

## **Appendix 17: Diabetes and Physical Activity**

### **EVERYONE BENEFITS FROM PHYSICAL ACTIVITY!**

One of the ways to reduce the risk of type 2 diabetes, and its complications is through physical activity. Some people may not know the term physical activity, but it simply means that a person is moving his or her body and using more energy than if they were just sitting and resting. This could include things that they do at work such as carrying a box of files, housework such as vacuuming, or things that they like to do in their leisure time such as walking or playing hockey. The main idea is that a person is getting up and moving. Every little bit counts, even if it does not seem like much.

#### **4 types of physical activities**

- Sport is a planned activity that follows rules and is competitive. Some examples of this would be hockey, volleyball, curling and soccer.
- Exercise is planned and follows a sort of prescription, such as, walking quickly for 15 minutes, or lifting a weight 20 times.
- Traditional Activities are activities such as ceremonies and living closely to the land. These are generally quite physically demanding.
- Active living is integrating physical activity into your daily life though occupational, household and leisure time activities. It can be as simple as hanging the laundry on the clothesline or walking to get groceries instead of driving.

#### **Benefits of physical activity**

- Better health, including helps to lower cholesterol, lowers blood glucose levels, lowers the risk of heart attack and stroke, reduces the risk of diabetes and its complications
- Better fitness
- Better posture and balance
- Weight control or weight loss
- Stronger muscles and bones
- Improved self-confidence
- Improved self-esteem
- More energy
- Improved overall happiness
- Relaxation
- Stress reduction
- Improved cognitive function and reduced risk of dementia
- Ability to maintain independence with age



Being physically active not only improves the physical aspects of a person's life, but it also helps to improve one's mental, emotional and spiritual health.

### **Physical activity guidelines**



The Canadian Society of Exercise Physiology has physical activity guidelines that provide minimum levels of activity that each person should be getting. It is important to note that if a person is normally inactive, he/she may need to slowly work up to the recommended levels. The guidelines are broken up into four different age groups: early years aged 0-4 years; 24 hour movement guidelines for children and youth aged 5-17 years; adults aged 18-64 years and older adults aged 65 and older. The guidelines can be downloaded from the Canadian Society of Exercise Physiology website at [www.csep.ca/guidelines](http://www.csep.ca/guidelines). For hard copies of the guidelines see **Appendix 18**.

### **Early years (0-4 years):**

For healthy growth and development, infants, toddlers, and preschoolers should achieve the recommended balance of physical activity, high-quality sedentary behaviour, and sufficient sleep.



### **A healthy 24 hours includes:**

#### **Infants (less than 1 year)**

- **Move:** Being physically active several times in a variety of ways. For those not yet mobile, this includes at least 30 minutes of tummy time spread throughout the day while awake.
- **Sleep:** 14-17 hours (for those 0-3 months) and 12-16 hours (for those 4-11 months).
- **Sit:** Not being restrained for more than 1 hour at a time (in a high chair or stroller); screen time is not recommended.
- When sedentary, they should be engaged with things like reading and storytelling with a caregiver.

#### **Toddlers (1-2 years)**

- **Move:** At least 180 minutes spent in a variety of physical activities at any intensity spread throughout the day. More is better!
- **Sleep:** 11-14 hours of good quality sleep, including naps, with consistent bedtimes and wake-up times.

- **Sit:** Not being restrained for more than 1 hour at a time (in a high chair or stroller); screen time is not recommended for those less than 2 years old. For those 2 years old, sedentary screen time should be no more than 1 hour per day. Less is better!
- When sedentary, they should be engaged with things like reading and storytelling with a caregiver.

### **Preschoolers (3-4 years)**

- **Move:** At least 180 minutes spent in a variety of physical activities at any intensity spread throughout the day with at least 60 minutes of energetic play. More is better!
- **Sleep:** 10-13 hours of good quality sleep, including naps, with consistent bedtimes and wake-up times.
- **Sit:** Not being restrained for more than 1 hour at a time (in a car seat or stroller) or sitting for extended periods. Sedentary screen time should be no more than 1 hour per day. Less is better!
- When sedentary, they should be engaged with things like reading and storytelling with a caregiver.

### **Children and Youth (5-17 years):**

For optimal health benefits, children and youth should achieve high levels of physical activity, low levels of sedentary behaviour, and sufficient sleep each day.



#### **A healthy 24 hours includes:**

- **Sweat:** An accumulation of at least 60 minutes per day of moderate to vigorous physical activity involving a variety of aerobic activities. Vigorous physical activities, and muscle and bone strengthening activities should each be incorporated at least 3 days per week.
  - Aerobic exercise is repeated, rhythmic and continuous movement, such as walking, jogging, dancing, biking, swimming, etc.
  - Moderate activity means that the person feels warm, the heart is beating faster, is breathing heavier, but still able to talk easily, but not sing.
  - Vigorous activity means that the person, is warm and likely sweating, the heart is beating faster and breathing heavier to the point where it would be difficult to have a conversation.
- **Step:** Several hours of a variety of structured and unstructured light physical activities.



- **Sleep:** Uninterrupted 9-11 hours of sleep per night for those aged 5-13 years and 8-10 hours per night for those aged 14-17 years, with consistent bedtimes and wake-up times.
- **Sit:** No more than 2 hours per day of recreational screen time. Limited sitting for extended periods.

For children and youth that are not currently meeting the 24-hour movement guidelines, small changes over time should be made to get closer to them. Following these guidelines is associated with better overall health, academic achievement and reasoning and understanding, better control of emotions, better social skills and behaviour, and overall quality of life.

These guidelines are relevant for all healthy children and youth, and may be appropriate for children and youth with disabilities or medical conditions. However, a health care professional should be consulted for additional guidance.

### **Adults (18-64 years):**

For health benefits, adults aged 18-64 should be active each day, minimize sedentary behaviour and get enough sleep.

#### **A healthy 24 hours includes:**

- **Physical Activity:** Performing a variety of types and intensities of physical activity including:
  - Moderate to vigorous aerobic activity for at least 150 minutes a week.
    - Aerobic exercise is repeated, rhythmic and continuous movement, such as walking, jogging, dancing, biking, swimming, etc.
    - Moderate activity means that the person feels warm, the heart is beating faster, is breathing heavier, but still able to talk easily, but not sing.
    - Vigorous activity means that the person, is warm and likely sweating, the heart is beating faster and breathing heavier so that they can only say a couple of words between breaths or feel “out of breath”.
  - Muscle-strengthening activities at least 2 times per week.
  - Several hours of light physical activity, including standing.
- **Sleep:** Getting 7-9 hours of good-quality sleep regularly with consistent bedtimes and wake-up times.
- **Sedentary behaviour:** Limiting sedentary behaviour to 8 hours or less, which includes:



- No more than 3 hours of recreational screen time.
- Breaking up long periods of sitting as often as possible.

Replacing sedentary behaviour with more physical activity and trading light physical activity for more vigorous activity, while preserving sleep can provide greater health benefits.

### **Older adults (65 years and older):**

For health benefits, adults 65 and older should be active each day, minimize sedentary behaviour and get enough sleep.

A healthy 24 hours includes:

- **Physical Activity:** Performing a variety of types and intensities of physical activity including:
  - Moderate to vigorous aerobic activity for at least 150 minutes a week.
    - Aerobic exercise is repeated, rhythmic and continuous movement, such as walking, jogging, dancing, biking, swimming, etc.
    - Moderate activity means that the person feels warm, the heart is beating faster, is breathing heavier, but still able to talk easily, but not sing
    - Vigorous activity means that the person, is warm and likely sweating, the heart is beating faster and breathing heavier so that they can only say a couple of words between breaths or feel “out of breath”.
  - Muscle-strengthening activities at least 2 times per week
  - Physical activities that challenge balance
  - Several hours of light physical activity, including standing
- **Sleep:** Getting 7-9 hours of good-quality sleep regularly with consistent bedtimes and wake-up times.
- **Sedentary behaviour:** Limiting sedentary behaviour to 8 hours or less, which includes:
  - No more than 3 hours of recreational screen time
  - Breaking up long periods of sitting as often as possible.



Replacing sedentary behaviour with more physical activity and trading light physical activity for more vigorous activity, while preserving sleep can provide greater health benefits.

## People with diabetes

Often people with chronic diseases, such as type 2 diabetes feel that they are not able to exercise. In almost all circumstances the benefits of physical activity outweigh the potential risks. Being active carries much less risk than being inactive.

Regular exercise should be part of the treatment plan for people living with diabetes. However, before beginning very strenuous or vigorous exercise, they should be assessed by their health care provider for health risks.



Key Messages from the Diabetes Canada Clinical Practice Guidelines include:

- Physical activity often improves glucose control and facilitates weight loss but has multiple other health benefits even if weight and glucose control do not change.
- It is best to avoid prolonged sitting. Try to interrupt sitting time by getting up briefly every 20 to 30 minutes.
- Try to get at least 150 minutes per week of aerobic exercise (like walking, bicycling or jogging).
- Using a step monitor (pedometer or accelerometer) can help track your activity.
- In addition to aerobic exercise, try to do at least 2 sessions per week of strength training (like exercises with weights or weight machines).
- If you decide to begin strength training, you should ideally get some instruction from a qualified exercise specialist.
- If you cannot reach these recommended levels of activity, doing smaller amounts of activity still has some health benefits.

## Physical Activity During Pregnancy

The Canadian Guidelines for Physical Activity throughout pregnancy state that :

- Unless a doctor has said that they cannot exercise, all pregnant people should be physically active throughout their pregnancy including:
  - Those who were previously inactive
  - Those diagnosed with gestational diabetes
  - Those who are considered overweight or obese
- Pregnant people should accumulate 150 minutes of moderate-intensity physical activity each week.
- Physical activity should be accumulated over a minimum of 3 days per week, although being active every day is encouraged.
- A variety of aerobic and resistance activities should also be incorporated to achieve greater health benefits.
- Yoga or gentle stretch can also be beneficial.

- Pelvic floor training can be added to reduce the risk of urinary incontinence.
- Laying flat on the back should be avoided if the individual feels light-headedness, nausea or unwell.

## How To Start

For those that have been inactive or want to be more active, it can be difficult to know where to start. The Movement Counselling Tool for Adults Aged 18-64 Years (**Appendix 18**) is a great tool to use to help guide the conversation with someone who would like to start being more active.



When deciding to get active, people often try to do too much when they start and end up feeling sore and then discouraged. It is important to start slowly and set reasonable expectations. Here are a few tips to make sure that starting a new exercise routine is safe and enjoyable.

## The warm-up

The warm-up is essential to get the body ready for exercise. It prepares the heart and lungs for more activities and helps lubricate the joints to help increase flexibility. The warm-up could include walking slowly and then gradually increasing the speed for 5-10 minutes.



## The activity

Exercise can be fun and should be specific to each individual. An individual should start by picking something that they enjoy and can fit into their day. A few fun ideas are:



- Going for a walk after dinner
- Playing outside with kids or grandkids
- Buying an exercise DVD that will be fun
- Joining a walking club
- Starting a garden
- Buying a resistance band and doing strength activities at home
- Trying a new sport or activity like volleyball, soccer, ultimate frisbee or yoga
- Snowshoeing
- Chopping wood

## The cool-down

The cool-down is just as essential as the warm-up. It can help prevent sore muscles and an irregular heartbeat. It also helps get back to a resting heart



rate and helps the body cool down. It can be as simple as walking around, gradually getting slower and then stretching. Each stretch should be held for 10-30 seconds and should not hurt.

### **Get Active Questionnaire**

For most people, the benefits of being physically active outweigh any risks, however, for some people, getting advice or direction from a health care provider is advisable.

Anyone can fill out the Get Active Questionnaire, which can be found in **Appendix 18**, which will help determine if they should talk with a health care provider before starting to be more physically active.