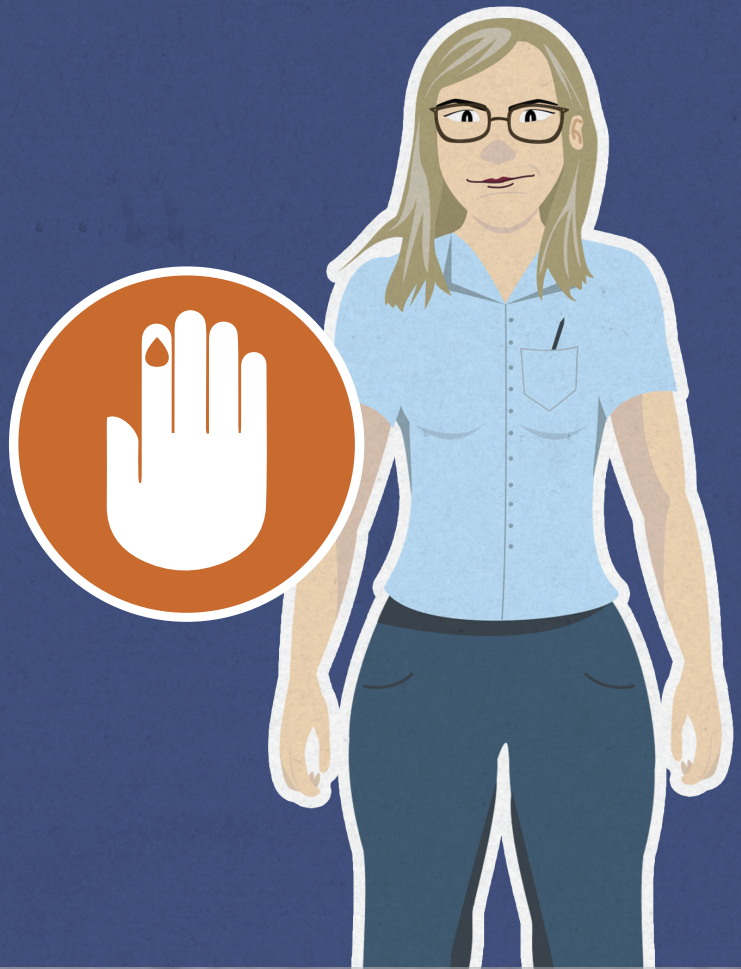


# Exercise Right for DIABETES

Diabetes mellitus is a metabolic disease characterised by an elevated fasting blood glucose level due to defects in insulin secretion or inability to use insulin.



## TYPE 1 DIABETES - T1DM

In T1DM the cells in the pancreas that produce insulin are destroyed by the body's immune system. Without insulin the body's cells cannot take up glucose (sugar) and turn it into energy. Glucose builds up in the blood stream and this can damage organs in the body such as the kidneys, heart and eyes. People with T1DM require daily injections of insulin to control their glucose levels.

They also test their blood glucose levels several times daily. The onset of T1DM typically occurs in people under 30 years, but can occur at any age. About 10-15% of all cases of diabetes are T1DM.

## TYPE 2 DIABETES - T2DM

T2DM is the more common form of diabetes, affecting 85-90%

of all people with diabetes. While it usually affects older adults, more and more young people, even children, are developing T2DM. In T2DM the pancreas produces insulin but the body's cells do not respond effectively to the insulin and so do not take up the blood glucose and turn it into energy. This results in a build-up of glucose in the blood.

T2DM results from a combination of genetic and environmental factors. Although there is a strong genetic predisposition, the risk is greatly increased when associated with lifestyle factors such as high blood pressure, overweight or obesity, insufficient physical activity, poor diet and the classic 'apple shape' body where extra weight is carried around the waist.

The management of T2DM includes healthy eating and regular physical activity. Some people with T2DM may also need medication and insulin injections.

## WHY IT'S IMPORTANT TO EXERCISE

Everybody benefits from regular exercise but for people with diabetes mellitus (Type 1 or Type 2) exercise can play a vital role in the management of their condition.

Exercise cannot reverse the damage to the cells in the pancreas that leads to the decreased production of insulin. However, exercise can improve the way the muscles respond to insulin, which, in turn, helps regulate the blood glucose level for some

hours after the exercise.

Exercise also increases glucose uptake by the muscles in other ways that do not depend on insulin. In addition, exercise can lower the dose of insulin required by improving the body's response to insulin.

It is important to exercise right for diabetes however, as those with this condition may have an increased risk of complications.





## THINGS TO REMEMBER

- To avoid potential problems, blood glucose levels need to be checked before, during and after exercise

- Avoid injecting insulin into exercising limbs
- To prevent foot ulcers; supportive shoes and well-fitting socks need to be worn and regular foot checks undertaken



## TYPES OF EXERCISES RECOMMENDED

Exercise Right recommends both supervised and unsupervised phases of exercise programs with changes in duration, intensity, and frequency of exercise.

For the best health benefits, Exercise Right recommend at least 150 minutes a week of moderately intense physical

activities such as:

- Walking
- Strength training
- Lap swimming
- Bicycling
- Other activities such as dancing and Tai chi are also recommended



## RIGHT PROFESSIONAL

### GP/Doctor

Before beginning an exercise program, you should undergo an extensive medical evaluation by your doctor to identify any diabetic related complications.

### Accredited Exercise Physiologist (AEP)

Assessment and evaluation of your body is also recommended by an accredited exercise physiologist. An AEP can then deliver an expertly prescribed exercise program tailored to your individual requirements and goals.

It is important to exercise right for diabetes however, as those with this condition may have an increased risk of complications.



## RIGHT PLACE

### Climate controlled environment

Often thermoregulation in hot or cold environments is

impaired for those with diabetes. As such, Exercise Right recommends you exercise in a climate controlled environment. Otherwise, be sure to dress appropriately for weather conditions.



## RIGHT TIME

### Exercise in the early morning, avoid peak insulin action

The timing of exercise is very important for those with diabetes. Exercise is not recommended during peak insulin action so consider when your last meal or medications were taken.

At this time of day, levels of the hormone cortisol are higher, which lowers insulin action and keeps blood glucose levels from dropping, and circulating. Insulin is also lower (prior to any insulin taken for breakfast).

Exercise before bed is also not recommended given the risk of delayed post exercise hypoglycaemia.

When possible, scheduling similar timing of exercise into your daily routine maybe beneficial to minimize the risk of nocturnal hypoglycaemia.

A recent study published in the Journal of Diabetes Science and Technology early in 2015 found that overall, hypos occurred significantly less often following 7 AM exercise compared to 4 PM (5.6 vs. 10.7 hypos per person). That study compared blood glucose levels and the number of lows during and following moderate exercise for 36 hours.

Remember to always consult a professional before beginning any new exercise routine, and to find out what time may work best for you and your uniqueness.