CYSTIC FIBROSIS Western Australia

Government of Western Australia
North Metropolitan Health Service
Sir Charles Gairdner Osborne Park Health Care Group

CF Fact
cystic fibrosis fact sheet

CFRD & Diet

Cystic Fibrosis Related Diabetes (CFRD) is a type of diabetes unique to people with CF. It is different to other types of diabetes and the symptoms may vary from person to person.

It is caused by damage to the pancreas over a period of time. It may be triggered by an exacerbation and treatment of an infection and/or be a gradual onset; it is not related to diet. Individuals with CF should be tested annually for the development of CFRD and following diagnosis, should have a six-monthly dietary review or more often if required.

One of the pancreas' main jobs is to make and secrete a hormone called insulin. Insulin helps glucose from food get out of the blood and into the cells in our bodies to be used for energy. Insulin is considered the 'key' that 'unlocks' the cells. If glucose cannot get into our cells, they cannot work properly. A reduced amount of insulin production results in high blood glucose levels (BGLs), known as hyperglycaemia.

In a person with CF, symptoms of hyperglycaemia may include:

- a lack of energy
- a decrease in lung function
- weight loss
- increased hunger
- excessive thirst and
- increased urine output

Hypoglycaemia or a 'hypo' is when the opposite occurs and BGLs drop too low.

Signs of a hypo can include:

- hunger and
- feeling shaky followed by
- sweating and possibly fainting.

Insulin and other diabetes medications are used to help the body use glucose effectively and keep BGLs at near-normal levels. This will help to maintain your weight and ensure good health.

Everyone is different and so individualised dietary advice from a specialist diabetes team experienced in the management of CFRD is essential.

Food

The nutritional management of CFRD is different to that of type 1 or type 2 diabetes. In general, if you are pancreatic insufficient and have CFRD you will still need to eat a high calorie, unrestricted diet to maintain your weight. Although optimising BGLs is important in CFRD, this should not be at the expense of eating enough calories overall.

Having CFRD means you need to learn about how eating different foods will impact your BGLs.

Carbohydrates are broken down into sugar in the body and therefore have the biggest impact on BGLs. Carbohydrate foods include breads, cereals, rice, pasta, noodles, fruit, starchy vegetables, most dairy products and processed foods such as cakes, biscuits, soft drink and takeaway. Foods that are made up mostly of protein and fat have much less of an effect on BGLs.

Carbohydrates

Carbohydrates are the best energy source for your body. When digested in the gut they breakdown into glucose which is absorbed in the blood stream and transported around the body to be used as energy in muscles, the brain and all other organs.

Carbohydrates produce glucose energy at different rates; some fast, some slow. The Glycaemic Index (GI) indicates how a carbohydrate food affects BGLs. The lower the GI, the slower the rise in BGLs will be when the food is eaten, resulting in sustained energy. It is recommended to focus on eating mostly low and intermediate GI foods for optimal BGL control.

However, the inclusion of some high GI foods is usually still required to maintain overall calorie intake.

Low GI Foods	Less than 55
Intermediate GI Foods	Between 55-70
High GI Foods	Greater than 70

Low GI foods are broken down more slowly by the nbody and examples include:

- Legumes such as beans, chickpeas and lentils
- Sweet potato
- Dairy products
- Fresh, tinned and frozen fruit
- Wholegrain breads, cereals, rice, noodle and pasta products

Your dietitian or CFRD educator will also be able to help you learn how to carbohydrate count and manage CFRD.

Fats

People with type 1 or type 2 diabetes are often advised to eat a low-fat diet to help prevent other health issues such as obesity and heart disease. This advice does not usually apply to people with CFRD. Most people with CF will be advised to continue to eat a high fat diet, however with the advice to select more of the good fats, such as monounsaturated and polyunsaturated fats.

Your CF dietitian will be able to prescribe overall fat requirements based on your age, BMI and overall health.

Protein

Eating protein alone does not have a big impact on BGLs, however when paired with a source of carbohydrate it can help to slow down BGL rise. Including a source of protein with most meals in important for overall health.

Alcohol

If you plan to drink alcohol, you should be aware of the effect it has on your BGLs. When you are drinking, your liver is busy breaking down the alcohol so it will release less glucose into the blood. This puts you at risk for low BGLs. Signs of being drunk are a lot like signs of low BGLs.

If alcohol has clouded your thinking, you may not treat your low BGLs the right way. Those around you may not know that you have low BGLs and this puts you in grave danger.

If you are going to drink:

- Talk to your doctor or diabetes educator about how alcohol may affect you and how to best manage your CFRD.
- Only drink alcohol when BGLs are well-controlled.
- Do not drink on an empty stomach and continue to eat carbohydrate snacks while drinking e.g. chips.
- Check your BGLs after drinking to learn your response to alcohol (you may also need to check your BGLs during

the night, especially if you drank too much or you have been physically active while drinking).
- Have a bedtime snack after drinking to prevent a hypo.
- Never drink alone; be sure to tell your friends that you have diabetes when you drink alcohol.
- Carry identification that states you have diabetes (diabetes ID bracelet or necklace).
- Be aware that alcohol may impair your awareness of hypos.
- Do not count the carbohydrates in alcohol towards your insulin dose.

Exercise

Routine exercise can help control your BGLs by making your body respond better to insulin. Be mindful that your body will use up more carbohydrate stores with exercise and you will need to monitor your BGLs during exercise.
People with CFRD can work out safely however should be aware of the following:
- Check your BGLs before, during and after your workout so you can watch your blood sugar patterns.
- Carry a source of carbohydrates with you e.g. glucose tablets.
- You may need an extra 15 to 30 grams or more of carbohydrates for each hour of intense or lengthy exercise.
- The blood-sugar-lowering effect of a workout can last as long as 12 to 24 hours, so you may need to eat an extra bedtime snack with carbohydrates on the days you've exercised really hard.

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