Low profile balloon retained ‘button’ gastrostomy tubes – in children

Introduction
A gastrostomy is a surgically made stoma (‘hole’) from the skin to the stomach. A gastrostomy is formed when a person cannot eat or cannot eat enough to meet nutritional requirements. A gastrostomy tube is used to deliver nourishment, liquid and medication (or a combination of these) into the stomach.

What is a low profile balloon retained gastrostomy tube?
A ‘low profile balloon retained gastrostomy tube’ (also known as a ‘button’ or ‘Mic key button’) is a small skin level gastrostomy tube made of silicone. There is an inflatable balloon at one end (inside the body) and an external base (outside the body) at the other.

The external base:
The external base holds the tube in place yet allows air to circulate around the skin. The bottom of the base should rest just above the skin surface.
The silicone retention balloon:
The low profile balloon retained gastrostomy tube has a balloon which is inflated inside the stomach to hold the tube in place. The balloon is filled with sterile (cooled, boiled) water which should be changed once per week.

The balloon valve:
The balloon which holds the tube in place is inflated and deflated by inserting a luer tipped syringe into the balloon valve.

Advantages of the low profile balloon retained gastrostomy tube
- Low profile when not in use so there is no long external tubing.
- Can be replaced at home therefore no need for anaesthetic or hospital admission.
- Should the gastrostomy tube no longer be needed, it can be removed with medical advice without the need for surgery.

Disadvantages of a low profile balloon retained gastrostomy tube
- Should the retaining balloon perish or burst, the gastrostomy tube will fall out. This requires emergency attention within one to two hours; otherwise the stoma ('hole') will close making it difficult or impossible to replace a new tube.
- Should the tube get accidently caught it can pull out. This requires emergency attention within one to two hours; otherwise the stoma ('hole') will close making it difficult or impossible to replace a new tube. To prevent the tube getting accidently pulled it is important that the extension set is always removed when not in use.
- All carers (for example, parents/baby sitters/school) need to be both competent and confident with tube replacement in case an emergency situation arises whereby the tube has fallen out.
- The gastrostomy tube is a foreign object in the body and can therefore be associated with infections around the site. Daily cleaning of the surrounding skin helps to prevent this.
- Gastrostomy tubes can block if not flushed adequately (see section below on tube blockage).
- Serious complications related to changes of low profile balloon retained gastrostomy tubes are very rare and symptoms are seen usually within a maximum of 72 hours after their insertion or after a tube change. If your child develops any of the ‘red flag’ symptoms within 72 hours of gastrostomy insertion or change you should contact the paediatric surgery nurse specialist team (contact number at the end of this leaflet).
The nurse specialist team are available Mon-Fri 08:00 to 18:00 excluding bank holidays. Outside of these hours you should speak to your GP or local hospital who will contact the paediatric surgery specialist registrar at Addenbrookes. The ‘red flag symptoms’ are:

![Red Flag Symptoms]

- Pain or signs of distress within 72 hours of insertion/change
- Fresh bleeding within 72 hours of insertion/change
- Leakage of feed around the tubing within 72 hours of insertion/change

Administering feed/fluids via a low profile balloon retained gastrostomy tube

- It is important to wash hands carefully before and after accessing the gastrostomy tube.
- It is essential that all feeds, fluids and flushes are administered via an approved locking extension set for your tube which is of the same brand as the gastrostomy tube itself. Using different manufacturer’s extension sets can cause damage to the feed valve.
- Syringes should **never** be inserted into the device directly as this will break the feed valve.
- A ‘secure-lock extension set’ should be used to deliver feeds/fluids and this should be changed every seven days (see section on extension sets below).
- Your gastrostomy care team will recommend a feeding plan suitable for your child’s needs and will provide teaching for you on how to administer it. This may be through a pump, by gravity ‘bolus’ feeds or a combination of both.
- It should not be necessary to check the position of the tube with pH strips prior to feeding unless you are concerned that it does not have its normal appearance and/or may have dislodged.

Administering medication via a gastrostomy tube

- Administering medication correctly will avoid the gastrostomy tube becoming blocked.
- Remind anyone prescribing medication for your child that the medication is to be delivered via the gastrostomy tube.
- Remember to wash your hands before and after using the gastrostomy tube.
- Always administer medications and flushes via an extension set which is designed for use with your child’s gastrostomy tube.
- Never insert a syringe directly into the gastrostomy tube itself as this will break the feed valve.
- Ask that your child’s medication is provided in a liquid form wherever possible.
Some liquid medications are known to be associated with tube blockages. They therefore need to be further diluted with water (usually a 50:50 dilution – half liquid medication, half water) before being administered via a gastrostomy tube. Ask a member of your gastrostomy care team if you are unsure.

**Clarithromycin (an antibiotic) is known to irreparably block gastrostomy tubes and therefore we advise that this medication is avoided via tube.**

- If medication is only available in tablet form, seek advice from your GP, pharmacist or nurse specialist on whether tablets can be crushed and mixed with water. Also ask how you make a solution with crushed tablets as tablet particles can lead to tube blockages.
- Ensure the gastrostomy tube is flushed between drugs and with a minimum of 20mls of water after drugs. Use sterile (cooled, boiled) water if your child is aged below one year. (Smaller volumes may be used in exceptional circumstances).

**General care**

**Cleaning**

- Daily care of the gastrostomy site and tube will reduce the possibility of soreness or infections. Older children should be encouraged to care for their gastrostomy sites themselves.
- Always ensure that you wash your hands before and after caring for your child’s gastrostomy tube.
- The gastrostomy site should be cleaned daily with warm soapy water.
- During cleaning, check that the gastrostomy tube is not becoming too tight or too loose. You should be able to lift the low profile gastrostomy tube 2mm from the skin. If you are concerned it may be too tight/loose contact a member of your gastrostomy care team.
- Always avoid using cream or powders on the skin around the tube (unless otherwise advised by your care team). This can damage the tube material and may lead to irritation of the skin and give rise to infection.
- Gastrostomy sites can become infected. If you notice that the skin is becoming inflamed or there is discharge (‘oozing’) from the site you should contact a member of your gastrostomy care team.
- Dressings around the gastrostomy tube are usually not required (unless advised in specific circumstances when specific dressings for use around a gastrostomy tube will be provided).

**Flushing**

- The low profile balloon retained gastrostomy tube should be flushed **through an approved extension set** after any feed and/or medication has been administered.
Unless otherwise specified by your dietician, a minimum of 20mls of water should be used for flushes (see section on ‘administration of medications’).

- Your dietician may advise that you give a flush prior to administering a feed to ensure your child’s fluid requirements are met.

### Changing water in balloon

- The purpose of changing the water is to ascertain the condition of the balloon. If the balloon is beginning to perish this will be indicated by either drawing back (‘aspirating’) less water than expected and/or the water which is aspirated being discoloured. If either of these are observed you should contact your community nurse within 24 hours. If these signs are ignored the balloon is at risk of bursting and the gastrostomy tube may fall out.
- If the low profile balloon retained gastrostomy is the first gastrostomy tube that your child has had the water in the retaining balloon should not be changed until the tube has been in place for four weeks (while the tract heals) but should then be changed weekly thereafter.
- If your child has had a different type of gastrostomy tube before and has been changed to having a low profile balloon retained gastrostomy tube, the water in the retaining balloon should be changed for the first time seven days after it is inserted and then weekly thereafter.

### Procedure

- **To change the water in the retaining balloon:**
  1. Collect together the equipment required:
     - Two syringes
     - Sterile (cooled boiled) water
  2. Wash hands.
  3. Draw up 5mls of the water into one of the syringes.
  4. Hold the gastrostomy tube still by placing a finger and thumb on either side.
  5. Insert the empty syringe into the balloon valve (marked ‘BAL’) and remove all water from the balloon.
  6. Check the aspirated water in the syringe for volume and colour.
  7. Discard old water.
  8. Take new water, insert syringe into balloon valve and let go of syringe. If the syringe has been inserted fully it will stay connected to the tube on release.
  9. Gently push the syringe so that the water is injected into the device.
  10. Once all of the water has been injected, remove the syringe by using a slight twisting motion. It is important to keep your thumb on the end of the syringe whilst removing it to prevent water being expelled back into the syringe spontaneously.
Resizing

- As children grow they may need a longer or shorter low profile gastrostomy tube. You will know when a change of size is required as the gastrostomy tube will appear too tight or too loose. (You should be able to lift the low profile gastrostomy tube 2mm from the skin). If you are concerned that it may be too tight or loose contact a member of your gastrostomy care team. They will be able to re-measure the gastrostomy tract and advise what length is required.

Replacing extension sets

- We advise that the extension set is changed every seven days. Between each use the tubing should be sterilised for infants less than one year of age or washed with hot soapy water, rinsed, then stored as dry as possible in children over the age of one year.

Infection

- Daily cleaning of the gastrostomy site with soapy water will help to reduce the risk of infection.
- If you notice that the gastrostomy site is inflamed, red, sore, oozing and/or discharging, contact a member of your gastrostomy care team for advice.

Changing and replacing a low profile balloon retained gastrostomy tube

A silicone gastrostomy generally lasts for several months but its lifespan will vary in each individual child according to several factors, for example medication, volume of water used to inflate the balloon, gastric pH (acidity). Your gastrostomy care team will teach you how to identify when your child’s tube needs replacing. They will advise you on the frequency, which is usually every three months.

An advantage of the low profile balloon retained gastrostomy tube is that it can be changed without the need for an anaesthetic. Most children have their tubes changed at home, often by a community nurse who can also teach you how to change your child’s tube. Even if you are not keen on the idea of changing your child’s tube yourself it is important to know how to do this in case of an emergency or being away on holiday etc.

To replace a low profile balloon retained gastrostomy tube:

1. Collect together equipment which will be needed to place a new tube:
   - New tube
   - Sterile (cooled boiled) water
   - Two syringes
   - Lubricating jelly (for example, KY jelly)
2. Wash your hands.
3. Check the expiry date on the packaging prior to opening it.
4. Before inserting the new tube it is important to check that the parts all function.
   - Draw up 5mls of the water into one syringe.
   - Push the syringe into the balloon port (marked BAL).
   - Let go of the syringe and ensure that when you let go the syringe stays attached in the balloon port.
   - Push the water into the balloon and disconnect the syringe.
   - Examine the balloon for faults (for example, leaks) and ensure that the shaft is in the centre of the balloon. If the shaft is to one side massage the balloon in your hand until it is centralised and therefore fully symmetrical (leakage may occur if the balloon is not symmetrical when inside the stomach).
   - Place the syringe back into the balloon port and deflate the balloon fully.
   - Refill the syringe to 5mls with the water (a small amount of water will have been taken up by the T-shaped part of the device).

5. Apply a small amount of lubricating gel to the tip of the tube and then lay the tube on a piece of gauze (supplied with the tube).

6. Attach the second syringe (which should still be empty) to the balloon valve (marked ‘BAL’) of your child’s gastrostomy tube. Once the syringe is pushed fully in, water will begin to be expelled from the balloon out into the syringe. (Sometimes it might be necessary for you to gradually pull back on the plunger of the syringe but usually water will be expelled spontaneously).

7. Once no more water can be removed disconnect the syringe from the balloon valve and discard it.

8. Gently remove the tube from your child’s stomach.

9. Take the new tube and gently push the device into the tract until the top part sits flat against your child’s skin.

10. Hold the gastrostomy tube still by placing a finger and thumb on either side to support it.

11. Insert the newly filled syringe into the balloon port, let go of the syringe and ensure it stays connected.

12. Gently push the syringe so that the water is injected into the device.

13. Once all of the water has been injected, remove the syringe by using a slight twisting motion. It is important to keep your thumb on the end of the syringe whilst removing it to prevent water being expelled back into the syringe spontaneously.

14. Wipe away fluid or gel from the skin.

15. Check the tube for correct placement by aspirating a small amount of gastric contents using the extension set and test it on a pH strip (pH 1-5) to ensure correct positioning.

16. Wash hands and dispose of equipment.

17. Telephone your delivery company, community nurse or dietician and order a new gastrostomy tube so that you have a spare one again.
• Complications resulting from changes of tube are very rare. However, if any ‘red flag’ symptoms are seen you should contact the paediatric surgery nurse specialist team (contact number at the end of this leaflet). The nurse specialist team are available Mon-Fri 08:00 to 18:00 excluding bank holidays. Outside of these hours you should speak to your GP or local hospital who will contact the paediatric surgery specialist registrar at Addenbrookes. The ‘red flag symptoms’ are:

<table>
<thead>
<tr>
<th>Red Flag Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pain or signs of distress within 72 hours of insertion/change</td>
</tr>
<tr>
<td>• Fresh bleeding within 72 hours of insertion/change</td>
</tr>
<tr>
<td>• Leakage of feed around the tubing within 72 hours of insertion/change</td>
</tr>
</tbody>
</table>

Common questions

Can I/my child bath or shower?
Yes. You/your child can bath or shower as normal. Dry the area thoroughly afterwards.

Can I/my child go swimming?
If the low profile balloon retained tube is the first gastrostomy tube that your child has had, your child should not go swimming for two weeks. If your child’s gastrostomy tube has been changed to a low profile balloon retained tube swimming is permitted without delay. Make sure the tube cap is closed.

Will I/my child be able to move around freely?
Yes. Your/your child’s gastrostomy tube should not affect or restrict your normal activities.

Where do I get the equipment and supplies?
We will provide you with initial supplies (usually enough to last for one week) and a spare tube to use in case the tube falls out. You will receive further supplies from your community healthcare team; some areas use a home delivery service. If you have any problems getting supplies at home please ring your nurse specialist who will be able to help you. You should remember to order new supplies in good time before you run out and only use equipment for the length of time specified by the manufacturer.

Will I/my child be able to go to school?
You/your child should be able to go to school as normal. Staff at the school can be taught what to do if the device falls out and spare supplies should also be kept at the school for emergency use.
Can we go on holiday?

- It is fine to travel with your child but we advise that you discuss travel plans with your doctor or gastrostomy care team. It may be helpful, particularly if your child has complex needs, to take a letter with you from your care team. This can help you if you need to seek medical advice whilst on holiday. In addition, letters from your care team can be useful to prevent any problems with airport security when you are travelling with ‘medical equipment’.
- Remember to take extra supplies – emergency and replacement set - with you and to pack at least some of these in your hand luggage in case your main luggage goes astray.
- Use a large dressing to avoid getting sand near the stoma site as this can irritate the skin.
- Your home delivery company will also offer practical advice.

If I am not using my tube what care is required?

The tube must be flushed at least once per day with a minimum of 20mls of water (sterile water if child is aged below one year).

Problem solving

Tube blockage

To prevent tube blockage the tube should be flushed through an approved extension set with at least 20mls of water after giving feeds or medication. Always ensure medications are being administered in a way that limits the chances of tube blockage (see section on ‘administering medication’).

If the tube does block you may try the following. If unsuccessful on the first step, try the next:

1. Ensure all clamps are open and the extension set is not kinked.
2. Try to flush using a pumping action with the plunger on the syringe.
3. Connect a 50ml syringe to the end of the tube and try to draw back (‘aspirate’).
4. Mix a solution of sodium bicarbonate (baking soda). Mix half a teaspoon of sodium bicarbonate (baking soda) with 30mls of boiling water. Leave this to cool to a warm temperature then use a 10ml syringe to flush this solution down the tube. Leave the solution in the tubing for at least two hours (can be left overnight) then flush it through with 20mls of water. If you do not have any sodium bicarbonate, try soda water or pineapple juice.
5. If the above does not help, it is advisable to change the tube. (Contact your community nurse to help with this if you are not experienced in tube changes).

Balloon will not deflate

If you cannot extract water from the balloon with the syringe:

1. Ensure that the syringe has been inserted correctly. If the syringe has been pushed in too far or not far enough, water will not be expelled from the balloon.
2. Ensure that the recess in the balloon valve is clean. Occasionally this recess can trap spills of feeds or other material. Clean inside the recess with warm water (cotton buds are useful for this) then try to insert the syringe again by pushing it firmly into the valve with a push and twist motion.

3. If the balloon will still not deflate you should contact a member of your gastrostomy care team within 24 hours to check the nature of the problem.

Leakage from feed valve

- The feed valve (located in the top of the gastrostomy tube) is designed as a valve which closes each time the extension set is disconnected. This prevents stomach contents from coming out when the extension set is disconnected.
- Using a syringe directly into the feed valve or using an extension set from a different manufacturer to the gastrostomy tube can break this valve.
- If a child has trapped wind in their stomach this can be forced out via the feed valve and, along with the air, some leakage can also leak out. If you are concerned that your child may have trapped wind you may need to decompress via the tube (see section on decompression below); contact your community or specialist nurse for advice.
- Ask a member of your gastrostomy care team if you have concerns relating to the feed valve.

Leakage of feed from stoma site around the tube

- In most cases leakage of feed occurs due to a minor problem (see below). However, if leakage of feed is seen within the first 72 hours following tube insertion/change which is not normal for your child you should seek advice from the clinical nurse specialist team (see section ‘disadvantages/complications’)
- If feed is observed coming from the stoma site you should carry out a water change to ensure that the balloon has not deflated (see section ‘general care: changing water in the balloon’).
- Assess whether you feel the gastrostomy tube appears too tight or loose. If you are concerned, contact your community nurse who will be able to re-measure the gastrostomy tract to ensure that the ideal tube size is being used.
- If the problem persists, additional water can be added to the balloon in an attempt to create a tighter seal near the stomach wall. Instead of having a standard 5mls of water in the balloon, add 7mls. If the problem persists, a further 2mls can be added (total of 9mls). A maximum of 10mls can be added to the balloon.
- Leakage from the stoma site can occur because the stomach is too full/contains gas. If the above advice does not help, you may be advised to contact your dietician to discuss changing feeding regimes, for example decreasing the flow rate.
- Please report any action you have taken to your gastrostomy care team.
Stomach is swollen and/or feels hard: ‘venting’ (or ‘decompression’)

- Some children suffer from trapped wind. This gas can be released by decompressing the stomach via the gastrostomy tube.
- To decompress the stomach attach an approved extension set to the gastrostomy tube with syringe attached (with the plunger from the syringe removed). Hold the syringe 10cms above the height of the child’s abdomen and unclamp. If necessary aspirate the gas.

Sore skin

- Redness or soreness around the skin and stoma may be the result of gastric leakage.
- Clean and dry the area frequently.
- Call your community nurse if the stoma is:
  - persistently red and sore
  - the stoma emits an odour
  - the surrounding skin is swollen
  - if you observe pus
  - there is bleeding from the site.

Overgranulation

Granulation tissue is the result of the body trying to repair itself. The tissue may proliferate and require treatment. You may recognise overgranulation as a clear brownish discharge and occasional bleeding or as pinkish raised tissue. If bleeding occurs or a large amount of tissue builds up, contact a member of your gastrostomy care team for advice.

When sickness and/or stomach cramps occur:

- See section on ‘venting/decompression’.
- You may need to slow the rate of feeding. Contact your dietician if this problem continues.
- The feed may be too cold. Let the feed reach room temperature before administering it.

When diarrhoea occurs:

- You may need to slow the rate of feeding.
- If diarrhoea continues contact your doctor.

When vomiting occurs:

- See section on ‘venting/decompression’.
- You may need to slow the rate of feeding.
- Always check expiry dates of feed.
- The feed may be too cold. Let the feed reach room temperature before administering it.
If your child continues to vomit and the above simple steps have not helped, you should contact your doctor.

The balloon retained tube has fallen out

If weekly checks are being carried out, any signs of balloon perishing are dealt with and the extension set is removed when the gastrostomy tube is not being used, then a low profile balloon retained gastrostomy tube should not fall out. However, if a tube does fall out a new tube must be inserted as soon as possible as the stoma (‘hole’) will start to heal and may completely close within one to two hours. If the stoma closes surgery will be needed.

If the tube has come out the following steps should be taken:

1. Stay calm
2. Place a clean tissue, handkerchief or towel over the stoma site (hole) to prevent stomach contents leaking onto clothes/skin.
3. Collect together the equipment which will be needed to place a new tube:
   - New tube
   - Sterile (cooled boiled) water
   - Two syringes
   - Lubricating jelly (for example, KY jelly) (optional)
4. Wash your hands.
5. Check the expiry date on the packaging prior to opening it.
6. Before inserting the new tube it is important to check that its parts all function.
   - Draw up 5mls of water into one syringe.
   - Push the syringe into the balloon port (marked BAL).
   - Let go of the syringe and ensure that when you let go the syringe stays attached in the balloon port.
   - Push the water into the balloon and disconnect the syringe.
   - Examine the balloon for faults (for example, a hole) and ensure that the shaft of the device is in the centre of the balloon. If the shaft is to one side massage the balloon in your hand until it is centralised and therefore fully symmetrical (leakage may occur if the balloon is not symmetrical when inside the stomach).
   - Place the syringe back into the balloon port and deflate the balloon fully.
   - Refill the syringe to 5mls with water (a small amount of water will have been taken up to the T-shaped part of the device).
7. If lubricating gel is used apply a small amount to the tip of the tube.
8. Gently push the device into the tract until the top part sits level on your child’s skin.
9. Hold the gastrostomy tube still by placing a finger and thumb on either side to support it.
10. Insert the syringe into the balloon port, let go of the syringe and ensure it stays connected.
11. Gently push the syringe so that the water is injected into the device.
12. Once all of the water has been injected, remove the syringe by using a slight twisting motion. It is important to keep your thumb on the end of the syringe whilst removing it to prevent water being expelled back into the syringe spontaneously.

13. Aspirate a small amount of gastric content using the extension set and test it on a pH strip (pH 1-5) to ensure correct positioning.

14. Wash hands and dispose of equipment.

15. Telephone your delivery company, community nurse or dietician and order a new gastrostomy tube so that you have a spare one again.

**If you have not been trained to insert a new gastrostomy tube, are not happy to carry this out or don’t have a spare tube:**

- Gently push the tube which has come out back into the tract.
- Place tape over the top of the tube to secure it to the skin.
- **Do not** use this tube.
- Seek urgent advice by contacting either your community paediatric nurse or your nurse specialist. If they are unavailable, your child will need to attend your local casualty department. If possible, telephone the casualty department before leaving home to let them know you are coming in and that your child needs to have a gastrostomy passed. This will give the department time to find your child’s notes etc. Tell the casualty department what type of tube your child has. If you have a spare tube, take it with you.

**If you are unable to insert your regular sized tube:**

If you are unable to insert your spare tube or can’t get the tube which fell out back into the tract the stoma may have started to close. Surgery may be prevented if a smaller sized tube can be inserted in the first instance and then the tract dilated.

1. Attempt to pass a smaller tube. (This may be a smaller sized gastrostomy tube, a catheter or naso-gastric tube).
2. Tape the tube to the skin.
3. **Do not** use this tube.
4. Contact a member of your gastrostomy care team or Accident and Emergency department immediately and explain what has happened. Provide as much information as you can regarding the type/size of tube your child usually uses.

**The balloon retained tube is not lasting the expected length of time before the balloon perishes**

Most children will have their balloon retained gastrostomy tube changed approximately every 3 months but each child tends to develop their own pattern depending on factors such as what is being administered, how often the tube is used and the child’s gastric pH.

If your child’s gastrostomy tube is requiring changing more frequently than is usual for them it is important that you discuss this with your community or specialist nurse.
Some children carry Candida (‘thrush’) in their stomach which can cause premature perforation of the silicone retaining balloon. Your child’s stomach contents can be tested for the presence of Candida by a small sample being collected and sent to the laboratory. If Candida is present treatment and a planned tube change during treatment will be required.

**Details of your/your child’s low profile balloon retained gastrostomy tube**

Make of tube:

French size (Fr):

Length of tube (cms):

Balloon volume: (mls)

Date of Insertion:

Dates of tube changes:

**Contact numbers for your gastrostomy care team**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Contact number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse specialist (paediatric surgery)</td>
<td></td>
<td>01223 586973</td>
</tr>
<tr>
<td>Nutrition Nurse specialist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dietitian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community paediatric nurse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home delivery company</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HALF PINNT (‘Patients on Intravenous and Naso gastric Nutrition Therapy’)</td>
<td></td>
<td>01582 765238</td>
</tr>
</tbody>
</table>
We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site.
For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:

If you would like this information in another language, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk.
Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.