

Carbohydrates in Type 1 Diabetes

Are carbohydrates important in Type 1 Diabetes?

Carbohydrates are an important part of the diet. Carbohydrates provide nutrients for healthy growth and development and all children, with and without diabetes require carbohydrate as a source of energy. Children with diabetes have the same carbohydrate and overall nutritional requirements as children without diabetes.

It is important to include a wide variety of foods from the five core food groups.

Eating 3 main meals and 2-3 snacks per day is appropriate for your child.

It is also important to drink enough fluid; water is the best drink for your child.

What nutrients do Carbohydrates provide?

Carbohydrate foods supply many nutrients, these include:

- Energy
- B Vitamins (from whole grains, lentils, baked beans, fruits, milk, seeds and nuts)
- Fibre (grains are the highest source of fibre in the diet and are also found in some fruit and starchy vegetables)
- Calcium (from milk and yoghurt)
- Antioxidants (from fruit and starchy vegetables)
- Iron (from lentils, baked beans, nuts and seeds)

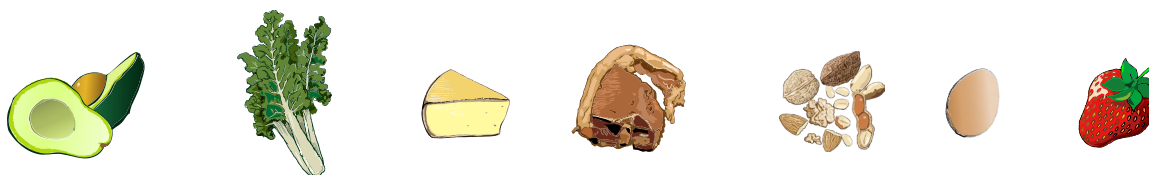


Low carbohydrate foods

Low carbohydrate foods include non- starchy vegetables, meats and meat alternatives, some dairy foods and some fruits. Including these foods along with carbohydrates at meals and snacks can help to satisfy hunger, to achieve a healthy diet and improve our diabetes management.

Low carbohydrate foods such as non-starchy vegetables, strawberries, blueberries and raspberries contain only small amounts of carbohydrate, but eaten in large amounts can add up and increase your blood glucose levels. If eating large amounts of these lower carbohydrate foods, you may need to count the carbohydrates in these foods.

Other low carbohydrate containing foods such as, meats and cheese, are high in protein and fat. Protein and fat can have a **delayed** impact to increase blood glucose levels. Speak to your dietitian for more information about the impact of high protein and high fat meals and how to manage your blood glucose levels.



Is a low carbohydrate diet recommended?

Low carbohydrate diets are not recommended for children and adolescents with type 1 diabetes as they can:

- Restrict growth,
- Increase the risk of heart disease; and
- Increase the risk of poor eating behaviours.
- Reduced the effectiveness of glucagon treatment (used for treatment of severe hypoglycaemia)
- Negatively affect performance in mental and physical tasks.

If you are having difficulty controlling blood glucose levels after eating carbohydrates, speak with your dietitian and diabetes team who can help.

Is there a place for low carbohydrate foods in diabetes?

Yes. You can include low carbohydrate foods as part of a balanced diet. Often when you are first diagnosed you can be very hungry. Now is the time to get into the routine of regular meals and snacks from the five food groups to help beat the hunger and manage your diabetes. It is important to follow a balanced diet for your child's health and diabetes management.

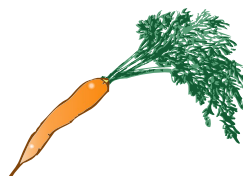
Low carbohydrate foods

Vegetables

All vegetables except for potato, sweet potato, corn, yam, parsnip and legumes are low in carbohydrate. Vegetables are rich in fibre and micronutrients and are an important part of your child's diet. They can help fill your child up without the need for additional carbohydrate.

Some ways you can incorporate vegetables in your child's diet include:

- Vegetable sticks with dip (try salsa, guacamole, cream cheese or tzatziki)
- Celery filled with peanut butter or light cream cheese
- Vegetable roll ups: fill lettuce leaves with grated cheese, thinly sliced salad vegetables and lean meats
- San choy bow: lettuce filled with cooked lean mince (beef / chicken / pork) with cooked diced vegetables and soy sauce
- Vegetable quiche prepared using eggs, ricotta, and vegetables and baked in muffin tins. You can serve these hot or cold.
- Serve main meals with a side salad or cooked vegetables and add a salad to wraps or sandwiches. This will help your child feel full without the need for additional carbohydrate

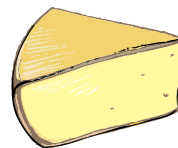


Dairy

Cheese and cream are the only dairy products that are low in carbohydrate.

Some ways you can incorporate dairy in your child's diet include:

- Cheese sliced, diced or cut into sticks.
- Cottage cheese mixed with grated vegetables
- Cottage cheese mixed with berries or diet jelly
- Cream cheese as a spread or dip
- Baked ricotta cheese



Full cream dairy is recommended for children and infants under the age of 2 years. For those children and adolescents over the age of 2 years reduced fat dairy is best.

Meat and alternatives

All fresh meats are naturally carbohydrate free. Choose lean cuts of meat and remove all visible fat. Avoid processed meat as they are often high in saturated fat and salt.

Some ways you can incorporate meat and meat alternatives in your child's diet include

- Cooked skinless chicken can be used as a snack or addition to salads
- Fill lean slices of ham or turkey with sliced salad vegetables and cottage cheese and roll up
- Eggs can be served boiled as a snack, devilled, scrambled or cooked into an omelette or frittata
- Mini meatballs made with lean mince and grated vegetables
- Tinned tuna, salmon or chicken (including flavoured varieties)
- A small handful of nuts or seeds (where appropriate for age)
- Serve lean bacon with cooked egg, tomato and mushrooms
- Salami sticks or beef jerky (limit the use of these processed/high saturated fat meat options)



Fruit

The following fruits can be considered low carbohydrate in small amounts:

- Berries – strawberries, blueberries, raspberries (fresh or frozen)
- Passionfruit
- Lemon



Other foods/ condiments

There are a range of foods that are naturally carbohydrate free or have been designed specifically to be carbohydrate free. They are useful in adding flavour and variety to your child's diet. They include:

- Water – use this as your child's main drink!
- Vegemite, peanut butter
- Soy sauce, oyster sauce, lemon juice
- Salt, pepper, herbs, spices
- Herbal teas
- Diet soft drink, cordial
- Diet jelly
- Sugar free topping or powdered milk flavouring



Do I need to eat specially labelled 'diabetic' foods?

No. "Diabetic" foods are not recommended because they are often expensive, high in fat, and may contain sweeteners that cause laxative effects or diarrhoea.

Water should always be encouraged instead of sweetened drinks with non-nutritive sweeteners. Diet or lite drinks can be recommended instead of sugary drinks on special occasions. Sweetened drinks, soft- drinks and cordials should be discouraged for the whole family.

Things I can do to help manage my diabetes:

1. _____

2. _____

3. _____

For further information contact your Dietitian: _____