



Recommended levels of physical activity for health

Children (5–17 years old)

For children and young people of this age group physical activity includes play, games, sports, transportation, recreation, physical education or planned exercise, in the context of family, school, and community activities.

In order to improve cardiorespiratory and muscular fitness, bone health, cardiovascular and metabolic health biomarkers (blood pressure, blood glucosis and lipids) and reduced symptoms of anxiety and depression, the following are recommended:

1. Children and young people should accumulate at least 60 minutes of moderate to vigorous-intensity physical activity daily.
2. Physical activity of amounts greater than 60 minutes daily will provide additional health benefits.
3. Most of daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone, at least 3 times per week.

Adults (18–64 years old)

For adults of this age group, physical activity includes recreational or leisure-time physical activity, transportation (e.g walking or cycling), occupational (i.e. work), household work, play, games, sports or planned exercise, in the context of daily, family, and community activities.

In order to improve cardiorespiratory and muscular fitness, bone health and reduce the risk of NCDs and depression the following are recommended:

1. Adults should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity.
2. Aerobic activity should be performed in bouts of at least 10 minutes duration.
3. For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week, or engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity.
4. Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week.



Elderly (65 years old and above)

For adults of this age group, physical activity includes recreational or leisure-time physical activity, transportation (e.g walking or cycling), occupational (if the person is still engaged in work), household work, play, games, sports or planned exercise, in the context of daily, family, and community activities.

In order to improve cardiorespiratory and muscular fitness, bone and functional health, and reduce the risk of NCDs, depression and cognitive decline, the following are recommended:

1. Elderly should do at least 150 minutes of moderate-intensity aerobic physical
2. activity throughout the week, or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity.
3. Aerobic activity should be performed in bouts of at least 10 minutes duration.
4. For additional health benefits, adults aged 65 years and above should increase their moderate intensity aerobic physical activity to 300 minutes per week, or engage in 150 minutes of vigorous intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous intensity activity.
5. Adults of this age group with poor mobility should perform physical activity to enhance balance and prevent falls on 3 or more days per week.
6. Muscle-strengthening activities should be done involving major muscle groups, on 2 or more days a week.
7. When adults of this age group cannot do the recommended amounts of physical activity due to health conditions, they should be as physically active as their abilities and conditions allow.

Overall, across all the age groups, the benefits of implementing the above recommendations, and of being physically active, outweigh the harms. At the recommended level of 150 minutes per week of moderate intensity activity, musculoskeletal injury rates appear to be uncommon. In a population-based approach, in order to decrease the risks of musculoskeletal injuries, it would be appropriate to encourage a moderate start with gradual progress to higher levels of physical activity.



Intensity levels of physical activity

Light physical activity

Light activity feels easy. Your exercise intensity is at a light level if:

- You have no noticeable changes in your breathing pattern.
- You don't sweat (unless it's very hot or humid).
- You can easily carry on a full conversation or even sing.

Examples: standing, light walking, cycling at low speed (up to 8 km/h), stretching, light weight training, dancing slowly etc.

Moderate intense physical activity

Moderate activity feels somewhat hard. Your exercise intensity is at a moderate level if:

- Your breathing quickens, but you're not out of breath.
- Your heart beat quickens moderate.
- You develop a light sweat after about 10 minutes of activity.
- You can carry on a conversation, but you can't sing.

Examples: brisk walking, cycling at moderate speed (8-15 km/h), walking uphill, hiking, roller skating at leisurely pace, low impact aerobics, aqua aerobics, yoga, jumping on a trampoline, moderate dancing, etc.

Vigorous intense physical activity

Vigorous activity feels challenging. Your exercise intensity is at a vigorous level if:

- Your breathing is deep and rapid.
- Your heartbeat pace is high.
- You develop a sweat after a few minutes of activity.
- You can't say more than a few words without pausing for breath.

Examples: Race walking (more than 7 km/h), cycling at high speed (16 km/h and more), jogging, fast pace in-line skating, high impact aerobics, step aerobics, etc.



Meeting physical activity recommendations with cycling and walking as means of transport

It is possible to reach the recommended amounts of physical activity with daily/transport cycling or walking. Especially if the distance to work or other places visited frequently is short. Remember that your cycling or walking should:

- be at least moderate intense
- last at least 10 min at a time
- last at least 150 min per week if moderate intense
- last at least 75 min per week if vigorous intense

Examples on how to reach the minimum amount of recommended physical activity:

- cycling to work 15 minutes each way
- cycling to work 10 minutes each way + 10 minutes walking during lunch break
- walking to work 30 minutes one way, taking public transport the other way
- walking to work 15 minutes each way
- walking to work 10 minutes each way + 10 minutes walking during lunch break

Note: each minute of physical activity more than the recommended amount brings additional positive effects on health and wellbeing.

The best way is to include active transport into an active lifestyle additional to recreational physical activities or sport. But active transport as the only physical activity can be a good solution in particular situations (lack of time, busy schedule, etc.).



Health benefits of physical activity- preventing diseases and maintaining health

Health benefits of physical activity (general)

Physical activity is one of the most important lifestyle factors that influence your health. Regular physical activity can help:

- Control your weight
- Reduce your risk of cardiovascular disease
- Reduce your risk for type 2 diabetes and metabolic syndrome
- Reduce your risk of some cancers
- Strengthen your bones and muscles
- Improve your mental health and mood
- Improve your ability to do daily activities and prevent falls, if you're an older adult
- Increase your chances of living longer

1.1 Weight control

Both physical activity and diet play a critical role in controlling your weight. You gain weight when the calories you burn, including those burned during physical activity, are less than the calories you eat or drink. When it comes to weight management, people vary greatly in how much physical activity they need. You may need to be more active than others to achieve or maintain a healthy weight.

To maintain your weight: Work your way up to 150 minutes of moderate-intense aerobic activity, 75 minutes of vigorous-intense aerobic activity, or an equivalent mix of the two each week. Strong scientific evidence shows that physical activity can help you maintain your weight over time. However, the exact amount of physical activity needed to do this is not clear since it varies greatly from person to person. It's possible that you may need to do more than the equivalent of 150 minutes of moderate-intense activity a week to maintain your weight. Active transport to work or other places visited frequently can be a easy, cheap and minimum time-consuming way to maintain the minimum amount of physical activity and a healthy weight.



To lose weight: You will need a higher amount of physical activity: 300 minutes of moderate-intense aerobic activity, 150 minutes of vigorous-intense aerobic activity, or an equivalent mix of the two each week. Additionally, you have to adjust your diet and reduce the amount of calories you're eating and drinking. Getting to and staying at a healthy weight requires both regular physical activity and a healthy eating plan.

Active transport can help you increase the amount of physical activity and bring more variety into your exercise plan.

1.2 Preventing cardiovascular disease

1.3 Heart disease and stroke are two of the leading causes of death. But following the recommendations and getting at least 150 minutes a week of moderate-intense aerobic activity can put you at a lower risk for these diseases. You can reduce your risk even further with more physical activity. Regular physical activity can also lower your blood pressure and improve your cholesterol levels.

1.4 Preventing type 2 diabetes and metabolic syndrome

Regular physical activity can reduce your risk of developing type 2 diabetes and metabolic syndrome. Metabolic syndrome is a condition in which you have some combination of too much fat around the waist, high blood pressure, low HDL cholesterol, high triglycerides, or high blood sugar. Research shows that lower rates of these conditions are seen with 120 to 150 minutes a week of at least moderate-intense aerobic activity. And the more physical activity you do, the lower your risk will be.

1.5 Reducing risk of some cancers

Being physically active lowers your risk for **two types of cancer: colon and breast**. Research shows that physically active people have a lower risk of colon cancer than do people who are not active. Also, physically active women have a lower risk of breast cancer than do people who are not active.

Although the research is not yet final, some findings suggest that your risk of **endometrial cancer** and **lung cancer** may be lower if you get regular physical activity compared to people who are not active.

If you are a cancer survivor, research shows that getting regular physical activity not only helps give you a better quality of life, but also improves your physical fitness.

1.6 Strengthen your bones and muscles



As you age, it's important to protect your bones, joints and muscles. They support your body and help you move, but also keeps bones, joints and muscles healthy. This can help ensure that you're able to do your daily activities and be physically active. Research shows that doing aerobic, muscle-strengthening and bone-strengthening physical activity of at least moderate-intense level can slow the loss of bone density that comes with age.

Hip fracture is a serious health condition that can have life-changing negative effects, especially if you're an older adult. But research shows that people who do 120 to 300 minutes of at least moderate-intense aerobic activity each week have a lower risk of hip fracture.

Muscle-strengthening activities can help you increase or maintain your muscle mass and strength.

1.7 Improve your mental health and mood

Regular physical activity can help keep your thinking, learning, and judgment skills sharp as you age. It can also reduce your risk of depression and may help you sleep better. Research has shown that doing aerobic or a mix of aerobic and muscle-strengthening activities 3 to 5 times a week for 30 to 60 minutes can give you these mental health benefits. Some scientific evidence has also shown that even lower levels of physical activity can be beneficial.

1.8

1.9 Prevent functional limitation and falls

A functional limitation is a loss of the ability to do everyday activities such as climbing stairs, grocery shopping, or playing with your grandchildren.

How does this relate to physical activity? If you're a physically active middle-aged or older adult, you have a lower risk of functional limitations than people who are inactive

Research shows that doing balance and muscle-strengthening activities each week along with moderate-intensity aerobic activity, like brisk walking, can help reduce your risk of falling.

1.10 Increase Your Chances of Living Longer

Science shows that physical activity can reduce your risk of dying early from the leading causes of death, like heart disease and some cancers. You don't have to do high amounts of activity or vigorous-intense activity to reduce your risk of premature death. You can put yourself at lower risk of dying early by doing at least 150 minutes a week of moderate-intensity aerobic activity.



Physical activity and chronic diseases

Can exercise improve a chronic condition?

Having a chronic disease, like cardiovascular disease, diabetes or arthritis, doesn't mean you should not be physically active. It the opposite- If you have a chronic condition, regular exercise can help you manage symptoms and improve your health.

Examples:

Heart disease: Strength training can improve muscle strength and endurance, make it easier to do daily activities, and slow disease-related declines in muscle strength.

Diabetes: Regular exercise can help insulin more effectively lower your blood sugar level. Physical activity can also help you control your weight and boost your energy.

Asthma: Often, exercise can help control the frequency and severity of asthma attacks.

Back pain: Regular low-impact aerobic activities can increase strength and endurance in your back and improve muscle function. Abdominal and back muscle exercises (core-strengthening exercises) help reduce symptoms by strengthening the muscles around your spine.

Arthritis: Exercise can reduce pain, help maintain muscle strength in affected joints and reduce joint stiffness. If you have arthritis, research shows that doing 130 to 150 minutes a week of moderate-intensity, low-impact aerobic activity can not only improve your ability to manage pain and do everyday tasks, but it can also make your quality of life better.

Healthy and safe physical activity



Before starting physical activity, it's important to talk to your doctor about how long your exercise sessions can be and what level of intensity is safe for you. Talk with your doctor to find out if your condition limits, in any way, your ability to be active.

If your condition stops you from meeting the minimum, try to do as much as you can. What's important is that you avoid being inactive. Even 60 minutes a week of moderate-intense aerobic activity, like brisk walking, is good for you. If you haven't been active for a while, start slowly and build up gradually.



Health benefits of walking

Walking is low impact, requires minimal equipment, can be done at any time of day and can be performed at your own pace. You can get out and walk without worrying about the risks associated with some more vigorous forms of exercise. It's also a great form of physical activity for people who are overweight, have chronic diseases are elderly or who haven't exercised in a long time.

There are countless physical activities out there, but walking has the lowest dropout rate of them all. It's the simplest positive change you can make to effectively improve your health.

Research has shown that regular walking and moderate physical activity for at least 30 minutes a day can help you:

- Reduce the risk of coronary heart disease
- Improve blood pressure and blood sugar levels
- Improve blood lipid profile (cholesterol and triglycerides)
- Maintain body weight and lower the risk of obesity
- Reducing stress
- Enhance mental well being
- Reduce the risk of osteoporosis
- Reduce the risk of breast and colon cancer
- Reduce the risk of non-insulin dependent (type 2) diabetes

If it's too difficult to walk for 30 minutes at one time, do regular small bouts (10 minutes) three times per day and gradually build up to longer sessions.

Some suggestions to build walking into your daily routine include:

1. Take the stairs instead of the lift (for at least part of the way).
2. Walk to work instead of driving.
3. Get off public transport one stop earlier and walk to work or home.
4. Walk (don't drive) to the local shops.
5. Walk the dog (or your neighbour's dog).





Health benefits of cycling

Cycling is a healthy, low-impact exercise that can be enjoyed by people of all ages, from young children to older adults. It is also fun, cheap and good for the environment.

Cycling to work or the shops is one of the most time-efficient ways to combine regular exercise with your everyday routine.

The best reasons to include regular cycling into your physical activity routine are:

- **Low impact** – it causes less strain and injuries than most other forms of exercise.
- **A good muscle workout**– cycling uses all of the major muscle groups as you pedal.
- **Easy** – unlike some other sports, cycling does not require high levels of physical skill. Most people know how to ride a bike and, once you learn, you don't forget.
- **Good for strength and stamina**– cycling increases stamina, strength and aerobic fitness.
- **As intense as you want**– cycling can be done at very low intensity to begin with, if recovering from injury or illness, but can be built up to a demanding physical workout.
- **A fun way to get fit**– the adventure you get from coasting down hills and being outdoors means you are more likely to continue to cycle regularly, compared to other physical activities that keep you indoors or require special times or places.
- **Time-efficient** – as a mode of transport, cycling replaces sedentary (sitting) time spent driving motor vehicles or using trams, trains or buses with healthy exercise.

Cycling can improve both physical and mental health, and can reduce the chances of experiencing many health problems. The health benefits of regular cycling include:

- increased cardiovascular fitness
- increased muscle strength and flexibility
- improved joint mobility
- decreased stress levels
- improved posture and coordination
- strengthened bones
- decreased body fat levels
- prevention or management of disease
- reduced anxiety and depression.





Children and physical activity

Just like in adults, increased physical activity has been associated with an increased life expectancy and decreased risk of cardiovascular disease. Physical activity produces overall physical, psychological and social benefits. It is important for the development and maintaining physical and mental health. The most important health benefits are:

- Helps build and maintain healthy bones and muscles.¹
- Helps reduce the risk of developing obesity and chronic diseases, such as diabetes, cardiovascular disease, and colon cancer.¹
- Reduces feelings of depression and anxiety and promotes psychological well-being.¹
- May help improve students' academic performance, including
 - o Academic achievement and grades
 - o Academic behavior, such as time on task
 - o Factors that influence academic achievement, such as concentration and attentiveness in the classroom.⁴

Active transport for children

Active Transport is an effective way to introduce children to physical activity. It is proven that if children have a positive introduction to physical activity at a young age, they are more likely to lead healthy active lifestyles throughout their lives. Benefits of active transport for school children are:

- Improve health and fitness
- Less traffic congestion at schools
- Increase learning about road safety
- Reduce pollution
- Save money on petrol
- Encourages a sense of community
- Fun
- Keeps children alert and ready for school



Health economic assessment tools (HEAT) for walking and for cycling

The promotion of cycling and walking for everyday physical activity not only promotes health but can also have positive effects on the environment.

The booklet summarizes the tools and guidance developed to facilitate this shift: the methodology for the economic assessment of transport infrastructure and policies in relation to the health effects of walking and cycling; systematic reviews of the economic and health literature; and guidance on applying the health economic assessment tools and the principles underlying it.

This methodology and user guide will be of key interest to professionals at both national and local levels: transport planners, traffic engineers, and special interest groups working on transport, walking, cycling or the environment, as well as health economists, physical activity experts and health promotion experts.

The publication is only available online on:

http://www.euro.who.int/_data/assets/pdf_file/0010/256168/ECONOMIC-ASSESSMENT-OF-TRANSPORT-INFRASTRUCTURE-AND-POLICIES.pdf?ua=1