What is food insecurity?  Food insecurity is the inability to access food because of inadequate finances or other resources. It exists “whenever the availability of nutritionally adequate and safe food or the ability to acquire acceptable foods in socially acceptable ways, is limited or uncertain.”

How is food insecurity related to diabetes?  The odds of having diabetes are twice as high for those who have a low income and are food insecure. Food insecurity itself may be a risk factor for diabetes, or diabetes may be one of the causes of food insecurity. It has been shown that out of pocket health care costs for adults living with diabetes are higher than for people with any other disease, including heart disease and cancer. Some people may have to choose between taking their diabetes medications and putting food on the table.

Canadian statistics on food insecurity and diabetes

- 9.3% of Canadians with diabetes experience food insecurity (compared to 6.3% of Canadians without diabetes)
- The odds of being food insecure are higher in those diagnosed with diabetes before the age of 40

Food Insecurity and Hyperglycemia - People who are experiencing food insecurity may eat foods that are higher in calories, sugar and carbohydrate because they are often less expensive, and they may overeat to prevent food waste. Financial difficulty may force some to reduce or stop taking medications in order to afford food. Food insecurity can also be associated with stress and anxiety, which may lead to suboptimal self management behaviours. Depression and fatigue may lead to a lack of motivation for exercise. All of these factors may contribute to hyperglycemia in the food insecure individual.

Food insecurity and Hypoglycemia - As many as one third of people living with diabetes have experienced hypoglycemia that they relate to being unable to afford food. Hypoglycemia may be sporadic, or it may occur more often at the end of the month when the household food budget has been used up.

Screening for food insecurity - Many people feel ashamed by their inability to provide for their basic needs. Therefore, questions must be asked non-judgementally and, if possible, in the context of an ongoing and trusting patient/provider relationship. The following questions may be asked to screen for food insecurity:

1. During the last year, did you ever worry whether the food in your house would run out before there was money to get more?
2. During the last year, was there ever a time when the food in the house just didn’t last and there wasn’t enough money to get more?

An answer of yes to either question indicates a high risk of household food insecurity.
3. During the last year, how often were you unable to afford balanced meals

Any answer other than “never” indicates risk for food insecurity.

**Addressing hyperglycemia related to food insecurity**

Referring individuals to **food resources** can help improve food security. Food resources in the Greater Toronto Area include:

- FoodShare Toronto – Canada’s largest community food security organization. Website: [www.foodshare.net](http://www.foodshare.net)  Foodlink Hotline: (416) 392-6655
- Community Health Centres – offer a variety of programs. visit [http://www.ontariochc.org](http://www.ontariochc.org)
- Food banks – provide emergency food services. For a food bank in your area, visit [www.oafb.ca](http://www.oafb.ca)

**Nutrition counselling** can provide tips on healthy eating on a budget. If possible, individuals should be referred to a registered dietitian.

Basic counselling points include:

- Focus on decreasing portions of available foods
- Frozen vs fresh foods
- More vegetarian protein sources
- Reducing restaurant eating
- Eating fruits and vegetables that are season
- Buying in bulk
- Substituting fresh for canned fruits and vegetables


**Smoking cessation** can help free up money for food and medications. Local resources include:

- Smoker’s Helpline – Operated by the Canadian Cancer Society  1-877-513-5333
- Smoking Treatment for Ontario Patients (STOP program) - [www.stopstudy.ca](http://www.stopstudy.ca).
- Training Enhancement in Applied Counselling and Health Program [www.teachproject.ca](http://www.teachproject.ca).

**Addressing hypoglycemia related to food insecurity** - People living with diabetes and food insecurity should be screened for hypoglycemia at each visit. They should be taught to treat a day without food as a “sick day” and follow sick day guidelines. Scheduling medications to coordinate with meals instead of time of day may be helpful, so that the patient does not take medications if meals are skipped. Oral medications with a short half life are recommended to help reduce the risk of hypoglycemia with missed meals. Long acting insulin with no peak is preferable to those whose peak action may cause hypoglycemia.

**Conclusion** - Managing diabetes and food insecurity together can be challenging. The number of Canadians with diabetes who experience food insecurity is higher than the general population. Referrals to food resources, nutrition counselling, smoking cessation support and individualized medication planning can help these individuals reduce both hyper and hypoglycemia.

Gucciardi, E. “Exploration of the Relationship between Household Food Insecurity and Diabetes in Canada” Diabetes Care 32: 2218-2224 (2009) [http://care.diabetesjournals.org/content/32/12/2218.full.pdf+html](http://care.diabetesjournals.org/content/32/12/2218.full.pdf+html)