

Cystic Fibrosis Related Diabetes

Dietary recommendations for children who have cystic fibrosis related diabetes (CFRD).

People with CFRD need to pay attention to the types and amounts of carbohydrates they eat to help them control their Blood Glucose Levels (BGLs).

CFRD is different from Type 1 and Type 2 Diabetes. CFRD is a complication of CF and is caused by a lack of insulin production and / or insulin that does not work properly (insulin resistance).

Glucose is the main source of fuel for the body. Insulin is needed to move glucose from the blood into the body's cells to be used for energy. A lack of insulin or insulin resistance prevents glucose moving from the blood into the cells. Glucose levels then rise in the blood, and the body is unable to use glucose or energy properly. Body fat and muscle will then be broken down and used for energy, resulting in weight loss.

You need to have insulin injections to treat CFRD. Your insulin regime will be discussed with you by your diabetes doctor and nurse educator. The amount of insulin required may change when you have an acute pulmonary infection or if you need steroids.

Remember, it is essential for all people with CF to follow a high energy diet to ensure good nutrition. Higher body weights are linked to better lung function so making sure children with CF maintain a healthy weight is important for their health. This does not change with CFRD but now it is important to also ensure good BGL control. Poorly controlled BGLs can cause increased hospital admissions, worsening of lung function and poor weight gain. CFRD is quite different to other types of diabetes and the dietary recommendations should not be confused with those for type 1 or 2 diabetes.

Carbohydrates are the only foods that directly affect BGLs because the body breaks down all carbohydrate foods into glucose. Carbohydrates are found in the following foods:

- Breads, breakfast cereals, pasta, rice, crackers
- Starchy vegetables and legumes (potato, sweet potato, sweet corn, legumes and lentils)
- Fruit and fruit juice
- Milk, yoghurt, custard, ice cream
- Biscuits, cake, muesli bars, chocolate
- Soft drink, cordial, lollies, jelly, sports drinks, sugar

You should not avoid carbohydrates as they contain important nutrients and are the body's main fuel source. It is important for your BGL control however to keep the amount of carbohydrate at meals and snacks consistent from day to day. The types of carbohydrate foods you choose are also important for BGL control.

To maintain good BGLs, it may help to count the amount of carbohydrate you are having. This allows you to maintain a balance between carbohydrate intake and insulin doses. Carbohydrate counting can be discussed further with your dietitian if the team feel it is appropriate and would assist in controlling your BGLs.

Tips to help control your BGLs:

1. Aim to have regular meals and snacks with similar amounts of carbohydrate day to day. Ensure that you don't miss any meals.
2. Choose carbohydrates that break down slower in the blood. These are called low glycemic index (GI) carbohydrates.
3. Avoid large amounts of high sugar foods such as cordial, soft drink, lollies and jelly. These foods have a high GI - they break down quickly in your body and cause your BGLs to go high. If you do choose to have these foods sometimes, try to have them with meals and in small quantities.

Examples of low and high GI carbohydrates:

	Lower GI	Higher GI
Breads	Wholegrain / Multigrain breads, Wholemeal bread, Fruit loaf, "Low GI" white breads	White bread
Breakfast Cereals	All Bran, Porridge, Weetbix, Special K, Nutri-Grain	Sultana Bran, Coco-Pops, Rice Bubbles, Cornflakes
Grains	Pasta (all types), Noodles, Doongara Clever Rice, Basmati rice, Brown rice	Jasmine rice, Long grain rice
Starchy Vegetables	Sweet corn, Sweet potato, Hot chips	White potato
Dairy Foods	All milk products (milk, yoghurt, custard, ice cream)	
Snacks	Cake, Biscuits, Chocolate, Crisps, Nuts	Jelly, Lollies, Rice cakes, Rice crackers

Note: Many lower GI choices are high in fibre which may fill you up more. This might result in you eating less. Speak to your dietitian about finding a balance between choosing low GI foods and maximising how much you eat to ensure good weight gain.

4. Adding fat to carbohydrate foods can help to lower the GI of the meal or snack, and helps to keep your weight up. Some tips to do this include:
 - > Add margarine or cheese to bread, crackers and cooked vegetables
 - > Add cream cheese or sour cream to jacket potatoes or wedges
 - > Choose creamy sauces on pastas and dressings on salads
 - > Have full cream milk or yoghurt at snacks or with meals

If you have any questions about how to best control your CFRD through food intake, consult your CF dietitian.

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