

AN INFORMATION SHEET FOR SUPPORT PERSONS:

Type 1 diabetes in children and adolescents

physical activity

All children need to be encouraged to participate in physical activity and sports. Physical activity helps children to have more energy, maintain a healthy weight and to generally feel good about themselves. Physical activity helps insulin to work better so for children with type 1 diabetes it may help to improve their overall diabetes management.

Can physical activity affect blood glucose levels?

Yes, physical activity can affect the blood glucose levels of a young person with type 1 diabetes in the following ways:

- Physical activity usually lowers blood glucose levels due to:
 - > the muscles using more glucose as energy.
 - > the body becoming more sensitive to insulin.
- Physical activity sometimes increases blood glucose levels due to:
 - > the effect of other hormones on the body (usually temporary due to stress or excitement).
 - > the child being unwell.

Physical activity affects children differently. However, the child and you – as a parent, carer or support person – will soon get to know their particular response to different activities.

How can problems be avoided?

Children with type 1 diabetes should be encouraged to be active and plan ahead:

- Test the child's blood glucose level to decide how much extra carbohydrate may be needed before the activity starts.
- Think about how long the activity will last and how active the child will be. Prolonged periods of activity may require extra carbohydrates and/or a reduction in insulin dose. Discuss this with your doctor or diabetes educator.
- Make sure the child carries a hypo kit (eg: juice and biscuits) when exercising.
- Make sure the child is supervised or exercises with someone who can help in case of a hypo.

Acknowledgement: Department of Endocrinology, The Children's Hospital, Westmead, NSW

Points to remember

- **BEING ACTIVE:** may improve the management of the child's diabetes.
- **BEFORE** being active: the child with type 1 diabetes needs to eat extra carbohydrate and measure their blood glucose levels.
- **WHILE** being active: the child with type 1 diabetes must be supervised.
- **AFTER** being active: a hypo can occur up to 16 hours later.



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Foods to eat before being active

Many carbohydrate foods are suitable to eat before physical activity to help maintain blood glucose levels. They include:

- Juice
- Low fat milk/ flavoured milk
- Yoghurt
- Fruit/muesli bar
- Cereal
- Biscuits

Hypoglycaemia (low blood glucose level)

Despite good planning, a hypo or low blood glucose level may still occur, in which case the person with the child must know exactly what to do. The child must stop activity until treatment has been given and their blood glucose level has risen to 5mmol/L or more.

MOST IMPORTANT: If a hypo occurs, it must be treated immediately.

Step 1: Give the child some easily absorbed carbohydrate food that is easy to consume eg: one of the following:

- 1/3–1/2 can soft drink (not Diet)
- 2–3 teaspoons honey or sugar
- Glucose tablets equivalent to 10–15gms
- 5–7 jellybeans
- 1/3–1/2 glass fruit juice or a small tetrapak

Step 2: Follow up with some carbohydrate food such as fruit, a sandwich or biscuits. If a hypo occurs just before a scheduled meal or snack, follow with that meal or snack.

Remember that a hypo can occur up to 16 hours after exercise. You can reduce the risk of a delayed hypo by extra blood glucose testing, giving the child extra carbohydrates and/or adjusting the insulin dose. Refer to *What is Hypoglycaemia, an information sheet for support persons: type 1 diabetes in children and adolescents*.

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