

Type 1 Diabetes – Fact Sheet

Type 1 diabetes (juvenile onset) is a chronic condition that results in pancreatic B-cells being destroyed. By the time someone is diagnosed with juvenile diabetes, it is thought that 80-90% of the islet cells have already been destroyed and that the remaining cells are compensating by producing extra insulin to keep blood glucose levels within normal range. The hormone amylin is also affected as this hormone is secreted along with insulin to suppress glucagon release. Glucagon's main role in the body is to release glucose from the cells thus increasing blood sugar levels, therefore; with this balance thrown out of place, it is too hard for the body to maintain homeostasis and blood sugar levels become elevated.

The metabolism of proteins, fats and carbohydrates are all altered in diabetics. Glucose is often excreted in urine and the faulty breakdown of proteins and fats inhibits the body's ability to access the glucose from circulation. The body goes into ketoacidosis which can be dangerous if sustained for a long period as the high ketones actually reduce blood pH. The sweet, fruity odour that can be noticed in the breath is a direct result of acetone a type of ketone.

Type 1 diabetes can be caused of autoimmune origin, genetics or environmental factors.

- **Autoimmune** – the body's own antibodies detect B pancreatic cells as foreign agents and destroy the islet cells. As a result the immune system continues with the destruction. Food allergies, poor gastrointestinal health/integrity, nutritional deficiencies and nitrate/nitrosamines have all been linked to triggering immune sensitivity.
- **Genetic** – the IDDM1 gene is believed to be the major gene involved.
- **Environmental damage** – viruses or chemotoxins.

Eye disease, nerve damage, kidney disease, heart disease and stroke may result if insulin administration is not appropriately controlled and managed.

Signs and symptoms can include:

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| ▪ Lethargy | ▪ Increase in hunger |
| ▪ Fatigue | ▪ Hyperglycaemia |
| ▪ Excessive thirst | ▪ Excessive urination or bed-wetting |
| ▪ Excess water loss from kidneys | ▪ Weight loss |

Insulin injections will always be required to manage blood glucose levels, however dietary changes and exercise can support the condition and reduce the amount of insulin required.

Low GI Foods

The glycaemic index (GI) is the way in which carbohydrates are measured in terms of how much they will or will not affect blood glucose levels. Foods that have a high GI encourage blood glucose levels to rise rapidly, which can be dangerous to diabetics as what rises so quickly then falls just as quickly, but below normal range. Low GI foods are more favourable for diabetics as they naturally have higher blood glucose levels. These foods are able to stabilise glucose levels and may delay hunger, control appetite, assist with weight loss and improve cellular sensitivity to insulin.

Dietary Inclusions

- Fresh fruits and vegetables – generally speaking most are low GI, however if consuming high GI sources eat in moderation and with other foods.
- Complex carbohydrates – as they are naturally low GI and rich in B vitamins.
- Lean protein from animal and plant based sources.

- Essential fatty acids.

Dietary Exclusions

- Avoid alcohol, refined foods, caffeine, sugar (including artificial sugars) and soft drinks.
- Avoid trans fats, deep fried foods and oxidised fats.
- Avoid smoked and cured foods.

Other Suggestions

- Manage stress – stress can increase blood sugar levels thereby affecting how the body uses insulin. Yoga, meditation, exercise and counselling may be effective solutions.
- Exercise – improves insulin sensitivity particular high intensity interval training (HIIT), therefore aiming for 30mins of exercise daily is recommended.

Customised nutritional plans comprising of a specific food plan with the support of nutrient/herbal supplements can be very effective in the management of diabetes. If you require support please visit www.good4younutrition.com.au