

High protein, high energy eating and diabetes

Introduction

When you are unwell or on steroid medication your blood glucose levels can be higher than normal. Whilst blood glucose control is important, maintaining a diet high in protein and energy is important to help achieve adequate nutrition, maintain weight and will help assist with your recovery.

What is carbohydrate?

Carbohydrate is one of the building blocks of food. Foods that contain carbohydrate are the best source of energy for the body. When carbohydrates are digested, they break down to form glucose in the bloodstream. Glucose is then moved out of the blood stream by the hormone insulin so that it can be used for energy by the body.

How does carbohydrate affect my blood glucose levels?

It is the carbohydrate in food that directly affects blood glucose levels (BGLs). Eating regular meals and spreading carbohydrate through the day can help you manage your blood glucose levels, appetite, and weight.

If you take insulin or some other diabetes medications and you don't eat enough carbohydrate or miss a meal, your blood glucose can go too low (hypoglycaemia or hypo). It is good to include some carbohydrate with each of your meals.

Carbohydrate foods include:

- Dairy including milk, yoghurt and custard (not cheese)
- Fresh, dried and canned fruit or fruit juice
- Starchy vegetables (potato, corn, legumes)
- Cereals and grains (bread, pasta, rice, noodles, biscuits, cakes)
- Extras: cakes, lollies, chips, chocolate

What about sugar?

When you are unwell, losing weight or eating less than normal, eating higher sugar foods or fluids may be appropriate, especially if they are the only things you are able to tolerate. These foods are a source of energy and may be required to help maintain your weight and aid with your recovery. Your Dietitian can provide advice regarding this.

Important: If your blood glucose levels are high after eating or drinking items with carbohydrate or sugar, **do not avoid** these; talk to your Doctor as you may need more insulin or tablets to help control your blood glucose levels. Also request to speak to a Dietitian as they may be able to suggest alternative meal or snack options.

Eating for recovery

During times of illness it is important to maintain weight to assist with recovery. A diet high in protein and energy is appropriate if you are underweight, losing weight without trying, unwell or undergoing cancer treatment.

High protein foods include:

- Meat, fish and chicken
- Eggs
- Dairy products e.g. milk, cheese, yoghurt (including soy and lactose-free varieties)
- Beans, legumes, nuts and seeds
- Meat alternatives e.g. tofu, vegetarian sausages
- Protein supplements e.g. *Beneprotein*, *milk powder*

High energy foods include:

- Full cream dairy products
- Margarine, butter, salad dressing, oil
- *Soft drinks, cordial, chocolates, sweets, ice cream
- *Nutritional supplements e.g. fortified milk, *Sustagen*, *Ensure* (these are also high in protein)
*These are high in carbohydrate and may need a change in medication.

Tip: Including extra high protein and high fat foods can be a great way to increase your energy intake without affecting your blood glucose levels.

After you reach a healthy weight or have recovered from your illness, your dietary goals will change; discuss this with your Dietitian.

Eating to increase or maintain your weight

- ✓ Eat more often if you can't eat a lot. Aim for 6 smaller meals rather than 3 big meals a day, which may be too filling.
- ✓ Keep your favourite foods in the cupboard or fridge.
- ✓ Keep ready-to-eat meals and snacks handy for times when you don't feel like preparing food (e.g. tinned soups,

frozen meals, yoghurt, nuts, cheese, biscuits and dips).

- ✓ Drink fluids that provide energy such as milk, instead of tea, coffee or water.
- ✓ Keep a record of your weight to check if these changes are working.

Quick snack suggestions for a poor appetite

- Nuts, seeds
- Cheese
- Milk and milk drinks
- Yoghurt, custard and ice cream
- Fruche*, *Yogo*, and other dairy desserts
- Fresh or dried fruit, fruit juice
- Peanut butter with biscuits or bread
- Muesli Bar
- Leftovers – meats, vegetables, desserts
- Hard boiled eggs
- Crumpets, muffins, pikelets or scones with jam, honey, syrup, butter and cream
- Dips made with cream cheese, beans or sour cream; commercial dips, hummus
- Sandwiches
- Cakes and biscuits

Steroid Medication

If you are taking steroid medication, this will also increase your body's requirement for protein. While on steroids aim to include a high protein food at every meal.

Impact of steroids on blood glucose levels

The effect of steroids on your blood glucose level will vary depending on the type, timing and dosage. Steroids taken in the morning will increase blood glucose levels through the morning and peak late afternoon/ evening. Levels usually drop overnight unless an evening dose of steroid is taken. If steroids are taken in the evening blood glucose levels will rise overnight with an expected higher reading in the morning.

High blood glucose readings due to steroids may require an increase in oral diabetes medication or insulin. Discuss this with your diabetes educator or Doctor.

Hypoglycaemia

Hypoglycaemia or a “hypo” means a low level of glucose in the blood (less than 4mmol). Hypos can occur for a number of different reasons. These include: not eating enough carbohydrate, missing meals, vomiting, having too much insulin or diabetes medications, unplanned exercise or alcohol.

Common hypo symptoms include:

- feeling hungry
- feeling “shaky”
- sweating
- being irritable or mood changes
- feeling weak or tired

It is important to check your blood glucose levels if you are experiencing any of the above symptoms.

If your blood glucose levels are less than 4mmol/L then you need to treat this by having something high in sugar (1/2 glass of regular soft drink or 6-7 jellybeans). You may need to follow this up with some other carbohydrate containing foods/fluids e.g. glass of milk, muesli bar if your next meal is more than one hour away.

For more detailed hypo management refer to the *Treating hypoglycaemia or “hypos”* resource available online:

https://www.health.qld.gov.au/nutrition/nemo_diab.asp

Sick day management

- Illness can lead to an increase in blood glucose levels due to insulin resistance. If you are acutely unwell, check your blood glucose levels more frequently (at least every 4 hours).
- Take your normal dose of insulin or diabetes tablets. Sometimes you may need more insulin. If unsure, contact your diabetes educator or Doctor.
- Drink fluids to avoid dehydration. If blood glucose levels are more than 15mmol, drink sugar free fluids. If blood glucose levels are less than 15mmol, drink sweet fluids like lemonade. Try to drink half a cup of fluid every hour.
- If you are unable to eat your usual meals try having small carbohydrate containing snacks every couple of hours e.g. toast, crackers, yoghurt, custard.
- Contact your Doctor or present to emergency if you have repeated vomiting or diarrhoea, fever or blood glucose levels are over 15mmol for more than 24 hours.

Suggested Meal Plan

BREAKFAST
MORNING TEA
LUNCH
AFTERNOON TEA
DINNER
SUPPER

Things I can do to increase or maintain my weight

1.

2.

3.

4.

For further information contact your Dietitian or Nutritionist: _____

References:

Australian Diabetes Society. Guidelines for Routine Glucose Control in Hospital. 2007 [cited 2016 Oct 4] Available from: https://diabetessociety.com.au/documents/ADSGuidelinesforRoutineGlucoseControlinHospitalFinal2012_000.pdf