific needs, including chronic health problems (e.g. chronic back pain), movement restrictions or disabilities *(sensory handicap, physical, mental or psychological disability) also benefit from regular physical activity and should aim to meet the basic guidelines as far as possible. Personalised advice from an expert and an individualised adaptation of the physical activity guidelines in line with personal circumstances regarding frequency, duration, intensity and type of physical activity depending on the condition, disability and personal situation should be considered. Relevant expert organisations (e.g. healthcare leagues, Procap bewegt, PluSport, Swiss Paraplegics Association) are available to assist with the required adaptations. Persons who have to remain seated for long periods due to a walking impairment are advised to regularly change their seated position (e.g. raise their arms and stretch their upper body, move their body sideways, curl up/stretch their upper body). The individually possible range of motion of the joints should be used to adopt alternating positions.*

Chart 9: Recommended times for weekly physical activity by adults.

Good to know

- **Any physical activity is better than none**. It's never too late to take the first step.
- Any physical activity benefits adult health, even if it does not meet the guidelines.
- 150–300 minutes of aerobic, moderate-intensity physical activity or 75-150 minutes at vigorous intensity cover the physical activity range offering the greatest positive health outcomes. Adults can achieve additional health benefits, albeit to a lesser extent, if they increase the amount of physical activity to over 300 minutes (5 hours) at moderate intensity or 150 minutes (2½ hours) at vigorous intensity per week. Moderate and vigorous intensity aerobic physical activities can also be combined.
- It is possible and sensible to vary different activities and intensities to meet the basic guidelines,whereby vigorous-intensity physical activity counts double. For example, the recommended amount of aerobic physical activity can comprise the following:
  · 30 minutes (½ hour) of brisk walking at moderate intensity five days a week
  · 30 minutes (½ hour) of cycling at moderate intensity on three days plus 60 minutes (1 hour) of cross-country skiing at vigorous intensity one day per week = 3 × 30 min. = 90 min. and 2 × 60 min. = 120 min. Total = 210 minutes.
- Varied types of physical activity should make up the weekly amount of physical activity with strength-building, aerobic, balance and flexibility activities.
- Adults who have previously been largely or completely inactive are advised to start with gentle physical activity and increase the frequency, duration and intensity incrementally over time.

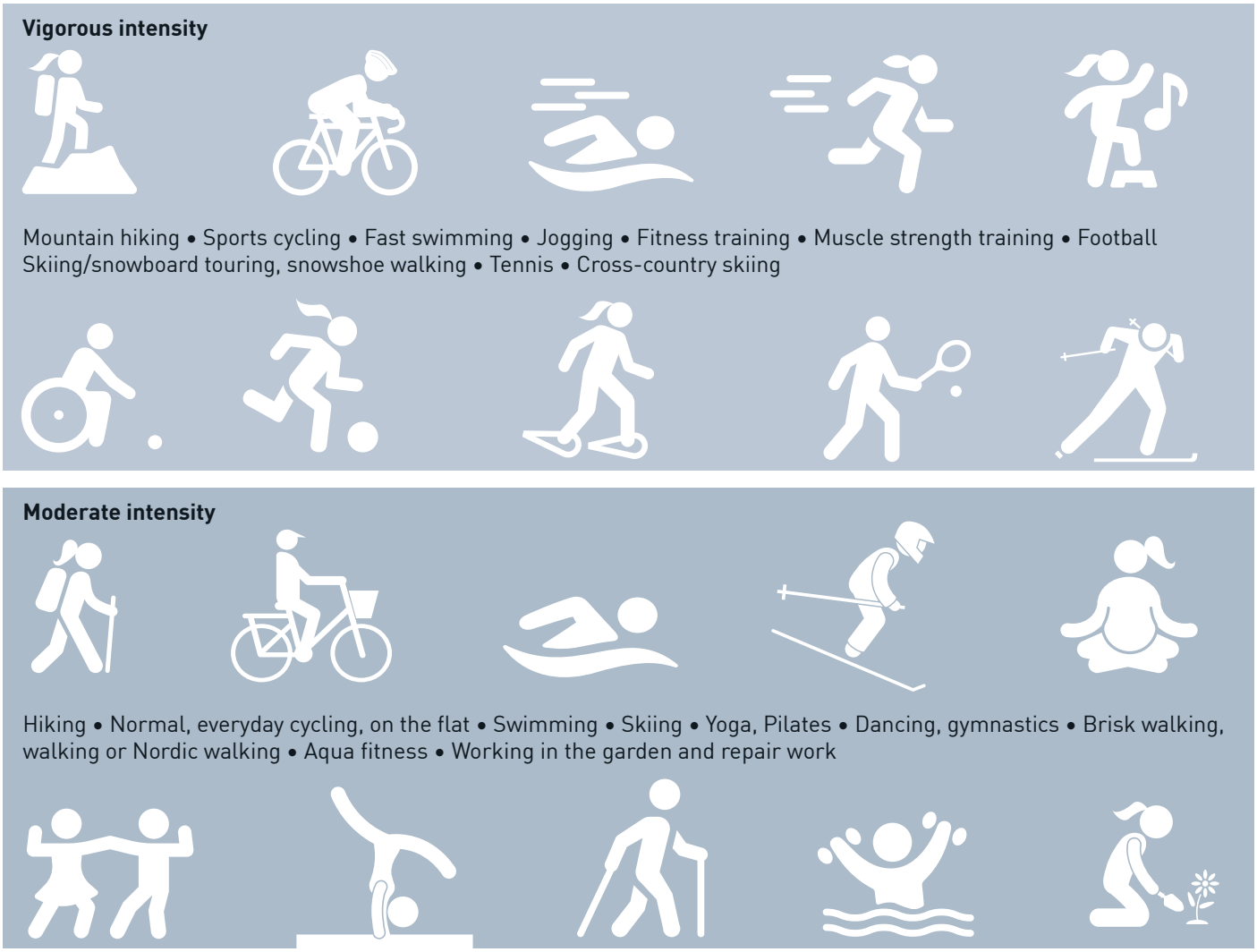


Chart 10: Examples of moderate and vigorous intensity physical activity for adults[24]

Sedentary behaviour

Prolonged sitting is associated with increased all-cause mortality among adults, mortality from cardiovascular diseases and types of cancer as well as a higher probability of developing cardiovascular diseases, cancer and type 2 diabetes.

- Adults are recommended to limit or regularly interrupt prolonged sitting through physical activity of any intensity, including light intensity.
- To mitigate the adverse health effects of prolonged sitting, adults who often spend a lot of time seated are advised to do more than the recommended amount of moderate to vigorous-intensity activity (see Table 2).

Implementing the guidelines for adults[25]

Improving health through physical activity and developing and maintaining movement skills, flexibility etc. through a wide range of physical activity works best when one finds out what types of activity one enjoys over the long term and which also provide a sense of achievement. Chart 10 shows examples of moderate and vigorous-intensity activity. Some people enjoy group activities, where the social side may be an added benefit. Others prefer individual activities. The 'Berner Motiv- und Zielinventar' is a questionnaire designed to help adults find out which activity or sport suits them best.[26] Physical activity and sport can also help cure many illnesses and impairments as part of therapy and rehabilitation.

[24] Sports in Switzerland in descending order of popularity (resident population from the age of 15), see Sport Schweiz 2020 study [9]
[25] Adapted from the Austrian physical activity recommendations [14]
[26] The questionnaire and findings from research studies are available at https://bmzi.ispw.unibe.ch/home.

Flexibility training, why?

Flexibility is a part of physical fitness, as are endurance, strength, speed and coordination. Many daily activities require a certain level of flexibility (for example putting shoes or a pullover on, personal hygiene, driving a car). Gymnastics and stretching exercises increase flexibility. Flexibility exercises are a meaningful addition to an activity programme, even if they have no proven positive effects on health or injury prevention [14, 17]. However, due to the lack of available scientific evidence, there is no specific time allocated to flexibility training in meeting the basic guidelines.

Muscle-strengthening activities as a addition to aerobic physical activities

Muscle-strengthening activities involving all major muscle groups (legs, hips, chest, back, abdominals, shoulders and arms) should be done at least twice a week, in addition to aerobic physical activity. Muscle-strengthening activity fits easily into a daily routine (e.g. taking the stairs, walking uphill, carrying heavy shopping) or it can take the form of strength training. It helps maintain muscle mass, strength and endurance and has a positive effect on muscular fitness and bone density.

4.4 Physical activity guidelines for older adults (aged 65 years and older)

Regular physical activity is important for health and physical performance throughout life. Physical activity among older adults has a beneficial effect on:

- all-cause mortality, cardiovascular disease mortality, high blood pressure, various types of cancer, type 2 diabetes and infectious diseases, as well as
- the immune system, psychosocial health (fewer anxiety and depression symptoms, improved well-being), cognitive health and sleep, and helps maintain a healthy body weight.

Being physically active also helps older adults avoid falls and falling-related injuries, as well as contributing to bone health and retention of functional abilities such as independence (maintaining autonomy).

Target group for guidelines

The guidelines apply to all older adults from the age of 65, irrespective of gender.

Older adults (65 and older) with specific needs, including chronic health problems (e.g. chronic back pain), movement restrictions or disabilities *(sensory handicap, physical, mental or psychological disability) also benefit from regular physical activity and should aim to meet the basic guidelines as far as possible. Personalised advice from an expert and an individualised adaptation of the physical activity guidelines in line with personal circumstances regarding frequency, duration, intensity and type of physical activity depending on the condition, disability and personal situation should be considered. Relevant expert organisations (e.g. healthcare leagues, Pro Senectute, Procap bewegt, PluSport, Swiss Paraplegics Association) are available to assist with the required adaptations. Persons who have to remain seated for long periods due to a walking impairment are advised to regularly change their seated position (e.g. raise their arms and stretch their upper body, move their body sideways, curl up/stretch their upper body). The individually possible range of motion of the joints should be used to adopt alternating positions.*

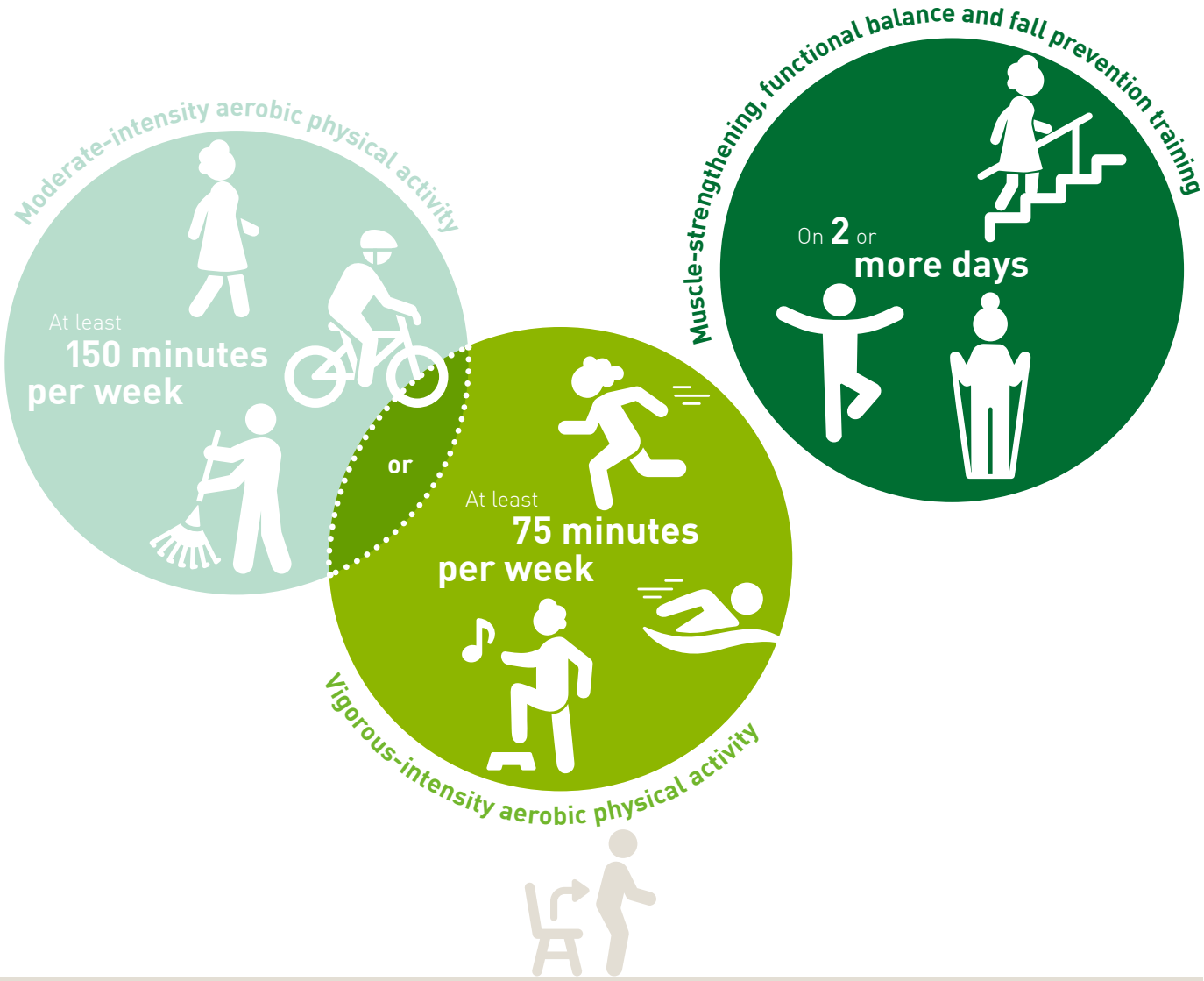


Chart 11: Recommended weekly physical activity times for older adults.

Basic guidelines for older adults

All older adults are recommended to engage in regular physical activity.

The following is recommended for older adults:

- **At least 150 minutes (2½ hours) to 300 minutes (5 hours) of aerobic physical activity per week at moderate intensity** (e.g. brisk walking, cycling as well as snow-shovelling or gardening)
  - or a **minimum of 75 minutes (1¼ hours) up to 150 minutes (2½ hours) of aerobic physical activity or sport per week at vigorous intensity** (e.g. jogging, fast cycling, swimming or cross-country skiing, as well as cardiovascular training on exercise machines),
- or a corresponding combination of aerobic physical activity of moderate to vigorous intensity.
- **Two or more days per week of muscle-strengthening activity** at moderate or vigorous intensity, involving all major muscle groups (e.g. squats, exercises with elastic bands, everyday activities like climbing the stairs) and activities that **help improve balance**, as these activities bring an additional positive health outcome (preventing falls, for example).

Good to know

- **Any physical activity is better than none**. It's never too late to take the first step.
- Any physical activity is good for health and helps older adults maintain independence and quality of life, even if they fall short of meeting the guidelines. Older adults are recommended to be as physically active as their physical function allows and to adapt their physical exertion to their fitness level.

- 150-300 minutes of aerobic, moderate-intensity physical activity or 75-150 minutes at vigorous intensity covers the physical activity range offering the greatest positive health outcomes. Older adults can achieve additional health benefits, albeit to a lesser extent, if they increase the amount of physical activity to over 300 minutes (5 hours) at moderate intensity or 150 minutes (2½ hours) at vigorous intensity per week. Moderate and vigorous-intensity aerobic physical activities can also be combined.
- It is possible and sensible to vary different activities and intensities to meet the basic guidelines. Thereby, vigorous-intensity physical activity counts double. For example, the recommended amount of aerobic physical activity can comprise a minimum of:
  · 30 minutes (½ hour) of brisk walking at moderate intensity five days a week.
  · 30 minutes (½ hour) of cycling at moderate intensity on three days plus 60 minutes (1 hour) of cross-country skiing or gardening at vigorous intensity one day per week
  = 3 × 30 min. = 90 min. and 2 × 60 min. = 120 min.
  Total = 210 minutes.
- Varied types of physical activity should make up the weekly amount of physical activity with strength-building, aerobic physical activity, balance and flexibility.
- Older adults who have previously been largely or completely inactive are advised to start with gentle physical activity and increase the frequency, duration and intensity incrementally over time. Before engaging in physical activity, older adults who have been largely inactive may benefit from a consultation with an expert to understand which activities and amount of physical activity may be suitable.

Sedentary behaviour

Prolonged sitting is associated with higher all-cause mortality among older adults, mortality from cardiovascular diseases mortality and types of cancer as well as a higher probability of developing cardiovascular diseases, cancer and type 2 diabetes.

- Older adults are recommended to limit or regularly interrupt prolonged sitting through physical activity of any intensity, including light intensity.
- To mitigate the adverse health effects of prolonged sitting, older adults who are often sedentary for long periods are advised to do more than the recommended amount of activity at moderate to vigorous-intensity.

Implementation of guidelines for older adults[27]

It is especially important for older adults to maintain health through physical activity. It is therefore important to find varied physical activity programmes at all stages of life that correspond to personal circumstances and are enjoyable. The 'Berner Motiv- und Zielinventar' helps older adults to understand which physical activity or sport suits them best.[28] Group activities may bring added benefits through social contact depending on a person's life situation. This age group stands to benefit most from sport and physical activity in therapy and rehabilitation for all sorts of diseases and impairments.

Why are exercises to improve balance good?

Older people are more at risk of falling, especially if they have fallen before or experience difficulty walking. That is why older people should be regularly physically active and do specific exercises to prevent falls. Besides leg strength, this includes coordination training, especially balancing exercises. The box below contains examples of balancing exercises. Generally speaking, strengthening the back, abdominal and leg muscles also improves balance by enhancing core stability.

Specific training to prevent falls

The following elements must be included at an adequate duration and intensity on a day-to-day basis or through sports training to remain independent in old age and avoid falls:

- *Static and dynamic balancing exercises (e.g. standing on one leg with variations)*
- *Specific strengthening of the foot, leg and core muscles (e.g. squats, possibly with a support)*
- *Motor-cognitive exercises (e.g. walking in figure of eight or solving a brainteaser)*

Information and training programmes can be found at www.bfu.ch *and www.sichergehen.ch*

[27] Adapted from the Austrian physical activity recommendations [14]
[28] The questionnaire and findings from research studies can be found at https://bmzi.ispw.unibe.ch/home.

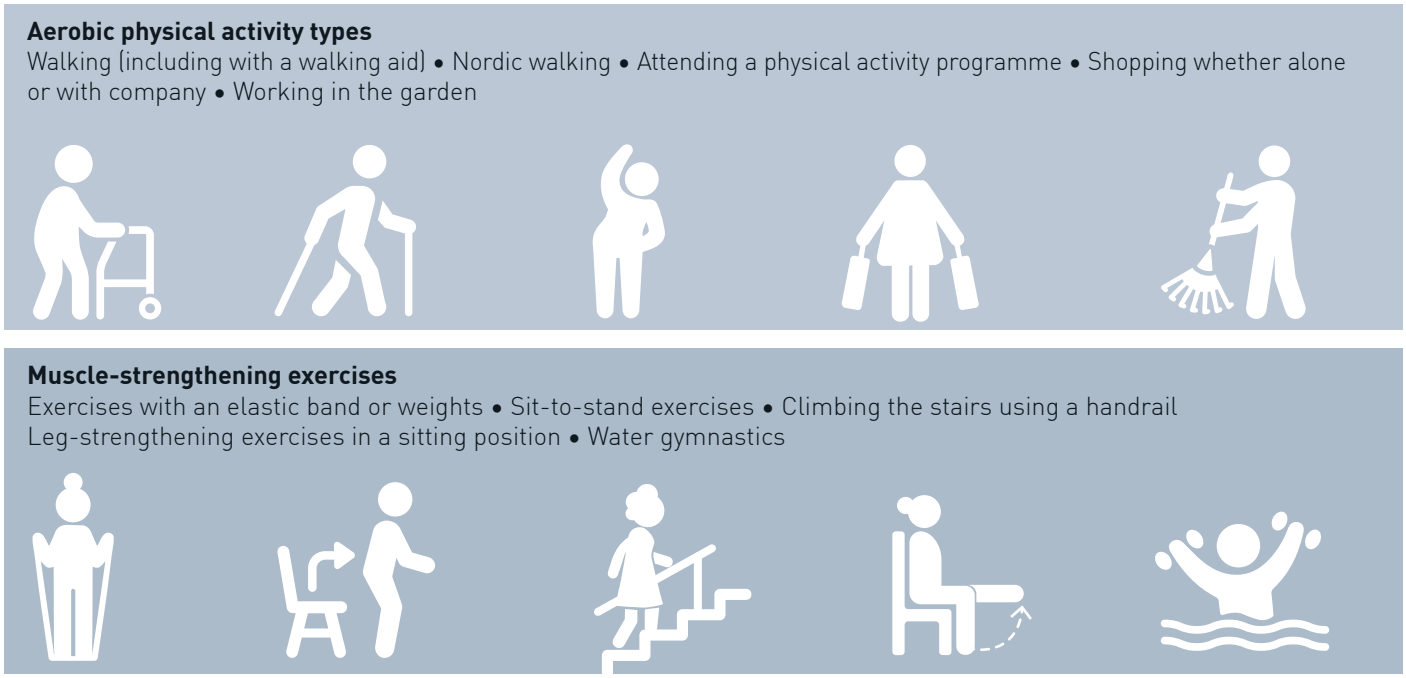


Chart 12: Examples of aerobic physical activity types and muscle-strengthening exercises, including for people with movement restrictions

Why flexibility training?

Flexibility is part of physical fitness, as are endurance, strength, speed and coordination. Many daily activities require a certain level of flexibility (for example putting shoes or a pullover on, personal hygiene, driving a car). Gymnastic and stretching exercises increase flexibility. Flexibility exercises are a meaningful addition to an activity programme, even if they have no proven positive effect on health or injury prevention [14, 17]. However, due to the lack of available scientific evidence, there is no specific time allocated to flexibility training in meeting the basic guidelines.

Muscle-strengthening activities as an addition to aerobic physical activities

Muscle-strengthening activities involving all major muscle groups (legs, hips, pectorals, back, abdominals, shoulders and arms) are to be done at least twice a week, in addition to aerobic physical activity. Muscle-strengthening activity can easily be integrated into a daily routine (e.g. taking the stairs, going up mountains, carrying heavy shopping) or included in strength training. It helps maintain muscle mass, strength and endurance and has a beneficial effect on muscular fitness and bone density.

What is varied multicomponent physical activity?

Varied multicomponent physical activity comprising a combination of different activity types is important for older adults to improve their physical function and decrease the risk of falls or injuriy from a fall.

These activities can be done at home or in a structured group setting. Many of these activity programmes combine all the activity types (aerobic physical activity, muscle strengthening, coordination and balancing exercises, flexibility). An example of a multicomponent physical activity programme could include walking (aerobic physical activity), lifting weights (muscle strengthening) and balance training. Dancing also combines aerobic physical activity and balance components.

Being physically active in spite of impairments

Older people who are no longer able to do an aerobic physical activity for 150 to 300 minutes at moderate intensity or a corresponding combination of moderate and vigorous intensity per week are advised to set achievable goals. Consultations with relevant experts can help with finding appropriate activity types and levels. Shorter activity sessions at moderate intensity are already health promoting.

Remaining independent into old age

Various impediments, some of which stem from illness, often occur simultaneously in old age. This is known as frailty and results from functional issues including restricted mobility, loss of muscle strength and muscle mass, poor nutrition, frequently being in a bad mood and declining social contacts [54]. Frail people are less resilient and more susceptible to illness, disabilities and falls.

As frailty stems from age-related loss of muscle mass and muscle strength (sarcopenia), it can be delayed through regular physical activity and sport including muscle-strengthening exercises in combination with a balanced diet [76].

Being active in spite of functional limitation

If a person can no longer carry out everyday tasks, this is known as functional limitation. Older people with functional limitation benefit from regular physical activity as

- it improves their functional skills (e.g. getting dressed or preparing food independently),
- they feel less pain,
- they can get through the day more easily and remain independent for longer, and
- they enjoy a higher overall quality of life.

4.5 Physical activity guidelines for women during and after pregnancy

These physical activity guidelines correspond to the WHO guidelines and are a condensed version of the detailed contents of "Gesundheitswirksame Bewegung bei Frauen während und nach der Schwangerschaft – Empfehlungen für die Schweiz" [Swiss guidelines for health-enhancing physical activity guidelines for women during and after pregnancy], available from Health Promotion Switzerland in French, German and Italian.[29] The detailed guidelines include, inter alia, additional safety considerations for women during and after pregnancy.

Physical activity before and during pregnancy can help reduce the risk of common pregnancy complications, such as a lower risk of diabetes, hypertension and pre-eclampsia that can occur during pregnancy, excessive weight gain during pregnancy, delivery complications and postpartum depression. There are also fewer complications with newborns and no indications of adverse effects for the birth weight or the risk of stillbirth.

Target group for guidelines

The physical activity guidelines are for women during and after pregnancy without contrary indicators.

Basic guidelines for women during and after pregnancy

The guidelines are for women to undertake regular physical activity throughout pregnancy and after giving birth, provided there are no contraindications.

Women are recommended to do at least **150 minutes (2½ hours) moderate-intensity** aerobic physical activity throughout the week during and after pregnancy to promote and maintain good health (e.g. walking briskly to work, brisk walks e.g. with the pram, cycling, swimming, Nordic walking or gardening).

Charts, further documentation and videos

Women with specific needs, including chronic health problems (e.g. hypertension), movement restrictions or disabilities *(e.g. sensory handicap, physical, mental or psychological disability) also benefit from regular physical activity and should aim to meet the basic guidelines as far as possible. Personalised advice from an expert and an individualised adaptation of the physical activity guidelines in line with personal circumstances regarding frequency, duration, intensity and type of physical activity depending on the condition, disability and personal situation should be considered. The recommendation is for women during and after pregnancy who cannot avoid sitting for prolonged periods due to their restricted mobility to change position regularly (e.g. raise their arms and stretch the upper body, move their body sideways, curl up/stretch their upper body). The individually possible range of motion of the joints should be used to adopt alternating positions.*

[29] Detailed guidelines and further documentation and videos regarding activity for women during and after pregnancy are available in German, French and Italian at https://gesundheitsfoerderung.ch/kantonale-aktionsprogramme/ernaehrung-und-bewegung/kinder-und-jugendliche/ bewegungsempfehlungen.html

The guidelines are to **combine varied aerobic and muscle-strengthening physical activity. Strength training** contributes to well-being and health. Light strength training without forced exhalation is recommended during pregnancy and after the birth at least twice per week, as are **gentle stretching exercises**.

In addition
Women who were regularly physically active before pregnancy can maintain their physical activity and sport regime **including vigorous-intensity activities** (such as cycling fast or step aerobics), provided they feel good doing so. It is advisable to adapt the frequency, duration and/or intensity during pregnancy and to start being physically active again after birth.

Points to note

- Any physical activity is better than none. It's never too late to take the first step.
- Any physical activity benefits the health of women during and after pregnancy, even if it falls short of meeting the basic guidelines.
- During and after pregnancy, women who have previously been largely or completely inactive are advised to start with gentle physical activity and increase the frequency, duration and intensity incrementally over time.
- Regular pelvic floor exercises are recommended, especially during pregnancy and after birth. An expert can offer valuable support with that. This way, pelvic floor dysfunction (incontinence, descent) can be prevented or treated individually.

Sedentary behaviour

Prolonged sitting among women during and after pregnancy is, as with all adults, associated with higher all-cause mortality, mortality from cardiovascular diseases and types of cancer as well as a higher probability of developing cardiovascular diseases, cancer and type 2 diabetes.

The guidelines are for women during and after pregnancy **to limit and regularly interrupt prolonged sitting with physical activity of any intensity**, including light intensity.

4.6 Exercising safely

The key message of the current Swiss activity guidelines is "Every move counts". That also means that any physical activity is better than none. Regular aerobic and muscle-strengthening physical activity brings extensive positive health outcomes (see chapter 3.1).

At the same time, it may also lead to unwanted outcomes. This applies in particular to the musculoskeletal system, for example if there is an acute injury, such as fractures, or longer-term signs of wear and tear such as osteoarthritis [77]. Rarely, the cardiovascular system is impacted [15], mainly related to acute bouts of physical activity of very vigorous intensity.

However, adequate preparation, the right equipment, proper execution and the planning of recovery phases not only benefits the individual but also brings collective health benefits. Moreover, it is known that at moderate to vigorous intensity and with a slow increase in frequency, duration and intensity, the recommended physical activity per target group is not harmful. At the same time, it is reasonable to assume that the health benefit of such physical activity outweighs the risks [7] (see chapter 3).

Recovery periods are relevant as performance does not improve during exertion but in the ensuing recovery period. Moreover, recovery helps to counteract overload and possible physical and psychological repercussions. If physical activity at vigorous intensity (as a minimum) is spread out over the week, corresponding recovery periods also need to be scheduled. Breaks of 48 hours have been proven to be beneficial.

For persons with specific needs, personalised advice from an expert and individualised adaptation of the physical activity guidelines in line with personal circumstances regarding frequency, duration, intensity and type of physical activity depending on the condition, disability and personal situation is advisable.

Weather conditions, air pollution and activity

The **weather conditions** are key to which preparations need to be made and which clothing is suitable [14]. For example, during the winter months icy walkways and the danger of avalanche in the mountains are an issue. Protection from the sun is important during the spring and summer months.

*The following measures **reduce** the **risk of dehydration or heat stroke** on very hot and humid days:*
- *Plan to be physically active early in the morning instead of around midday.*
- *Physical activity in cooler rooms instead of outdoors.*
- *Change the type of physical activity (e.g. swimming instead of ball games out in the open).*
- *Reduce the intensity (e.g. walking instead of jogging).*
- *Take breaks, seek out shade, drink enough and look for other ways to mitigate the effect of the heat.*

Suspended particulate air pollution in the winter and ozone-related air pollution in the summer are so high on certain days in Switzerland that they can have an adverse effect on health. Aside from trying to reduce air pollution by legal means, particularly susceptible people such as those with chronic respiratory conditions should reduce the intensity of outdoor activities and avoid major exertion on days when the concentration of air pollutants is especially high. From a health point of view, however, it would be wrong to generally avoid physical activity due to fear of air pollutants. New studies have shown that the health benefit of physical activity outweighs exposure to air pollutants several times including physical activity involving intense breathing [78, 79].

Further information on how to prevent accidents through physical activity and sport is available from the Swiss Council for Accident Prevention BFU in German, French and Italian at https://www.bfu.ch/de/sport-bewegung.

5. Activity behaviour in Switzerland[30]

5.1 Activity behaviour among children and adolescents

The physical activity behaviour of children as they grow is highly **age-related** and decreases markedly from childhood to adolescence. There is also a **gender difference**: only about half of girls adhere to the physical activity guidelines of one hour per day minimum compared to three-quarters of boys.[31]

The amount of physical activity and compliance with the guidelines by children and young people is higher among those who attend a sports club or do sport at school or on school days as opposed to on the weekend [81].

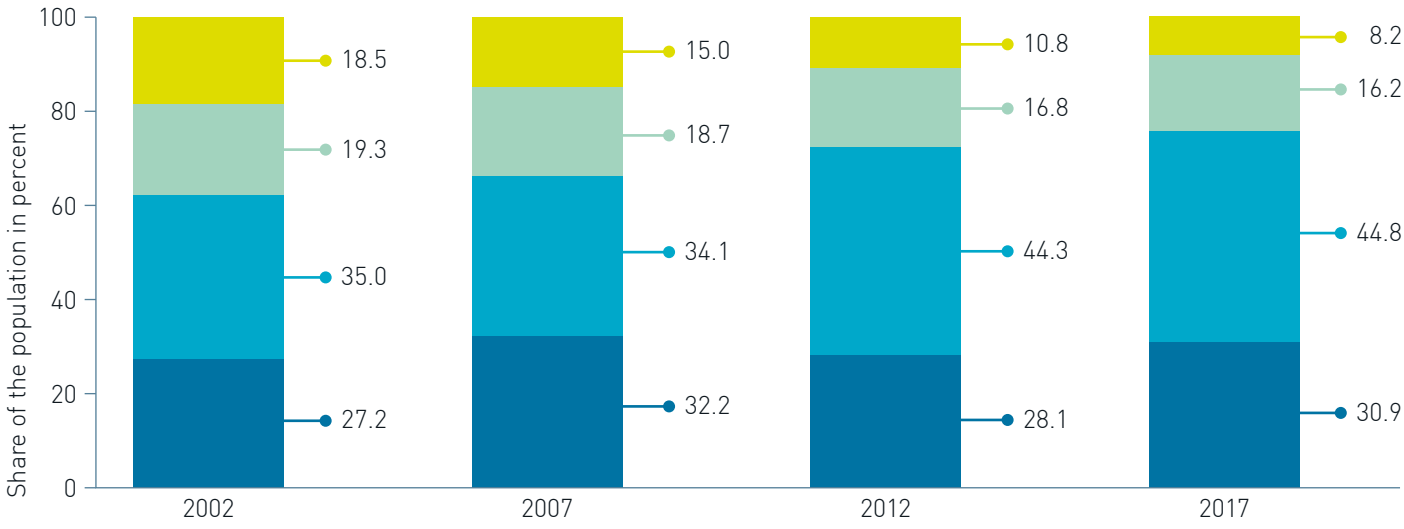
Moreover, walking including the use of vehicle-like devices such as scooters or kickboards has grown significantly among 6–20-year-olds over the past 20 years [82], while bicycles are being used consistently less, not least due to increased use of public transport. Nonetheless, the contribution of active mobility is substantial: about half of children and adolescents meet 50 % of the physical activity guidelines through everyday mobility alone, i.e. by walking including using vehicle-like devices and riding a bicycle; 20 % of children even meet all the guidelines in that way alone (see [82], p. 185).

5.2 Activity behaviour among adults

On the whole, physical activity behaviour among the Swiss resident population from the age of 15 is improving: the proportion of the population who meet the Swiss physical activity guidelines has risen to about three-quarters over the past 15 years (sum of "trained" and "sufficiently active" adults in Chart 13). The proportion of those who do not meet the physical activity guidelines has declined over the same time period ("inactive" and "partially inactive"). In 2017, however, **a quarter of the population were still not physically active enough**.[32]

Note: the four levels of physical activity are defined according to the Swiss Health Survey (SGB) as follows:
- trained: physical activity causing sweating episodes at least three days per week;
- sufficiently active: at least 150 minutes of physical activity per week at moderate intensity or at least two days with sweating episodes;
- partially active: at least 30 minutes of physical activity at moderate intensity per week or one day with sweating episodes;
- inactive: no noteworthy physical activity.

[30] The following section is based on an extract from the report "Global Action Plan on Physical Activity 2018–2030 (GAPPA). Standortbestimmung und Stakeholderanalyse Schweiz" [Snapshot and stakeholder analysis Switzerland] [80].
[31] Updated figures and additional information are provided in German, French and Italian in the indicator "Physical activity (age: 6–16)" by MonAM: https://ind.obsan. admin.ch/indicator/monam/bewegungsverhalten-alter-6-16
[32] Updated figures are provided in the indicator "Physical activity (age 15+)" by MonAM at https://ind.obsan.admin.ch/en/indicator/monam/physical-activity-behavior-age-15 and in the indicators of the Swiss Sport Observatory Sportobs in German and French at https://www.sportobs.ch/de/indikatoren/sport-und-bewegungsfoerderung/indikatorenuebersicht-sportfoerderung/



Inactive: no noteworthy physical activity
Partially active: at least 30 minutes of physical activity at moderate intensity per week or one day with sweating episodes
Sufficiently active: at least 150 minutes of physical activity per week at moderate intensity or at least two days with sweating episodes
Trained: physical activity causing sweating episodes at least three days per week

Chart 13: Physical activity behaviour of the Swiss population from the age of 15, 2002 to 2017 (modified by [80])
Source: Swiss Health Surveys 2002–2017 by the FSO [56]. The "trained" and the "sufficiently active" meet the current Swiss guidelines for health-enhancing physical activity.

The Swiss data show:
- **Age differences**: older (over 75 years) people are less active than younger persons. This difference is greater among women than men.
- **Gender differences**: women and girls tend to be less active than men and boys.
- Differences among the **language regions**: persons from French and Italian-speaking Switzerland tend to be less active than those from the German-speaking part.
- **Educational and income differences:** persons of all age groups without post-compulsory education are much less active than people with a higher education. That also applies to people or families on a lower income relative to those on a medium or high income.
- **Differences of origin:** children and adults from southern and eastern Europe and some non-European regions of origin are less active than the Swiss and people from northern and western Europe.

Active mobility behaviour (walking, cycling or using vehicle-like devices) currently has a high value in the population's activity behaviour; at the same time there is major improvement potential, particularly in using a bicycle, as shown by the Mobility and Transport Microcensus [83]. Active mobility in urban areas is somewhat higher than in rural parts of Switzerland.[33] This may well be due to people having to often travel longer distances, among other factors.

In terms of **sedentary behaviour**, on average the Swiss resident population spends a lot of the day seated[56]. On average, younger people spend longer times seated than older respondents and men more than women. Most respondents break up longer sedentary periods at least every half hour. People with tertiary-level education spend a lot more time sitting on average than sections of the population with other educational qualifications.[34]

[33] Current figures are provided in the indicator "Active mobility – by foot/bicycle (age: 6+)" by MonAM at https://ind.obsan.admin.ch/en/indicator/monam/active-mobility-on-foot-by-bike-age-6
[34] Current figures are provided in the indicator "Sitting (age: 15+)" by MonAM at https://www.obsan.admin.ch/en/indicator/monam/sitting-age-15

6. Social consequencesof physical inactivity

How insufficient physical activity affects people's health

There are four reasons why activity behaviour – the manner and frequency in which people are physically active or inactive – matters for people's health:

- Physical activity is extremely important to health (see chapter 3).
- In spite of the positive trend, the proportion of people who are not physically active enough remains significant at one quarter of Switzerland's resident population at or above the age of 15 (see chapter 5).
- Insufficient physical activity causes health impairments, a host of diseases and fatalities.
- Insufficient physical activity has an economic cost [84].

In 2017, there were over 1,287 additional fatalities in Switzerland due to people not being physically active enough [84], equivalent to just under 2 % of all deaths. The main areas affected are the cardiovascular system, due to hypertension, heart disease and strokes. Women are impacted much more than men and the over-75 age group is most affected for both genders. The total number of deaths through lack of physical activity has fallen consistently since 2002 in parallel with the reduction in physical inactivity (see chapter 5).[35]

Economic consequences: costs of physical inactivity

The total costs of physical inactivity are estimated at around CHF 2.5 billion [85]. Just under half of these costs are direct medical treatment costs[36], while the rest are indirect economic costs, for example sick days or premature deaths.[37]

It has been calculated that physical inactivity in Switzerland caused 2 % of total lost healthy life years and 1.2 % of total medical costs in 2013 [86]. The two conditions which caused the greatest economic burden were back pain and depression due to physical inactivity.

A new WHO study shows that between 2020 and 2030, the seven main diseases resulting from physical inactivity will account for about USD 1.7 billion in direct public health costs in Switzerland if the resident population continue to fall short of the physical activity guidelines [93].

Across all age groups, there are about 285,000 fall-related accidents per year, often due to a lack of physical activity [66]. The resulting total annual costs for the over-65 age group alone amount to CHF 1.7 billion and about CHF 3 billion across all age groups; that comes to about one quarter of annual material costs of all non-work-related accidents.

Social consequences and potential outcomes

The social costs of physical inactivity also need to be considered. People need to be mobile and physically active to enjoy other people's company. This is how people get to know and trust one another and become involved in the community.

Opportunities for meeting people and for physical activity within the public sphere facilitate and support diverse interactions. If people's activity spaces are limited, then valuable social capital is lost. Many types of structural promotion of physical activity offer additional benefit, such as greater safety in traffic or public spaces, improved biodiversity, fewer emissions and more sustainable urban development overall [88, 89]. Remaining physically active into old age increases the likelihood of staying independent for longer and enjoying a high quality of life, which is desirable from both a social and economic perspective [89].

[35]Current figures are provided in German, French and Italian in the indicator "Mortality through physical inactivity (age: 35+)" by MonAM at https://ind.obsan.admin.ch/en/indicator/monam/mortality-from-physical-inactivity-age-35
[36]29 % of direct medical costs are for cardiovascular diseases (ischaemic heart disease, stroke and hypertension), 28 % for back pain, 26 % for depression and the other 16 % for osteoporosis, type 2 diabetes, obesity, colon carcinoma and breast cancer.
[37]See indicator "Economic costs of inactivity" by MonAM at https://ind.obsan.admin.ch/de/indicator/monam/volkswirtschaftliche-kosten-inaktivitaet

7. Factors influencing our activity behaviour

7.1 Physical activity in different areas of life

Physical activity is compatible with different areas of life: traditional **sports** and physical activity during **leisure time** are becoming more popular in Switzerland: in 2020, 75 % of the population did sport at least once a week [9]. The main types of physical activity and sport are hiking, cycling, swimming and skiing. The reasons for doing sport are not primarily for competition: health and fitness come first, older people also want to retain their everyday mobility; other often-cited reasons for physical activity and sport include experiencing nature, relaxation and alleviating stress. People can also move at **work** and **at home**, for example while doing housework or gardening. Just under two-thirds of the population meet the physical activity guidelines without doing sport [9]. **School** is also important for physical activity: besides PE lessons, breaks, lessons on the move, the way to school and games and sports days, also provide options for less active children [81].

Active mobility like walking or cycling can make a valuable contribution: on average people in Switzerland spend over 30 minutes walking or cycling per day, but there is potential for improvement, especially regarding cycling.[38]

Bringing lasting change to activity behaviour is often a long process, usually involving several stages with possible setbacks on the way. The complexity of this process, the significance of the different influencing factors on a behavioural and structural level as well as the particular features of the target group must be taken into account when developing models for promoting health through physical activity and sport.

A number of influencing factors play a role in deciding the time spent on physical activity in the different areas of life as shown in Chart 14.

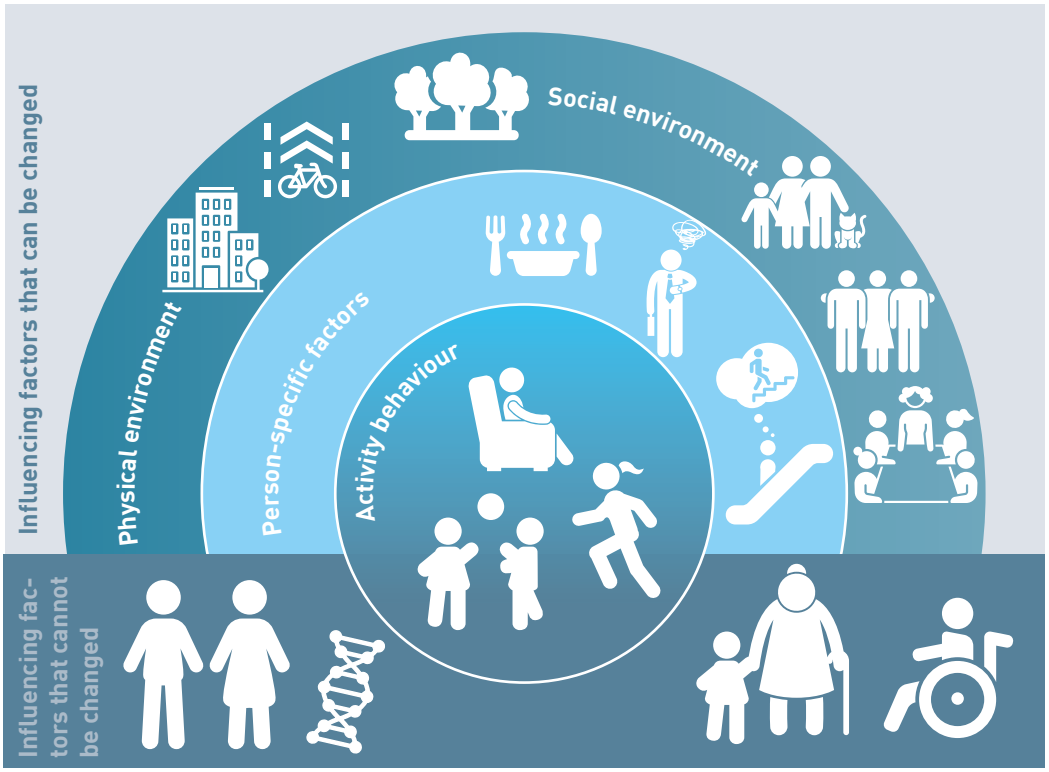


Chart 14: Influencing factors on activity behaviour. Activity behaviour is influenced by factors not subject to change (heredity, age, gender).
On the other hand, there are factors that can be changed. These include personal factors and factors in the social, physical and political environment.

[38] See https://ind.obsan.admin.ch/en/indicator/monam/active-mobility-on-foot-by-bike-age-6

7.2 Factors that cannot be changed

Determinants that cannot be changed directly by activity-promoting measures:
- Genetic predisposition
- Age and gender
- Membership of a specific cultural group
- Social class (based on education or income)

The following sections of the population are targeted in particular as they are less physically active (see chapter 5):
- People over 75, especially women
- Generally speaking, women across all age groups
- People from French and Italian-speaking Switzerland and persons from southern and eastern Europe plus some non-European regions of origin
- People with a low level of education
- People from low-income families

Although the health benefits of physical activity are scientifically documented and widely accepted by society, many people find it hard to lead an active lifestyle. However, this is not solely due to personal choice, it is also a product of circumstances. That is why the promotion of physical activity must provide those groups that are less active or suffer from health impairments with sufficient access to activity programmes and opportunities to provide the required motivation and support. See chapter 8 for more details of recommended measures.

7.3 Factors that can be changed

Studies show that there are many factors influencing physical activity behaviour that can be directly changed through appropriate measures. These include personal factors as well as influences from a person's social and physical environment.

From knowledge to action
Changing habits is a long and often difficult process in which relapses into old patterns of behaviour may also occur. Programmes for health promotion through physical activity and sport should take this complexity into account. The path to greater physical activity is supported by removing barriers, emphasising positive expectations and strengthening self-confidence.

Personal stumbling blocks
- *"I don't have any time."*
- *"I am not athletic."*
- *"I am too tired."*
- *"I already get enough physical activity."*

Keys to changing behaviour successfully
- *Gradual increase in physical activity*
- *Help people experience successes*
- *Make people aware of individual progress*
- *Select appropriate role models*
- *Offer activities that are enjoyable and fun*

Personal factors

An individual's **attitude** to physical activity and his or her **self-efficacy**, i.e. the belief into his or her ability to complete tasks and reach goals, strongly characterise that person's physical activity behaviour. **Physical activity behaviour at a young age** and the desire to maintain a physically active lifestyle also play a key role.

The literature also shows that good health, a healthy diet and motor skills are important in terms of physical activity behaviour.

Physical environment

Spatial planning, landscape architecture and architecture play a key role in public health. This particularly applies to where people live, work, learn or spend their leisure time. The quality of our environment is thus strongly connected to the nature and extent of our everyday physical activity. Even if these connections may be easily identified, they could be integrated more effectively into planning, construction and design. **Transport infrastructure** is closely tied to the development of the built environment (for motorised private transport, public transport, pedestrian and bicycle traffic). This also has a direct impact on our levels of physical activity. Around 75 % of respondents find that well-connected and safe pedestrian and cycling paths are an important incentive to people walking or cycling more.[39]

[39] See indicator "Active mobility – population's opinion on structural measures (age:15+) by MonAM

Studies show that the general volume and speed of traffic are also key in determining whether people walk or cycle. This applies to children in particular. A transport environment considered safe and mixed urban structures with short distances between housing, services and leisure infrastructure are also conducive to everyday physical activity.

Social environment

Support within the **family** has a positive effect on physical activity behaviour. However, the influence of role models is less significant than previously thought. Friends or informal activity groups can also influence an individual's physical activity habits (social cohesion).

Initiatives/programmes in the home environment or as part of organised sport can have a positive impact on physical activity. A positive **working environment** can also play a part. Socio-economic status and equality of opportunity do not just shape the social environment, they also influence activity behaviour. People on low incomes have less time for physical activity and cannot access training facilities and green areas so easily [88]. Culture also influences attitudes and convictions about the activity behaviour of different population groups, e.g. by gender, age and social group.

Public perception and, in particular, the societal image of active lifestyles are being increasingly recognised as important factors. In some countries, for example, cycling is viewed as an acceptable means of transportation among all parts of society, even to the point of being "trendy". Yet, in other countries, it is viewed merely as an acceptable form of transportation for children or for the most economically disadvantaged. **Social trends**, such as an economic or health crisis or a phase of economic growth can also have a significant impact on a population's activity behaviour.

Furthermore, there are indications that a **supportive policy environment** prioritising investment in active mobility leads to more active mobility in those countries (e.g. cycling in Denmark or the Netherlands).

Activity-friendly, barrier-free environment[40]

International studies show what an environment must look like for people to enjoy engaging more frequently in physical activity:
Firstly, human-powered mobility must be safe and attractive so that people will cover more distance on foot, by bicycle or by other means (e.g. wheelchair, scooter, skateboard, etc.).
Secondly, easily accessible, barrier-free and attractive spaces for physical activity are necessary for people to be more active in leisure time.

Elements that promote physical activity:
- *Zone planning: mixed-use areas (residential, shopping and services, work)*
- *Connected and dense pedestrian and cycling paths with direct connections and safe, dry and nearby bicycle racks*
- *Short distances to destination points*
- *High residential density*
- *A barrier-free neighbourhood attractively designed for pedestrians and people with mobility impairments*
- *Good public transport connections with short distances to well-equipped public transport stops*
- *Barrier-free access to parks and recreational facilities*
- *Simultaneous promotion of routine physical activity and provision of safe environments*
- *The more pedestrians there are, the safer it will be for all pedestrians*
- *The more cyclists there are, the safer it will be for all cyclists*
- *Create and maintain attractive and robust natural and other green spaces*
- *Bicycle access to and bicycle storage in buildings, inviting stairwells and lit entrances.*

***Important for spatial planners and landscape architects**: involve users and residents as early as the planning stage through participative processes and leave room for independent appropriation and creative use of spaces later on.*

[40] Further information on health promotion in Switzerland is available in German, French and Italian at https://gesundheitsfoerderung.ch/kantonale-aktionsprogramme/ernaehrung- und-bewegung/kinder-und-jugendliche/fokusthemen/bewegungsfreundliches-umfeld.html and in the guide (in German) "Gemeinde-Sportanlagenkonzept" published by the Federal Office of Sport FOSPO at https://www.basposhop.ch/produkt/011d-gemeinde-sportanlagenkonzept-leitfaden/

8. Encouraging people to be physically active

The premise of this core document is that promoting physical activity is a cyclical process where the available knowledge stands in the centre (see Chart 15).

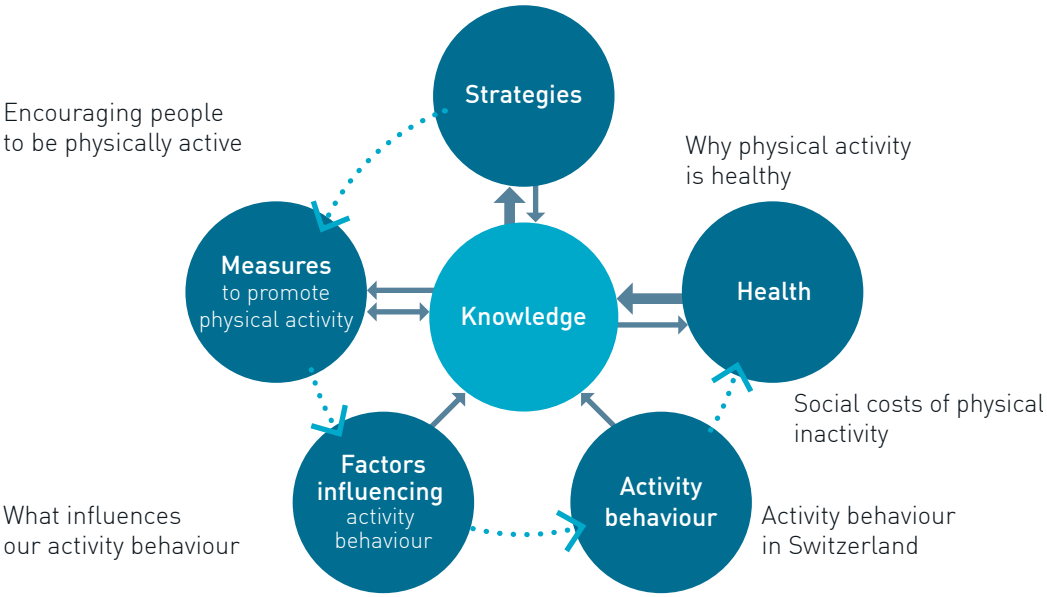


Chart 15: Framework concept of promoting physical activity

Active people in an active environment: action areas and measures

It is crucially important that national physical activity guidelines reach the main target groups and are supported by appropriate, targeted and sustainable communication measures, which raise awareness of the many benefits of regular physical activity and reduce sedentary behaviour. However, in order to achieve a sustainable change in behaviour, these measures should ideally be supported by a whole-of-government approach with coordinated strategy packages and measures. This will provide macro-environmental conditions conducive to physical activity, whereby everyone has the opportunity and incentives to be physically active. Involving a broad spectrum of stakeholders helps increase the number of people engaging in physical activity in different areas of life. The WHO Global Action Plan on Physical Activity 2018–2030 (GAPPA report) [8] aims to reduce the proportion of physically inactive people worldwide by 15% by 2030 relative to 2016. In the interests of a systematic approach to promoting physical activity, the WHO recommends 20 evidence-based measures and interventions in four action areas [8]. The GAPPA report [8] has been analysed for Switzerland with regard to the level of implementation, stakeholder landscape and need for action [80]. GAPPA measures of varying orders of priority have been identified for Switzerland as part of the analysis and synthesis of expert opinions.[41]

[41] The central results of the study and the consolidated recommended actions can be found at https://www.bag.admin.ch/bag/de/home/ gesund-leben/gesundheitsfoerderung-und-praevention/bewegungsfoerderung.html

Chart 16: Illustration based on the WHO concept of the broad range of stakeholders contributing to a more active population.

1. **This package of measures aims to trigger a paradigm shift in society through improved knowledge and awareness of the many benefits of regular physical activity. It comprises the following measures:**

1.1 Implement best-practice communication campaigns to raise awareness and transfer knowledge, connected to specific local programmes

1.2 Launch communication campaigns on the social, economic and environmental added benefit of physical activity (especially in connection with active mobility)

1.3 Hold regular major activity events in public spaces with free participation for all sections of the population

1.4 Education and training of professionals within and outside the health sector to create a physically active society.

3. **This package of measures is to improve access for all sections of society to suitable offers and programmes in different settings:**

3.1 Enhanced, high-quality opportunities for all children to be physically active via a whole-of-school approach at all school levels

3.2 Assessment and advice for patients regarding physical activity and less sedentary behaviour from experts in health and social programmes

3.3 More physical activity programmes for all sections of the population in public green and natural areas as well as in workplaces, community centres, sport and recreational facilities or religious meeting places

3.4 More specific physical activity programmes and less sedentary behaviour for older adults in community venues, health, social and long-term care settings, assisted living facilities and family environments.

3.5 More development of programmes and offers in different settings for the least active sections of the population

3.6 Whole-of-community initiatives, at the city, town or community levels, involving all local stakeholders and a combination of approaches in all possible settings to promote more physical activity and less sedentary behaviour among all sections of the population.

2. **This package of measures is to create a supportive and secure environment for all types of physical activity involving all sections of the population. This includes the following intervention opportunities:**

2.1 More integration of spatial and traffic planning in order to promote compact and mixed- land use with a particular focus on active mobility and public transport

2.2 Improvement of human-powered mobility networks to encourage the secure use of active mobility and public transport for all sections of the population

2.3 Improvement of road safety and personal safety within the public sphere, especially for the use of active mobility and public transport plus a particular focus on the most vulnerable users

2.4 Improved access to public green and recreational areas and sports facilities for all sections of the population

2.5 Strengthening of political, regulatory and design guidelines to promote physical activity in public venues, schools, healthcare, sport and leisure facilities, places of work and social housing.

4. **This package of measures covers the strengthening of the state's leadership role, of multi-sectoral partnerships and a comprehensive representation of interests and of information and financing systems:**

4.1 Strengthen policy frameworks, leadership and governance systems for promoting activity at all levels of government, in particular policy coherence across sectors as well as monitoring and evaluation

4.2 Enhance data systems and monitoring of physical activity behaviour including wider sociocultural and environmental determinants. Development and testing of new digital technologies to strengthen surveillance systems and policy monitoring.

4.3 Strengthen research and evaluation capacity and stimulate the application of digital technologies to accelerate the implementation of effective policy solutions aimed at increasing physical activity.

4.4 Escalate efforts to increase awareness, knowledge and advocacy of high-level leaders, policy makers across multiple sectors, the media, the private sector, city and municipal councils and the wider population for the promotion of physical activity.

Glossary

Term	Definition
Aerobic physical activity	Activity in which the body's large muscles move in a rhythmic manner for a sustained period of time. Aerobic activity – also called endurance activity – improves cardiorespiratory fitness. Examples include walking, running, swimming and cycling
Amount of physical activity	In this document, the term "amount of physical activity" refers to the product of the frequency and duration of a physical activity at a certain intensity level.
Areas of life/ domains for physical activity	Physical activity can occur within one or more of the following areas of life (domain or setting): free or leisure time, school/education, work (occupation), active mobility (transport), household.
Balancing exercises/training	Static and dynamic exercises that are designed to improve an individual's ability to withstand challenges from postural sway or destabilising stimuli caused by self-motion, the environment or other objects.
Bone-strengthening activity	Physical activity primarily designed to increase bone mass and density and thus increase the strength of the bones forming the skeletal system. Bone-strengthening activities produce an impact or tension force on the bones that promotes bone strength and growth. Jogging, skipping and lifting weights are examples of bone-strengthening activities.
Cardiorespiratory fitness (endurance)	A health-related component of physical fitness. The ability of the cardiovascular and respiratory system to maintain an adequate supply of oxygen to the body during sustained physical activity. Usually expressed as the measured or estimated maximal oxygen uptake (VO_2 max).
Cardiovascular and metabolic health	The interplay of blood pressure, blood lipids, blood glucose and insulin on a person's health (cardiometabolic health).
Cognitive functions	Cerebral activities, such as reasoning, memory, attention, interaction and language that lead to the attainment and processing of information and knowledge.
Disability	According to the World Health Organization (WHO) a disability is when a health problem leads to an impairment of a person's body function or structure (impairments), limits the ability to perform certain activities (activity limitation) or impedes participation in a person's social environment (participation restrictions). Disability is thus not only a biological but also a social problem, which arises when a person is unable for health reasons to perform basic everyday tasks or to have a full social life. Disability results from the interaction between health conditions and personal and environmental factors [91].
Fitness	A measure for the current level of physical performance in the areas of strength, endurance, speed, flexibility and coordination.
Flexibility	A health and performance-related component of physical fitness serving to maintain or improve the range of motion in one or more joints. It influences the stretch tolerance of the musculature and connective tissue. Flexibility is specific to each joint and depends among other things on the tightness of specific ligaments and tendons. Flexibility exercises enhance the ability of a joint to move through its full range of motion.
Flexibility = physical activity	Any bodily movement produced by skeletal muscles that requires energy expenditure above the resting metabolic rate. Examples include walking, jogging, taking the stairs, dancing.
Functional exercises	Exercises that can be embedded into everyday tasks to improve lower-body strength, balance and motor performance. Examples include tandem or one-leg stands, squatting, chair stands, toe raises and stepping over obstacles.

Term	Definition
Health-enhancing physical activity (HEPA)	Any physical activity that improves a person's health with minimum undesired side effects is health-enhancing. Examples include active mobility (e.g. walking, cycling), dancing, gardening (e.g. raking leaves), yoga, fitness training, jogging, Nordic walking, swimming or cross-country skiing. Physical activity must be carried out correctly to ensure it is safe, gentle and health-enhancing. Gardening, for example, is usually a very good activity, but it can cause back problems if done with poor posture. Types of physical activity involving a lot of contact (e.g. concussion in football), or very intensive sport activity over an extended period can also be detrimental to health (e.g. arthritis after a sporting career). In the physical activity guidelines, physical activity is understood as health-enhancing physical activity.
Light-intensity physical activity	Light-intensity physical activity covers activities that do not significantly increase breathing or heart rate, e.g. walking slowly, doing the dishes or other casual activities. The energy expenditure is between 1.5 and 3 METs, i.e. less than three times the energy expenditure at rest for that person. On the 10-point Foster scale of individually perceived exertion[42] (0 means "no exertion whatsoever", 10 means "maximum exertion"), based on a person's physical performance, light intensity normally corresponds to an individual value of 4.
Major muscle groups	Major muscle groups include the legs, back, abdomen, chest, shoulders and arms.
Metabolic equivalent of task (MET)	The metabolic equivalent of task (MET) or simply the metabolic equivalent, is a physiological measure expressing the intensity of physical activities. One MET is the energy equivalent expended by an individual while seated at rest. A MET is defined as an oxygen intake of 3.5 ml/min/kg corresponding to energy expenditure of 1 kcal pro kg of body weight per hour (4 kJ/kg/h). If a person weighing 80 kg does sport for one hour at an intensity of 7 MET, that person uses an estimated 7 kcal/kg/h * 80 kg * 1h = 560 kcal compared to an estimated 80 kcal/h when resting.
Moderate-intensity physical activity	Moderate-intensity physical activity comprises activities that accelerate breathing, but (as a general rule) do not involve sweating, so it is still possible to talk but not to sing. Brisk walking, cycling, strength training with small weights, snow-shovelling or gardening are just some of the many examples of moderate-intensity physical activity in leisure, everyday or sporting pursuits. Energy expenditure is 3-6 METs. This corresponds to 5 or 6 on the 10-point Foster individually perceived exertion scale.
Muscle-strengthening activity (also muscle-strengthening exercise)	Physical activity and exercise of moderate to vigorous intensity involving as many major muscle groups as possible (leg, hip, chest, back, abdominal, shoulder and arm muscles) that increase skeletal muscle strength, power, endurance and mass (e.g. strength training, resistance training or a combination of strength and aerobic physical activities).
Physical activity	Physical activity refers to any activity performed by the skeletal muscles that leads to an increase in energy expenditure above the resting metabolic rate. Examples include walking, jogging, climbing stairs, dancing.
Physical activity at very vigorous or maximum intensity	Physical activity involving very vigorous and maximum intensity covers the most strenuous forms of exercise, such as uphill sprints, strength training with weights or on exercise machines at full capacity or running for the train. This corresponds to 9 or 10 on the 10-point Foster individually perceived exertion scale. This occurs at brief intervals during training (a few seconds) with rests or in combination with lower-intensity activities (high-intensity interval training (HIIT)). This could entail combining aerobic physical activities with muscle-strengthening exercises. Physical activity of very vigorous or maximum intensity has been proven to be health-enhancing for healthy, active persons (children and adolescents, active adults, trained persons) [11], but there are currently only very few findings on the benefit and risks for older people.
Physical inactivity	Physical inactivity is defined as not complying with the physical activity recommendations of at least 150 minutes of moderate-intensity physical activity or at least 75 minutes of vigorous-intensity physical activity per week. Going by the Swiss health survey this corresponds to the activity levels "inactive" and "partially active".

[42]There is a template for a Foster scale in German at https://www.mobilesport.ch/assets/lbwp-cdn/mobilesport/files/2016/06/06_16_FosterSkala.pdf

Term	Definition
Psychosocial health	Mental, emotional and social dimensions of health.
Sedentary behaviour	Any behaviour whether awake or at rest involving energy expenditure of 1.5 METs or less, while sitting, reclining, or lying. Most desk-based office work, driving a car or watching television are examples of sedentary behaviour; these can also apply to those unable to stand, such as wheelchair users.
Sedentary screen time	Time spent watching screen-based entertainment (television, computer, mobile devices). This does not include any active screen-based games requiring movement. Screen time during leisure time is separate to remote work or education/study.
Sport	Sport covers a range of activities that can, but do not have to, resemble a game or competition: nowadays, many leisure activities involving physical activity are classified as sport, such as hiking, yoga or dancing (see Sport Schweiz Study 2020 [9]). The boundary between sport and physical activity is thus something of a grey area.
Sport training	A subcategory of physical activity that is planned, structured, repeated and targeted, whereby the improvement or maintenance of one or more components of physical fitness, physical performance or health is the aim.
Type of physical activity	Nature or type of exercise and physical activity. There is a distinction between aerobic physical activity, muscle-strengthening activity, bone-strengthening activity, coordination/balancing exercises/training and flexibility exercises/training.
Varied multicomponent activity	For older adults, varied multicomponent physical activity comprising a combination of different physical activity types is important to improve physical function and decrease the risk of falls or injury from a fall. These activities can be done at home or in a structured group setting. Many of these activity programmes combine all activity types (aerobic physical activity, muscle strengthening, coordination and balancing exercises, flexibility). An example of a multicomponent physical activity programme could include walking (aerobic activity) and lifting weights (muscle strengthening) and incorporates balance training. Dancing also combines aerobic physical activity and balance components.
Vigorous-intensity physical activity	Vigorous-intensity physical activity comprises activities causing (at a minimum) slight sweating and accelerated breathing so only brief exchanges of words are possible. They include activities and sports that use major muscle groups, such as jogging, cycling fast while going about daily business or during free time, swimming or cross-country skiing, as well as cardiovascular and strength training on exercise machines or strength training with own body weight (e.g. press-ups, sit-ups, pull-ups). The energy expenditure exceeds 6 METs. This corresponds to 7 or 8 on the 10-point Foster individually perceived exertion scale.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Bibliography

[1] Federal Office of Sport, Federal Office of Public Health, Health Promotion Switzerland, HEPA Switzerland network. Gesundheitswirksame Bewegung. Magglingen: FOSPO; 1999.

[2] Federal Office of Sport, Federal Office of Public Health, Health Promotion Switzerland, HEPA Switzerland network. Gesundheitswirksame Bewegung bei Kindern und Jugendlichen. Magglingen: FOSPO; 2006.

[3] World Health Organization (WHO). Global recommendations on physical activity for health [online]. Geneva, Switzerland; 2010 [cited 28 May 2015]. Available at: https://www.who.int/publications/i/item/9789241599979

[4] Federal Office of Sport FOSPO, Federal Office of Public Health FOPH, Health Promotion Switzerland, BFU – Swiss Council for Accident Prevention, Health and Physical Activity Network Switzerland, Suva. Health-Enhancing Physical Activity – Core Document. Magglingen: FOSPO; 2013.

[5] Health and Physical Activity Network Switzerland hepa.ch. Gesundheitswirksame Bewegung bei Säuglingen, Kleinkindern und Kindern im Vorschulalter – Empfehlungen für die Schweiz. 2016.

[6] Kahlmeier S, Hartmann F, Martin-Diener E, Quack Lötscher K, Schläppy-Muntwyler F. Schweizer Bewegungsempfehlungen für schwangere und postnatale Frauen. Schweizer Zeitschrift für Ernährungsmedizin. 2018;4.

[7] World Health Organization. WHO guidelines on physical activity and sedentary behaviour. Geneva; 2020.

[8] World Health Organization. Global action plan on physical activity 2018–2030: more active people for a healthier world. Geneva; 2018.

[9] Lamprecht M, Bürgi R, Stamm H. Sport Schweiz 2020: Sportaktivität und Sportinteresse der Schweizer Bevölkerung. Magglingen: Federal Office of Sport FOSPO; 2020.

[10] Tremblay MS, Aubert S, Barnes JD, Saunders TJ, Carson V, Latimer-Cheung AE, a.o. Sedentary Behavior Research Network (SBRN) – Terminology Consensus Project process and outcome. Int J Behav Nutr Phys Act. 10. June 2017;14(1):75.

[11] Batacan RB, Duncan MJ, Dalbo VJ, Tucker PS, Fenning AS. Effects of high-intensity interval training on cardiometabolic health: a systematic review and meta-analysis of intervention studies. Br J Sports Med. March 2017;51(6):494–503.

[12] Department of Health and Social Care. UK Chief Medical Officers' Physical Activity Guidelines. London: Department of Health and Social Care; 2019.

[13] Ainsworth BE, Haskell WL, Herrmann SD, Meckes N, Bassett DR, Tudor-Locke C, u. a. 2011 Compendium of Physical Activities: a second up- date of codes and MET values. Med Sci Sports Exerc. August 2011;43(8):1575–81.

[14] Austrian Health Promotion Fund (publisher). Austrian Physical Activity Recommendations (Volume 17). Vienna; 2020.

[15] 2018 Physical Activity Guidelines Advisory Committee. 2018 Physical Activity Guidelines Advisory Committee Scientific Report. Washington, DC: U.S. Department of Health and Human Services; 2018.

[16] World Health Organization. WHO guidelines on physical activity and sedentary behaviour: Web Annex. Evidence profiles. Geneva; 2020.

[17] US Department of Health and Human Services. Physical Activity Guidelines for Americans, 2nd edition. Washington, DC: US Department of Health and Human Services; 2018.

[18] Poitras VJ, Gray CE, Borghese MM, Carson V, Chaput JP, Janssen I, a.o. Systematic review of the relationships between objectively measured physical activity and health indicators in school-aged children and youth. Appl Physiol Nutr Metab. June 2016;41(6 (Suppl. 3)):p.197–239.

[19] Pozuelo-Carrascosa DP, Cavero-Redondo I, Herráiz-Adillo Á, Díez-Fernández A, Sánchez-López M, Martínez-Vizcaíno V. School-Based Exercise Programs and Cardiometabolic Risk Factors: A Meta-analysis. Pediatrics. November 2018;142(5):e20181033.

[20] Eddolls WTB, McNarry MA, Stratton G, Winn CON, Mackintosh KA. High-Intensity Interval Training Interventions in Children and Adolescents: A Systematic Review. Sports Med. November 2017;47(11):2363–74.

[21] Bea JW, Blew RM, Howe C, Hetherington-Rauth M, Going SB. Resistance Training Effects on Metabolic Function Among Youth: A Systematic Review. Pediatr Exerc Sci. August 2017;29(3):297–315.

[22] Xue Y, Yang Y, Huang T. Effects of chronic exercise interventions on executive function among children and adolescents: a systematic review with meta-analysis. Br J Sports Med. November 2019;53(22):1397–404.

[23] Carson V, Hunter S, Kuzik N, Gray CE, Poitras VJ, Chaput JP, a.o. Systematic review of sedentary behaviour and health indicators in school-aged children and youth: an update. Appl Physiol Nutr Metab. Juni 2016;41(6 (Suppl. 3)):p.240–65.

[24] Peart T, Velasco Mondragon HE, Rohm-Young D, Bronner Y, Hossain MB. Weight status in US youth: the role of activity, diet, and sedentary behaviors. In J Health Behav. November 2011;35(6):756–64.

[25] Lissner L, Lanfer A, Gwozdz W, Olafsdottir S, Eiben G, Moreno LA, a.o. Television habits in relation to overweight, diet and taste preferences in European children: the IDEFICS study. Eur J Epidemiol. 1 September 2012;27(9):705–15.
[26] Hoare E, Milton K, Foster C, Allender S. The associations between sedentary behaviour and mental health among adolescents: a systematic review. Int J Behav Nutr Phys Act. 8. October 2016;13(1):108.
[27] Suchert V, Hanewinkel R, Isensee B. Sedentary behavior and indicators of mental health in school-aged children and adolescents: A systematic review. Prev Med. July 2015;76:48–57.
[28] Bierhoff HW. Prosocial Behaviour. In: Jonas K, Stroebe W, Hewstone M, publisher. Social psychology: an introduction [online]. Berlin, Heidelberg: Springer Berlin Heidelberg; 2007. pgs 295–327. Available at: https://doi.org/10.1007/978-3-540-71633-4_9
[29] Belmon LS, van Stralen MM, Busch V, Harmsen IA, Chinapaw MJM. What are the determinants of children's sleep behavior? A systematic review of longitudinal studies. Sleep Med Rev. February 2019;43:60–70.
[30] Chaput JP, Gray CE, Poitras VJ, Carson V, Gruber R, Olds T, a.o. Systematic review of the relationships between sleep duration and health indicators in school-aged children and youth. Appl Physiol Nutr Metab. 1 June 2016;41(6 (Suppl. 3)):pgs266–82.
[31] Chaput JP, Gray CE, Poitras VJ, Carson V, Gruber R, Birken CS, a.o. Systematic review of the relationships between sleep duration and health indicators in the early years (0–4 years). BMC Public Health. 20 November 2017;17(5):855.
[32] Chen X, Beydoun M, Wang Y. Is Sleep Duration Associated With Childhood Obesity? A Systematic Review and Meta-analysis. Obesity (Silver Spring, Md). 1 March 2008;16:265–74.
[33] Owens J. Insufficient Sleep in Adolescents and Young Adults: An Update on Causes and Consequences. Pediatrics. September 2014;134(3):e921–32.
[34] Taveras EM, Gillman MW, Peña MM, Redline S, Rifas-Shiman SL. Chronic Sleep Curtailment and Adiposity. Pediatrics. June 2014;133(6):1013–22.
[35] World Health Organization. Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age [online]. World Health Organization; 2019 [cited 3 June 2021]. Available at: https://apps.who.int/iris/handle/10665/311664
[36] Ekelund U, Tarp J, Steene-Johannessen J, Hansen BH, Jefferis B, Fagerland MW, a.o. Dose-response associations between accelerometry measured physical activity and sedentary time and all cause mortality: systematic review and harmonised meta-analysis. BMJ. 21. August 2019;366:l4570.
[37] Schuch FB, Vancampfort D, Firth J, Rosenbaum S, Ward PB, Silva ES, a.o. Physical Activity and Incident Depression: A Meta-Analysis of Prospective Cohort Studies. In J Psychiatry. 1 July 2018;175(7):631–48.
[38] Gordon BR, McDowell CP, Hallgren M, Meyer JD, Lyons M, Herring MP. Association of Efficacy of Resistance Exercise Training With Depressive Symptoms: Meta-analysis and Meta-regression Analysis of Randomized Clinical Trials. JAMA Psychiatry 1. Juni 2018;75(6):566–76.
[39] Pérez-López FR, Martínez-Domínguez SJ, Lajusticia H, Chedraui P, Health Outcomes Systematic Analyses Project. Effects of programmed exercise on depressive symptoms in midlife and older women: A meta-analysis of randomized controlled trials. Maturitas. December 2017;106:38–47.
[40] Schuch FB, Vancampfort D, Richards J, Rosenbaum S, Ward PB, Stubbs B. Exercise as a treatment for depression: A meta-analysis adjusting for publication bias. J Psychiatr Res. June 2016;77:42–51.
[41] Schuch FB, Stubbs B, Meyer J, Heissel A, Zech P, Vancampfort D, a.o. Physical activity protects from incident anxiety: A meta-analysis of prospective cohort studies. Depress Anxiety. September 2019;36(9):846–58.
[42] Gordon BR, McDowell CP, Lyons M, Herring MP. The Effects of Resistance Exercise Training on Anxiety: A Meta-Analysis and Meta-Regression Analysis of Randomized Controlled Trials. Sports Med. December 2017;47(12):2521–32.
[43] Das P, Horton R. Rethinking our approach to physical activity. Lancet. 21. July 2012;380(9838):189–90.
[44] Brasure M, Desai P, Davila H, Nelson VA, Calvert C, Jutkowitz E, a.o. Physical Activity Interventions in Preventing Cognitive Decline and Alzheimer-Type Dementia: A Systematic Review. Ann Intern Med. 2. January 2018;168(1):30–8.
[45] Northey JM, Cherbuin N, Pumpa KL, Smee DJ, Rattray B. Exercise interventions for cognitive function in adults older than 50: a systematic review with meta-analysis. Br J Sports Med. February 2018;52(3):154–60.
[46] Engeroff T, Ingmann T, Banzer W. Physical Activity Throughout the Adult Life Span and Domain-Specific Cognitive Function in Old Age: A Systematic Review of Cross-Sectional and Longitudinal Data. Sports Med. June 2018;48(6):1405–36.
[47] Rathore A, Lom B. The effects of chronic and acute physical activity on working memory performance in healthy participants: a systematic review with meta-analysis of randomized controlled trials. Syst Rev 30 June 2017;6(1):124.
[48] Livingston G, Sommerlad A, Orgeta V, Costafreda SG, Huntley J, Ames D, a.o. Dementia prevention, intervention, and care. Lancet. 16 December 2017;390(10113):2673–734.

[49] Hafner M, Yerushalmi E, Stepanek M, Phillips W, Pollard J, Deshpande A, a.o. Estimating the global economic benefits of physically active populations over 30 years (2020–2050). Br J Sports Med. 1 December 2020;54(24):1482–7.

[50] Ekelund U, Brown WJ, Steene-Johannessen J, Fagerland MW, Owen N, Powell KE, a.o. Do the associations of sedentary behaviour with cardiovascular disease mortality and cancer mortality differ by physical activity level? A systematic review and harmonised meta-analysis of data from 850 060 participants. Br J Sports Med. July 2019;53(14):886–94.

[51] Ekelund U, Steene-Johannessen J, Brown WJ, Fagerland MW, Owen N, Powell KE, a.o. Does physical activity attenuate, or even eliminate, the detrimental association of sitting time with mortality? A harmonised meta-analysis of data from more than 1 million men and women. Lancet. 24 September 2016;388(10051):1302–10.

[52] Keadle SK, Conroy DE, Buman MP, Dunstan DW, Matthews CE. Targeting Reductions in Sitting Time to Increase Physical Activity and Improve Health. Med Sci Sports Exerc. August 2017;49(8):1572–82.

[53] Patterson R, McNamara E, Tainio M, de Sá TH, Smith AD, Sharp SJ, a.o. Sedentary behaviour and risk of all-cause, cardiovascular and cancer mortality, and incident type 2 diabetes: a systematic review and dose response meta-analysis. Eur J Epidemiol. 2018;33(9):811–29.

[54] Dorner TE, Schindler K. Gesundheit im Alter: Selbstständigkeit erhalten, Gebrechlichkeit vorbeugen. MANZ'sche Vienna; 2017. 201 p.

[55] Sherrington C, Fairhall NJ, Wallbank GK, Tiedemann A, Michaleff ZA, Howard K, a.o. Exercise for preventing falls in older people living in the community. Cochrane Database of Systematic Reviews [online]. 2019 [cited 22 February 2021];(1). Available at: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012424.pub2/full

[56] Federal Statistical Office FSO. Swiss Health Survey 2017. Physical activity and health. Neuchâtel: FSO; 2019. (FSO current). Report No.: August 2019.

[57] Davenport MH, Ruchat SM, Poitras VJ, Jaramillo Garcia A, Gray CE, Barrowman N, a.o. Prenatal exercise for the prevention of gestational diabetes mellitus and hypertensive disorders of pregnancy: a systematic review and meta-analysis. Br J Sports Med. November 2018;52(21):1367–75.

[58] Du MC, Ouyang YQ, Nie XF, Huang Y, Redding SR. Effects of physical exercise during pregnancy on maternal and infant outcomes in overweight and obese pregnant women: A meta-analysis. Birth. June 2019;46(2):211–21.

[59] Davenport MH, Ruchat SM, Sobierajski F, Poitras VJ, Gray CE, Yoo C, a.o. Impact of prenatal exercise on maternal harms, labour and delivery outcomes: a systematic review and meta-analysis. Br J Sports Med. January 2019;53(2):99–107.

[60] Nakamura A, van der Waerden J, Melchior M, Bolze C, El-Khoury F, Pryor L. Physical activity during pregnancy and postpartum depression: Systematic review and meta-analysis. J Affect Disord. 1. March 2019;246:29–41.

[61] Beetham KS, Giles C, Noetel M, Clifton V, Jones JC, Naughton G. The effects of vigorous intensity exercise in the third trimester of pregnancy: a systematic review and meta-analysis. BMC Pregnancy Childbirth. 7 August 2019;19(1):281.

[62] Boyer WR, Churilla JR, Ehrlich SF, Crouter SE, Hornbuckle LM, Fitzhugh EC. The Protective Role of Physical Activity on Type 2 diabetes: An Analysis of Effect Modification by Race-Ethnicity. J Diabetes. February 2018;10(2):166–78.

[63] Arem H, Moore SC, Patel A, Hartge P, de Gonzalez AB, Visvanathan K, a.o. Leisure Time Physical Activity and Mortality: A Detailed Pooled Analysis of the Dose-Response Relationship. JAMA Intern Med. 1 June 2015;175(6):959–67.

[64] Blond K, Brinkløv CF, Ried-Larsen M, Crippa A, Grøntved A. Association of high amounts of physical activity with mortality risk: a systematic review and meta-analysis. Br J Sports Med. 1. October 2020;54(20):1195–201.

[65] Moore SC, Patel AV, Matthews CE, Gonzalez AB de, Park Y, Katki HA, a.o. Leisure Time Physical Activity of Moderate to Vigorous Intensity and Mortality: A Large Pooled Cohort Analysis. PLOS Medicine. 6 November 2012;9(11):e1001335.

[66] Swiss Council for Accident Prevention BFU. Status 2019: Statistics on non-occupational accidents and the level of safety in Switzerland. Road traffic, sport, house and leisure time. Bern; 2019.

[67] Martin-Diener E, Brügger O, Martin B. Bewegungsförderung und Unfallprävention: Eine Gesamtbetrachtung. Bern: Swiss Council for Accident Prevention BFU, Federal Office of Public Health FOPH, Health Promotion Switzerland, Public Health Schweiz, Schweizerische Gesellschaft für Sportmedizin SGSM, SuvaLiv – Sichere Freizeit, publisher. Grundlagendokument für die Schweiz; 2012.

[68] Ekelund U, Tarp J, Fagerland MW, Johannessen JS, Hansen BH, Jefferis BJ, a.o. Joint associations of accelerometer-measured physical activity and sedentary time with all-cause mortality: a harmonised meta-analysis in more than 44 000 middle-aged and older individuals. Br J Sports Med. 1 December 2020;54(24):1499–506.

[69] Zahner L, Steiner R. Kräftig altern. Fachhandbuch: Die positiven Effekte von Muskeltraining in der 3. Lebensphase. Luzern: Schweizerischer Fitness- und Gesundheitscenter Verband; 2010. 100 p.

[70] Coelho-Ravagnani CF, Almeida JA, Sui X, Ra- vagnani FCP, Pate RR, Blair SN. Changes in Compliance With Physical Activity Guidelines and Cardiovascular Disease Mortality. Journal of Physical Activity and Health. 9. April 2021;18(6):638–43.

[71] Skelton DA, Mavroeidi A. How do muscle and bone strengthening and balance activities (MBSBA) vary across the life course, and are there particular ages where MBSBA are most important? J Frailty Sarcopenia Falls. 1 June 2018;3(2):74–84.

[72] McPhee JS, French DP, Jackson D, Nazroo J, Pendleton N, Degens H. Physical activity in older age: perspectives for healthy ageing and frailty. Biogerontology. 2016;17:567–80.

[73] Hamer M, Lavoie KL, Bacon SL. Taking up physical activity in later life and healthy ageing: the English longitudinal study of ageing. Br J Sports Med. February 2014;48(3):239–43.

[74] Liu CJ, Chang WP, Araujo de Carvalho I, Savage KEL, Radford LW, Amuthavalli Thiyagarajan J. Effects of physical exercise in older adults with reduced physical capacity: meta-analysis of resistance exercise and multimodal exercise. Int J Rehabil Res. December 2017;40(4):303–14.

[75] Public Health England. Muscle and bone strengthening and balance activities for general health benefits in adults and older adults. London: Public Health England; 2018.

[76] Sieber CC. Zum Konzept der Gebrechlichkeit – von der Phänomenologie zu therapeutischen Ansätzen. Z Gerontol Geriatr. 1 September 2005;38(1):i1–3.

[77] Lang M, Cillekens B, Verhagen E, van Mechelen W, Coenen P. Leisure time physical activity and its adverse effects on injury risk and osteoarthri- tis in adults: an umbrella review summarizing 14 systematic reviews. J Phys Act Health. submitted.

[78] Tainio M, de Nazelle AJ, Götschi T, Kahlmeier S, Rojas-Rueda D, Nieuwenhuijsen MJ, a.o. Can air pollution negate the health benefits of cyc- ling and walking? Prev Med. June 2016;87:233–6.

[79] Sun S, Cao W, Qiu H, Ran J, Lin H, Shen C, a.o. Benefits of physical activity not affected by air pollution: a prospective cohort study. International Journal of Epidemiology. 1 February 2020;49(1):142–52.

[80] Stamm H, Fischer A. Global action plan on physi- cal activity 2018–2030 (GAPPA) Standortbestim- mung und Stakeholderanalyse Schweiz. Commissioned by the Federal Office of Public Health FOPH. 2021.

[81] Lamprecht M, Bürgi R, Gebert A, Stamm H. Sport Schweiz 2020: Kinder- und Jugendbericht. Magglingen: Federal Office of Sport FOSPO; 2021.

[82] Sauter D. Mobilität von Kindern und Jugendlichen. Veränderungen zwischen 1994 und 2015. Analyse basierend auf den Mikrozensen «Mobilität und Verkehr». Bern: Astra; 2019. (Materialien Langsamverkehr). Report No.: Nr. 141.

[83] Federal Statistical Office. Population's transport behaviour – Results of the 2015 Mobility and Transport Microcensus [online]. May 2017 [quoted 18 May 2021]. Report No.: 840–1500. Available in German at: https://www.bfs.admin.ch/bfs/de/home/ statistiken/mobilitaet-verkehr/personenverkehr/ verkehrsverhalten.assetdetail.1840477.html

[84] Syleouni ME, Vinci L, Mattli R. Physical inactivity attributable deaths in Switzerland in 2017. Winterthur: ZHAW; 2020.

[85] Mattli R, Hess S, Maurer M, Eichler K, Pletscher M, Wieser S. Kosten der körperlichen Inaktivität in der Schweiz. Winterthur: Winterthur Institute of Health Economics / ZHAW; 2014.

[86] Mattli R, Wieser S, Probst-Hensch N, Schmidt-Trucksäss A, Schwenkglenks M. Physical inactivity caused economic burden depends on regional cultural differences. Scandinavian Journal of Medicine & Science in Sports. 2019;29(1):95–104.

[87] Michel FI, Bochud Y. Haus und Freizeit. Unfall-, Risiko- und Interventionsanalyse [online]. Bern: BFU, Swiss Council for Accident Prevention; 2012.

[88] McNeill LH, Kreuter MW, Subramanian SV. Social Environment and Physical activity: A review of concepts and evidence. Social Science & Medicine. 1 August 2006;63(4):1011–22.

[89] Marques EA, Baptista F, Santos DA, Silva AM, Mota J, Sardinha LB. Risk for losing physical independence in older adults: the role of sedentary time, light, and moderate to vigorous physical activity. Maturitas. September 2014;79(1):91–5.

[90] Federal Statistical Office FSO. Equality of people with disabilities. Pocket Statistics. Neuchâtel: Federal Statistical Office FSO; 2020.

[91] World Health Organization & World Bank. (2011). World report on disability 2011. World Health Organization. https://apps.who.int/iris/ handle/10665/44575.

[92] Nigg C et al. Bewegung als Schutzfaktor für das Immunsystem. Bern: University of Bern; 2022

[93] World Health Organization (Santos AC et al). The cost of inaction on physical inactivity to public healthcare systems: a population-attributable fraction analysis. Geneva: World Health Organization; 2022. https://doi.org/10.1016/S2214-109X(22)00464-8

Annex A: Scientific core documents for the physical activity guidelines

The updated Swiss physical activity guidelines are based on the following core documents, which also contain some of the original scientific literature:

- Federal Office of Sport (publisher) (2013): Health-Enhancing Physical Activity. Core Document FOSPO, Magglingen. https://www.hepa.ch/de/bewegungsempfehlungen.html
- Federal Office of Sport (issuer) (2016): Gesundheitswirksame Bewegung bei Säuglingen, Kleinkindern und Kindern im Vorschulalter. FOSPO, Magglingen.
- Canadian Academy of Sport and Exercise Medicine (ed.) (2019): Canadian Guideline for Physical Activity throughout Pregnancy. https://csepguidelines.ca/guidelines/pregnancy/
- Department of Health and Social Care, Llwodraeth Cymru Welsh Government, Department of Health Northern Ireland and the Scottish Government (eds.) (2019): UK Chief Medical Officers' Physical Activity Guidelines. Gov. UK.
- Fonds Gesundes Österreich (publisher) (2020): Austrian Physical Activity Recommendations (Vol. 17), Vienna.
- Health Promotion Switzerland (publisher) (2018): Gesundheitswirksame Bewegung bei Frauen während und nach der Schwangerschaft. University of Zurich, Zurich.
- Physical Activity Guidelines Advisory Committee (2018): Physical Activity Guidelines Advisory Committee Scientific Report. U.S. Department of Health and Human Services, Washington, DC. https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf
- U.S. Department of Health and Human Services (2018): Physical Activity Guidelines for Americans, 2nd edition. U.S. Department of Health and Human Services, Washington, DC. https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf
- Rütten, A., Pfeifer, K. (publisher) (2017): Nationale Empfehlungen für Bewegung und Bewegungsförderung. FAU Erlangen-Nürnberg, Erlangen-Nürnberg.
- World Health Organization (2018): Global action plan on physical activity 2018–2030: more active people for a healthier world. Geneva: World Health Organization. Licence: CC BY-NC-SA 3.0 IGO.
- World Health Organization (2018): ACTIVE: a technical package for increasing physical activity. Geneva: World Health Organization. Licence: CC BY-NC-SA 3.0 IGO
- World Health Organization (2019): WHO guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age. WHO, Geneva.
- World Health Organization (2020): WHO guidelines on physical activity and sedentary behaviour. WHO, Geneva.
- World Health Organization (2020): WHO guidelines on physical activity and sedentary behaviour: at a glance. WHO, Geneva.
- World Health Organization (2020): WHO guidelines on physical activity and sedentary behaviour: web annex: evidence profiles. WHO, Geneva.

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Swiss Council for Accident Prevention BFU, Health and Physical Activity Network Switzerland hepa.
Physical activity guidelines Switzerland. Core document.
Magglingen: FOSPO 2022.

Short reference on request for charts:
hepa.ch. Magglingen: FOSPO 2022