

Pregnancy after Bariatric Surgery

Timing

We advise all women planning pregnancies after bariatric surgery to wait at least **one year** post-op. By this stage your weight should have stabilised and your body will no longer be in a catabolic state (breaking down the body's excess stores). It can be difficult to provide adequate nutrition in the earlier stages after surgery due to a much smaller food intake, food intolerance and greater frequency of regurgitation as you adapt to your altered gastrointestinal tract. At one year any intolerances to certain foods should be resolved and you will be able to eat a good variety of foods in sufficient quantities (1 ½ cups per meal, or a full portion control plate of food) to ensure optimal nutrition for your growing foetus.

Weight Gain

Some weight gain during pregnancy is expected even after bariatric surgery - approximately 10kg at full term. However, we don't anticipate this to occur until the 2nd (4kg) and 3rd (6kg) trimesters when the baby's fat stores are laid down. Use the Body Mass Index (BMI) table below to work out the ideal weight gain range for your current weight.



Pre-pregnancy BMI (kg/m ²)	Total weight gain range (kg)	Rates of weight gain 2 nd and 3 rd trimester (mean range in kg/wk)
Underweight (<18.5)	12.5-18	0.51 (0.44-0.58)
Healthy weight (18.5-24.9)	11.5-16	0.42 (0.35-0.50)
Overweight (25.0-29.9)	7-11.5	0.28 (0.23-0.33)
Obese (≥30)	5-9	0.22 (0.17-0.27)

What is the best way to gain this weight?

Increase in calories per trimester:

First trimester	No increase in calories – 3 meals per day, no snacks
Second trimester	100-150 calories – 3 meals + 1 extra per day
Third trimester	200-250 calories – 3 meals + 2 extras per day

Suitable Extras

Extras should always be protein based and if possible, rich in calcium. Choose from some of the following;

- 1x ½ cup low sugar yoghurt with 1 tsp of sunflower seeds, pumpkin seeds and sliced almonds
- 12x natural almonds or 6 walnut halves
- 1 cup Calci Trim or Anchor Protein Plus milk
- 2x Vita Weat crackers with 1 tbsp nut butter (e.g. Pic's, Macro, or Cere's Organics),
- 2x Vita Weat crackers with 1tbsp cream cheese/cottage cheese that is freshly opened or cheese made from pasteurised milk
- 1x boiled egg with ¼ avocado and 1tbsp/slice cheese made from pasteurised milk
- 1 x 85 tin of tuna/salmon



Main Meals

It is important to do the best you can with your food choices throughout the course of your pregnancy. The following meals are examples of foods that will support optimal growth and development of your baby.

Breakfast

- 2 eggs (scrambled or hard boiled) with 2 tbsp lite baked beans
- 2 egg omelette with vegetables (e.g. courgette, mushroom, capsicum, spinach), 25g grated pasteurised cheese &/or salmon
- 2 slices of lean rindless bacon with 1-2 eggs (scrambled or hard boiled)*
- Protein shake made with 1 cup Calci-Trim milk, 1 scoop Lifefoods Whey Protein Powder, 2 tbsp unsweetened yoghurt, ½ cup frozen berries and 1 tbsp chia seeds
- ½ cup plain All Bran with 2 tbsp unsweetened natural yoghurt*, Calci-Trim milk and ¼ cup berries
- 1/3 cup nut and seed based muesli/granola with 2 tbsp unsweetened natural yoghurt*, Calci-Trim milk and ¼ cup berries
- 1/3 cup plain rolled oats made with 2/3 cup Calci-Trim milk, topped with 2 tbsp unsweetened natural yoghurt*, ¼ cup berries and a sprinkle of cinnamon
- 1 x Ryvita cracker with 2 tbsp Philadelphia Lite Cream cheese*, 1x 85g tin tuna, ¼ sliced avocado, and 1 sliced tomato

Lunch

- Salad with 3 proteins – choose from protein table below – e.g. 50g salmon, ½ boiled egg and 20g feta
- 2 egg omelette with 2 x protein fillings (choose from protein table below) and vegetables of choice
- 1x slice crustless quiche filled with vegetables and 2 protein fillings (choose from protein table below)
- 1 cup chicken and vegetable soup with 1 cruskit spread with Philadelphia Lite Cream Cheese*
- 2 Ryvita/Cruskits or 2-3 x protein toppings (choose from protein table below) - topped with sliced tomato, avocado, and cucumber
- 1x small pita bread pizza topped with 3 x protein toppings (choose from protein table below) with diced vegetables of your choice
- Nachos with mince/chicken/beans, lite sour cream*, guacamole, grated cheese, salad ingredients of your choice, and 3-4 homemade tortilla chips (cut a tortilla into triangles, brush lightly with olive oil, sprinkle with spice/herbs of choice and bake until lightly golden)

Table of Protein:

Chicken	Mince	Prawns	Tuna
Salmon	Egg	Noble/Edam cheese	Feta cheese*
Philadelphia lite cream cheese*	Cottage cheese*	Mozzarella	Ricotta*
Lite baked beans	Kidney beans	Cannellini beans	Black beans
Chickpeas	Tempeh	Tofu	Quorn mince

Dinner

- 100-120g lean, well-cooked protein (**i.e. beef, chicken, fish, pork, lamb, venison, veal or seafood**) or 2 eggs with solid yolks, ½ tin beans/chickpeas, 50g tofu/tempeh as vegetarian options
- Non-starchy (green) vegetables – unlimited – Please see table of green vegetables below
- Carbohydrates can be included in your meal (optional) but must be eaten in moderation - ¼ cup or 1-2 tbsp per meal. It is recommended to choose carbohydrates that are considered to be 'whole foods' rather than processed forms which have minimal nutrition to offer (see table below)

****Refer to the foods to consume/avoid for more extensive advice on how foods should be eaten.***

Non-Starchy (Green) Vegetables

Asparagus	Artichoke	Brussel's Sprouts	Bean Sprouts
Beetroot (raw)	Broccoli	Bok Choy	Cauliflower
Cucumber	Capsicum	Courgette	Celery
Cabbage	Eggplant	Garlic	Kale
Lettuce	Leek	Mushroom	Onion
Radish	Rhubarb	Rocket	Spinach
Silverbeet	String beans	Spring onion	Tomato
Watercress			

Whole Food Carbohydrates

Roasted Beetroot	Potatoes	Kumara	Pumpkin
Sweetcorn	Taro	Yams	Turnip
Peas	Swede	Broad Beans	Quinoa
Millet	Buckwheat	Amaranth	Brown Rice

Foods to consume and to avoid

See <https://www.mpi.govt.nz/food-safety/food-safety-for-consumers/food-and-pregnancy/list-of-safe-food-in-pregnancy/> for the most updated advice on foods to include and to avoid during pregnancy.

Food Type		What to do
Breads and Cereals		
Breads	All types	Ok to eat
Cakes, muffins slices	Plain	Okay to eat
	Added cream/custard	Don't eat unless the cream is newly opened and the custard is homemade and fresh
Cereals	Breakfast cereals, rice, pasta and similar products	Okay to eat
Dairy		
Cheese	Soft unpasteurised	Don't eat
	Soft pasteurised cheese (for example, brie, camembert, blue, ricotta, mozzarella, feta)	Generally should not be eaten uncooked while pregnant. However, OK to eat in small quantities if purchased in the manufacturer's original packaging and eaten immediately after opening. Do not reseal to eat later, and do not eat if cheese has been repackaged in a deli or supermarket as may have become contaminated
	Hard cheese (for example, cheddar, parmesan)	OK to eat, store in fridge
	Cottage cheese, cream cheese or similar	Buy in sealed packs; eat cold or cooked within 2 days of opening pack
Butter	All types	Okay to eat, store in fridge

Food Type		What to do
Dairy		
Cream	Fresh, un-whipped or whipped, sour cream and similar	Buy in sealed packs; eat within 2 days of opening pack
Custard	Ready-made chilled (packaged)	Eat within 2 days of opening
	Homemade	Eat hot immediately after cooking; reheat leftovers until piping hot (over 70 degrees Celsius) and eat immediately
Milk	Pasteurised	Drink or use within 2 days of opening
	Unpasteurised (raw)	Don't drink or use
Icecream	Packaged	Okay to eat
	Soft serve	Don't eat
Yoghurt	Pasteurised	Eat within 2 days of opening
	Unpasteurised	Don't eat
Eggs		
Raw eggs	In egg flips, eggnog, smoothies, home-made mayonnaise and dressings, home-made ice cream, mousse and tiramisu, and similar	Don't eat
Cooked eggs	Fried, scrambled, baked, poached, and similar	Cook well (firm yolks, firm scrambled eggs)
Meats and Poultry		
Cooked meats	Beef, pork, chicken, mince, sausages, and similar	Cook until piping hot throughout, and until juices run clear (use a meat thermometer to check temperatures); eat while hot; never eat rare or undercooked meats; store leftovers covered in fridge and eat within 2 days; reheat leftovers until piping hot (over 70 degrees Celsius)
Processed meats	Ham, salami, luncheon, pâté, pastrami, biltong, or jerky (dried meat), and similar	Don't eat unless heated until piping hot (over 70 degrees Celsius)
Cold cooked poultry	Any cold pre-cooked poultry (for example, chicken and turkey)	Don't eat unless heated until piping hot (over 70 degrees Celsius)
Raw meat	Any raw meat, raw chicken or other poultry, beef, pork, and similar	Don't eat or taste; don't touch face, mouth or eyes while preparing; wash and dry hands well after touching raw meat
Seafood		
Raw fish	Any raw fish (including marinated raw fish)	Don't eat
Raw shellfish	Any raw shellfish (including marinated raw mussels)	Don't eat
Smoked fish, shellfish and crustacean	Chilled, pre-cooked fish, mussels, oysters*, scallops*, salmon, crayfish, prawns, and similar	Don't eat unless heated until piping hot (over 70 degrees Celsius)

Food Type		What to do
Vegetables, fruits and salads		
Fruit	All	Wash and dry well before serving
Vegetables	Fresh	Wash and dry well before eating raw or wash before cooking
	Frozen	Cook before eating
Salad	Ready-made salads and coleslaws from delis, salad bars, and similar	Don't eat
	Home-made	Wash all ingredients then okay for using
Herbs	All	Wash before using
Miscellaneous		
Leftovers	Cooked	Store leftovers covered in fridge and eat within 2 days; reheat leftovers until piping hot (over 70 degrees Celsius); never eat cold leftovers
Canned foods	Canned fruit, vegetables, fish, seafood, meat, sauces, and similar	Remove from can for storage; store uneaten leftovers covered in fridge and eat within 2 days
Sauces, dressings and spreads	Salad dressings (oil and vinegar), bought mayonnaise, tomato sauce, margarine-type spreads, and similar	Store in fridge once opened; check maximum storage time
Sushi	Store-bought (all types – even without raw seafood)	Don't eat
	Home-made	Use freshly cooked rice, and don't use raw or cold cooked meat or seafood; eat immediately; don't eat leftovers
Stuffing	Stuffing from chicken or turkey	Don't eat unless stuffing is cooked separately (in a dish); eat hot; store leftovers in fridge and eat within 2 days; reheat leftovers until piping hot (over 70 degrees Celsius)
Hummus and tahini	Store-bought or home-made	Don't eat

Other Considerations

- Protein – Aim for around 75-90g protein per day (25-30g per meal). Use the protein shopping list as a guideline for including a top-level protein at each meal (ask your dietitian if you do not have one)
 - **Top (Gold):** beef, chicken, fish, lamb, venison, pork, seafood, protein powder
 - **Second (Silver):** eggs, low-fat dairy (e.g. lite cream cheese, cottage cheese, low-sugar yoghurt)
 - **Third (bronze):** beans, nuts, seeds, chickpeas, legumes, tofu, tempeh (avoid hummus & tahini items)
- Fruit - limit to 1 piece a day and incorporate into a meal rather than eating it alone. The protein and healthy fats from your meal can help to reduce the effect the fructose can have on your blood sugar levels. Dice some fruit over your breakfast or slice into a salad etc
- Recommended condiments to include: salt and pepper, fresh/dried herbs and spices, garlic, chilli, ginger, tamari/soy sauce, balsamic vinegar, apple cider vinegar, lemon/lime juice, reduced-salt stocks, tinned tomatoes, tomato paste, wholegrain mustard, Dijon mustard
- Condiments to avoid include; high fat/sugar salad dressings, mayonnaise, aioli, creamy sauces, chutneys, relish, pickles, and tomato, bbq, sweet chilli, teriyaki, hoisin sauces
- Cooking oil – Cold-pressed extra virgin olive oil, avocado oil or coconut oil are the best choices. Keep your portion to 1 tbsp when cooking meals, and use tin foil/baking paper when roasting/baking food to limit intake. If using oil as a dressing, limit your portion to 1 tsp (flaxseed oil, extra virgin cold-pressed olive oil, and avocado oils are good choices for salad dressings)

- Include 1-2 cups of Calci-Trim milk per day for extra calcium, either as part of your breakfast or in between main meals. If you are lactose intolerant or don't habitually consume a lot of dairy products, you may benefit from increasing your calcium supplementation – refer to the supplement section
- Maintain a structured eating plan during your pregnancy to keep your blood sugar level stable and ensure success with your weight loss goals after your baby is born. Meals should be eaten approximately 4-6 hours apart with extra in between based on your relative trimester calorie requirements as stated above

Constipation

- Constipation while pregnant is common. The muscle contractions that normally move food through your intestines slow down during pregnancy due to higher levels of the hormone progesterone. In addition to this, the extra iron from your prenatal vitamin can further constipate you. Ensuring you drink at least 2L fluid per day, include non-starchy (green) vegetables with your main meals, and keeping physically active will help to encourage regular motions. If you continue to have issues with constipation, please contact your midwife or dietitian for further advice

Nausea and Vomiting

During the first trimester, and for some, the entire pregnancy, nausea and vomiting can make food consumption difficult. If this is problem for you, try some of the following suggestions:

- Eat 5-6 small meals rather than 3 larger ones
- Avoid heavily spiced, high fat, and strongly odourous foods
- Lemon and ginger herbal tea bags, freshly grated ginger and lemon juice added to hot water, and grated ginger root in cooking can help to settle the stomach if feeling nauseous
- Try liquid meals e.g. Smoothies, protein shakes (using a natural protein powder), and chicken or beef soup. These tend to be better tolerated and can be consumed slowly over a 60 minute period if needed
- Make sure you replace your fluids by drinking plenty of water
- Replace your electrolytes lost from vomiting by using electrolyte replacement capsules such as 'PURE electrolyte capsules' from www.drinkpure.co.nz. These will replenish electrolytes without making you 'dump' from the sugar contained in standard sporting electrolyte drinks like Powerade. Alternatively you could use pure coconut water (avoid the flavoured varieties) from your supermarket
- If suffering from reflux, it is recommended that you take Omeprazole (Losec). Please contact your doctor or nurse for a prescription if you are suffering from reflux

Supplementation

It is **necessary to STOP taking bariatric multivitamins when planning pregnancy**. The level of vitamin A is too high and can affect your baby's development – Elevit with iodine or alternatively Naturobest Preconception (no iron) and Prenatal Vitamins have been designed specifically for pregnancy and should be used. The following supplement regimens are recommended 3 months prior to conception and throughout your pregnancy:

Gastric Bypass

- 2x Celebrate prenatal or 2x Naturobest capsules
(Trimester one has no iron to reduce morning sickness; Trimester 2 onwards has 24mg iron)
- 1x B12 500mcg sublingual tablet with folic acid ***B12 injections are not recommended for pregnant women**
- 1000mg Calcium Citrate (chewable, tablets, or capsules) + 2 cups Calci-Trim milk with a meal or in between meals

Sleeve Gastrectomy

- 2x Celebrate prenatal or 2x Naturobest capsules
- 1x B12 500mcg sublingual tablet with folic acid ***B12 injections are not recommended for pregnant women**
- 2 cups Calci-Trim milk with a meal or in between meals

Other considerations

- Additional **iron** may be required if levels are inadequate



- An additional 500mg calcium may be required if habitual dietary intake of dairy products is low
- It is recommended you follow advice of your Midwife or Obstetrician for monitoring your bloods
- Your GP can prescribe calcium, and additional iron if needed
- Sublingual B12 tablets, calcium chews, and additional chewable iron tablets can be purchased from info@tricnutrition.co.nz
- Vitamin D deficiency can increase the risk of foetal growth retardation and skeletal deformities. A vitamin D test (at your expense) is highly advised **if you haven't been using a bariatric multivitamin**
- Naturobest can be purchased from a pharmacy or online at www.netpharmacy.co.nz
- It can be beneficial to take fish oil supplement to provide omega 3 for healthy brain development of the foetus. Recommended supplements include Ethical Nutrients High strength fish oil *OR* Nordic Natural Pre-Natal DHA capsules
- **If you experience any abdominal pain you must contact your GP. *With pregnancy, the risk of an internal hernia is increased after gastric bypass surgery***

Gestational Diabetes testing

During your pregnancy you will be tested to check for the presence of gestational diabetes. This is typically determined with an oral glucose tolerance test. **DO NOT** take this test as it will cause dumping syndrome which has unpleasant symptoms. You will need to have a blood test called **HbA1c** instead that tests your average blood glucose levels over a time period. Your doctor or midwife can provide a referral for this.

Food Poisoning

Preventing food borne illness during pregnancy is extremely important as it can increase your risk of miscarriage and other serious illnesses.

It is recommended that you read the booklet "Food Safety in Pregnancy" for in depth overview of food borne illnesses and safe eating practices during pregnancy. It is available at: <https://www.mpi.govt.nz/food-safety/food-safety-for-consumers/food-and-pregnancy/>

Key food safety considerations

- Keep cold food in the fridge below 5 degrees to help stop the growth of bacteria. A thermometer can be useful if you are unsure about the accuracy of your fridge
- Wash your hands, utensils and chopping boards between preparing raw and ready to eat foods to avoid cross-contamination. Use separate utensils, cutting boards and knives for meats and vegetables, and for raw and cooked foods
- Cook food to a temperature greater than 60 degrees Celsius – a thermometer can assist with this and should be tested in the thickest part of food, near the bone if it is present
- Reheat cooked food until it is greater 70 degrees Celsius and do not reheat more than once. Only reheat food that has been stored in the fridge for less than 2 days.
- Separate raw and cooked foods in the fridge
- Defrost frozen food in the fridge or microwave, not on the bench, or in a sink
- Cook food thoroughly, in particular poultry - no pink should be visible and the juices should run clear
- Wash all fruit and vegetables thoroughly and dry with clean paper towel just before eating
- Reheated food should be heated thoroughly until piping hot
- Keep all kitchen surfaces, crockery, and utensils clean
- Thoroughly wash and dry hands before, during and after the handling of food
- You can eat cottage cheese and cream cheese if they are brought in sealed packs and consumed cold or cooked within 2 days of opening.

Foods to avoid due to their higher bacteria risk

- Semi-soft cheeses (e.g. brie, camembert, blue vein, feta, ricotta, Roquefort)*
- Raw seafood e.g. natural oysters and ceviche
- Pâté
- Carpaccio (raw meat)
- Cold cooked chicken
- Deli/processed meats
- Pre-cooked meat such as smoked chicken and corned beef
- Un-pasteurised dairy products
- Soft serve ice cream, cheesecake, or custard products
- Deli salads i.e. coleslaw (homemade, well washed salads are fine)
- Raw eggs or cooked eggs with runny yolks
- Unwashed vegetables or fruit
- Sushi
- Hummus and tahini



*Soft cheeses that are made with pasteurised milk (i.e. Cream cheese and Cottage cheese) are fine but should be eaten within 2 days of opening.

Mercury in fish

Fish is rich in protein, minerals and omega 3 fatty acids. Omega 3 fatty acids are important for the development of the central nervous system in babies - before and after they are born. While fish is a good choice during pregnancy and breastfeeding, it is important you are careful with the fish you consume. Some may contain mercury levels that could harm your baby. Options that contain minimal risk of consumption include tinned tuna/salmon, mackerel, sardines, farmed salmon, tarakihi, blue cod, hoki, John Dory, monkfish, warehou, whitebait and flounder. These fish are low risk and the nutrients they contain have many health benefits. Some longer lived fish and large fish such as wild salmon, kahawai, red cod, orange roughy, grouper should be limited because they can contain more mercury. Please refer to the Food standards website for more information about recommended weekly servings of fish while pregnant and safe fish species - <http://www.foodstandards.govt.nz/consumer/chemicals/mercury/pages/default.aspx>

Exercise

It is important to remain active during your pregnancy. Aim to complete 30 minutes of exercise 5 days a week. Walking, aqua jogging, swimming, yoga, pilates can be more gentle forms of exercise.

Alcohol

Drinking alcohol during pregnancy can lead to miscarriage, stillbirth, premature birth or foetal alcohol syndrome (slow growth of your baby before and after birth, and mental disabilities). As there is no known safe level of alcohol consumption at any stage of pregnancy, the NZ Ministry of Health advises that women stop drinking around conception, throughout their pregnancy and while breastfeeding.

Caffeine

Small amounts of caffeine are safe during pregnancy. However, excessive volumes may increase the risk of miscarriage, premature birth and foetal growth restriction. Caffeine is in coffee, tea, chocolate, energy drinks, cola, and some other soft drinks. Food Safety New Zealand recommends that pregnant women limit themselves to 200mg of caffeine daily – this equates to;

- 2 cups of ground coffee
- 2 ½ cups instant coffee,
- 4 cups medium strength tea
- 4 cups sugar free cocoa/hot chocolate
- 6 cups of sugar free cola



Smoking

Smoking is dangerous for both you and your baby. Smoking increases the risk of premature birth, low birth weight, and respiratory problems. There is no safe level of smoking, therefore it is recommended that pregnant women avoid smoking during pregnancy.

Please note: If you have any questions you can contact your dietitian/nutritionist/nurse at any time.