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Insulin and Weight Gain In Type 2 Diabetes

Original:

February 2011

IT'S YOUR HEALTH

Insulin and Weight Gain In Type 2 Diabetes

The Issue

Insulin is a [medicine](#) that may be used in the treatment of [Type 2 diabetes](#).

Treatment with [insulin](#) may lead to weight gain but this gain can be prevented by making healthy life style choices.



Background

[Insulin](#) is a hormone normally produced by the pancreas. It helps to keep blood sugar (glucose) at normal levels by moving glucose from the blood into the cells of your body. The cells then use glucose for the energy your body needs to function.

Normally, the pancreas secretes insulin when you eat. But if your body doesn't make insulin or cannot use it properly, glucose accumulates in the blood and the cells don't get enough sugar for

energy. If this happens, your doctor may decide you need to be treated with insulin, in addition to diet, exercise and/or medicines, depending on your type of diabetes.

There are three types of [diabetes](#):

- [Type 1 diabetes](#), (once called juvenile diabetes or insulin-dependent) diabetes, is usually diagnosed in children, teenagers, or young adults and cannot currently be prevented. Those with type 1 diabetes must take insulin because their bodies do not make it.
- [Type 2 diabetes](#), (once called adult-onset diabetes or non-insulin-dependent diabetes) is the most common form of diabetes. It starts when the body doesn't use insulin as it should. There are several options available to manage the disease. Some people may require only lifestyle modifications, including healthy eating and increased physical activity. Others may need to use oral diabetes medications (for example, metformin) and/or insulin, in addition to making lifestyle changes. You and your doctor should decide which option is the best for you.

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- **Gestational Diabetes** is a condition where the body does not properly use insulin during pregnancy. This type of diabetes usually goes away after the baby is born. However, if this type of diabetes is not managed during pregnancy there may be complications for both the mother and the newborn. There is also an increased risk for type 2 diabetes for both mother and child later in life.



Other associated conditions may include vascular disease, polycystic ovary syndrome or schizophrenia

Health Effects of Insulin Treatment in Type 2 Diabetes

One of the effects of taking insulin is an increased risk of weight gain. If the cells don't use all the sugar when insulin moves it from blood into the cells, it is stored as fat. If you continue to eat as you did before starting insulin, you may gain weight. This happens because before you started taking insulin, your body wasn't properly using all the glucose in the food you ate. But once you start taking insulin, your body uses food normally and you may be eating more food than your body needs to stay healthy.



Gaining weight can also make your body resistant to the effects of insulin. This means that you may need to take even more insulin to get glucose into your cells, causing a vicious cycle of weight gain and more insulin use, with the result that your diabetes is poorly managed.

This pattern can make it more difficult to stay healthy.

Minimizing Your Risk

The best way to avoid unwanted weight gain in Type 2 diabetes is to adjust your calorie intake to the needs of your body and to increase your **physical activity**. Any change in your activity level, eating patterns or insulin dose should be discussed with your doctor. Decreasing your insulin dosage without dietary adjustments to control your weight may lead to high blood glucose and put you at increased risk of complications from diabetes.

If you have diabetes or care for someone who has diabetes, take the following steps to help avoid weight gain:

- Talk to your doctor about your condition and the best course to follow.
- Consult a dietician to learn about the **food choices** you should be making.
- Don't skip meals. It can seriously affect your blood sugar level.
- Spread your calories throughout the day to steady your metabolism.
- Get moving! Even moderate activity such as walking can help control your diabetes.
- Ask your doctor about other diabetes medications.
- Take your insulin as directed.

Risk Factors for Type 2 Diabetes

Many factors may affect your risk of developing Type 2 Diabetes. They include:

- Pre-diabetes (having high blood sugar but not to the point of having diabetes)
- Being overweight or **obese**
- Advanced age
- Having high blood pressure and/or high cholesterol
- **Physical inactivity**
- Having a family history of diabetes
- Belonging to certain high-risk ethnic populations, such as Aboriginal, African, Hispanic, Asian
- A history of gestational diabetes



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The Government of Canada's Role

[Health Canada](#) and the [Public Health Agency of Canada \(PHAC\)](#) are committed to helping Canadians improve their health and well-being by promoting and supporting regular physical activity and healthy eating. They play a leadership role in chronic disease prevention and control across Canada and internationally.

The Government of Canada launched the [Canadian Diabetes Strategy \(CDS\)](#) in 1999 in partnership with the Provinces and Territories, various national health organizations and interest groups, and Aboriginal communities across the country. The CDS sought to:

- Increase public awareness about diabetes
- Prevent diabetes where possible
- Help Canadians living with diabetes better manage the disease and its complications.

In 2005, funding for the CDS was renewed at \$18 million per year over 5 years. The renewed strategy focuses on:

- Prevention of Type 2 Diabetes among high-risk populations
- Early detection of Type 2 Diabetes
- Management of Types 1 and 2 Diabetes and related complications.

The renewed strategy is targeted at populations who are at risk of developing Type 2 Diabetes.

In addition, in 2007-08, through the [Canadian Institutes of Health Research](#), the federal government invested \$33 million in diabetes-related research. The Government is also taking action on obesity, a key risk factor for Type 2 Diabetes, through supporting community-based healthy living programs and initiatives such as the [Children's Fitness Tax Credit](#) and the newly revised [Food Guide](#) and [Physical Activity Guides](#).

Inactive, overweight children are at an increased risk of developing Type 2 Diabetes. This is becoming more prevalent with the decreasing activity and exercise in children.

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Need More Info?

To report a side effect (adverse reaction) or interaction involving a health product, including insulin, go to the *MedEffect Canada* web section at :

www.healthcanada.gc.ca/medeffect

For more information on Diabetes see the following websites:

- The Public Health Agency of Canada's *Diabetes* web section at : www.diabetes.gc.ca
- Health Canada's *Diabetes* web section at : <http://www.hc-sc.gc.ca/hc-ps/dc-ma/diabete-eng.php>
- Health Canada's First Nations, Inuit and Aboriginal Health *Diabetes* web section at : <http://www.hc-sc.gc.ca/fniah-spnia/diseases-maladies/diabete/index-eng.php>
- *It's Your Health*, *Diabetes Type 2* at : <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/diabete-eng.php>
- *It's Your Health*, *Insulin Products* at : <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/med/insul-eng.php>
- *Canadian Diabetes Association* at : <http://www.diabetes.ca/>
- *Association Diabètes Québec* at : www.diabete.qc.ca

For information on healthy eating visit the following websites:

- *Eating Well with Canada's Food Guide* at : www.healthcanada.gc.ca/foodguide
- Health Canada's *Food and Nutrition* web section at : <http://www.hc-sc.gc.ca/fn-an/index-eng.php>
- *Healthy Eating is in Store for you™* at : <http://www.healthyeatingisinstore.ca/>
- *It's Your Health*, *Obesity* at : <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/obes-eng.php>

For information on physical activity visit the following websites:

- *Canada's Physical Activity Guide to Healthy Active Living* at : <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/pag-gap/index-home-accueil-eng.php>
- *Canadian Diabetes Association* article *Physical Activity and Diabetes* at : <http://www.diabetes.ca/diabetes-and-you/living/management/activity/>

For safety information about food, health and consumer products visit the *Safe Consumers* website at: www.health.gc.ca/consumer

For additional articles on health and safety issues go to the *It's Your Health* web section at: www.healthcanada.gc.ca/iyh

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245*