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## **Dietary problems after surgery for stomach cancer**

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This information is about dietary problems people may have after surgery for stomach cancer. It may also be helpful to people who have had surgery for cancer of the gullet (oesophagus) or cancer of the pancreas, which involves removing part of the stomach.

The information should ideally be read with our information about your type of cancer. We hope this fact sheet answers any questions you may have. If you have any further questions you can ask your doctor or nurse at the hospital where you are having your treatment.

You may also want to discuss this information with one of our cancer support specialists on freephone **0808 808 00 00** (open Monday–Friday 9am–8pm). Alternatively visit **macmillan.org.uk**. If you're hard of hearing you can use textphone 0808 808 0121, or Text Relay. For non English speakers, interpreters are available.

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### **The stomach**

The stomach is a muscular bag, and is part of the digestive system. The upper part of the stomach is joined to the gullet (oesophagus), and the lower part of the stomach is joined to the beginning of the small bowel (duodenum).

Once food has been swallowed it passes down the gullet and into the stomach, where it's mixed with gastric juices. The semi-solid food then passes into the small bowel, where it's broken down further and nutrients are absorbed. The gastric juices in the stomach help the bowel to absorb some important substances from our food such as Vitamin B12, iron and calcium.

### **Surgery to the stomach**

There are two main types of surgery for stomach cancer:

- partial gastrectomy, in which only part of the stomach is removed

- total gastrectomy, in which the whole stomach is removed.

Other types of operations on the digestive system (to treat cancer of the gullet or the pancreas) may also involve removing part or all of the stomach.

## Dietary problems

People can have different types of dietary problems after stomach surgery. These problems can generally be divided into two groups:

- early problems that happen straight away or soon after the surgery
- late problems that happen a few weeks or months after surgery.

### Early problems

These can include:

- feeling full after eating and drinking
- weight loss and malnutrition
- poor appetite
- indigestion and/or reflux (this can be continuous)
- dumping syndrome
- diarrhoea
- bilious vomiting.

### Feeling full after eating and drinking

This is a sensation of fullness after meals and sometimes even after small snacks. The stomach acts as a storage chamber for food, and its muscle wall relaxes to accommodate a meal as a response to the sight or smell of food. This is controlled by a nerve called the vagus nerve.

If surgery has made the stomach smaller and scarred (or if surgery has damaged or cut the vagus nerve), the stomach's capacity will be reduced. Food enters the stomach and puts direct pressure on the stomach wall, which makes it stretch (distend). This gives a feeling of fullness.

Sometimes eating smaller, more frequent meals may reduce the sensation of fullness. It is helpful to avoid foods that are high in fibre, such as large portions of fruit,

vegetables and wholegrain cereals, as high-fibre foods can make you feel full very quickly.

Although it's important to drink plenty fluids, try not to drink a lot just before meals.

### Weight loss and malnutrition

If you are not able to eat very much due to feeling full very quickly, you may find that you lose weight very easily and may not absorb all the nutrients that you need to keep healthy.

It is useful to build up your energy intake with small frequent meals and supplement drinks. Your cancer specialist and dietitian can give you further advice on how to manage this problem.

### Poor appetite

A poor appetite can be due to feeling full after meals or snacks. Eating little and often may help to stimulate your appetite. You can ask your dietitian for further advice.

### Indigestion

Indigestion and/or reflux (a backward flow of stomach juices into the gullet) can occur after any stomach surgery.

Indigestion can also be caused by wind trapped in the digestive system.

Wind can be helped by taking peppermint water or charcoal tablets (available at local chemists). Be careful with fizzy drinks, alcohol and spicy foods if they make your symptoms worse.

Reflux can cause soreness and inflammation of the lining of the gullet, and can be reduced by antacid medicines such as Gaviscon<sup>®</sup>, Maalox<sup>®</sup> and Aludrox<sup>®</sup>.

Your GP or cancer specialist can prescribe antacid medicines for you.

### Dumping syndrome

Dumping syndrome is divided into two types: early dumping syndrome and late dumping syndrome. Each of these has different processes and symptoms.

**Early dumping syndrome** usually happens within 30 minutes of eating a meal. You may feel dizzy or faint, and your heart may start to beat faster. These symptoms may last for about 10–15 minutes. Some people also have tummy cramps and diarrhoea.

The symptoms happen when food rapidly enters the bowel. This draws fluid into the bowel from the surrounding organs and tissues and causes a drop in blood pressure.

Early dumping syndrome often gets better on its own over a few months. It can be reduced by eating slowly and choosing small, frequent, dry meals and having drinks between meals, rather than during them.

It can also help to avoid foods that are high in added sugars. It's important to eat some sugars as these are a good source of energy (calories), so don't cut them out of your diet completely. Try taking them as part of a mixed meal rather than as sugary drinks.

Eating meals that are high in proteins (fish, meat and eggs) and starchy carbohydrates (pasta, rice, bread and potatoes) can help. Resting for 15–30 minutes immediately after meals can reduce the problem.

**Late dumping syndrome** usually occurs a couple of hours after meals or when a meal has been missed. You may feel faint, sick and shaky.

Late dumping syndrome is caused by stomach contents that are high in carbohydrate being released into the small bowel. This causes a rise in blood sugar levels as the carbohydrate is absorbed. Large amounts of insulin are released into the blood as a response to this. The insulin levels continue to rise after the blood sugar levels have begun to fall. It's the high insulin level which causes the symptoms.

If you have this problem, follow the same advice for early dumping syndrome: take small regular meals that are low in

processed carbohydrates such as sugar. If you feel the symptoms coming on, taking glucose tablets may help you feel better. Eating food and drinking fluid at separate times may also be useful in preventing late onset dumping syndrome.

If your symptoms continue or are severe your doctor may prescribe a medicine such as octreotide, or a similar drug.

### **Diarrhoea**

Diarrhoea can happen after any type of stomach surgery, but it's more likely after surgery involving the vagus nerve. If the vagus nerve has been cut during surgery (vagotomy), there may be a strong sense of needing to open the bowels urgently. This can be quite upsetting.

Diarrhoea can happen in short episodes for a few days or weeks after surgery, before the bowel returns to normal. Everyone is different, so it's difficult to predict how long it may last or how many times a day you'll get diarrhoea. Some people may have diarrhoea once a day, while others may have it a few times a day.

Taking an anti-diarrhoea drug called loperamide (Imodium®) regularly in the morning can sometimes help. As the diarrhoea is due to the effect of the surgery, it may not be possible to reduce it by changing the foods you eat. If you find that some foods particularly affect your bowel it may help to avoid them, but it's best not to exclude too many foods from your diet.

Let your doctor know if your diarrhoea doesn't improve.

### **Bilious vomiting**

This usually occurs first thing in the morning. People find that they have stomach pain and a feeling of fullness when they wake up. This is relieved by vomiting clear fluid, which has some dark brown fluid (bile) in it.

Vomiting in this way can be very distressing, but it only lasts for a short time. The cause is quite complex and it usually happens

after removal of part of the stomach (partial gastrectomy).

Some drugs that act on the digestive system, such as domperidone (Motilium®) or metoclopramide (Maxolon®), may be helpful in controlling bilious vomiting. Some people find that any treatments they are given are not effective, however, and they may need to learn to live with the condition. If the symptoms are severe and frequent, reconstructive surgery can sometimes be considered. Your surgeon can discuss the possible benefits and risks of further surgery.

Many of the problems mentioned above improve gradually over a period of time. You may need to make long-term changes to your daily eating patterns, such as eating smaller meals more regularly, to reduce or control these problems. Your dietitian and clinical nurse specialist can give you further information, support and advice about this.

### **Late problems**

These can include:

- calcium malabsorption
- anaemia, caused by iron and vitamin B12 deficiency
- stricture of the anastomosis, which can make it difficult to swallow food.

Your surgeon will monitor you after your treatment and will see you on a regular basis every 6–12 months. This is because late side-effects can occur months or years after treatment.

Your specialist will investigate any problems that occur later on, to see whether they are caused by your surgery.

### **Calcium malabsorption**

Following surgery to remove the stomach (gastrectomy) it can be difficult for people to absorb enough calcium from their diet. This can cause a condition known as osteomalacia (a weakening of the bones). Osteomalacia can be prevented or reduced by taking vitamin D and calcium supplements, as prescribed by your doctor.

### **Anaemia**

Anaemia means that the blood is not carrying enough oxygen and can occur for several reasons. Iron-deficiency anaemia, the most common form, occurs if you do not have enough iron in your diet, or if you are not able to absorb iron from the foods that you eat. Iron is the main component of haemoglobin (Hb) which carries the oxygen in the blood.

There can be several reasons for an iron deficiency after stomach surgery. These are:

- changes in the way iron is converted from food, due to a reduction of stomach juices
- food moves more quickly through the bowel, reducing the time for absorption of iron
- if a small bowel (duodenal) bypass has been done, it reduces the normal surface area of the bowel so that less iron is absorbed.

Anaemia due to these reasons can be treated with iron supplements.

Lack of vitamin B12, which is needed to make red blood cells, can be another cause of anaemia. This can happen if part or all of the stomach has been removed, because the stomach produces a protein known as the 'intrinsic factor', which is needed for the absorption of vitamin B12.

After stomach surgery the body is no longer able to produce intrinsic factor, which leads to a reduction in the amount of vitamin B12 and folic acid absorbed. This can be treated with injections of vitamin B12.

If you've had all of your stomach removed you will need to have vitamin B12 injections for the rest of your life. These will be given to you every few months by your GP. If only part of your stomach is removed, your doctor will do a blood test to check your levels of B12 from time to time in case you need injections.

### **Narrowing of the join (anastomosis)**

When the whole stomach is removed, the lower end of the gullet (oesophagus)

is joined to the upper end of the small bowel. The join is called an anastomosis. Occasionally the anastomosis can become narrowed, which can make it difficult to swallow food. This is known as a stricture.

If you find it is getting difficult to swallow food, you may become worried that the cancer has come back. It is a good idea to see your specialist as soon as possible, so that they can organise an endoscopy to look into your gullet. If you have a stricture the doctor may be able to stretch it, making it easier for you to eat. Alternatively it may be possible to place a tube (stent) into the narrowing to keep it open.

If you are having problems swallowing, you may find that you begin to lose weight quite quickly. It can be helpful to try eating soft or puréed foods and to have nourishing drinks.

## Psychological effects

A lot of people find it difficult coping with dietary complications after gastrointestinal surgery. Different feelings and emotions can arise. Some people feel depressed due to not enjoying food or mealtimes any longer. Others find it hard to adjust to the change in their body image due to surgery and/or weight loss.

Many people find that, although their dietary problems may not disappear completely, they do learn to manage them so that they are not such a problem. Family and healthcare professionals can give support with this. It is often helpful to contact your hospital dietitian as soon as any problems occur. They are experts in dealing with dietary problems, whatever the cause, and will be able to give you specialist advice regarding your diet and how to cope with associated problems.

## Helpful organisations

### The Oesophageal Patients Association

22 Vulcan House, Vulcan Road, Solihull, West Midlands B91 2JY

**Tel** 0121 704 9860 (Mon–Fri, 9am–5pm)

**Email** enquiries@opa.org.uk

**www.opa.org.uk**

An organisation of people who have had, or still have, cancer of the oesophagus. Offers advice and support to patients and their families, including dietary information.

### Related Macmillan information

- Recipes from Macmillan Cancer Support
- Diet and cancer
- The emotional effects of cancer

For copies of this related information call free on **0808 808 00 00**, or see it online at **macmillan.org.uk**

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- Souhami et al. *Oxford Textbook of Oncology*. 2<sup>nd</sup> edition. 2002. Oxford University Press.
- Souhami and Tobias. *Cancer and Its Management*. 5<sup>th</sup> edition. 2006. Oxford Blackwell Scientific Publications.
- Kelsen et al. *Gastrointology: Principles and Practice*. 2007. Lippincott, Williams and Williams.

We revise our fact sheets every year; the next edition will be available in January 2011.

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