

Exercise for children and young people with type 1 diabetes

This information should only be used with support from your paediatric diabetes dietitian and/or diabetes team.

Regular physical activity is important for all children and young people, and children should aim for at least 60 minutes per day. This can include playing in the playground, walking or cycling to school, PE lessons, sports, swimming, skipping or dancing.

The same is encouraged if you have type 1 diabetes, you just need to understand how activity may affect your blood glucose levels.

Benefits of regular physical activity

- Helps build and maintain healthy bones, muscle and joints
- Improves coordination and motor skills
- Reduces risk of chronic disease
- Helps maintain a healthy body weight
- Improves quantity and quality of sleep
- Improves insulin sensitivity
- Improves well-being and self-esteem
- Reduces risk of microvascular complications

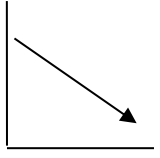
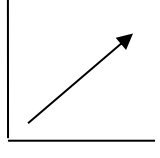
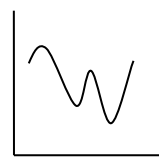
What happens to blood glucose during physical activity?

When you exercise your body will use more glucose for energy, which can lead to a reduction in blood glucose levels.

Very high intensity exercise, sports and weightlifting can cause your blood glucose levels to rise. This is because your body can pull glucose from its stores in the liver and muscle, or a spike in adrenaline causes the blood glucose levels to increase.

You may experience a delayed drop in blood glucose levels many hours after exercise. This is because the body continues to use more glucose to replenish glucose stores in the body. You must be especially careful of this if exercising late at night.

The response of blood glucose to exercise can vary person to person and can also be dependent on the time of day you exercise.

Aerobic (continuous moderate intensity) e.g. running, walking, cycling, swimming	Anaerobic (short sharp bursts of activity) e.g. weightlifting, sprinting High adrenaline activities	Mixed e.g. sports
Blood glucose likely to lower 	Blood glucose likely to increase 	Blood glucose may go up or down 

Before exercise

- Before exercise aim for a blood glucose **above 7mmol/L and below 14mmol/L**
- **above 14mmol/L**- check ketones, do not exercise if ketones above 0.6mmol/L
- **less than 4mmol/L** – do not exercise now or for the rest of the day, treat the hypo
- **4 – 6.9mmol/L** – have a 10-20g carbohydrate snack without insulin before exercise (e.g. cereal bar, glass of milk, small pot of yogurt, 1 biscuit, 1 portion of fruit)
- **7 – 14mmol/L** – no snack needed, can start activity
- If you are having a meal before exercise, you can reduce your insulin dose (by 50% for multiple daily injections and standard pumps or 25% for closed loop pumps)

During exercise

- Check your blood glucose every 30 minutes
- If your blood glucose drops below 7mmol/L, have 10g of fast release carbohydrate without insulin (e.g. 100ml fruit juice, ½ energy gel, 3 jelly babies, 150ml Lucozade sport). This is a starting point and may need to be adjusted depending on your individual response to the type of exercise
- If your blood glucose drops below 4mmol/L, stop exercising and treat hypoglycaemia. Do not resume exercise.

After exercise

- Have a meal with carbohydrates and protein after exercise - if you exercised for more than 60 minutes, you may need to reduce your insulin dose by 50% for multiple daily injections and standard pumps or 25% for closed loop pumps

- If you exercise later in the day and have low blood glucose levels at night, try having a carbohydrate and protein snack before bed (e.g. glass of milk, cheese and crackers, yogurt)

Closed loop insulin pumps

- You can use the activity/exercise mode to increase your target glucose. You can turn this on 90 minutes before exercise and keep it on until 60 minutes after exercise
- Be careful not to give large amounts of carbohydrate at once. If too much carbohydrate is given and blood glucose is high the pump can give extra insulin which could lead to low blood glucose. You may need to reduce the amount of carbs given during exercise to prevent this
- You can speak to your diabetes team if you would like more specific advice on carbohydrate requirement during exercise on closed loop pumps
- If you have put your activity mode on before exercise, you may not need a snack without insulin before exercise. For unplanned exercise where you have not been able to use activity mode before the exercise starts, you can still have the 10-20g snack.

Contact Details

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Accessibility

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