

# Exercise & Diabetes

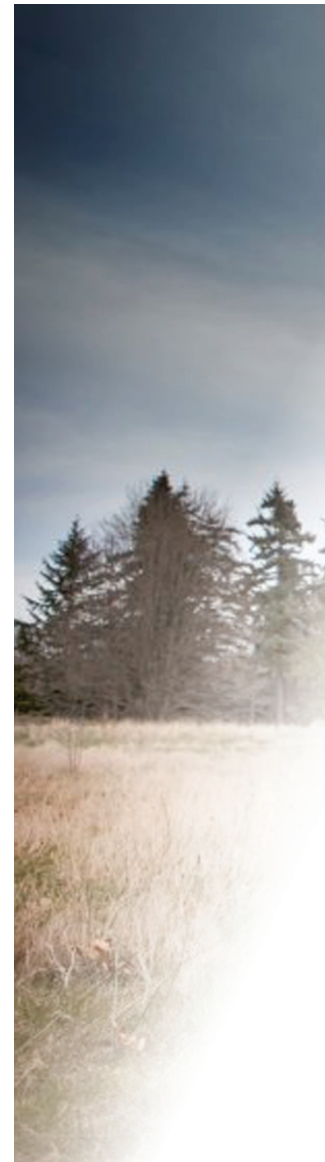
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Diabetes Mellitus is an excellent example of a medical condition in which exercise contributes to both prevention and management of an illness, and where regular exercise can significantly improve quality of life.

Diabetes Mellitus is a metabolic disorder characterised by high blood glucose. When one eats, food is broken down to carbohydrate, protein or fat. Carbohydrates are further broken down to glucose, the primary energy source used by the body. Insulin is a hormone produced by the body (pancreas) to facilitate uptake of glucose into the cells. In Type 1 diabetes, the body does not produce enough insulin. In Type 2 diabetes, the body does produce insulin but the cells are resistant to its action. Both Type 1 and Type 2 diabetes result in too much glucose circulating in the blood and too little being absorbed into the cells, which is where it is needed. Exercise plays a fundamental role in preventing and managing diabetes by influencing glucose uptake into the cells.

Type 1 diabetes is usually genetic and often presents in childhood with symptoms of increased urine, increased thirst and increased hunger. Because the body cannot

produce its own insulin, patients with Type 1 diabetes (DM1) need external sources of insulin, often in the form of an injection. Type 2 diabetes (DM2) is often related to a sedentary lifestyle. It associated with hypertension, obesity and heart disease. These patients typically require the use of oral medications to control their blood glucose levels. In both Type 1 and Type 2 diabetes, exercise plays a fundamental role in maintaining stable glucose levels via two mechanisms. Firstly, glucose is the primary energy source in the metabolic processes required to sustain activity; it is steadily used up as one exercises so naturally decreases circulating glucose. Secondly, exercise increases the expression of glucose receptors in muscle and tissue cells. More receptors means more channels for glucose to enter the cells. In both these ways, exercise helps maintain stable blood glucose levels and in so doing, the amount of exogenous insulin required by the patient can be gradually reduced. In DM 2, the goal of treatment should also be to minimize the risk of acute and chronic complications of diabetes by encouraging weight loss, increasing exercise capacity, and controlling associated co-morbidities.



Patients suffering from any chronic disease should exercise caution when starting a physical activity regime. It is advisable to talk to one's health care practitioner for advice about types and frequency of exercise and possible changes to medication. Daily exercise is highly recommended, but patients must start slow and gradually increase the frequency and intensity of exercise. A minimum of 30 minutes of moderate intensity cardiovascular exercise is recommended five days per week. Twice a week, one can replace the cardiovascular exercise with lower intensity resistance or strength training. Remember to take frequent breaks if you need to, to drink fluids, and very importantly, to monitor your blood glucose levels before and after you exercise.

The World Health Organisation has listed physical inactivity as one of the major risk factors for global morbidity (illness) and mortality (death). Inactivity is the one of the leading risk factors for diseases of chronic lifestyle such as diabetes, hypertension and coronary artery disease. The good news is that by modifying lifestyle, these chronic diseases are largely preventable and controllable. In words copied from an internet postcard 'Do something today that your future self will thank you for'.

***Don't delay, start moving today.***

\*References available on Request

