



Diabetes Research &
Wellness Foundation



EXERCISE and DIABETES

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Diabetes and exercise

This leaflet explains why exercise is so important for people with diabetes. People who exercise have lower blood pressure, lower heart rates and improved circulation. They also have lower cholesterol and less body fat, as well as higher rates of metabolism and consequently better weight control. They sleep better, have more energy, are less stressed/anxious and are happier and more confident.

Why is exercise important for someone with diabetes?

Unlike medication, exercise is low cost and side-effect free. Those with diabetes who don't exercise are three times more likely to have poor diabetes control and more likely to suffer related complications. Exercising regularly, apart from getting the benefits listed above, improves sensitivity to a range of metabolic hormones and the body becomes better at transporting glucose. This happens because exercise stimulates the body's muscles.

Exercise also reduces the level of fat in the body, particularly round about the tummy area. It is thought that it is this mobilisation of the body's fat stores, by exercising, that might improve blood glucose control. Less glucose in the blood, because it's now stored in the body's muscle, means the blood flows better and some of the blood vessel complications, associated with diabetes, may be avoided.

1



Figure 1 Traditional exercise prescriptions focused on aerobic exercise, but it is now recognised that health benefits, particularly for people with diabetes, are best built upon by doing some strength (resistance) exercises too.

2



Figure 2 Walking is a cheap and easy way of getting exercise and can be built into your day. A pedometer, sports watch, or an app on your phone that measures steps can act as an additional motivational tool.

How long do these effects from exercise last for?

The good news is that if someone regularly exercises these benefits can be permanent, and for someone with diabetes it can mean reducing their medication.

If younger members of families with a predisposition to diabetes exercise regularly they could avoid diabetes altogether.

A single bout of exercise can benefit the body's sensitivity to insulin for 16-18 hours, exerting effects on blood glucose control for 24-48 hours but these effects have worn off by 60-72 hours. Even a little bit of exercise is better than none at all, and a little and often approach to exercise can be of benefit.

How much exercise should I be taking?

To get health benefits, the Government recommends adults should be aiming to exercise at a moderate intensity for 30 minutes five days (but preferably most days) of the week. However the same health benefits can be gained by breaking this down into 10 minute bouts of moderate activity. The overall aim should be to accumulate 150 minutes (2 1/2 hrs) of moderate activity per week.

What do we mean by moderate activity?

A scale known as Borg's scale of Rate of Perceived Exertion (RPE) is used to rate how hard the exerciser is working. Moderate activity means the exerciser should feel some breathlessness, be aware that his/her pulse is raised, be sweating, know that he/she is using his/her muscles, but still be able to hold some brief conversation.

What types of exercise should be performed?

Three S's make up the components of all-round exercise. These are strength, suppleness and stamina. To gain the benefits of exercise all of these components should be included in the exercise routine.

Traditional exercise prescriptions focused on aerobic exercise, but it is now recognised that health benefits, particularly for people with diabetes, are best built upon by doing some strength (resistance) exercises too. **See Figure 1.** To develop these components and get the exercise benefits you don't have to join a gym or an exercise class - but these methods are recommended as this means you will have company exercising; someone is likely to be supervising what you are doing; and if in the gym, you will probably have been prescribed a personal exercise plan.

If the gym or exercise class is not for you, there are still ways to exercise in and around the home during your daily routines. Walking is a cheap and easy way of getting exercise and can be built into your day. This can be done by parking the car further away from work, getting off the bus a stop earlier or intentionally going for a walk at lunchtime, and how about using stairs instead of escalators/lifts? A pedometer can act as an additional motivational tool.

See Figure 2

Top tips to get started

- Check with medical personnel that your diabetes is presently stable enough to allow you to begin an exercise routine.
- Start with small bouts of exercise of low intensity and build up gradually. Start with 5-10 minutes of activity per day for the first week, then add on 5 minutes per day until the target goal of 150 minutes (2 1/2 hrs) of moderate activity is reached.
- Find an exercise partner – this could be a family member, children or grandchildren, or a work colleague and make it fun.
- Choose something you enjoy, as you are more likely to stick with it.
- Find out if any of the following schemes are locally available: Health-led Walks or Exercise on Referral /Prescription schemes.

How do I make sure I'm exercising safely?

In order to prepare the body for exercise there must always be some kind of warm-up which involves gently raising the pulse and getting the muscles warm for 5-10 minutes before the main exercise activity. Instructor-led sessions will build this into the activity.

However, if you are exercising independently, and this includes doing heavy housework, DIY and gardening, remember to start the activity gently and build up.

It is also important to cool-down following exercise, to avoid feeling faint and dizzy and to help the body return to a resting state. Spend 5-10 minutes repeating the activities undertaken in the warm-up.

Top tips to exercise safely

- Build up slowly.
- Don't ever try to lift maximum weights and never breath-hold when doing any weight or resistance-based exercises.
- Don't try to do too much, stick to moderate intensity exercise.
- If new to exercise it may be best for you to monitor your blood glucose before, during and after exercise until a routine is established. If doing any prolonged exercise or activity, check blood glucose during the activity and adjust medication and/or food as necessary.
- If your diabetes is controlled by diet alone, then you don't need to adjust your food intake when exercising, unless undertaking for example, a marathon.
- Don't exercise when you are feeling ill, you are vomiting or have an infection.
- Ensure that your footwear won't cause blisters and practice good foot care.
- If you've been diagnosed with retinopathy you may need some additional advice about the safest types of exercise for you.
- If you've been diagnosed with autonomic neuropathy you may need to have your pulse and blood pressure monitored during exercise. Weight-bearing exercises may have to be avoided if you have peripheral neuropathy. Check first with your healthcare professional.

To have all the benefits of exercise you must do it regularly and stick with it, so make sure you find something which is enjoyable and fun, it is not supposed to be a chore. Taking up exercise or becoming more active won't just benefit your diabetes it can also impact on any other disease and age-related problems you may have or could be at risk of.

More information

More information is available from the fitness pages on the **NHS Choices** website:
www.nhs.uk/live-well/exercise



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