

Physical Activity and Diabetes



What is diabetes?

Diabetes is a condition where there are high levels of glucose in the blood. Glucose is released into the blood when carbohydrate foods or fluids are digested in the gut. This glucose is used by the muscles for energy. A hormone called insulin that is produced by the pancreas, helps this glucose enter the muscle cells. When diabetes occurs the pancreas produces insulin which is not effective or stops making insulin altogether. Symptoms of undiagnosed diabetes include; excessive thirst, excessive urination, weight loss, dehydration.

There are two main types of diabetes, Type 1 and Type 2. Type 1 diabetes is the most common form of diabetes diagnosed in children and adolescents and is treated with insulin injections. Type 2 diabetes is far less common in children and adolescents and may be treated with oral medication, diet and exercise.

Why should children with diabetes be active?

All children, including those who have diabetes should be encouraged to be active. Exercise has huge benefits. It assists in weight control and promotes healthy growth and development. Children need at least 60 mins (and up to 2 hrs) of moderate to vigorous physical activity every day (Commonwealth of Australia, December 2004). Limiting TV and computer games to no more than 2 hrs per day and increasing incidental exercise such as walking to school are simple ways of increasing your child's activity. In addition to this

children should be given opportunities to participate in a variety of activities such as team sports, swimming, bike riding, and bush walking

Can exercise affect blood glucose levels (BGL)?

In general exercise lowers the BGL because the muscles use more glucose and injected insulin works better. However if blood glucose levels are high (greater than 15 mmol/l) and your child feels unwell, vigorous exercise should be avoided. Extra insulin may be needed. Speak to your diabetes health professional for sick day advice.

Hypoglycaemia- HYPO'S

Exercise can cause a low BGL during and/or after physical activity.

A BGL less than 4 mmol is known as a 'hypo' or hypoglycaemia.

A child having a hypo may appear pale, shaky, weak, uncoordinated, lethargic, or irritable.

If a hypo occurs and your child is able to swallow it should be treated immediately.

Give your child fast acting carbohydrate e.g.

- 7 jelly beans or
- 125ml popper (100% juice)
- ½ can soft drink (not diet).

This should be followed with additional carbohydrate e.g.

- one slice of bread
- two plain sweet biscuits
- one apple or one banana
- 250 ml (1 cup) milk.

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Do not leave a child having a hypo on their own.

Repeat if no improvement after 10 minutes.

DO NOT DELAY TREATMENT, as doing so will put your child at risk of severe hypoglycaemia.

To reduce the risk of hypoglycaemia talk to your diabetes health care team about managing exercise. They will help develop an individualized plan, which includes recommendations for adjusting your child's insulin and carbohydrates when exercising.

In general before participating in physical activity your child should:

1. Measure the blood glucose level.
2. Eat carbohydrates.
3. Always have a supply of foods suitable for treating hypos (eg. juice and biscuits).

Foods to eat before being active

Many carbohydrate foods are suitable to eat before activity and provide extra glucose for energy. Some examples include:

- juice
- yoghurt
- fruit
- biscuits
- milk

- cereal
- fruit/muesli bar
- fun-size chocolate bar.

Remember

- Physical activity should be encouraged in all children, including those with diabetes.
- Children with diabetes undertaking any exercise should be supervised for hypoglycaemia.
- Eating carbohydrates before exercise will reduce the risk of hypoglycaemia.
- If a hypo occurs treat the hypo immediately with fast acting carbohydrate.

Reference: Commonwealth of Australia, December 2004. Department of Health and Aging (2004) Australia's Physical Activity Recommendations for 5-12 year olds, Canberra

This fact sheet is for education purposes only. Please consult with your doctor or other health professional to make sure this information is right for your child.

This document was reviewed on Friday, 8th September 2006.

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