

DIABETES IN PREGNANCY



SUPPLIES



All women with gestational diabetes will be registered with the National Diabetes Services Scheme (NDSS). Your diabetes educator will complete your registration with you at your initial visit.

You will receive an NDSS card in the mail which you can use at your local chemist to gain a discount on the supplies you require for blood glucose monitoring and ketone testing. If you have not received your card, please show your Medicare card.

- NDSS helpline: 1800 637 700 or
- NDSS email: ndss@diabetesaustralia.com.au

All supplies for your blood glucose monitor and ketone testing are available at your local chemist.

For any medications you will need to get a prescription from the doctor.

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WHAT IS GESTATIONAL DIABETES?

The hormonal changes that occur during the pregnancy, as well as the hormones produced by the placenta, can influence other body hormones, such as insulin, which is a hormone required to store sugar (glucose) from our bloodstream. Due to these effects, the body requires increased insulin levels, and when the insulin-producing cells fail to meet these requirements, the blood glucose levels (BGL) start to rise. Gestational Diabetes is diagnosed if the blood or plasma glucose levels rise above the accepted levels. This diagnosis only applies to a pregnant woman who is not known to have any other form of diabetes mellitus.

WHY DID I GET GESTATIONAL DIABETES?

There are many risk factors for developing diabetes during pregnancy, such as genetics (family history / ethnicity), age, weight and some pre-existing health conditions. In some women, we may not be able to identify the risk factors.

HOW DOES THIS AFFECT MY BABY AND ME?



High blood glucose levels can influence your baby's growth resulting in macrosomia (larger than average body size), cause congenital malformations or abortions. With appropriate management of the condition, these risks can be minimised. Gestational diabetes will not cause diabetes mellitus in the baby.

WHAT HAPPENS WITH GESTATIONAL DIABETES AFTER THE PREGNANCY?

The blood glucose levels return to normal in about 80% of women after the pregnancy. An oral glucose test is performed, at a time advised by your treating specialist, to confirm the normalisation of glucose levels.

Having gestational diabetes increases the risk of developing Type 2 diabetes later in life. Following your post-partum visit, your specialist will provide your general practitioner with a monitoring plan for the future.

HOW CAN I MANAGE MY GESTATIONAL DIABETES?



Maintaining the blood glucose level within the recommended range is crucial, and the following steps will assist you.

- Monitor your blood glucose to ensure that this is within the target range.
- Follow a balanced carbohydrate meal plan to help manage your blood glucose levels.
- Regular physical activity (provided there are no contraindications).
- Follow the treatment plan advised by your treating team.

CAN I EXERCISE?

A moderate degree of regular exercise is encouraged during pregnancy as this can improve insulin function and thereby optimise the glucose profile. However, as certain pregnancy-related complications can worsen with exercise, please check with your obstetrician if it is safe for you to exercise.

WHY IS MY DIET SO IMPORTANT?



Due to gestational diabetes, your body is not able to adequately process the carbohydrates in your diet, which in turn results in high blood glucose levels.

Carbohydrate is a nutrient present in certain type of foods, that is converted into glucose by your body. The hormone insulin is responsible for transferring the glucose in the blood to the body's cells where it can be used as an energy source. Glucose is an energy source for your growing baby as well. Therefore, a balanced amount of carbohydrate is required in your diet.

If you don't consume enough carbohydrate, your body begins to break down fats and proteins for energy which results in the production of a substance called ketones. Production of ketones is to be avoided during pregnancy.

WHY DO I NEED TO CHECK FOR KETONES?

Ketones in the urine (or blood) can assist in identifying inadequate dietary intake, mainly carbohydrates. It may also indicate other metabolic derangements and therefore kindly contact us if the ketones in the urine are consistently high.

IF I HAVE PRE-EXISTING DIABETES, WHAT CAN I DO TO MINIMISE THE RISK OF COMPLICATIONS?

With pre-existing diabetes, there is a higher risk of diabetes-related complications during pregnancy. Optimising the diet and lifestyle will improve metabolic and glucose control, which will assist in minimising complications. Depending on the type of diabetes mellitus (Type 1 diabetes / Type 2 diabetes / Other forms of diabetes), your treating specialist will tailor the treatment approach.



GOALS

GOAL 1: EAT REGULAR MEALS AND SNACKS, WATCH THE CLOCK!

Aim to eat every 2 ½ - 3 hours. Eat 3 small meals with 3 mid-meal snacks at regular times. This spreads the carbohydrate foods evenly over the day, which makes it easier for the body to manage. It also helps to provide you and your baby enough glucose for energy across the day. Eating at regular time intervals helps to control your hunger and prevents overeating.

GOAL 2: EAT THE RIGHT AMOUNT OF CARBOHYDRATE

To get the right amount of carbohydrate to meet your needs during pregnancy and keep your BGLs in the target range, you will need to read food product labels and measure the amounts of carbohydrate in your meals accurately.

Generally, the Dietitian will advise you to aim for 30-40g of carbohydrate at breakfast, 20-30g of carbohydrate for snacks and 40-50g of carbohydrate for lunch and dinner.

GOAL 3: LIMIT THESE FOODS

Limit foods high in added sugars, such as;

- Lollies, chocolate, cakes and biscuits
- Sweetened drinks such as soft drinks, cordials and juices
- Spreads such as honey and jams

Limit foods high in saturated- and trans- fats, such as;

- Fast food and takeaway
- Pastry foods
- Pizza
- Dishes that contain sugary sauces

GOAL 4: INCLUDE LEAN PROTEIN FOODS AND HEALTHY FATS

Protein-rich foods provide the building blocks for growth during pregnancy. They are often lower in carbohydrate and help to control appetite.

- Lean meat, chicken and fish
- Eggs
- Nuts

Mono- and poly-unsaturated fats provide your body with healthy fats, vitamins and minerals

- Olive, canola, sunflower, soybean or peanut oils
- Avocado
- Nuts

GOAL 5: KEEP ACTIVE

Regular exercise is vital for weight control, blood glucose control and mental health. Physical activity helps the body store glucose from the bloodstream. Some good examples of activity during pregnancy include;

- Walking
- Yoga/ Pilates
- Swimming
- Housework such as sweeping/ mopping or vacuuming



CARBOHYDRATE FOOD LIST

Listed on this page are examples of carbohydrate-containing foods. Use this sheet to assess the amount of carbohydrate contained in your meal so that you can fulfil the nutritional requirements. The carbohydrate content of similar foods can vary between different brands and products. Be sure to check the food label.

Food	Grams of Carbohydrate
Breads /Cereals /Grains	
Tip Top 9 Grain Bread – two slices	25g
Soy and Linseed – two slices	30g
Burgen Fruit and Muesli bread (1 slice)	20g
English muffin (both sides)	30g
Bazzar Wholemeal Lavash Bread	35g
Bazzar Wholemeal Pita Pocket	30g
El Paso Wholegrain tortillas (2 wraps)	35g
1 cup boiled basmati rice	50g
1 cup boiled brown rice	50g
¼ of 450g packet Hokkien (egg) noodles	40g
1 cup cooked rice noodles (approx 150g)	30g
1 cup cooked pasta	40g
1 cup cooked couscous	50g
Weetbix – 2 biscuits	20g
⅓ cup dry oats	20g
½ cup (45g) Uncle Tobys natural style muesli	25g
1 cup Sultana Bran	30g
1 cup Uncle Tobys Plus Fibre	30g
1 sachet Uncle Tobys Gourmet Selections oats	25g
Grain Waves 40g packet	25g
Vegetables	
1 chat potato (100g)	15g
1 medium potato with skin (150g)	25g
1 medium sweet potato (115g)	20g
1 bucket hot chips (150g)	40g
½ corn on cob (100g)	15g
½ cup canned corn (75g)	15g
1-piece pumpkin (100g)	10g

Food	Grams of Carbohydrate
Fruits	
1 medium apple	15g
1 medium orange, pear or kiwi fruit	10g
1 medium banana	20g
1 punnet strawberries (250g)	10g
1 cup grapes	25g
2 whole apricots or plums	10g
1 cup cherries/ blackberries	15g
1 medium peach	10g
1 medium mango (300g)	25g
1 cup rockmelon/honeydew/watermelon or pineapple	10g
1 cup canned fruit salad (drained)	25g
1 tablespoon sultanas	10g
6 halves of dried apricots	15g
3 dates (fresh)	20g
120mls fruit juice	15g
Dairy Foods	
1 cup reduced fat milk	15g
150g tub Nestle Soleil Diet yoghurt	7g
150g tub Vaalia Low-Fat yoghurt	25g
150g tub Yoplait Le Rice	30g
250g (1 cup) Pauls low fat custard	40g
Legumes	
½ cup cooked lentils	10g
½ cup baked beans	15g
½ cup red kidney beans	15g
½ cup canned chickpeas	15g
½ cup canned bean mix	15g
Others	
1 tsp sugar	5g
1 Tbs regular jam	20g
1 Tbs Weight Watchers jam	5g
1 Tbs BBQ sauce	5g
3 tsp Milo (dry)	10g
Chicken Tonight Golden Honey Mustard ¼ of a jar	15g
Diet soft drink	0g
1 scoop ice cream (50g)	10g

READING FOOD LABELS

- There are 3 main things you need to look for when reading a label to manage your GDM:
- Look for the recommended serving size and determine if you will be eating this portion.
- Look for the total amount of carbohydrate per serve.
- Calculate your carbohydrate intake based on a portion.

NUTRITIONAL INFORMATION		
Servings per can: 2		
Servings size: 210g		
	Average Quantity Per Serving	Average Quantity Per 100g
ENERGY	895kJ	425kJ
PROTEIN	10.8g	5.1g
FAT:TOTAL	1.2g	0.6g
-SATURATED	0.2g	0.1g
CARBOHYDRATE	33.7g	16.1g
-SUGARS	15.5g	7.4g
DIETARY FIBRE	11.9g	5.7g
SODIUM	1300mg	620mg
POTASSIUM	650mg	310mg
IRON	2.7mg	1.3mg

MEAL IDEAS



EACH BREAKFAST IDEA IS EQUAL TO 30-40G OF CARBOHYDRATE

- 2 slices of wholegrain bread with peanut butter/ 2 poached or boiled eggs/ Vegemite®/ tinned fish (twice per week) or ½ of an avocado
- 1 slice of wholegrain bread plus ½ cup of baked beans
- 1/3 cup rolled oats (raw) with ½ cup of reduced-fat milk plus ½ cup strawberries or blueberries
- 1 'no added sugar' Sanitarium 'Up and Go' ®
- 200g yoghurt with ½ cup fruit and 30g crushed nuts
- 1 cup high fibre cereal (such as All Bran®/ Just Right®/ 2 Weetbix®/ Special K®) with ½ cup milk
- ½ cup fruit-free muesli (Carmans® or Morning Sun®) and ½ cup yoghurt

EACH LUNCH IDEA IS EQUAL TO 40-50G OF CARBOHYDRATE

- 2 slices of wholegrain bread with cheese and vegemite/ tuna or salmon/ peanut butter/ lean ham/ chicken breast/ boiled egg with lots of salad and 1 piece fruit
- 1 grainy wrap with hummus, reduced-fat cheese, tabouli, shredded lettuce and sliced tomato.
- Tinned fish/ lean meat or chicken with 1-2 cups of mix salad and 1 cup roasted sweet potato/ ½ cup corn or a small tin of 4 bean mix
- A cup of thick vegetable soup made with legumes or fat-reduced milk, plus 1-2 slices of bread
- A frittata made with sweet potato and sweet corn kernels, lean ham and lots of low carbohydrate vegetable serves with 1 slice grain bread.
- 1 cup of cooked pasta or rice or bean salad with lots of salad vegetables and some lean meat or fish.
- 6-8 Vitawheat® or 4 Ryvitas®/ Corn Thin® crackers with lean meat/chicken or fish and salad



EACH DINNER IDEA IS EQUAL TO 40-50G OF CARBOHYDRATE

- Tuna/ salmon salad made with 3 chat-sized potatoes, steamed and cooled, blanched green beans, cherry tomatoes, lettuce, drained canned tuna in water and hard-boiled egg quartered, add olives if desired, dress with olive oil and red wine vinegar.
- Asian stir fry frozen vegetable mix or fresh snow peas, baby corn, carrot, onion and Asian greens, add skinless lean chicken, beef, lamb or pork stir-fried in peanut oil with chilli plum sauce serve with 1 cup (130 grams) Hokkien® noodles.
- Barbequed chicken minus the skin, 1 whole corn cob, 1 chat potato and home-prepared coleslaw with canola dressing
- Spaghetti bolognese made with lean beef mince, onion, garlic, mushrooms and capsicum with a jar of tomato pasta sauce served with 1 ½ cup cooked pasta.
- Mexican style bean burrito made with lean mince, 1/2 cup beans topped with green salad and tomato salsa wrapped in a tortilla.
- 1 crumbed fish fillet with 1/2 cup reduced-fat oven-baked chips with lots of salad vegetables or steamed mixed vegetables

THE FOLLOWING SNACK IDEAS ARE BETWEEN 20G-30G OF CARBOHYDRATE

- 1 serve of fruit with 30g mixed unsalted nuts
- 200g yoghurt (flavoured is OK)
- 1 slice wholegrain bread with 1-2 hard-boiled eggs
- 4 Vitawheat® or Ryvitas® with peanut butter
- 10 low-fat rice crackers with salsa/ hummus or avocado
- 250mL milk with 2 teaspoons Milo
- 2 Arnott's Snack Right® fruit slice biscuits (97% Fat-Free)
- 1 slice of raisin toast
- 40g packet Grain Waves®
- 40g packet of fruit and nut mix.
- Occasional ice-cream such as Paddle Pop®/ Skinny Cow®/ mini Magnum®

FREE FOODS

Foods that contain minimal carbohydrate do not need to be 'counted'. These include;

- Tea and coffee, black or with a dash of low-fat milk and no sugar
- Non-starchy vegetables (lettuce, tomato, cucumber, spinach, onion, garlic, broccoli, capsicum, cauliflower, brussels sprouts, beans, carrots, asparagus, artichoke, mushrooms)
- Low-sugar fruits (strawberries, blueberries, passionfruit and lemon)
- Lean and unprocessed meats, chicken and fish (tinned fish twice weekly)
- Eggs (poached, boiled, scrambled)
- Cheese (preferably fat-reduced, occasional/ in moderation)
- Nuts (unsalted, dry-roasted, crushed)

REMEMBER

Variety of food, moderation in portion size and regular snacks are important aspects of controlling your blood glucose levels and maintaining healthy weight gain throughout your pregnancy.



BLOOD GLUCOSE TESTING AND TARGETS

Blood glucose levels (BGL's) need to be closely monitored throughout your pregnancy. You are required to test your BGL's 4 times per day for the duration of your pregnancy.

BGL's should be tested before breakfast (fasting) and between 2hrs after the start of breakfast, lunch and dinner.



Please ensure hands are clean. If you have an abnormally high reading, wash hands and repeat.

Targets

- Before Breakfast: < 5.1mmol/L
- After Main Meals: < 6.7mmol/L.

KETONE TESTING

Ketones are detected if our body is burning fat stores as a source of energy because it cannot use glucose effectively. This may occur when your BGL is high, or if you are not eating enough carbohydrate.

Ketones are the waste products that are left over when the body burns some of its own fat for fuel.

The ketones pass from the bloodstream into the urine. They can cross the placenta and affect foetal growth.

Urine should be tested daily for ketones.



FOOD DIARY

WRITE DOWN THE TIME OF THE MEAL, THE TYPE AND QUANTITY OF FOOD AND AMOUNT OF CARBOHYDRATES.

Date	Meal	Food	Carbohydrate Portions
Time	Breakfast		
	Morning Tea		
	Lunch		
	Afternoon Tea		
	Dinner		
	Supper		
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We understand your stress and concerns. Please feel free to contact us if you require phone advice between appointments

Business Hours: Call the rooms: **02 4965 3800**

For urgent after-hours support: **0413 641 518**

N.B. If the call is unattended, please leave a brief message and we will call you back.

Please do not send text messages to the after-hours number.



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