

# Vitamin and mineral supplementation and monitoring



Bariatric surgery

## Patient information

Kindness, Respect, Teamwork  
Everyone, Every day

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## Introduction

After bariatric surgery the risk of developing a nutritional deficiency is increased. This is because:

- Bariatric surgery helps you to eat smaller portions of food, which makes it more difficult to get enough vitamins and minerals from your food alone
- Some bariatric surgery affects the absorption of vitamins and minerals

To prevent nutritional deficiencies we recommend that all patients who have had bariatric surgery take specific vitamin and mineral supplements for the rest of their lives. We also recommend that all patients have regular nutritional blood tests to help monitor, detect and treat any nutritional concerns.

As the patient, it is your responsibility to obtain supplements (on prescription from your GP and from a shop) and arrange for your blood tests (usually at your GP surgery).

The information in this leaflet outlines our current guidelines. In some cases, individuals may be advised differently by a GP, bariatric dietitian or other health care professional.

**We regularly review our advice so recommend that you continue to monitor our website or contact the team (see 'Further support') for updates.**

## Frequently asked questions

**Q. What are vitamins, minerals and trace elements?**

**A.** They are nutrients, also known as micronutrients that are needed in small amounts for the body to work well and stay healthy. The body cannot make them but most people generally get all the nutrients they need by having a balanced and varied diet. In certain situations it can be difficult to meet needs through diet alone, as after bariatric surgery, when supplements are advised. Each individual vitamin, mineral and trace element plays a specific role in the body.

**Q. What is a nutritional deficiency?**

**A.** This occurs when the body does not absorb or get the required amount of a nutrient. A deficiency can result in a range of health problems, some of which may not be treatable as they become irreversible.

**Q. What happens if I take a different type of supplement to the ones advised?**

**A.** You will be at increased risk of developing nutrient deficiencies. This is because they may not contain the correct or right amount of nutrients.

**Q. What happens if I choose not to take the advised supplements?**

**A.** You may be at increased risk of developing nutrient deficiencies. Some deficiencies can result in severe and irreversible damage.

**Q. Can I have too many vitamins and minerals?**

**A.** Yes, so it is important to follow our advice. Take the correct vitamin and mineral supplements, have regular nutritional blood tests and attend follow up appointments.

**Q. How long do I need to take supplements for?**

**A.** You will need to continue taking supplements for life, except for Thiamine which is for two years, after bariatric surgery. Please note that our advice is updated when there is new evidence.

**Q. Can I still get a nutritional deficiency if I take the recommended supplements?**

**A.** Yes, however your risk is much lower.

**Q. What happens if I don't get my nutritional blood test?**

**A.** We will not know if you are getting the right amount of the necessary nutrients.

**Q. Why are some people on different supplements after bariatric surgery?**

**A.** The advice can change according to individual need and type of surgery. Advice can also vary between surgical centres. Here at Musgrove Park Hospital, we base our advice on our clinical experience and current evidence from the UK and across the world.

**Q. How is an A-Z vitamin and mineral supplement different to other multivitamin/mineral supplements?**

**A.** An A-Z means it contains the full range of vitamins, minerals and trace elements. A multivitamin/mineral supplement only has a selection of nutrients and is not “complete”. Taking this instead could lead to nutrient deficiencies.

**Q. Will the current advice on supplements and blood tests change?**

**A.** New evidence on best practice is always emerging so we review our advice regularly. This can result in our advice changing.

**Q. I have seen vitamin B12 as an oral supplement, why do I need an injection?**

**A.** After a gastric bypass and sleeve gastrectomy we recommend supplementing vitamin B12 with injections to maintain normal levels. We do not recommend the use of oral or sublingual (under the tongue) supplementation. This is because the evidence for non-injections is not long-term and we do not know if this is enough to maintain normal levels and prevent deficiency. A vitamin B12 deficiency can cause irreversible, lifelong problems so we want our patients to reduce this risk.

## Checklist to help you plan

You can use this space to plan your vitamin and mineral supplements and monitoring. Choose the correct table:

Date of surgery \_\_\_\_\_

### Gastric band

#### Before admission:

Request  
prescription of  
supplements

- Forceval capsule (A-Z vitamin and mineral supplement), one a day (start at week 3)
- Adcal D3, one, twice a day

Purchase  
supplements  
from shop

- Soluble/chewable/liquid multivitamin and mineral supplement, one a day (weeks 1 and 2 only)
- Thiamine (vitamin B1) 50-100mg a day (start at week 3, take for first three months)
- Vitamin D 25ug, one, twice a day (start at week 3, take for life)

#### After discharge from hospital:

Book routine  
nutritional blood  
tests at GP surgery

Refer to page 18-19 for test details. Your GP will have been sent a copy of this information but it may be helpful to take this leaflet with you to refer to

- Every three, six and 12 months after your operation, then yearly for life
- You may wish to write down the months below when these are due in the first year

First year: 1st test = \_\_\_\_\_

2nd test = \_\_\_\_\_

3rd test = \_\_\_\_\_

Then continue yearly

## Gastric bypass and sleeve gastrectomy

### Before admission:

Request  
prescription of  
supplements

- Forceval capsule (A-Z vitamin and mineral supplement), one a day (start at week 3)
- Adcal D3, one, twice a day
- Ferrous gluconate 300mg, one a day (start at week 3)

Purchase  
supplements  
from shop

- Soluble/chewable/liquid multivitamin and mineral supplement, one a day (weeks 1 and 2 only)
- Thiamine (vitamin B1) 50-100mg a day (start at week 3, take for first 3 months)
- Vitamin D 25ug, one, twice a day (start at week 3, take for life)

### After discharge from hospital:

Book routine  
nutritional blood  
tests at GP surgery

Refer to page 18-19 for test details. Your GP will have been sent a copy of this information but it may be helpful to take this leaflet with you to refer to

- Every three, six and 12 months after your operation, then yearly for life
- You may wish to write down the months below when these are due in the first year

First year: 1st test = \_\_\_\_\_

2nd test = \_\_\_\_\_

3rd test = \_\_\_\_\_

Then continue yearly

Book B12 injection  
at GP surgery

Start at six months after surgery, continue every three months for life.

Write down the month to start this below:

\_\_\_\_\_

Then continue every three months

# Vitamin and mineral supplementation

## **Before bariatric surgery**

You should take vitamin and mineral supplements if:

- You have been advised by a health care professional to take vitamin and/or mineral supplements. This advice will be individual to you
- You are using the food plan for the liver shrinking diet. We advise that you take one A-Z vitamin and mineral supplement a day. This is only needed during the liver shrinking diet
- You are alternating between the food plan and the meal replacement drinks for the liver shrinking diet. We advise that you take one A-Z vitamin and mineral supplement on the days that you follow the food plan. This is only needed during the liver shrinking diet. You do not need to take an A-Z vitamin and mineral supplement if you are using the meal replacement drinks plan as they should contain the nutrition you need

## **After bariatric surgery – Week 1 and 2**

For the first two weeks after bariatric surgery, like medications, vitamin and mineral supplements need to be in a chewable, liquid, soluble or crushable form unless they are very small. This is to avoid difficulties when taking medications and allow time for healing.

The table opposite explains what you need and where to get it from. Ensure you get your supplements a few weeks before your surgery. If you have any problems please discuss it with the bariatric team during your admission.

## **After bariatric surgery – Week 3 onwards**

From week three you should be able to tolerate tablets and capsules again. The tables on page 10-13 explains what you need and where to get it from. If you struggle, continue with the advice for the first two weeks and try again in week four.



## After bariatric surgery – Week 1 and 2

Supplement	Product name	Where to get it from	How much to take and how often
Multivitamin, and mineral	<p>Suitable over the counter products include:</p> <ul style="list-style-type: none"> <li>• Centrum Fruity Chewables</li> <li>• Bassett's Adult Multivitamin Raspberry and Pomegranate</li> <li>• Shops own brand of chewable, soluble or liquid multivitamin and mineral supplement</li> </ul>	Buy from shop (such as pharmacist, supermarket or online)	<p>After all surgeries: Once per day</p> <p>After a gastric bypass or sleeve gastrectomy: One, twice a day</p>
Calcium and vitamin D	<p>Adcal D3 is the best choice</p> <p>Or equivalent chewable supplement (providing a total of at least 1000mg calcium and 20ug vitamin D per day)</p>	<p>On prescription from GP</p> <p>On prescription from GP or buy from shop (such as pharmacist, supermarket or online)</p>	<p>After all surgeries One, twice a day</p>

## After a gastric band – Week 3 onwards

Individual advice may be given by your health care professionals.

Supplements after a gastric band	Product name	Where to get it from
1 A-Z complete multivitamin and mineral	Forceval capsule. This is the best choice	On prescription from GP
	If the above is not tolerated, a suitable over the counter product is: Holland and Barrett ABC-Z. Other options (but contain less folic acid) are: Tesco A-Z • Sanatogen A-Z Complete • Lloyds Pharmacy A-Z Multivitamin and Minerals	Buy from shop (such as pharmacist, supermarket or online)
2 Calcium and vitamin D (combined supplement)	Adcal D3	On prescription from GP
	Equivalent supplements providing a total of at least 1000mg calcium and 20ug vitamin D per day	On prescription from GP or buy from shop (such as pharmacist, supermarket or online)
3 Vitamin D	Vitamin D (vitamin D3 is the recommended form)	Buy from shop (such as pharmacist, supermarket or online)
4 Thiamine	Thiamine (also known as vitamin B1)	Buy from shop (such as pharmacist, supermarket or online)

How much to take	How long to take it for (unless individual advice is given)
One a day	For life
One, twice a day	For life
As needed to meet dosage. We advise not to take more than 500mg calcium at any one time	
25ug twice a day (a total of 50ug a day)	For life
50-100mg once a day (50mg is sufficient but is poorly available, 100mg is widely available. You could split 100mg into halves using a pill cutter and take half a tablet a day)	For the first 3 months

## After a gastric bypass or sleeve gastrectomy – Week 3 onwards

Supplements after a gastric bypass or sleeve gastrectomy	Product name
1 A-Z complete multivitamin and mineral	<p>Forceval capsule. This is the best choice</p> <p>If the above is not tolerated, suitable over the counter products are:</p> <p>Holland and Barrett ABC-Z • Tesco A-Z • Sanatogen A-Z Complete • Lloyds Pharmacy A-Z Multivitamins and Minerals</p>
2 Calcium and vitamin D (combined supplement)	<p>Adcal D3</p> <p>Equivalent supplements providing a total of at least 1000mg calcium and 20ug vitamin D per day</p>
3 Iron	<p>Ferrous Gluconate</p> <p>Equivalent iron supplementation can be considered, please discuss with GP or bariatric dietitian</p>
4 Vitamin D	<p>Vitamin D (vitamin D3 is the recommended form)</p>
5 Thiamine	<p>Thiamine (also known as vitamin B1)</p>
6 Vitamin B12	<p>Vitamin B12 (also known as hydroxocobalamin) intramuscular injection</p> <p>We recommend routine and regular supplementation of vitamin B12 with injections. We do not routinely recommend the use of oral or sublingual vitamin B12 supplements</p>

Individual advice may be given by your health care professionals.

Where to get it from	How much to take	How long to take it for (unless individual advice is given)
Prescribed by your GP	One per day	For life
Buy from shop (such as pharmacist, supermarket or online)		
Prescribed by your GP	One, twice a day	For life
On prescription from your GP or buy from shop (such as pharmacist, supermarket or online)	As needed to meet dosage. We advise not to take more than 500mg calcium at any one time	
Prescribed by your GP	300mg, once a day	For life
On prescription from your GP or buy from shop (such as pharmacist, supermarket or online)	As needed to meet dosage	
Buy from shop (such as pharmacist, supermarket or online)	25ug twice a day (a total of 50ug a day)	For life
Buy from shop (such as pharmacist, supermarket or online)	50-100mg once a day See page 11 for more information	For the first 3 months after surgery
Prescribed by your GP and administered by a health care professional at your GP surgery	1mg injection	Every three months, start six months after surgery

The supplements recommended in the tables provide the appropriate nutrients in the amounts needed after bariatric surgery. Your GP or pharmacist may recommend a generic equivalent; this is acceptable for the calcium, vitamin D and iron supplements but not for the A-Z vitamin and mineral supplement as we cannot guarantee alternatives contain appropriate or sufficient levels of nutrients.

Further details about the amounts of nutrients you need are available in the “Guideline for the Supplementation and Blood Monitoring of Bariatric Surgery Patients”, which is available on our website.

### **Allergies and dietary preferences**

Some supplements contain allergens (for example nuts, soy and milk) and may not be suitable for vegans or vegetarians or be halal certified. If you are struggling to find a suitable supplement for your needs please contact the Bariatric Dietitians.

## When to take your supplements

When you take your supplements and what you take them with can affect how well your body absorbs them. To help them work as well as possible, we advise the following:

Supplement	Advice
Multivitamin and minerals	As these contain iron please refer to the advice for iron below
Combined calcium and vitamin D	<p>Should be taken at least two hours apart from A-Z complete multivitamin, minerals, trace element and iron supplements</p> <p>Calcium dose should be spread throughout the day with no more than 500mg taken at any one time, i.e. do not take all calcium supplements at the same time</p>
Iron	<p>Best taken with vitamin C containing food or drink if possible, such as a small amount of orange juice, fruit, vegetables or a fortified drink containing vitamin C</p> <p>Avoid taking with antacids, calcium supplements and foods/drinks high in phytates or polyphenols (this includes beans, peas, lentils, pulses, wholegrains, bran, brown rice, oats, potatoes, nuts, seeds, dark chocolate, cocoa, tea and coffee, including decaffeinated)</p>
Vitamin D	Can be taken with combined calcium and vitamin D supplement
Thiamine/ Vitamin B1	Can be taken with A-Z complete multivitamin, mineral and trace element supplements

### Example plan

With breakfast:	A-Z complete multivitamin, mineral and trace element supplement Iron Thiamine/Vitamin B1
With lunch:	Combined calcium and vitamin D Vitamin D
With evening meal:	Combined calcium and vitamin D Vitamin D
Before bed:	Antacid (routinely advised for the first one month after gastric band and three months after a gastric bypass and sleeve gastrectomy)



## Considerations when taking medications

We advise that you speak with your pharmacist to check if there is any special advice about taking your current medications with supplements. The following medications are examples of where advice changes:

Medication	Issue	Advice
Antacids (including Lansoprazole and Omeprazole)	Antacids can reduce the absorption of vitamin and minerals	Take antacid at the end of the day, avoid taking with vitamin and mineral supplements
Thyroxine	A-Z complete multivitamin, mineral, trace element and iron supplements and calcium can prevent the absorption of Thyroxine	Take Thyroxine two hours before or two hours after multivitamin and minerals, calcium and/or iron
Anti-coagulants (such as Warfarin)	Vitamin K, present in some multivitamin and mineral supplements, works against anti-coagulants	<p>If you are taking anti-coagulants choose an A-Z complete multivitamin and mineral supplement that does not contain vitamin K, such as Forceval</p> <p>If this is not possible and the A-Z complete multivitamin and mineral supplement contains vitamin K, you should inform your GP as they may wish to adjust your monitoring</p>
Isotretinoin/Roaccutane	This can affect vitamin A levels therefore caution is needed to prevent too much vitamin A	Discuss with the Bariatric Dietitian

# Nutritional monitoring (blood tests)

As part of a shared care approach, you can request your blood tests at your GP surgery. The table below outlines the blood tests to get and how often.

<b>Routine nutritional blood tests (this means they are advised for everyone and are regularly monitored)</b>
• Full blood count • Urea and electrolytes • Phosphate and Magnesium • Liver function tests • Ferritin • Folate • Vitamin B12 (serum MMA recommended if available/health care professional may test if concerned) • Calcium • Parathyroid hormone (PTH)
25(OH) Vitamin D
Zinc and Copper Vitamin A
HbA1c
Fasting lipids (including cholesterol and triglycerides)
Transferrin saturation
<b>Additional nutritional blood tests (only in special circumstances)</b>
• Vitamin A • Vitamin E • Vitamin K (INR) • Zinc and Copper • Selenium
Other nutritional tests may be done following the advice of a health care professional

Bariatric surgery and how often to get blood tests		
Gastric band	Gastric bypass	Sleeve gastrectomy
✓ Every 3, 6 and 12 months post surgery then yearly for life (for all surgeries)	✓ Every 3, 6 and 12 months post surgery then yearly for life	✓ Every three months in the first year then yearly for life
✓ Every 3, 6 and 12 months post surgery then yearly for life (for all surgeries)	✓ At six months and 12 months in the first year, then yearly for life	✓ At six months and 12 months in the first year then, yearly for life
X Not routine	✓ 12 months after surgery, then annually	✓ Zinc and Copper only 12 months after surgery then annually
If you had diabetes before surgery or if requested by health care professional: At six months and 12 months in the first year then as required		
If you had high cholesterol or triglycerides before surgery or if requested by health care professional: At six months and 12 months in the first year then as required		
Another marker of iron stores that can be tested if there are any concerns or as requested by health care professional		
If there are clinical concerns, as requested by health care professional		

### **It is important to note:**

- You may need to have blood tests more regularly if there are any concerns about your individual nutritional health and as advised by a health care professional.
- If a deficiency is found you may be offered further dietary advice or advised to take extra supplementation.
- The bariatric dietitian is available for you and your GP to discuss your blood test results with. For example, how to interpret a result and how to manage an abnormal result.
- There are also additional blood tests that may be needed, as explained in the table above.

## **Advice when planning, during and after pregnancy**

Pregnancy should not be planned until your weight is stable; this is usually at least 12 to 18 months after bariatric surgery. This is because there is a risk of nutritional related problems for both the baby and mother and it will allow the mother time to focus on and adapt to life after bariatric surgery.

**We advise all women who are planning pregnancy or are pregnant to contact their GP. It is also important that you contact our bariatric surgery team or refer to our website to access up to date advice and to obtain a copy of our patient information leaflet regarding pregnancy and bariatric surgery.**

### **When planning and during pregnancy**

Nutritional blood tests:

- When planning pregnancy you should have your routine and additional nutritional bloods (see page 18-19) tested at your GP surgery to check for any nutritional deficiencies.
- You should have your routine and additional nutritional bloods tested at least twice during your pregnancy.

### Supplements:

- All women who have had bariatric surgery require **5mg of folic acid**. This can only be obtained on prescription and should be taken for at least three months **before** conception (becoming pregnant). This should be continued until you are 13 weeks pregnant.
- Ensure the vitamin A in the A-Z supplement is in beta carotene form (retinol sources of vitamin A should be avoided during pregnancy). Forceval capsule is fine (Forceval soluble is not). If using an over the counter supplement, change to a pregnancy specific multivitamin and mineral supplement.
- All other supplements should remain the same unless advised otherwise by a health care professional.

### After birth and during breastfeeding

#### Nutritional blood tests:

- You should have your routine nutritional bloods (see page 18-19) tested at three months after giving birth to check for any nutritional deficiencies. This can be done at your GP surgery. Continue to have these tested every three months if you are breastfeeding.

### Supplements:

- If you changed to a pregnancy specific multivitamin and mineral supplement, return to the A-Z multivitamin and mineral supplement.
- If you have had a gastric bypass or sleeve gastrectomy we advise that you increase your A-Z multivitamin and mineral supplement back to two a day.
- All other supplements should remain the same unless advised otherwise by a health care professional.

## Further information

**Bariatric surgery service website**

[www.somersetft.nhs.uk/bariatric-surgery/](http://www.somersetft.nhs.uk/bariatric-surgery/)



## Contact details

### **Bariatric dietitian**

01823 343 394

bariatricsurgerydietitians@

somersetft.nhs.uk

Monday to Friday

9am to 4pm

### **Bariatric surgery secretaries**

01823 343562

Monday to Friday

8am to 4.30pm



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uk/index.php/627811?lang=en](https://forms.somersetft.nhs.uk/index.php/627811?lang=en)



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