What is the digestive system and what does it do?

Most of us will sit down and eat each and every day without really thinking too much about what is happening to our food after we have eaten it.

Your body is absolutely amazing and has a very clever system which breaks down the food you eat into smaller parts which all the cells in your body can then use to keep you alive and your body working properly. Here is how it all works...

Your digestive system from entry to exit is basically one long tube called the gastrointestinal (GI) tract or the gut. This ‘tube’ has lots of different parts which all play different roles when it comes to digesting and absorbing your food.

- Things start off in the mouth – and it is important that you remember to chew your food properly before swallowing it!
- From here it passes down the oesophagus (a tube approximately 25cm long) into the stomach.
- The stomach produces lots of different fluids (known as gastric juices) which help to break down your food into smaller pieces.
- After your food has spent time in your stomach (which can be anything from a few minutes to several hours depending on what it is), it passes into a long wiggly tube called the small bowel (also called the small intestine).
- More digestive juices are added to the mashed up food to further break it down and then finally the nutrients from your food (the sugars, amino acids, fatty acids, vitamins and minerals) can be absorbed through the lining of the small intestine into the blood which then transports these goodies around the body to be used. Water is also removed from the small intestine at this time too.
- From the small intestine, what remains after absorption is passed into the large bowel (also called the large intestine or colon) where the final stages of digestion happen. Bacteria which live in the intestine ferment any remaining carbohydrates and this produces the ‘gas’ we know exists. What remains is a stool (also known as poo or faeces) which is then passed out via the anus and the process is complete.*


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**Diagram:**

- Mouth
- Oesophagus
- Liver
- Stomach
- Transverse Colon
- Lleum (Small Intestine)
WHAT DO WE MEAN BY DIGESTIVE HEALTH?
Having good digestive health basically means that your food is always being properly broken down and absorbed. There needs to be a healthy ‘flow’ through the gastrointestinal (GI) tract without things staying in there too long and causing constipation, or the opposite, when things are going through far too quickly and you have diarrhoea.

Digestive issues such as constipation, diarrhoea, bloating and wind are all relatively common in the general population but can be even more frequent for those who are doing lots of exercise and training. This isn’t just uncomfortable and potentially embarrassing, but also can be very frustrating.

On top of these issues, there are several other digestive health problems which are becoming increasingly common including coeliac disease and irritable bowel syndrome. These need to be managed to ensure you maintain good health and wellbeing and that you are able to eat right to be able to perform at your best.

KEEPING YOUR DIGESTIVE SYSTEM HEALTHY
1. Make sure you chew your food properly.
2. Eat slowly. Put your knife and fork down between mouthfuls.
3. Keep up your fluids – particularly if you are doing lots of training.
4. Make sure you are getting enough fibre. Fibre rich foods include fruits, vegetables, wholegrain breads and cereals, nuts and seeds, pulses (e.g. lentil, chickpeas, kidney beans, baked beans).

It is worth getting individual advice from a Dietitian/Nutritionist to make sure you are getting things right when it comes to your digestive health and meeting your needs for fluid and fibre.

DIGESTIVE SYSTEM AND IMMUNITY
All of us have bacteria which live in our GI tract (mainly in the small and large intestine), some of which are good bacteria, some of which aren’t so good. For a strong and healthy immune system, we need to make sure we have more healthy bacteria in our gut,* diet has a lot of influence on that.

For a healthy digestive system, the first step is to make sure you are having a healthy balanced diet including:
- Fruit and vegetables
- Wholegrain breads and cereals
- Low fat dairy products
- Lean meat, fish, eggs, pulses, tofu
- Healthy fats – vegetable oils, nuts, seeds, avocado

It is also important to limit unhealthy options such as deep fried foods, pastries, pies, cakes, biscuits and other high fat/high sugar junk foods.

Probiotics have also been shown to be helpful at maintaining good gut health. Probiotics are healthy bacteria which you can find in certain yoghurts, milk drinks and in capsule form. For more on probiotics speak to your GP or a Dietitian/Nutritionist to see if including these would be right for you.

WHAT THINGS CAN GO WRONG WITH OUR DIGESTION?
Below we have outlined some of the most common issues which arise with digestion and we have suggested a few ideas which could help. Please note that we do advise that if you have any digestive problems you also see your GP to make sure you get advice, which is right for your situation.

1. Runners trots or runners gut
There are certain groups of sports people particularly runners and triathletes who experience ‘loose bowels’ and the sense of urgency to go to the bathroom when they are out training. There are several reasons why this can happen:
- Blood is diverted away from the gastrointestinal tract when you are running/exercising to the working muscles.
- The physical ‘running’ movement changes the speed at which food moves through your digestive system and may speed things up.
- When you start exercise there can be a change in your neurological and hormonal function which may affect your digestive system.

On top of these things, anxiety and stress can have an impact on the speed food moves through your digestive system. Before a big race it is common to feel nervous or anxious which can end up resulting in a change in your bowel motions.

If this sounds like you, what can you do?
• Make sure you are well hydrated before exercise (See Nutrition Advice Sheet on ‘Hydration’). Sports drinks can be helpful, drinks which are too concentrated in carbohydrate (like fruit juices, soft drinks, energy drinks) can make the issue worse as they draw water into the bowel.
• Get to know your sweat rate – if you are doing prolonged high intensity exercise (such as marathon running) this can cause a significant rise in your body temperature and when coupled with dehydration can reduce blood flow to the gut and add to the issue. So, best to work out your sweat rate and know how much you need to be drinking during training (see Nutrition Advice Sheet on ‘Hydration’)
• Look at what you are eating – meals or snacks with a large amount of fat, protein or fibre can slow stomach emptying and may cause issues if eaten too close to training or an event.

2 – Irritable bowel syndrome
Irritable bowel syndrome (IBS) is basically a disturbance in the function of your digestive system which can cause a broad range of symptoms including abdominal pain and discomfort, change in bowel habits (loose or constipated, sometimes both), bloating and excessive wind.

IBS is basically diagnosed when all other possible conditions which could affect the bowel have been excluded. Other things which need to be considered before the diagnosis of IBS include things such as coeliac disease, Crohn’s disease, ulcerative colitis, diverticulitis and endometriosis.

If you do have any disturbance in your bowel habits or any bloating or abdominal pain, it is very important to seek proper medical advice before self-diagnosing IBS. It is vital to have any other possible medical issues excluded and have a confirmed diagnosis from your GP or a specialist of IBS before making big changes to your diet.

If you have been diagnosed with IBS, there are some changes you can make which can help reduce the symptoms and regulate your bowel motions.
Things which can help IBS:
- Managing stress – stress and anxiety can affect the function of your gut. Try deep breathing, yoga and other relaxation technique to help manages these feeling.
- Reducing caffeine, alcohol and spicy food may be helpful for some people

FODMAPs and Irritable Bowel
There is increasing evidence that a low FODMAP diet can be helpful for some people who suffer from IBS.* FODMAPs
are short chain carbohydrates which can be partly or poorly absorbed and can end up fermenting in the large intestine creating gas which can then cause bloating and pain.

FODMAPs stands for: Fermentable, Oligosaccharides, Disaccharides, Monosaccharide’s and Polyols.

Here are a few examples of some of the most common foods which are high in FODMAPs and may be best limited if you struggle with IBS – the amount which you will be able to tolerate varies from person to person

- Fruit with excess fructose e.g. apples, mango, pear, watermelon
- Foods high in lactose e.g. milk, ice cream, custard, some soft cheeses
- Fructan rich foods e.g. asparagus, beetroot, garlic, onions, leeks, wheat, rye
- Pulses e.g. baked beans, kidney beans, lentils, chickpeas
- Polyols e.g sorbitol and mannitol

Please note, this is NOT an extensive list and purely aims to give an example of some of the common foods which may be problematic for some people with IBS. If you think you might have IBS or you have been diagnosed with it or want to know more about FODMAPs it is essential to seek individual guidance from your GP as well as a Dietitian/Nutritionist who can look at your situation specifically and tailor advice for you.

BEEF STIR-FRY CAPSICUM CUPS
Serves 4

5 red capsicums
2 tsp sunflower oil
400g lean rump steak, cut into strips
1 cup broccoli florets
1 pkt MAGGI AsianOriental Beef Recipe Mix
½ cup water
1 cup snow or sugar snap peas, ends trimmed

- Cut 4 capsicums in half and deseed to create cups. Bake for 15 minutes at 200ºC. Deseed and slice the remaining capsicum.
- Heat oil in a large frying pan and stir-fry beef strips for 2 minutes
- Add broccoli and sliced capsicum. Stir-fry for another 2 minutes.
- Combine MAGGI AsianOriental Beef Recipe Mix and water. Add to the pan with the snow peas. Simmer for 2 minutes or until thick.
- Pile into capsicum cups to serve.

ANALYSIS per serve
- Energy (kJ) 1030
- Carbohydrate (g) 16
- Protein (g) 28
- Fat (g) 8

**This recipe is from the Fit Food Fast cookbook. For more recipes visit www.tastyrecipes.co.nz.**