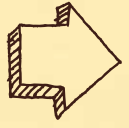




looking after type 2 diabetes

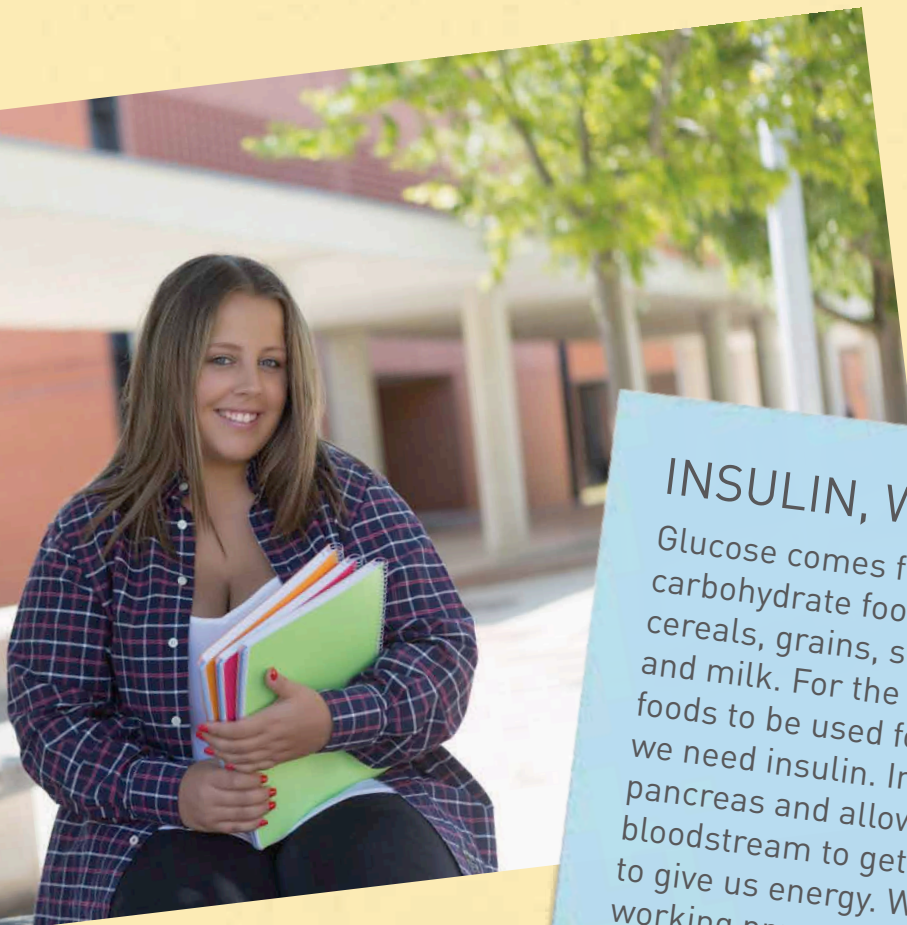


What is diabetes?



Type 2 diabetes is when the body is unable to use insulin effectively due to “resistance” to insulin. The cells in the pancreas that make insulin still produce insulin but the insulin is not able to work properly because the cells in the body are “resistant” to its effects (so a lot more insulin is needed to do the same job!). Sometimes the insulin-making cells in the pancreas become exhausted which leads to inadequate insulin being produced in addition to the problem of insulin resistance. This causes an upset in your body’s glucose (sugar) balance.

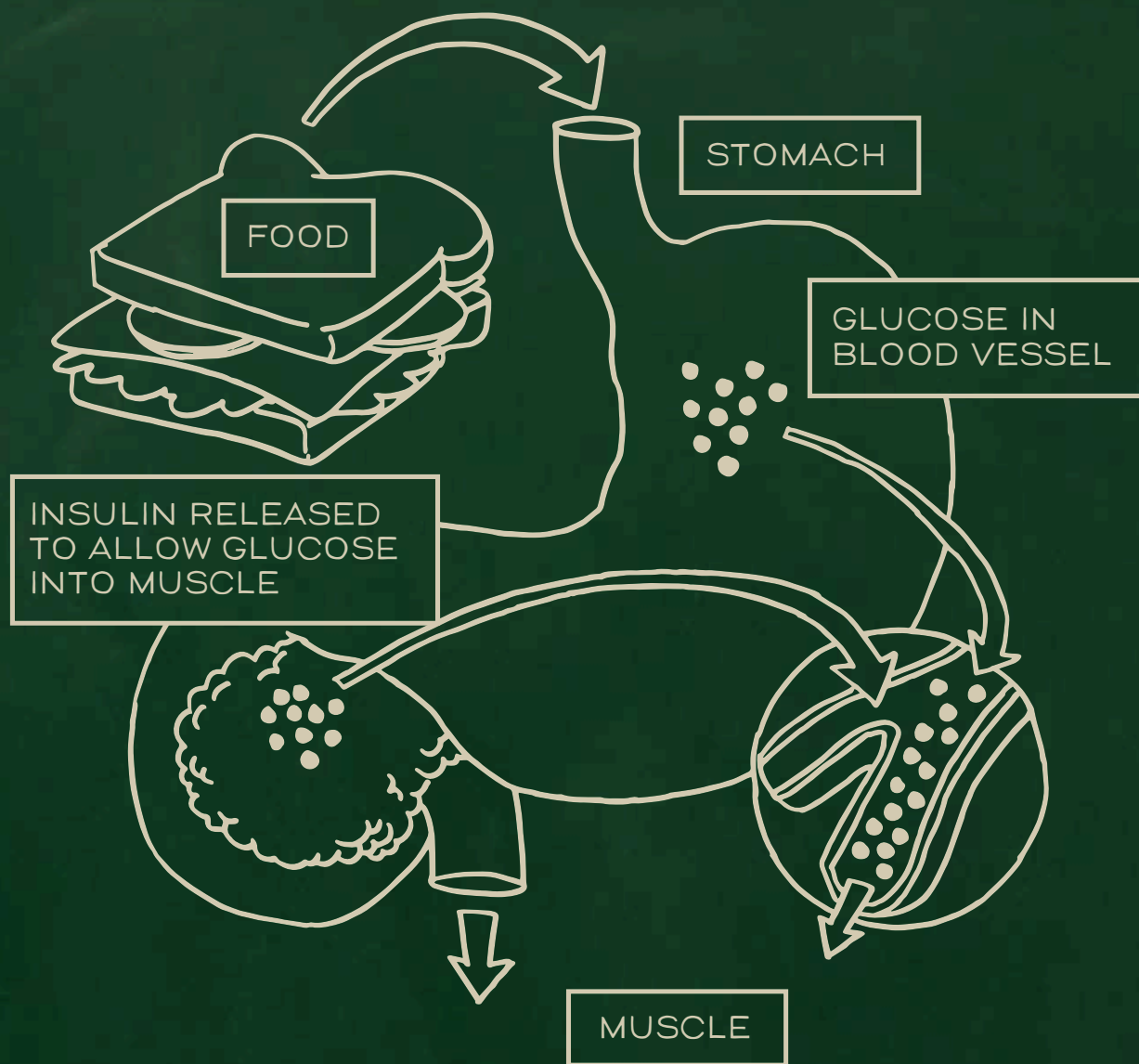
If you have developed type 2 diabetes it is because you have inherited the tendency to develop insulin resistance and your body is not able to effectively use insulin.



INSULIN, WHAT DOES IT DO?

Glucose comes from the digestion of carbohydrate foods such as breads, cereals, grains, starchy vegetables, fruit, and milk. For the glucose from these foods to be used for energy in our body we need insulin. Insulin is made by the pancreas and allows the glucose from the bloodstream to get into our body’s cells to give us energy. When insulin is not working properly or there is not enough insulin in the body, the glucose gets stuck in our bloodstream and cannot give us the energy we need.

insulin



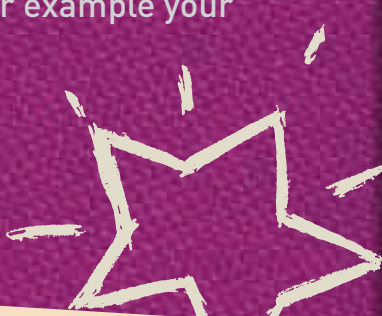
IN SOMEONE WHO DOES NOT HAVE DIABETES THE AMOUNT OF INSULIN RELEASED VARIES IN RESPONSE TO THE AMOUNT OF GLUCOSE ABSORBED FROM THE GUT IN FOODS EATEN AND THE ENERGY USED AND NEEDED. BLOOD GLUCOSE LEVELS TYPICALLY STAYS BETWEEN 3.5 MMOL/L AND 7 MMOL/L BECAUSE INSULIN IS RELEASED IN RESPONSE TO THE BLOOD GLUCOSE RISING AFTER FOOD IS DIGESTED BY THE BODY.

WHAT HAPPENS WHEN INSULIN IS NOT WORKING PROPERLY OR THERE IS NOT ENOUGH INSULIN?

When the insulin is not working properly or the insulin making cells are too exhausted to make enough insulin, the glucose gets stuck in the bloodstream and the blood glucose level rises. In type 2 diabetes, this most often happens gradually over time but eventually the glucose levels in the blood become too high and the glucose spills out of the bloodstream through the kidneys and into the urine.

The kidneys react to the high glucose levels by making extra urine which draws fluid in from the body causing thirst and excessive drinking in order to try and wash the glucose away.

Excess amounts of glucose in the blood over long periods of time can affect the way other parts of your body are working (for example your eyes, kidneys, nerves and your heart). The best way to protect yourself against any problems developing due to diabetes is to maintain stable blood glucose levels in the healthy range.



TYPE 2 DIABETES (the type that you have)

Type 2 diabetes is the most common form of diabetes (80 to 90 percent of all diabetes). It is becoming more common in children and young people in New Zealand but also throughout the world. The tendency to develop type 2 diabetes is inherited, yet it also depends on environmental factors.

The major risk factor for getting type 2 diabetes is being overweight (obesity). Being overweight is often related to lifestyle factors such as not getting enough physical activity and eating too much of certain types of foods such as sugar, fats and fast foods.

The risk of getting type 2 diabetes reduces when improvements are made to a person's lifestyle – this can be achieved by healthy eating and becoming physically active.

Type 1 diabetes is where the body has stopped making insulin. People with this type of diabetes need insulin via injections or a pump.





HOW TO STAY FIT AND HEALTHY

- Doing 60 minutes or more of physical activity each day.
- Being active in as many ways as possible, for example, through play, cultural activities, dance, sport and hobbies.
- Being active with friends and whanau, at home, school and in the community.
- Spending less than 2 hours a day (out of school hours) in front of the television, computers, electronic devices or game consoles.
- Having meals together as a family (when possible) and turning off the television and cell phones.
- Eating at least 3 serves of vegetables and 2 serves of fruit every day.
- Eating 3 main meals (breakfast, lunch and dinner) that include fresh fruit and vegetables.
- Keeping snacks between meals low in fat, salt and sugar.
- Limiting takeaway food to occasional meals (less than once a week).
- Drinking water instead of juice and soft drinks as these contain a lot of sugar.

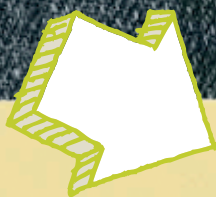
Type 2 diabetes in adults can sometimes be managed with a healthier diet and lifestyle changes. However, most young people who develop type 2 diabetes as well as a healthier diet and becoming more active, will require treatment with tablets, insulin injections, or a combination of both to help protect the insulin making cells in the pancreas and delay the progression of diabetes.

Metformin is the most commonly used tablet that helps to lower blood glucose levels. It needs to be taken with food or drink to prevent possible side effects like nausea, stomach pain or diarrhoea.

IF YOU ARE UNWELL AT ANY TIME WITH VOMITING OR DIARRHOEA OR NEED TO HAVE AN X-RAY OR CT SCAN, YOUR METFORMIN WILL NEED TO BE STOPPED TEMPORARILY. IT IS NOT SAFE TO DRINK ALCOHOL WHEN TAKING METFORMIN.



Goals for blood glucose levels



	Person without diabetes	Person with diabetes
Blood Glucose (before eating and after eating)	3.9–6.1mmol/L <7.8mmol/L	4 – 8mmol/L <10mmol/L
HbA _{1c} (average blood glucose level over 3 months)	<41mmol/mol	<58mmol/mol



Keeping glucose in the body at a healthy level will ensure that you can take part in all the same activities as people without diabetes. Sometimes glucose levels in the blood levels can drop below 4.

These are called “hypos” or “hypoglycaemia”. Having some “hypos” means your diabetes is being managed at a healthy level.

If you are taking Metformin tablets, hypos can happen more often than if managing your diabetes with changes to food and exercise. The combination of Metformin and insulin treatment also increases the chances of you having hypos. If you are having more than 3–4 hypos per week you should talk to your diabetes team about ways to stop this happening.

Notes

A large sheet of white paper with horizontal lines, intended for writing notes. The paper has a torn top edge and is placed on a wooden surface.



Contact Numbers

School Nurse:

Diabetes Specialist or Local Team:

Kidshealth

<http://www.kidshealth.org.nz>

Starship Transition

<https://www.starship.org.nz/patients-parents-and-visitors/youth-transition/diabetes-service>

Youth Law Aotearoa

<http://www.youthlaw.co.nz>

A series of leaflets is available that may be helpful for you:

- Annual Review
- Body Piercing & Tattooing
- Emotional Well-being
- Exercise
- Insulin Pumps
- Looking After Type 1 Diabetes
- Sensible Drinking
- Sex and Beyond
- Top Tips for School
- Travelling

Ask your diabetes team for the ones you want.

Provided by Lilly as a support to medicine and patients with diabetes. Lilly's involvement is limited to production costs and a review of the content for medical accuracy only.

Eli Lilly and Company (NZ) Limited would like to thank the nursing work stream of the National Clinical Network for Children and Young People with Diabetes, for their help in adapting these booklets for use in New Zealand.

Eli Lilly & Company (NZ) Limited, PO Box 109 197, Newmarket, Auckland 1149.
TAPS CH4794. NZDBT00169j. LN20292. Prepared April 2016.

Models used for illustrative purposes only.