DUMPING SYNDROME

What is Dumping?
The name Dumping has been given to a collection of symptoms that occur after a meal in patients who have undergone certain operations upon the stomach.

The symptoms fall into two groups. One group consists of symptoms that appear to be definitely related to the digestive tract: the patient feels sick, their abdomen feels bloated, they experience borborygmi, (a word that means tummy-rumblings), and this combination of symptoms sometimes leads up to passing a bulky, loose bowel motion. The other group of symptoms is quite different. Patients feel tired and want to lie down, and this may progress until they actually feel faint and sweaty and are aware that their heart is thumping (palpitations).

What is the Cause?
The cause of the symptoms is that the stomach is emptying its mixture of food and gastric juice into the intestines at a rate that is greater than normal.

Normally, when food enters the stomach it mixes with the gastric juice and digestion commences. The valve at the lower end of the stomach, the pylorus, acts as a brake on stomach emptying, so that the mixture is allowed through only bit by bit. If the valve is removed by surgery, or its function reduced by paralysing the muscle that forms the valve, the mixture gushes through into the intestine and causes the symptoms.

How are the Symptoms Produced?
The same mechanism is involved in the production of both sets of symptoms: it is called ‘osmotic pressure’. The partly-digested food mixture contains a larger number of molecules than the food that was eaten because much of the starch in the diet has been broken down to sugars. A strong solution of sugar in the intestine makes the bowel contract vigorously (producing the tummy-rumbling) so that it is rapidly spread throughout the length (20 feet or so!) of the small bowel. A strong solution of sugar then acts like blotting paper to suck water out of the much less concentrated tissue fluids of the body. It is this sucking effect, which one can think of as an attempt by nature to equalise the concentrations of sugar in the gut and the blood, that is called osmotic pressure.

This rapid shift of fluid from the body into the gut has been measured, and can be as large as 1.5 litres (three pints). Part of it comes from the blood itself (the rest from other parts of the body), and the fall in blood volume leads to faintness, sweating, desire to lie down and palpitations. The extra three pints of water in the guts leads to the feeling of bloating, makes the tummy rumbling worse, and if bad enough can end up with the passage of the excess liquid as the watery diarrhoea.

What operations produce dumping?
Surgical removal of most or all of the of the stomach (gastrectomy) nearly always involves the removal of the valve at the bottom of the stomach (the pylorus). This may be for technical reasons or because the disease requires this step.

In another operation called a gastroenterostomy the surgeon needs to by-pass the valve by making a communication between the stomach and the part of the intestine beyond the valve. This may be necessary because the valve is blocked.

A third group of patients may have had an operation to cut the vagus nerves to their stomach (vagotomy), the purpose being to reduce the amount of acid that the stomach makes.
Unfortunately cutting these nerves not only reduces acid but also diminishes the muscle power of the stomach and so its ability to empty itself. An operation to increase its drainage overcomes this problem but may lead to dumping. Fortunately modern vagotomy operations can leave the nerves to the valve (pylorus) intact.

**How common is dumping?**
This is a difficult question to answer because dumping is probably only an exaggeration of what happens in normal life. We are all familiar with the feeling of abdominal fullness and sleepiness which can follow a large meal but symptoms are usually mild.

Dumping will be most noticeable soon after the operation and will be made worse by larger meals. Probably 20-50% of patients who have recently undergone a stomach operation as described above will notice such symptoms, and those who do not probably have the same changes going on inside them, but their circulations are less sensitive to the fall in blood volume and their intestines are less sensitive to bloating.

As time passes, the symptoms become less, until by twelve months after the operation fewer than 5% of patients still complain of symptoms. The other 95% may also have them to a minor degree, but have learned to live with them. This means that they have discovered ways of reducing the impact of the condition on their lives.

**What is the Treatment?**
Firstly, it is worth remembering that dumping usually improves without any treatment at all. If you are still experiencing symptoms a year after the operation, it would be well worth asking for help from your general practitioner or hospital consultant.

Meanwhile, however, there are plenty of commonsense measures that you can take for yourself. Since the symptoms are directly related to each meal, limit the size of your meals: get up from a meal while you can still eat more. To ensure adequate nutrition, increase the number of meals you take. This step is not always easy, especially if it does not fit in with your work-pattern. Take plenty of vitamins, calcium and iron, because gastric operations may result in a tendency to be short of these.

Avoid the feeling of faintness by resting, at least sitting if not lying down, after the meal. The symptoms usually last only 20-40 minutes, so try not to go straight back to your job or housework immediately after the break. Again, this may be difficult to achieve.

Think about what you eat. Carbohydrates are rapidly broken down into small particles with a large osmotic effect, so you should minimise your intake of carbohydrates, especially of sugars. Avoid sugar in all forms -jams, cakes and chocolate and in your tea and coffee. You may need to switch to artificial sweeteners, or make the decision to cut out sugar from beverages.

It is best not to have your cup of tea or coffee at the end of a meal, but to defer it for an hour to lessen the amount of fluid entering the bowel.

**For Severe Symptoms**
If you are one of the few people with severe symptoms that are not adequately controlled by simple measures and which have persisted for more than a year, you should ask to see the surgeon who performed your operation. He or she will probably do a simple test to confirm the diagnosis of dumping; for example, testing whether a concentrated glucose solution reproduces the symptoms? It may then be possible to advise if an operation is available to cure your rapid stomach emptying. For example, if your pylorus has been by-passed it may be possible to bring it back into circuit; if it
has been enlarged, it may be possible to restore it to normal size; and if your stomach has been removed, it may be possible to construct an artificial stomach from intestine.

If no operation is available, drug treatment will possibly be recommended. There is no one remedy that is so good that it has displaced all the others, but each has helped many patients so it is well worth trying what you have been prescribed.

**Useful Tips on Diet**

1. Eat small frequent, regular meals
2. Only drink between meals.
3. Avoid too much sugar and sugary foods. If necessary, you can use artificial sweeteners.
4. Avoid excesses of acidic foods eg. Tomatoes and citrus fruits.
5. Excess fat should be avoided
6. Try not to eat late at night.
7. Avoid food temperature extremes.
8. If you are underweight seek advice from a dietitian regarding energy and protein supplements.
9. Increase foods rich in calcium and Vitamin D.
10. Iron, folic acid and Vitamin B12 supplementation may be necessary.