

## Exercise For Good Health: Benefits and Guidelines

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### Abstract

People are less active nowadays, partly because technology has made our lives easier. We drive cars or take public transport. Machines wash our clothes. "If exercise were a pill, it would be one of the most cost-effective drugs ever invented," says Dr Nick Cavill, a health promotion consultant. Inactivity is described by the Department of Health as a "silent killer". Living a sedentary lifestyle is more dangerous to your health than smoking. Research conducted by Tai-Hing et al. (2004) revealed that 20% of all deaths of people over the age of 34 were attributed to a lack of physical activity. They concluded that a lack of physical activity increased the risk of dying of cancer by 45% for men and 28% for women, and the risk of dying from respiratory ailments by 92% for men and 75% for women. The risk of dying from heart disease was 52% higher for men and 28% higher for women.

Recommended physical activity levels for children under 5 should do 180 minutes every day, for young people (5-18) should do 60 minutes every day, for adults (19-64) should do 150 minutes every week and older adults (65 and over) should do 150 minutes every week.

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### Introduction:

Although there are no sure-fire recipes for good health, the mixture of healthy eating and regular exercise comes awfully close. It can reduce your risk of major illnesses, such as heart disease, stroke, diabetes and cancer by up to 50% and lower your risk of early death by up to 30%. "If exercise were a pill, it would be one of the most cost-effective drugs ever invented," says Dr Nick Cavill, a health promotion consultant.

People are less active nowadays, partly because technology has made our lives easier. We drive cars or take public transport. Machines wash our clothes. We entertain ourselves in front of a TV or computer screen. Few people are doing manual work, and most of us have jobs that involve little physical effort. Work, house chores, shopping and other necessary activities are far less demanding than for previous generations.

### Sedentary lifestyles

Inactivity is described by the Department of Health as a "silent killer". Evidence is emerging that sedentary behaviour, such as sitting or lying down for long periods, is bad for your health. Not only should you try to raise your activity levels, but you should also reduce the amount of time you and your family spend sitting down.

Common examples of sedentary behaviour include watching TV, using a computer, using the car for short journeys and sitting down to read, talk or listen to music – and such behaviour is thought to increase your risk of many chronic diseases, such as heart disease, stroke and diabetes, as well as weight gain and obesity.

"Previous generations were active more naturally through work and manual labour, but today we have to find ways of integrating activity into our daily lives," says

DrCavill. Whether it's limiting the time babies spend strapped in their buggies, or encouraging adults to stand up and move frequently, people of all ages need to reduce their sedentary behaviour.

“This means that each of us needs to think about increasing the types of activities that suit our lifestyle and can easily be included in our day,” says DrCavill. Crucially, you can hit your weekly activity target but still be at risk of ill health if you spend the rest of the time sitting or lying down. For tips on building physical activity and exercise into your day, whatever your age, read *Get active your way*.

It's medically proven that people who do regular physical activity have:

- up to a 35% lower risk of coronary heart disease and stroke
- up to a 50% lower risk of type 2 diabetes
- up to a 50% lower risk of colon cancer
- up to a 20% lower risk of breast cancer
- a 30% lower risk of early death
- up to an 83% lower risk of osteoarthritis
- up to a 68% lower risk of hip fracture
- a 30% lower risk of falls (among older adults)
- up to a 30% lower risk of depression
- up to a 30% lower risk of dementia

According to the 2008 Physical Activity Guidelines for Americans, being physically active on a regular basis

- Improves chances of living longer and living healthier
- Protect from developing heart disease and stroke or its precursors, high blood pressure and undesirable blood lipid patterns
- Protect from developing certain cancers, including colon and breast cancer, and possibly lung and endometrial (uterine lining) cancer.
- Helps in preventing type 2 diabetes (what was once called adult-onset diabetes) and metabolic syndrome (a constellation of risk factors that increases the chances of developing heart disease and diabetes).
- Prevent the insidious loss of bone known as osteoporosis
- Reduces the risk of falling and improves cognitive function among older adults
- Relieves symptoms of depression and anxiety and improves mood
- Prevents weight gain, promotes weight loss (when combined with a lower-calorie diet), and helps keep weight off after weight loss
- Improves heart-lung and muscle fitness
- Improves sleep

More recently, studies have found that people who spend more time each day watching television, sitting, or riding in cars have a greater chance of dying early than people who spend less time on their duffs. Researchers speculate that sitting for hours on end may change peoples' metabolism in ways that promote obesity, heart disease, diabetes, and other chronic conditions. It is also possible that sitting is a marker for a broader sedentary lifestyle.

According to analyses by a team from the Centers for Disease Control (CDC) and Prevention, inactivity was associated with more than 9 million cases of cardiovascular disease in 2001, at an estimated direct medical cost of nearly \$24 billion. Another CDC analysis suggests that because individuals who are physically active have significantly lower annual direct medical costs than those who are inactive, getting people to become more active could cut yearly medical costs in the U.S. by more than \$70 billion. The Nurses' Health Study, for example, is one of many, many studies to find a strong link between television watching and obesity. Researchers followed more than 50,000 middle-aged women for six years, surveying their diet and activity habits. They found that for every two hours the women spent watching television each day, they had a 23 percent higher risk of becoming obese and 14 percent higher risk of developing diabetes. Interestingly, it didn't matter if the women were avid exercisers: The more television they watched, the more likely they were to gain weight or develop diabetes, regardless of how much leisure-time activity and walking they did. Long hours of sitting at work also increased the risk of obesity and diabetes.

Strong scientific evidence shows that physical activity can help to maintain 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.

Regular physical activity can reduce the risk of developing type 2 diabetes and metabolic syndrome. Metabolic syndrome is a condition in which people 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 moderate-intensity aerobic activity. If already have type 2 diabetes, regular physical activity can help control your blood glucose levels.

Physical activity lowers 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.
- Physically active women have a lower risk of breast cancer than do people who are not active.

Research shows that regular physical activity not only helps better quality of life, but also improves physical fitness.

Physical activity protects bones, joints and muscles in aged persons. Research shows that doing aerobics, muscle-strengthening and bone-strengthening physical activities of at least a moderately-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 in older adults. But research shows that people who do 120 to 300 minutes of at least moderate-intensity aerobic activity each week have a lower risk of hip fracture. Regular physical activity also helps in arthritis and other conditions affecting the joints.

Regular physical activity can help to keep thinking, learning, and judgment skills sharp in old age. It can also reduce risk of depression and may help in better sleep. Research has shown that doing aerobics or a mix of aerobic and muscle-strengthening activities helps in mental health benefits. Some scientific evidence has also shown that even lower levels of physical activity can be beneficial.

Science shows that physical activity can reduce risk of dying early from the leading causes of death, like heart disease and some cancers. Everyone can gain the

health benefits of physical activity - age, ethnicity, shape or size do not matter. A study of more 7,000 men who graduated from Harvard before 1950 suggests that older people, those who are out of shape, or those with disabilities may get as much benefit from 30 minutes of slower walking or other exercise as younger, more fit people get from the same amount of more-intense activity.

### **Guidelines for Physical Activity:**

#### **Babies: (Early years (under 5s) – for infants who are not yet walking)**

1. Physical activity should be encouraged from birth, particularly through floor-based play and water-based activities in safe environments.

2. All under 5s should minimise the amount of time spent being sedentary (being restrained or sitting) for extended periods (except time spent sleeping).

Examples of physical activity that meet the guidelines:

For infants who are not yet walking, physical activity refers to movement of any intensity and may include:

- 'Tummy time' – this includes any time spent on the stomach including rolling and playing on the floor.
- Reaching for and grasping objects, pulling, pushing and playing with other people
- 'Parent and baby' swim sessions
- Floor-based and water-based play encourages infants to use their muscles and develop motor skills. It also provides valuable opportunities to build social and emotional bonds.

#### **Early years (under 5s) – for children who are capable of walking:**

1. Children of pre-school age who are capable of walking unaided should be physically active daily for at least 180 minutes (3 hours), spread throughout the day.\*

2. All under 5s should minimise the amount of time spent being sedentary (being restrained or sitting) for extended periods (except time spent sleeping).

Individual physical and mental capabilities should be considered when interpreting the guidelines.

Examples of physical activity that meet the guidelines:

- Physical activity is likely to occur mainly through unstructured active play but may also include more structured activities. Activities can be of any intensity (light or more energetic) and may include:
- Activities which involve movements of all the major muscle groups, i.e. the legs, buttocks, shoulders and arms, and movement of the trunk from one place to another
- Energetic play, e.g. climbing frame or riding a bike
- More energetic bouts of activity, e.g. running and chasing games
- Walking/skipping to shops, a friend's home, a park or to and from a school.

Minimising sedentary behaviour may include:

- Reducing time spent watching TV, using the computer or playing video games.
- Reducing time spent in a pushchair or car seat – this can also help to break up long periods of sedentary behavior.

### **Physical activity guidelines for young people aged 5-18:**

To maintain a basic level of health, children and young people aged 5-18 need to do:

At least 60 minutes (1 hour) of physical activity every day, which should range between moderate-intensity activity, such as cycling and playground activities and vigorous-intensity activity, such as fast running and tennis.

On three days a week, these activities should involve muscle-strengthening activities, such as push-ups, and bone-strengthening activities, such as running.

Many vigorous-intensity activities can help you meet your weekly muscle- and bone-strengthening requirements, such as running, skipping, gymnastics, martial arts and football.

### **Physical Activity guidelines Adults (19–64 years)**

1. Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more – one way to approach this is to do 30 minutes on at least 5 days a week.

2. Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or combinations of moderate and vigorous intensity activity.

3. Adults should also undertake physical activity to improve muscle strength on at least two days a week.

4. All adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

Individual physical and mental capabilities should be considered when interpreting the guidelines.

Examples of physical activity that meet the guidelines:

Moderate intensity physical activities will cause adults to get warmer and breathe harder and their hearts to beat faster, but they should still be able to carry on a conversation.

Examples include:

- Brisk walking
- Cycling

Vigorous intensity physical activities will cause adults to get warmer and breathe much harder and their hearts to beat rapidly, making it more difficult to carry on a conversation.

Examples include:

- Running
- Sports such as swimming or football

Physical activities that strengthen muscles involve using body weight or working against a resistance. This should involve using all the major muscle groups. Examples include:

- ♣ Exercising with weights
- ♣ Carrying or moving heavy loads such as groceries

Minimising sedentary behaviour may include:

- ♣ Reducing time spent watching TV, using the computer or playing video games
- ♣ Taking regular breaks at work
- ♣ Breaking up sedentary time such as swapping a long bus or car journey for walking part of the way

### **Physical Activity guidelines For Older Adults (65+ years)**

1. Older adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more – one way to approach this is to do 30 minutes on at least 5 days a week.
  2. For those who are already regularly active at moderate intensity, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous activity.
  3. Older adults should also undertake physical activity to improve muscle strength on at least two days a week.
  4. Older adults at risk of falls should incorporate physical activity to improve balance and co-ordination on at least two days a week.
  5. All older adults should minimise the amount of time spent being sedentary (sitting) for extended periods.
- Individual physical and mental capabilities should be considered when interpreting the guidelines.

#### Examples of physical activity that meet the guidelines

Moderate intensity physical activities will cause older adults to get warmer and breathe harder and their hearts to beat faster, but they should still be able to carry on a conversation. Examples include:

- Brisk walking
- Ballroom dancing

Vigorous intensity physical activities will cause older adults to get warmer and breathe much harder and their hearts to beat rapidly, making it more difficult to carry on a conversation. Examples include:

- Climbing stairs
- Running

Physical activities that strengthen muscles involve using body weight or working against a resistance. This should involve using all the major muscle groups. Examples include:

- Carrying or moving heavy loads such as groceries
- Activities that involve stepping and jumping such as dancing
- Chair aerobics

Activities to improve balance and co-ordination may include:

- Yoga

Minimising sedentary behaviour may include:

- Reducing time spent watching TV
- Taking regular walk breaks around the garden or street
- Breaking up sedentary time such as swapping a long bus or car journey for walking part of the way

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