

Diabetes and rehabilitation

Toronto Rehab's Diabetes, Exercise and Healthy Lifestyle Service, part of the Cardiac Rehabilitation and Secondary Prevention Program, is one of only a few services in Canada that teaches adults who have diabetes or are at an elevated risk of developing it, how to manage or prevent the disease through a structured, intensive lifestyle program.

What is diabetes?

- Diabetes is a metabolic condition in which the body cannot effectively produce or use insulin to process the glucose that is obtained from food or mobilized from internal stores. It results in high blood glucose levels, which can cause extreme thirst, frequent urination, weight change, fatigue, blurred vision and wounds that are slow to heal.
- When the body can't use insulin to process glucose, it breaks down fats to use for energy instead, which produces dangerous waste products called ketones. Ketone build-up can be life-threatening.
- Over time, a variety of complications may arise, from diabetes, including heart, kidney or eye disease, amputation, impotence and nerve damage. Diabetes has an enormous impact on individuals, families, caregivers, and the health care system.

Facts about diabetes

- Diabetes is the fourth leading cause of death worldwide.
- The prevalence of type 2 diabetes is increasing dramatically due to the aging population, rising obesity rates and increasingly sedentary lifestyles. More than three million Canadians will have diabetes by 2010. Total global incidence is expected to hit 380 million by 2025.
- People of Aboriginal, Hispanic, Asian, South Asian or African descent are at greater risk of developing type 2 diabetes.
- About 80% of people with diabetes will die from heart disease or stroke. Women with diabetes are five to seven times more likely to develop heart problems than those without the disease.
- Canadian adults with diabetes are 50% more likely to die prematurely than those without. Diabetes is a contributing factor in approximately 41,500 Canadian deaths each year.
- By 2010, diabetes will cost the Canadian health care system an estimated \$15.6 billion a year. That will rise to \$19.2 billion by 2020.
- As the incidence rate of diabetes continues to increase, so will the cost to the health care system. Rehabilitation is an important part of Canada's solution to this challenge.

Toronto Rehab's expert diabetes rehabilitation

- At Toronto Rehab, rehabilitation is the interprofessional process of helping people who experience disabling injury, illness and conditions associated with aging to regain the skills, abilities, confidence and independence they need to live their lives to the fullest.

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- Rehabilitation can improve quality of life for people living with diabetes by helping them learn to carefully manage the disease through a well-rounded program of exercise and other healthy lifestyle choices. For people who don't yet have diabetes but are at risk of getting the disease, rehabilitation can help delay or prevent the onset of the disease.
- Rehabilitation for diabetes management involves an individualized program of exercise, weight management, psychosocial support and nutritional counselling. Regular physical activity has an especially important role in controlling sugar control and reducing cardiovascular risk.
- In order to ensure our patients and others around the world can benefit from the newest therapies, methods and equipment, leading-edge research is at the centre of care Toronto Rehab provides. Through close collaboration between Toronto Rehab researchers and clinicians, innovations in research are rapidly translated to the clinical setting.

Pushing the frontiers of diabetes rehabilitation research

Toronto Rehab conducts high-impact research that leads to advances in knowledge, treatment and technology and has a valuable impact on people affected by disability and their caregivers. Our rehabilitation research program is one of the largest and most diverse in North America. Current diabetes-related research projects include:

- **Extending the reach of research** – Toronto Rehab played a leadership role in research that found that exercise is a cornerstone in the effective management of diabetes. Toronto Rehab is now sharing elements of its successful Diabetes, Exercise and Healthy Lifestyle Service beyond its walls through a research-based community pilot project.
- **Optimizing the benefits of exercise** – PhD candidate Pearl Yang and Dr. Paul Oh, Medical Director of the Cardiac Rehabilitation Program, are examining patients' physical, metabolic, anthropometric and biochemical responses to different modalities and doses of exercise. Results will help determine the optimal amount and intensity of training in diabetes rehabilitation.
- **Monitoring systems and diabetes** – Dr. Paul Oh is collaborating with researchers at Wilfrid Laurier University to understand how blood glucose control relates to activity, food intake, and medications for people living with diabetes using 24-hour glucose monitoring, electrocardiograms (ECGs) and heart rate monitoring, electronic food diaries, and Global Positioning Systems (GPS), connected wirelessly through a BlackBerry. Results will enhance health maintenance, monitoring and alerting systems.

For more information

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