This booklet has been designed by state registered dietitian’s, with patient involvement, to explain the process through questions and answers, to help you make the right decision.

Introduction

With certain medical conditions, some people may require alternative or ‘tube’ (gastrostomy) feeding to provide essential nutrition that is normally provided by eating and drinking. Listed below are some of the reasons why you may require a gastrostomy:

- Inability to eat or drink full amounts before or following surgery e.g. stomach or bowel surgery, or head and neck surgery.
- During radiotherapy or chemotherapy, when it may be difficult or has become difficult to eat normally.
- Due to a neurological condition, where difficulties with swallowing may be experienced.
- Inability to eat and drink sufficiently to maintain your weight before, during or after treatment.

One type of gastrostomy is a RIG. This stands for radiologically inserted gastrostomy (RIG).

This booklet has been written for patients who may require a RIG and carers and health professionals involved in the care of patients who are due to have a RIG placed.

What is gastrostomy / RIG feeding?

Gastrostomy or RIG feeding is a way of providing good quality liquid nutrition via a feeding tube. It has been designed for people who require tube feeding over a longer period of time. It is a small feeding tube, which is inserted directly into the stomach and is discreetly hidden under the clothes. (See picture on page 9).
How can a RIG help?

If swallowing becomes troublesome for you, the amount of food and drink you can manage may decrease. This may result in weight loss, dehydration and lack of energy. Also, for a variety of medical reasons, you may not be managing to eat and drink enough orally and this too may result in weight loss, dehydration and lack of energy. RIG feeding provides the extra calories and fluid to help build up energy levels and strength.

Following RIG insertion, many people report an improved sense of wellbeing, with increased energy levels. Patients who have had a RIG insertion have also stated that the good quality nutrition provided has reduced fatigue and exhaustion.

Difficulty with swallowing, or not having the ability or appetite to eat, can be upsetting for you, your family and carers. The RIG can help remove the anxiety and pressures, which often accompany meals by providing some or all of the nutrition you need from a specially prepared liquid feed.

RIG feeding can also help reduce the risk of chest infections, which can follow when food or drink accidentally passes in to the airways or lungs during swallowing. RIG feeding can also have additional benefits of helping manage symptoms such as constipation, diarrhoea and dehydration.
What risks are associated with having a RIG?

All treatments and procedures have risks and we will talk to you about the risks of a RIG. Although RIG insertions are relatively safe procedures, there are potential risks.

Problems that may happen straight away
There is a very small chance that your bowel or liver could be damaged during the procedure. However, this risk is minimised by the Radiologist inserting the RIG under X-ray guidance.

Risks associated with the antibiotics used prior to RIG placement include diarrhoea and allergic reactions such as rashes and anaphylaxis. Your doctor will check whether you have had an allergic reaction to penicillin in the past, to help determine the most appropriate antibiotic for you. Having an antibiotic prior to the RIG being placed reduces the risk of infection.

The RIG insertion involves the use of a contrast solution. This reveals the structures of the stomach and bowel on X-rays, which helps the doctor to insert the RIG safely. The contrast solution used has been associated with mild diarrhoea, nausea and vomiting.

Important

If you are allergic to or have had a reaction to contrast in the past, please notify your health care professional.

Problems that may happen later
There is a risk of the stoma / tube site becoming infected, however this can be treated.

Problems that are rare, but serious
There is also a risk of developing peritonitis, a potentially life-threatening infection of the abdomen. This can occur if the stomach.
contents leak into the abdomen. The risk of developing peritonitis is minimised by the stomach being held up against the abdominal wall when the RIG is inserted. This enables the tissue to seal around the tube, reducing the risk of stomach contents leaking into the abdomen.

The risks will be explained to you prior to the procedure and before signing the RIG consent form.

**What will happen if I choose not to have a RIG?**

You may have been advised to have a RIG inserted due to present or expected difficulties with feeding. If you choose not to have a RIG inserted, your doctor can advise on whether an alternative method of tube feeding could be an option for you. In the event of you choosing not to have a RIG or alternative feeding tube placed, it might not be possible for you to meet your full fluid and nutritional requirements. This could lead in dehydration and weight loss.

**What alternatives are available?**

The main short-term alternative to a RIG is a nasogastric tube (NGT), which is a thin tube placed through the nose down in to the stomach. An NGT is usually recommended if you require an alternative route of feeding for less than 4 weeks. The benefits of an NGT include the quick insertion and removal process and that an operation is not required to have an NGT inserted. The main risk associated with an NGT is aspiration pneumonia, due to feed accidentally being fed in to the lungs. This can happen if the end of the NGT feeding tube sits in the lungs, instead of the stomach. If you have an NGT placed for feeding, you will receive training on how to check the NGT is in the correct position, the stomach, prior to commencing feeding.

The main long-term alternative to a RIG is a percutaneous endoscopically placed gastrostomy (PEG). This is placed endoscopically under sedation and is usually recommended to patients who are able to have oral endoscopic procedures. This procedure may not be possible if you have a limited mouth opening,
limited respiratory function or a constriction or mass in your throat or oesophagus.

Your dietitian will be able to discuss the alternatives to a RIG in more detail with you if required.

**How should I prepare for a RIG?**

- You will need a short stay in hospital when the RIG is placed. Thus, it is recommended that you bring a change of clothes during your admission. On average, the stay will be about 4-5 days; this may be shorter if you are not going to start using the RIG straight away.

- You will be informed in advance the date and time that you will need to come to the hospital to have the RIG inserted.

- You will need to come in the day before the procedure and stay for a few days afterwards. This is necessary to ensure you are tolerating the feed well, to check the RIG site and to make sure that you are familiar with all the procedures.

- You will need to stop eating and drinking for 6 hours before the procedure takes place.

- The hospital doctors will be able to advise on whether any of your medications need to be stopped on the day the RIG is due to be inserted.

**Asking for your consent**

We want to involve you in all the decisions about your care and treatment. If you decide to go ahead with treatment, by law we must ask for your consent and will ask you to sign a consent form. This confirms that you agree to have the procedure and understand what it involves. Staff will explain all the risks, benefits and alternatives before they ask you to sign a consent form. If you are unsure about any aspect of your proposed treatment, please don’t hesitate to speak with a senior member of staff again.
If you are a carer or patient who is unable to consent, consent may be obtained through a best interest meeting.

**How is a RIG inserted?**

- The procedure is done in the X-ray department at the hospital.
- A blood test will be taken prior to procedure and you will be given some antibiotics through a needle in your arm.
- If you don’t already have one, a thin tube called an NGT will be temporarily inserted through your nose, into your stomach. A water soluble radiological contrast liquid known as Omnipaque will be given via the NGT or via an alternative route prior to RIG insertion. This will enable your stomach and bowel to be visible under X-ray.
- The procedure requires a minor operation, and is usually inserted under local anaesthetic, with or without a mild sedation, depending on your clinical need.
- It is necessary to lie flat or at a slightly elevated angle during the procedure, depending on your clinical need.
- The whole process takes about 30 minutes to complete.
- X-ray will be used to decide the most suitable point for inserting a needle. The NGT will be used to inflate your stomach with air. A fine wire is then placed through the needle and this wire is used to guide the tube into your stomach.
- As this is a minor operation, you may have some pain for a few days afterwards. This will be controlled with regular painkillers.
Picture 1:  RIG feeding tube in stomach  (image used with Vygon UK permission)

Picture 2:  RIG feeding tube  (image used with Vygon UK permission)
What happens after the RIG Insertion?

- Upon returning to the ward, you will not be able to eat or drink for at least 12 hours. The Radiologist who inserted your RIG will document guidance for the ward staff as to when you can start feeding.

- Fluid will be given to you through a needle in your arm during this period, to prevent you getting dehydrated.

- After 12 hours, the nurses will use the RIG tube to give you a small amount of water over 2 hours. If this is tolerated, feeding can then usually commence via the RIG according to the dietitian’s feeding plan, in addition to water and medications being administered through the RIG as required. You can usually resume an oral diet at this point if you are safe to do so.

- Before you go home, yourself and your family/carers will be fully trained on how to manage RIG feeding at home, using feeding syringes or a pump.

- The RIG tube is secured with stitches (sutures), to hold your stomach against your abdomen wall. These are locked in place with external locking buttons on the surface of the skin. You will notice these buttons around your gastrostomy tube on your stomach (there could be between one and four of these small round buttons). Please refer to the photograph below:

![Picture 3: RIG feeding tube stitches (sutures), held in place with external locking buttons on skin surface](image used with Vygon UK permission)
• The stitches that secure the buttons will eventually dissolve. After two to five weeks, the buttons will gradually fall off. If the buttons haven’t fallen off after six weeks, your doctor or nurse may opt to cut the stitches below the buttons at the skin level.

• The RIG is held in place in the stomach by an internal balloon, which acts as the retention device.

• You may find it preferable to tape the tube securely to the skin to prevent movement of the tube resulting in friction in the tube entry or ‘stoma’ site.

• In the first few weeks prior to the stitches falling off, you can wash with a flannel or have a light shower making sure the tube end is closed, however you should NOT have a bath. After the stitches have dissolved and the external locking buttons have fallen off, you may have a bath, making sure the tube end is closed. Dry the area thoroughly afterwards.

Important:

• Do not rotate the external locking buttons, as this may weaken the sutures, resulting in early detachment.

• Do not rotate the tube for the first 2 weeks and / or until the buttons have fallen off or have been removed.

• Your dietitian will advise you how often you should rotate your tube.

How does it all work?

How soon after the tube insertion can I start feeding?

The X-ray department will send instructions back with you. It normally states that after 12 hours, water can be administered via the RIG for 2 hours. If this is tolerated, the tube can then be used for water and medications. Following this, 24 hours after the tube has been placed, feed can be introduced slowly to begin with, so that your body can adjust to the feed.
How will I use my RIG………..?

Feeding - how will I be fed?

There are two main ways:

- **Via a pump** - this is the standard way of feeding in hospital and at home. The bag or bottle of liquid feed is hung on a drip stand and pumped through the RIG at a set rate (see picture below).

- **By bolus feeding** – liquid feed is drawn up in to a 60ml syringe and then slowly syringed in to the RIG, at various intervals during the day (see pictures on page 13 for examples). However, to receive the full volume of feed, you may require frequent boluses throughout the day. This can be time consuming and therefore not suitable for everyone. When bolus feeding, please note that each bolus should take between 5-20 minutes to administer.

Your dietitian will help you decide the most suitable method for you.

![Photograph demonstrating RIG feeding via a pump at home](image)
When you are feeding, it is important to make sure that you either:

- Sit upright if you are feeding in the daytime
- Have pillows to prop you up or have the head (top) of the bed raised to an angle of 45° if you are feeding overnight or whilst sleeping. This helps to prevent feed from being regurgitated.
What equipment will I need?

Giving sets:
- A giving set is the tube that connects the feed bottle/bag to your feeding tube through the pump.
- You will usually be given a supply of giving sets and feed to take home.
- Giving sets must be changed each day (every 24 hours).
- However, if you are using more than one container of feed, you can use the same giving set for 24 hours.
- Giving sets should be disposed of in the same way as normal household waste.

Pump:
- Whilst in hospital, you will be given the choice about whether to have a pump delivered to your home or to have one delivered to your ward that you can then take home with you.
- The pump is on long-term loan from a company, and you or your carer will be shown how to use it by the company nurse. You will also receive a booklet with detailed instructions on how to use your feeding pump and advice on troubleshooting.
- If you have any problems with your pump when you are at home, you should contact your feeding company.

Syringes:
- 60ml syringes are used to flush your tube with water and for your medicines, if appropriate.
- You will also use syringes if you choose to go home with the syringe / bolus feeding method, as opposed to a pump and giving sets.
You will usually be given seven day’s supply of syringes to take home.

Your district nurse or feed company will supply more syringes after 1 week. In the event of the district nurse providing syringes, they will be able to provide you with guidance on managing the feeding syringes at home, along with guidance on the frequency of their use.

**Important:**

- **Before** and **after** feeding (using either method), you should use a 60ml syringe to flush the tube with at least 50ml fresh tap water. This is very important as it prevents the tube from blocking.

(Refer to your individualised feeding regime for guidelines on additional water flushes).

**Medications:**

**How will I take my medication?**

If you find it hard to swallow your medication, it can be taken via the RIG rather than orally. Medication will be prescribed in a liquid form where ever possible and administered down the RIG tube using a syringe. If the medication is unavailable in a liquid form, you may have to crush the tablets into a fine powder, mix with water to make a solution and then administer it down the tube with a syringe. Your pharmacist can give you advice about this. The tube must always be flushed with water before and after administration of drugs to prevent the tube blocking.

If you need to take more than one medicine at a time, you should make sure that you flush with 10ml water between each of these.

**Fluid / water:**
The tube should be flushed with 50mls of freshly run tap water before and after the feed or medicine administration to prevent tube blockage. You should only use the tube to administer the prescribed feed, water and liquid medication.

If you have a condition where you are particularly prone to infections, your dietitian may recommend that you use cooled boiled water or sterile water.

What happens when I go home?

Will having a RIG change my life at home?
Having a RIG should not affect or restrict your normal activity. RIG feeding is ideally suited to be used at home. If you decide to be fed via a pump, this will involve being connected to the pump for a set period of time and therefore many people choose for this to be done over-night, so that it does not interrupt daily activities. However, some people prefer to be fed during the day. The pump either sits on a small, waist height drip stand with wheels, which is easy to push around, or sits on a tabletop. If you decide to choose bolus feeding, this method does not require a pump or giving sets.

What feed will I receive?
Your dietitian will recommend the most suitable liquid feed for you, which contains all the energy, protein, vitamins, and minerals you need in a day. This feed has to be prescribed by your GP. You may receive part or all of your daily requirements via your gastrostomy tube, depending on your needs. You will agree with the dietitian the amount of feed required and what time it should be administered, to best suit your lifestyle.

You may also require extra fluids via your tube and the dietitian will advise you on this.

Who supplies the feeds?
Before discharge, the dietitian will contact your G.P, requesting that...
they prescribe the feed for you. The G.P. will then write out a monthly prescription for the feed. Depending on your local area, you will either get your feed from your local pharmacy or the Home Care Company will deliver it directly to your home. Either your district nurse or the Home Care Company will supply the giving sets and syringes. This depends on your local health authority. The hospital dietitian will explain which system you will be using, when you come in for the RIG.

**How much do the feeds cost?**
The feed is only available on prescription; therefore you pay the normal prescription cost. (Unless you are exempt from paying prescription).

**How do I store the feeds?**
Unopened containers of feed should be kept at room temperature. Once opened the feed should be used immediately or be kept in the fridge in between use. Do not use any feed that has been open for longer than 24 hours. Empty the unused contents down the sink.

**What support will I receive at home?**
On discharge from hospital, you will not be left to cope alone. There are many health professionals within your local community available to support you. It does depend on you and/or your carers’ ability to manage the RIG feeding. If you or your carers are intending to be responsible for the RIG, the district nurse can visit to offer help and assistance, should it be required. If, however, you are not in a position to look after the RIG, then it is often possible for the district nurse to come in to your home daily to help you.

Within 2 weeks of discharge, a community dietitian will come and visit you, unless follow-up care has been agreed with your hospital dietitian. They will monitor your tolerance to the feed, weight etc, and will provide follow up visits and telephone contact as required. The feed and Home Care Company will also have a helpline. Your GP will also offer support and provide you with your monthly feed prescription.
Frequently asked questions

Will I be able to take anything by mouth?
Once you have had a RIG, it does not necessarily mean that you have to stop eating and drinking. This will depend on your condition and treatment. However, your Speech and Language Therapist will advise you whether this is safe for you, and what types of food and drinks are suitable.

Will I gain or lose weight?
If you have lost weight your dietitian will take this in to consideration when designing your feeding plan, with the aim to regain some of the weight you have lost. If you don’t need to gain weight, the dietitian will aim to ensure that your weight is kept stable.

If I am not eating anymore, do I still have to look after my mouth?
Your mouth must be looked after even if you are not eating. Plaque can build up very quickly so it is essential to brush your teeth at least twice daily. A saline mouthwash is usually recommended for good mouth health.

Will it help with my disease/condition?
Your disease may continue to progress irrespective of the type of feeding. However, if you have lost weight through eating and swallowing problems, a better nutritional intake may help you feel less tired, less dehydrated and hungry.

Will a RIG affect my bowels?
Many people do have trouble with their bowels and there can be a number of reasons for this, including weakened muscles, poor fibre intake or poor fluid intake. RIG insertion can help with these problems. It can take a while for the bowels to return to a normal pattern following RIG insertion. Your dietitian may advise on the use of a fibre-containing feed if constipation is a problem. If you have problems with persistent diarrhoea, your dietitian will also take this in to consideration when deciding on which feed to use. There are special feeds which can be used to improve diarrhoea.
Can I go swimming?
Yes. It is advisable to cover the site with a waterproof dressing when swimming in public pools. Make sure the tube end is closed. The district nurse will be able to advise on the appropriate dressings.

What about sexual relationships?
Having a RIG should not interrupt your home life and this includes personal and sexual relationships. You can still share your bed with your partner and it shouldn’t interfere with sex or get damaged. It may help to secure it with dressing tape to prevent it getting pulled.

Can I still go on holiday overseas with a RIG tube?
If you are registered with a Home Care Company, the company may be able to arrange delivery of feed to your holiday destination, as long as they are given 6-12 weeks notice that you require feed to be delivered overseas.

In the unlikely event that the Home Care Company cannot deliver feed to an overseas destination, most airlines are able to give extra luggage weight allowance for feed, if they are provided a letter in advance from the hospital informing them that the extra weight allowance is required for medical reasons.

You can discuss this with your dietitian should the need arise.

How long do the tubes last?
The first RIG tube change will take place in hospital. The tube will need replacing approximately three to four months after the initial insertion. This will need to be organized through your GP and/or your dietitian.

If you require alternative feeding for longer than three months then ask your dietitian about the option of changing the RIG tube to a low-profile gastrostomy tube. This can only be done after three months of having the RIG tube. Low profile gastrostomy tubes are often described to be more cosmetically acceptable.

Is it reversible?
If the RIG is no longer being used or is no longer necessary, then it
can be reversed or removed. Your hospital team, community dietitian, district nurse or GP can help arrange this at your local hospital.

**Is it my decision whether I have a RIG?**
Yes. The decision is yours. However, we recommend that you talk to your family and to all the people involved in your care to ensure you are fully informed before making the decision. e.g. hospital consultant, GP, dietitian, speech and language therapist, community nurse, specialist nurse.

**Troubleshooting Advice**

**What happens if I’m not happy with the feeding regimen when I’m at home?**
Your dietitian will suggest a feeding plan that aims to suit your lifestyle. Once you get home, if you find that this feeding plan prevents you from continuing your normal daily activities, it can easily be changed to suit you.

**What happens if I develop diarrhoea, constipation and / or vomiting?**
The feed is unlikely to cause any of these. It could be a side effect of medicines you are taking or you may have a stomach upset. Please contact your GP or district nurse as soon as you can. Always ensure you wash your hands when handling your feed or feeding equipment to avoid the risk of contamination. You are also likely to require more water flushes via the tube to meet your requirements.

**What happens if I develop a cough or a chest infection?**
Contact your GP or district nurse immediately.

**What do I do if my tube starts leaking?**
Stop your feed and contact your district nurse or dietitian immediately.

**What do I do if my tube site is painful, red, inflamed or looks infected?**
This may be due to an infection, which may need further treatment. Please contact your GP or district nurse immediately.

What happens if the tube blocks?

- Make sure that the feeding tube is not kinked.
- If the blockage is visible in the tubing, massage the tube between your fingers to break up the blockage.
- Place a syringe filled with warm water (not hot, as the tube material will become warm too) onto the feeding tube and gently pull and push the plunger of the syringe. This causes turbulence in the feeding tube which may dissolve the blockage.
- If the blockage still remains, contact your doctor or district nurse. If the blockage is caused by your medication, a solution of sodium bicarbonate / baking soda (1 teaspoon for a 50ml syringe full of water) may dissolve it. However, you should not use sodium bicarbonate / baking soda to unblock your tube more than 3 times in a 24-hour period.
- In some cases, a blockage cannot be cleared and the tube will need to be replaced.

What happens if the tube falls out or gets pulled out?
You should go to the nearest Accident & Emergency department as soon as possible to get another tube put in. If you leave it too long, the incision could start closing up, which makes inserting another gastrostomy tube more difficult.
Important:
Occasionally, it may be that you are unable to meet your fluid requirements. Certain situations will require you to increase your fluid intake, for example:

- If you have diarrhoea
- If you are vomiting
- If you have a temperature/fever
- If the weather is hot

Please feel free to discuss your fluid requirements with your dietitian.

Ongoing management of the RIG

Balloon water changes via the balloon port....

- Balloon water changes are not required during the first 2 weeks following placement of the RIG

- After the first 2 weeks, check the volume of the water in the balloon at least once a week. To do this attach the luer-slip syringe to the balloon port and withdraw all the water while leaving the feeding tube in place. If there is less fluid than the amount originally prescribed, replace it with the prescribed amount. Your dietitian will advise you how much water to place in the balloon.

- Ensure the correct volume of water is placed in the balloon, as under-inflation may result in tube dislodgement or gastric leakage.

- When changing the water pull back the retention disc by...
approximately 2-3 cm and push the RIG tube towards the stomach.

- Next, attach a 5-10ml oral/enteral syringe to the balloon port while holding tube in place (your health care professional will provide you with the appropriate size syringes). Withdraw the water in the balloon and discard the water.

- Then, using the syringe, fill the balloon with the required volume of water via the balloon port. Pull back the RIG tube gently, until you feel resistance, which will indicate the balloon is against the stomach wall.

- Now, return retention disc to its correct position.

- Record balloon volume changes weekly.
Where can I get more information?

Please contact your dietitian if you would like more information on the RIG.

Contact details

The Department of Nutrition and Dietetics

Address: The Department of Nutrition and Dietetics
3rd Floor East
250 Euston Road
London, NW1 2PG

Direct telephone: 0203 447 9289
Switchboard: 0845 155 5000
Fax: 020 7380 9811
Website: www.uclh.nhs.uk
How to find us

No car parking is available at the hospital. Street parking is very limited and restricted to a maximum of two hours.

Please note the University College Hospital lies outside but very close to the Central London Congestion Charging Zone.
Space for notes and questions