

# Vitamins and Minerals After Bariatric Surgery

**Vitamins and minerals are also known as ‘micronutrients’, because they are needed by the body in much smaller amounts [milligrams (mg) or micrograms (mcg) per day] than the other nutrients that make up a healthy diet, such as carbohydrate, protein and fat (which are commonly known as macronutrients). Vitamins and minerals are essential nutrients which we must obtain from the food we eat, as we cannot make them in our body. Vitamin D is the exception; as we can make it in our skin when exposed to sunlight.**

**Bariatric surgery dramatically decreases the body’s ability to obtain sufficient vitamins and nutrients from our diets by restricting the amount of food you consume and/or reducing absorption. This can result in malnutrition and deficiencies which can be detrimental to your health.**

## Why are they important?

Vitamins perform a wide variety of functions in our bodies, such as helping to release energy from the foods that we eat, playing a role in DNA synthesis, and acting as antioxidants to protect our cells from damage.

Minerals such as calcium and iron also have a range of essential functions, such as the formation of bones and teeth, and are needed for the normal function of our nervous system. Some vitamins and minerals may be absorbed more efficiently by the body from the foods that we eat, rather than from food supplements (such as the iron in red meat).

## How much of the different vitamins and minerals do I need?

We may need varying amounts of vitamins and minerals depending on our age and sex. Pregnant or breastfeeding women also have different requirements.

The UK government has published a set of dietary reference values (DRVs) for different vitamins and minerals. These provide an estimate of the amounts required each day by different groups of healthy people in the general population to support growth and development, and to maintain good health.

Throughout your bariatric pathway, the team will be monitoring your blood biochemistry to ensure you are getting enough vitamins and minerals. It is important you take all the prescribed medications to ensure this.

Before bariatric surgery it is advisable to take a complete A-Z multivitamin and mineral formula daily and 10 mcg Vitamin D supplement daily.

After bariatric surgery it is recommended that in order to prevent nutritional deficiencies you take the following supplements daily:

- A-Z Multivitamin and mineral formula supplement (Your GP may prescribe Forceval, or may ask you to purchase a similar supplement - see below for suitable examples).
- Calcium & Vitamin D 25mcg daily supplement (GP may prescribe, or may ask you to purchase - see below for suitable examples).
- Iron supplement (GP may prescribe, or may ask you to purchase - see below for suitable examples).
- 1mg Vitamin B12 injection every 3 months (available through your GP / Princess Royal Hospital).
- Omeprazole or Lansoprazole (available on prescription from your GP)
- Vitamin D supplement 2000-4000IU daily (or also written 50-100mcg) (available to buy from the chemist / supermarkets).

The following tables show you some of the options that are suitable to buy if your GP does not prescribe the medications for you or you dislike those you have been provided with on prescription.

- 1) Buy **one** of the following **multivitamins & minerals** available online, large chemist or supermarkets or your GP may prescribe Forceval.

**For the first 4-6 weeks after surgery, you will need to take a chewable or soluble multivitamin and mineral**

i.e Forceval soluble x1 a day or Centrum Chewable x2 a day before moving onto one of the options below.

Take these with or after your main meal.

After surgery the hospital will provide you with a 14 day supply of Forceval soluble x1 a day. If you are unable to tolerate the liquid/soluble form you can purchase Centrum chewable over the counter.

**\*Please note** Centrum chewable is not nutritionally complete and is only suitable for short term use until you are able to tolerate tablets.



**Forceval**  
x1 a day  
45p/day  
or x1/day



**Sanatogen**  
**A-Z Complete**  
x2 a day  
18p/day



**Lloyds Pharmacy,  
Superdrug or any  
Supermarket Own-brand**  
**A-Z e.g. Tesco,  
Morrisons, Asda**  
x2 a day 8-12p/day



**Holland &  
Barrett ABC+**  
x1 a day  
7p/day



**Centrum**  
**Chewable**  
x2 a day  
50p/day

**FORCEVAL**  
**SOLUBLE**





- 2) One of the following **Calcium & Vitamin D supplements** are required, to maintain bone health and help prevent osteoporosis.

The chewable tablets can be taken straight away following your bariatric surgery.

Other tablets can be taken 4-6 weeks following your surgery.

After surgery the hospital will provide you with a 14 day supply of Adcal D3 chewable x2 daily.

					
<b>Adcal-D3 chewable</b> 1 tablet twice a day (morning & night) 22p/day	<b>Calceos (chewable)</b> 1 tablet twice a day (morning & night) 18p/day	<b>Calcichew D3 Forte chewable</b> 1 tablet twice a day (morning & night) 23p/day – may need prescription	<b>Adcal D3 Caplet</b> 2 tablets twice a day (morning & night) 20p/day – may need prescription	<b>Cacit D3 effervescent</b> 1 tablet twice a day – may need prescription	<b>Calcium Citrate with vitamin D3 (Solgar)</b> 1 tablet twice a day 20p/day <i>Calcium citrate may be the preferred option for those with a history of or risk of kidney stones</i>


In addition to calcium supplements it is advisable to take an additional 2000-4000IU (50-100mcg) of Vitamin D each day (5-10p/day)

			
<b>Better You Dlux 3000 Vitamin D Spray</b> 1 spray each day (3000IU)	<b>Holland &amp; Barrett Vitamin D3</b> 100 tablets 25ug (1000IU) 3 tablets each day (3000IU)	<b>Better You Dlux 1000 Vegan Vitamin D Spray</b> 3 spray each day (3000IU)	<b>Solgar Vitamin D3</b> 1000IU 90 tablets 3 tablets each day (3000IU)

- 3) **Iron supplements** are recommended particularly for those with iron deficiency anaemia or menstruating women.

It is important to try to take the iron supplement 2 hours apart from the calcium tablet or it reduces the rate of absorption of the supplements. The following table shows suitable examples:

The hospital ward will provide you will a liquid form of iron supplement called Sodium Feredetate, however you can change onto a tablet version at 4 weeks if you prefer.

			
<b>Sodium Feredetate (Sytron) Liquid</b> 20p per 10ml 10ml once a day or 20ml once a day for menstruating women	<b>Ferrous Fumarate*</b> 210mg 1/day 7p/day *often better tolerated	<b>Ferrous Sulphate</b> 200mg 1/day 5p/day	<b>Ferrous Gluconate</b> 300mg 1/day 3p/day (take 1 hour before food)

**Take all of your vitamins and mineral every day but do not take them all together. If you spread them evenly across the day, it helps your body to absorb them.**

### Here is an example:

After breakfast - multivitamin (1-2 x day depending on brand) + first calcium and vitamin D tablet.

With lunch - iron tablet (2x day for menstruating women).

Evening meal - second calcium and vitamin D tablet.

### Thiamine

If you experience prolonged vomiting and/or poor dietary intake or excessive weight loss, then contact your dietitian or GP as you may require additional supplements of Thiamine and Vitamin B Co strong. These B vitamins are not usually stored in the body so levels can become quickly depleted.

**Symptoms of thiamine deficiency;** confusion, neuropathy (damage to the nerves), poor coordination (stumbling, falling), slurred speech and a rapid heart rate (tachycardia).

### Can I get enough vitamins and minerals from a vegetarian or vegan diet?

Well-organised vegetarian and vegan diets can provide most essential nutrients, but there are some nutrients that you might want to give more consideration to if you are following a vegetarian or vegan diet - or if you are reducing the amount of meat, fish and dairy foods that you eat. This is because it may be more difficult to get enough of some vitamins or minerals from plant-based foods alone (like vitamin B12), or they may not be absorbed as easily by the body (referred to as 'bioavailability').

For example, the iron found in plant foods such as beans, lentils, nuts and green vegetables (called 'non-haem' iron) is less readily absorbed by the body than the iron from animal sources (known as 'haem iron').

Vitamin B12, Iron, Iodine, Calcium and Vitamin D are likely to be lower in vegetarian and vegan diets however, continuing with the prescribed multivitamin, vitamin and mineral medications will ensure adequate intake.

### Should I be taking additional vitamins and minerals which are not prescribed by the bariatric team?

As described previously, the recommended vitamins and minerals alongside a balance diet should ensure you are getting enough in your body. If you want to take additional over the counter vitamins and minerals, please discuss with your dietitian first to ensure they are safe to take.

**Please note** - we would not recommend taking additional copper supplementation as this can contribute to a zinc deficiency. We advise you to take zinc:copper in a ration of 15mg:2mg. This balance is present in Forceval tablets. Care should be taken when taking hair and nail supplements which can include high doses of several micronutrients and also the biotin they contain can affect your blood test results. It is important to remember to stop taking supplements containing biotin at least 2 days before your blood test.

## What happens if I get a deficiency of a vitamin or mineral?

A deficiency is a long-term lack of vitamin or mineral.

The tables below provide more information about the various roles of vitamins and minerals in the body, and which foods you can find them in. The bariatric team will discuss whether you have any vitamin and mineral deficiencies before asking you to make changes to your diet. Please use the table as information only as your medications will fortify your diet as needed.

Vitamins	It helps...	Deficiency Symptoms	Some food sources
Vitamin B1 (thiamine)	...to release energy from food. It also helps our nervous system and heart function normally.	Chronic digestive disorders Nerve damage Loss of appetite Burning sensation in the feet Muscular weakness and cramping Fatigue Memory loss	Bread, fortified breakfast cereals, nuts and seeds, meat (especially pork), beans and peas.
Vitamin B2 (riboflavin)	...to release energy from food, reduce tiredness, and helps to maintain normal skin and a normal nervous system.	Fatigue Mouth or lip sores, or cracks Nerve damage Sore throat Inflamed tongue	Milk and milk products, eggs, fortified breakfast cereals, offal, some oily fish (such as mackerel and sardines), mushrooms and almonds.
Vitamin B3 (niacin)	...to release energy from food, reduce tiredness, and helps to maintain normal skin and a normal nervous system.	Rash Fatigue Bright red tongue Circulatory problems Constipation	Meat, poultry, fish and shellfish, wholegrains (such as brown rice, wholewheat pasta and quinoa), bread and some nuts and seeds (such as peanuts and sesame seeds).
Vitamin B6	...to make red blood cells, which carry oxygen around the body. It helps our immune system work properly, regulates hormones and helps to reduce tiredness.	Cracks or soreness on lips Soreness or glossiness on the tongue Changes in mood Weakened immune system Fatigue	Meat, poultry, fish, fortified breakfast cereals, egg yolk, yeast extract, soya beans, sesame seeds, some fruit and vegetables (such as banana, avocado and green pepper).
Vitamin B12	...to make red blood cells, helps the nervous system function normally, and helps to reduce tiredness.	Anaemia/Tiredness Breathlessness Lack of concentration Irreversible neuropathy	Meat, fish, shellfish, milk, cheese, fromage frais, eggs, fortified yeast extract and fortified breakfast cereals.

<b>Vitamins</b>	<b>It helps...</b>	<b>Deficiency Symptoms</b>	<b>Some food sources</b>
Folate/Folic acid	...to make red blood cells, reduce tiredness and helps promote the normal functioning of the immune system. It is also needed for the normal development of the nervous system in unborn babies.	Fatigue Tongue swelling Headaches Irritability Sores in mouth	Green leafy vegetables, some breads (such as malted wheat and brown bread), offal, peas and beans, oranges, berries and fortified breakfast cereals.
Vitamin C	...to protect cells from damage. It helps form collagen, which is important for normal bones, gums, teeth and skin. It also helps the immune system and the nervous system to function normally.	Weakness Feeling fatigue Sore arms or legs Gum diseases	Fruit (especially citrus fruits, blackcurrants, strawberries, papaya and kiwi), green vegetables, peppers and tomatoes.
Vitamin A	...the immune system to function normally, helps with vision and helps the maintenance of normal skin.	Dry Skin Dry Eyes Night blindness Acne	Liver, cheese, eggs, dark green leafy vegetables and orange-coloured fruits and vegetables (such as carrot, sweet potato, butternut squash, cantaloupe melon and papaya)
Vitamin D	...the body to absorb calcium and to build and maintain healthy bones and muscles. It also helps the immune system to work as it should.	Osteoporosis Increase risk of dementia Depression Bone pain	Oily fish, eggs, fortified breakfast cereals and fat spreads. In spring/summer, the majority of people will get most of their vitamin D through the action of sunlight on the skin.
Vitamin E	...to protect the cells in our bodies against damage.	Disorientation Muscle Weakness Vision Problems	Vegetable and seed oils (such as olive, rapeseed, sunflower, peanut oils) nuts and seeds (such as sunflower seeds and almonds), avocados and olives
Vitamin K	...with normal clotting of blood and is required for normal bone structure.	Excessive bleeding Poor wound healing	Green vegetables (including leafy greens, broccoli, green beans and peas) and some oils (such as rapeseed, olive and soya oil)

<b>Minerals</b>	<b>It helps...</b>	<b>Deficiency Symptoms</b>	<b>Some food sources</b>
Calcium	...to build and maintain strong bones and teeth. It helps nerves and muscles to function normally and helps blood to clot normally.	Osteoporosis Nerve and muscle weakness	Milk, cheese, yogurt, fromage frais, some green leafy vegetables (such as kale), calcium-fortified dairy-alternatives, canned fish (where soft bones are eaten) and breads (white, brown and wholegrain)
Fluoride	...to form strong teeth and helps to reduce the risk of tooth decay.	Weak fragile bones Increased risk of fractures Tooth decay	Tap water, tea (and toothpaste)
Iodine	...to maintain normal thyroid function, and it helps the brain to function normally.	Swelling in the neck Unexplained weight changes	Milk, yogurt, cheese, some fish (such as cod, mackerel, haddock), some shellfish (such as crab and mussels) and eggs (and some fortified dairy alternatives)
Iron	...to make red blood cells, which carry oxygen around the body. It also helps the immune system to work and helps the brain to function normally.	Anaemia/Tiredness Breathlessness Lack of concentration Increased risk of infection	Offal, red meat, beans, pulses, nuts and seeds, fish (such as canned sardines and mussels), quinoa, wholemeal bread and dried fruit
Magnesium	...to release energy from food, maintain strong bones and it helps normal muscle and nerve function.	Muscle weakness Heart Irregularities Nerve/muscle dysfunction	Nuts and seeds (such as Brazil nuts and sunflower seeds), wholegrain breakfast cereals, wholegrain and seeded breads, brown rice and quinoa
Phosphorus	...to build strong bones and teeth and helps to release energy from food.	Weakness Anaemia Rapid weight loss Oral infections Joint pain Decreased appetite	Red meat, poultry, fish, milk, cheese, yogurt, eggs, bread and wholegrains (such as brown rice and wholewheat pasta).
Potassium	...regulate the water content in the body and maintain a normal blood pressure. It also helps the nerves and muscles to function normally.	Abnormal heart rhythm Weakness Tiredness Muscle cramps Confusion Constipation	Some fruit and vegetables (such as banana, blackcurrants, avocado, spinach, parsnip and beetroot), dried fruit (such as apricots, sultanas and figs), poultry, red meat, fish, milk and wholegrain breakfast cereals

<b>Minerals</b>	<b>It helps...</b>	<b>Deficiency Symptoms</b>	<b>Some food sources</b>
Selenium	...to protect the cells in our bodies against damage, helps the immune system to work as it should, and helps maintain normal skin and nails, and normal fertility in males.	Damage to the skeleton, heart and other muscles Increased risk of malignancy Tiredness Diarrhoea	Some nuts and seeds (such as Brazil nuts, cashews and sunflower seeds), eggs, offal, poultry, fish and shellfish
Sodium	...regulate the water content in the body.	Dizziness Muscle cramps Confusion Difficulty concentrating Nausea	Very small amounts found naturally in foods. Often added as salt (sodium chloride) during processing, preparation, preservation and serving. In general, many people consume excess sodium and need to reduce their intake.
Zinc	...contribute to normal mental skills and abilities and helps to maintain normal hair, skin and nails. It also helps with the normal healing of wounds and contributes to normal fertility and reproduction.	Poor immunity Diarrhoea Muscle wasting Skin rashes Taste changes Poor healing	Meat, poultry, cheese, some shellfish (such as crab, cockles and mussels), nuts and seeds (such as pumpkin seeds and pine nuts), wholegrain breakfast cereals and wholegrain and seeded breads.
Copper	...plays a role in forming red blood cells, enzymes, connective tissue, and bone. It also plays a vital role in immune health. Copper also influences energy production and iron absorption, helping the body produce collagen.	Low immunity Cardiac Arrhythmia Anaemia Poor wound healing Fatigue Vision Loss	Beef liver, shiitake mushrooms, leafy greens (such as lettuce, kale, spinach etc), nuts and seeds (such as cashew), lobster, oyster and shellfish

Reference: BNF (2021) <https://www.nutrition.org.uk/healthy-sustainable-diets/vitamins-and-minerals/?level=Consumer>

While we recognise the importance of vitamins, we also understand some people may experience psychological difficulties associated with taking vitamins (in tablet, pill or dissolvable form). For example, some individuals fear swallowing oral vitamins due to the sensations, feelings or thoughts they experience. This can lead to psychological challenges such as reluctance or avoidance of vitamins.



## What Psychological Support is available?

The Bariatric Surgery Psychology Service have put together some useful information below, to offer support to anyone experiencing distress around taking their vitamins. This includes exercises and resources you can use to calm yourself down in order to take the first steps towards becoming more comfortable and less anxious when swallowing vitamins.

### Relaxation & Anxiety Management Techniques

- If you are feeling really anxious about taking your vitamins, there are some useful self-soothing and relaxation techniques you can use to help reduce tension in your throat and stop it from tightening up.
- These techniques include Controlled Breathing, Progressive Muscle Relaxation and Visualisation & Guided Imagery. We have included resource sheets with information about how to use these and practice exercises with this document.
  - **Controlled Breathing Technique**  
[Breathing Retaining \(health.wa.gov.au\)](https://www.health.wa.gov.au)
  - **Progressive Muscle Relaxation (PMR)**  
[Progressive Muscle Relaxation \(health.wa.gov.au\)](https://www.health.wa.gov.au)
  - **Visualization & Guided Imagery**  
[A brief guide to guided imagery/CUH](#)

### Graded Exposure:

- We know that your anxiety is due to a specific trigger, which in this case is the psychological fear of swallowing vitamins. This may be due to a variety of different reasons.
- Over time if you keep avoiding this, the anxiety and panic may grow and make you more fearful. But through the graded exposure technique you can become more confident and comfortable with the situation and confront your anxiety.
- It can be scary, at first but you can learn to take small manageable steps like simply trying to sit with the idea of swallowing vitamins before taking further steps. We have included an example below, but you can also use the following resource sheet to support you.

### Guided (Situational) Exposure

#### *For example:*

- Imagine the idea of swallowing or taking a vitamin in pill form (3/10)
- Move towards actually having a vitamin in your hand to become comfortable with the size and texture (4/10)
- Then try to take the smallest size vitamin you have (5/10)
- When you're more comfortable move on to trying to swallow a bigger sized vitamin e.g., move from small to medium to big vitamins (6/10)
- Move on to try and take more than one vitamin at a time – one after another (7/10)
- When it feels difficult try to swallow the vitamins with lots of water, or with food (8/10)
- Then move onto closing your eyes and swallowing vitamins more quickly (9/10)
- When you feel more confident try swallowing vitamins of different sizes and textures more often and frequently (10/10)

We hope this information sheet is useful in helping you to begin taking your vitamins in a tablet form or move from a liquid to oral form.

If you have any questions, please get in touch with the Bariatric team.

If you have any psychological concerns, please also let the team know as they may be able to refer you into the Bariatric Psychology Service for some additional guidance and support.

## If you have any comments about this leaflet or the service you have received you can contact :

Your Bariatric Surgery Healthcare Team

Telephone: 01484 355217

Email: bariatric@cht.nhs.uk



[www.cht.nhs.uk](http://www.cht.nhs.uk)

## If you would like this information in another format or language contact the above

Potřebujete-li tyto informace v jiném formátu nebo jazyce, obraťte se prosím na výše uvedené oddělení

Jeżeli są Państwo zainteresowani otrzymaniem tych informacji w innym formacie lub wersji językowej, prosimy skontaktować się z nami, korzystając z ww. danych kontaktowych

ਬ ਤੁਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਪ੍ਰਾਚੂਪ ਜਾਂ ਭਾਸ਼ਾ ਵਿੱਚ ਲੈਣਾ ਚਾਹੁੰਦੇ ਹੋ,  
ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਉਪਰੋਕਤ ਵਿਭਾਗ ਵਿੱਚ ਸਾਡੇ ਨਾਲ ਸੰਪਰਕ ਕਰੋ।

اگر آپ کو یہ معلومات کسی اور فارمیٹ یا زبان میں درکار ہوں، تو  
برائے مہربانی مندرجہ بالا شعبے میں ہم سے رابطہ کریں۔

"إذا احتجت الحصول على هذه المعلومة بشكل مغاير أو مترجمة إلى لغة مختلفة فيرجى منك الاتصال بالقسم  
المذكور أعلاه"