Campylobacter are a group of germs (bacteria) that are a common cause of food poisoning. Typically, food poisoning causes gastroenteritis, an infection of the gut (intestines), leading to diarrhoea and sometimes being sick (vomiting).

What is campylobacter?
Campylobacter are a group of germs (bacteria) that are a common cause of an unpleasant bout of food poisoning. When something you eat or drink contains the campylobacter germs it can make you ill, usually by giving you gastroenteritis, an infection of your guts.

Should I report a campylobacter infection?
If you suspect that you (or your child) have campylobacter or any other type of food poisoning from eating takeaway or restaurant food, you should report this to your local Environmental Health Office. This is so that the business can be investigated by environmental health officers and further action may be taken if there is a problem with their food hygiene practices. This will hopefully help to reduce the chance that other people will get food poisoning. You can find your local food standards enforcer from the Food Standards Agency Report a Food Problem.

If your doctor suspects that you have food poisoning, or campylobacter infection is confirmed from your stool (faeces) sample, they are also required by law to report this.

How do you get campylobacter?
Campylobacter germs (bacteria) are commonly found in raw meat, particularly raw poultry such as chicken, turkey, etc. Cooking meat thoroughly usually kills the bacteria. Campylobacter may also be found in unpasteurised milk or untreated water (including ice cubes made from untreated water). Occasionally, mushrooms and shellfish can contain campylobacter.

Drinking untreated water whilst travelling is a common cause of campylobacter infection. Even if you are careful not to drink tap water, you may be using it without realising. For example, ice cubes might have been made from tap water, and salad vegetables are often washed in tap water. For more information on this situation, see the separate leaflet called Traveller’s Diarrhoea. Campylobacter is one of many possible germs which cause traveller’s diarrhoea.

Pets (including cats and dogs) and other animals infected with campylobacter can also pass on the bacteria to you. For example, cases of campylobacter have occurred after visiting farms. (Note: in animals, campylobacter rarely causes any symptoms for the animals themselves.)

How common is campylobacter?
Campylobacter germs (bacteria) are the most common bacteria causing food poisoning in the UK. There are around 65,000 confirmed cases each year in England and Wales alone and probably many more which have not been tested. The Food Standards Agency believes at least 280,000 people are affected each year in the UK.

Who gets campylobacter?
Campylobacter food poisoning can affect anyone of any age. It may be more common in:

- People who travel to developing countries where sanitation and food hygiene may be less strict.
- People working with farm animals.
- People who work in the meat industry.

What are the symptoms of campylobacter?
The typical symptoms are feeling sick (nausea), diarrhoea, and being sick (vomiting), although vomiting does not always occur. The diarrhoea can sometimes be bloody. You may also have crampy stomach pains and develop a high temperature (fever). Symptoms tend to come on within 2-5 days of eating the contaminated food or of being in contact with the contaminated animal. However, sometimes the time period before symptoms appear (known as the ‘incubation period’) can be as short as one day or as long as 11 days.
In most people, symptoms are relatively mild and improve within 2-3 days. About 9 in 10 affected people recover from the illness within one week. However, sometimes symptoms can be more severe and/or complications can occur. If symptoms are severe, lack of fluid in the body (dehydration) can occur.

**Symptoms of dehydration in children**

Diarrhoea and being sick (vomiting) may cause lack of fluid in the body (dehydration). If you suspect your child may be becoming dehydrated then you should seek medical advice urgently. Children, especially young children, infants and babies, can become severely dehydrated and very ill very quickly. Mild dehydration is common and is usually easily reversed by drinking lots of fluids.

Symptoms of dehydration in children include:

- Passing little urine.
- A dry mouth.
- A dry tongue and lips.
- Fewer tears when crying.
- Sunken eyes.
- Weakness.
- Being irritable.
- Having a lack of energy (being lethargic).

Symptoms of **severe** dehydration in children include:

- Drowsiness.
- Pale or mottled skin.
- Cold hands or feet.
- Very few wet nappies.
- Fast (but often shallow) breathing.

Severe dehydration is a medical emergency and immediate medical attention is needed.

Dehydration is more likely to occur in:

- Babies under the age of 1 year (and particularly those under 6 months old). Because babies don’t have a large volume of body fluid, losing even a small amount can cause significant dehydration.
- Babies under the age of 1 year who were a low birth weight and who have not caught up with their weight.
- A breast-fed baby who has stopped breast-feeding during their illness.
- Any baby or child who does not drink much when they have gastroenteritis.
- Any baby or child with severe diarrhoea and sickness (vomiting). (For example, if they have passed five or more diarrhoeal stools and/or vomited two or more times in the previous 24 hours).

**Symptoms of dehydration in adults**

Symptoms of dehydration in adults include:

- Tiredness.
- Dizziness or light-headedness.
- Headache.
- Muscle cramps.
- Sunken eyes.
- Passing less urine.
- A dry mouth and tongue.
- Weakness.
- Becoming irritable.

Symptoms of **severe** dehydration in adults include:

- Profound loss of energy or enthusiasm (apathy).
- Weakness.
- Confusion.
- A fast heart rate.
- Producing very little urine.
- Coma may occur.

Severe dehydration is a medical emergency and immediate medical attention is needed.

Dehydration in adults is more likely to occur in:

- Elderly or frail people.
- Pregnant women.
- People with severe diarrhoea and vomiting. In particular, if you are not able to replace the fluid lost with sufficient drinks.
How is campylobacter diagnosed?

Many people will recognise food poisoning from the typical symptoms. If your symptoms are mild, you do not usually need to seek medical advice or receive specific medical treatment. So, you may have campylobacter infection that is not 'confirmed'.

However, in some circumstances, you may need to seek medical advice when you have food poisoning (see below about when to seek medical advice). The doctor or nurse may ask you questions about recent travel abroad or any ways that you may have eaten or drunk contaminated food or water. They will also usually check you for signs of lack of fluid in the body (dehydration). They may check your temperature, pulse and blood pressure. They may also examine your tummy (abdomen) to look for any tenderness.

The doctor or nurse may ask you to collect a stool (faeces) sample. The sample of your stool is sent to the laboratory for testing. Campylobacter is confirmed if the germ (bacterium) is found in your stool sample.

A stool sample is not always needed. Your doctor is likely to suggest one in certain situations, such as:

- If you have recently been abroad.
- If you are very unwell.
- If you have blood or pus in your stools (faeces).
- If your diarrhoea is not settling after a week.
- If you have recently been in hospital or had antibiotic treatment.
- If you have another medical condition, particularly one which affects your immune system.
- If the doctor is not sure you have food poisoning or a gut infection (gastroenteritis).
- If your job involves handling food.

The reason a stool sample is not always needed is that in many cases knowing what germ you have does not make any difference to the treatment you need. Most cases of campylobacter get better on their own even before the stool test result is back.

When should I seek medical advice?

Children

If your child has gastroenteritis from any cause (including possible food poisoning caused by campylobacter), you should seek medical advice in the following situations:

- If your child is under the age of 6 months.
- If your child has an underlying medical condition (for example, heart or kidney problems, diabetes, history of premature birth).
- If you suspect a lack of fluid in the body (dehydration) is developing (see earlier).
- If your child appears drowsy or confused.
- If your child is being sick (vomiting) and is unable to keep fluids down.
- If there is blood in their diarrhoea or vomit.
- If your child has severe tummy (abdominal) pain.
- If your child has severe symptoms, or if you feel that their condition is becoming worse.
- If your child's symptoms are not settling (for example, vomiting for more than 1-2 days, or diarrhoea that does not start to settle after 3-4 days).
- If there are any other symptoms that you are concerned about.

Adults

If you have gastroenteritis from any cause (including possible food poisoning caused by campylobacter), you should seek medical advice in any of the following situations:

- If you suspect that you are becoming dehydrated.
- If you are vomiting a lot and unable to keep fluids down.
- If you have blood in your diarrhoea or vomit.
- If you have severe abdominal pain.
- If you have severe symptoms, or if you feel that your condition is becoming worse.
- If you have a persisting high fever.
- If your symptoms are not settling - for example, vomiting for more than 1-2 days, or diarrhoea that does not start to settle after 3-4 days.
- If you are elderly or have an underlying health problem such as diabetes, epilepsy, inflammatory bowel disease, kidney disease.
- If you have a weakened immune system because of, for example, chemotherapy treatment, long-term steroid treatment, HIV infection.
- If you are pregnant.
- If you suspect that you may have contracted food poisoning from eating restaurant or takeaway food (see below).
- If there are any other symptoms that you are concerned about.
What is the treatment for campylobacter in children?

Most children with campylobacter do not need any specific treatment. The symptoms usually improve in a few days as their immune system has time to clear the infection. The aim is to make sure that your child has plenty of fluids to avoid a lack of fluid in the body (dehydration). Children with campylobacter can usually be cared for at home. Occasionally, admission to hospital is needed if symptoms are severe, or if complications develop.

The following are commonly advised until symptoms ease:

**Fluids to prevent dehydration**

You should encourage your child to take plenty of fluids. The aim is to prevent dehydration. The fluid lost in their sick (vomit) and/or diarrhoea needs to be replaced. Your child should continue with their normal diet and usual drinks. In addition, they should also be encouraged to drink extra fluids. However, avoid fizzy drinks or large amounts of concentrated fruit juices as these can make diarrhoea worse.

 Babies under 6 months old are at increased risk of dehydration. You should seek medical advice if they develop gastroenteritis. Breast-feeds or bottle-feeds should be encouraged as normal. You may find that your baby's demand for feeds increases. You may also be advised to give extra fluids (either water or rehydration drinks) in between feeds.

Rehydration drinks may be advised by a doctor, for children at increased risk of dehydration (see above for who this may be). They are made from sachets available from pharmacies and on prescription. You should be given instructions about how much to give.

Rehydration drinks provide a perfect balance of water, salts and sugar. The small amount of sugar and salt helps the water to be absorbed better from the gut (intestines) into the body. If rehydration drinks are not available for whatever reason, make sure you keep giving your child water, diluted fruit juice or some other suitable liquid. If you are breast-feeding, you should continue with this during this time. It is important that your child is rehydrated before they have any solid food.

If your child is sick (vomits), wait 5-10 minutes and then start giving drinks again but more slowly (for example, a spoonful every 2-3 minutes). Use of a syringe can help in younger children who may not be able to take sips.

**Note:** If you suspect that your child is dehydrated, or is becoming dehydrated, you should seek medical advice.

**Fluids to treat dehydration**

If your child is mildly dehydrated, this may be treated by giving them rehydration drinks. Read the instructions carefully for advice about how to make up the drinks and about how much to give. The amount can depend on the age and the weight of your child. If you are breast-feeding, you should continue with this during this time. Otherwise, don’t give your child any other drinks unless the doctor or nurse has said that this is OK. It is important that your child is rehydrated before they have any solid food.

Sometimes a child may need to be admitted to hospital for treatment if they are dehydrated. Treatment in hospital usually involves giving rehydration solution through a special tube called a nasogastric tube. This tube passes through your child’s nose, down their throat and directly into their stomach. An alternative treatment is with fluids given directly into a vein (intravenous fluids).

**What about food?**

Eat as normally as possible once any dehydration has been treated. Correcting any dehydration is the first priority. However, if your child is not dehydrated (most cases), or once any dehydration has been corrected, encourage your child to have their normal diet. Do not ‘starve’ a child with gastroenteritis. This used to be advised but is now known to be wrong. So:

- Breast-fed babies should continue to be breast-fed if they will take it. This will usually be in addition to extra rehydration drinks (described above).
- Bottle-fed babies should be fed with their normal full-strength feeds if they will take it. Again, this will usually be in addition to extra rehydration drinks (described above).
- Older children - offer them some food every now and then. However, if he or she does not want to eat, that is fine. Drinks are the most important, and food can wait until the appetite returns.

**Do children need any medication?**

You should not give medicines to stop diarrhoea to children under 12 years old. They sound attractive remedies but are unsafe to give to children, due to possible serious complications. However, you can give paracetamol or ibuprofen to ease a high temperature (fever) or headache.

If symptoms are severe or persist for several days or more, a doctor may ask for a sample of the diarrhea. This is sent to the laboratory to look for infecting germs (bacteria, parasites, etc) including campylobacter. Sometimes an antibiotic medication is needed if the symptoms are very severe or not settling as expected. In this case, usually an antibiotic such as erythromycin will be prescribed.

Probiotics are generally not recommended for children with gastroenteritis or food poisoning from any cause. This may change if further research shows that they are helpful.
Antisecretory medicines are a newer group of treatments. They are designed to be used with rehydration treatment. They reduce the amount of water that is released into the gut during an episode of diarrhoea. They can be used for children who are older than 3 months of age. **Racecadotril** is the only antisecretory medicine available in the UK at the moment and is only available on prescription. It is not available in Scotland on prescription as it is felt there is not enough evidence yet about how effective it is.

**What is the treatment for campylobacter in adults?**

Symptoms often settle within a few days or so as your immune system usually clears the infection. Occasionally, admission to hospital is needed if symptoms are severe or if complications develop (see below).

The following are commonly advised until symptoms ease:

**Fluids - have lots to drink**

The aim is to prevent lack of fluid in the body (dehydration) or to treat dehydration if it has developed. **(Note: if you suspect that you are dehydrated, you should contact a doctor.)**

- As a rough guide, drink at least 200 mls after each watery stool (bout of diarrhoea).
- This extra fluid is in addition to what you would normally drink. For example, an adult will normally drink about two litres a day but more in hot countries. The '200 mls after each watery stool' is in addition to this usual amount that you would drink.
- If you are sick (vomit), wait 5-10 minutes and then start drinking again but more slowly. For example, a sip every 2-3 minutes but making sure that your total intake is as described above.
- You will need to drink even more if you are dehydrated. A doctor will advise on how much to drink if you are dehydrated.

For most adults, fluids drunk to keep hydrated should mainly be water. Also, ideally, include some fruit juice and soups. It is best not to have drinks that contain a lot of sugar, such as cola or pop, as they can sometimes make diarrhoea worse.

Rehydration drinks are recommended for people who are frail, or over the age of 60, or who have underlying health problems. They are made from sachets that you can buy from pharmacies. (The sachets are also available on prescription.) You add the contents of the sachet to water. Rehydration drinks provide a good balance of water, salts, and sugar. The small amount of sugar and salt helps the water to be absorbed better from the gut (intestines) into the body. They do not stop or reduce diarrhoea. Do not use home-made salt/sugar drinks, as the quantity of salt and sugar has to be exact.

**What about food?**

It used to be advised to 'starve' for a while if you had gastroenteritis. However, now it is advised to eat small, light meals if you can. Be guided by your appetite. You may not feel like food and most adults can do without food for a few days. Eat as soon as you are able - but don't stop drinking. If you do feel like eating, avoid fatty, spicy or heavy food at first. Plain foods such as wholemeal bread and rice are good foods to try eating first.

**Do adults need medication?**

Antidiarrhoeal medicines are not usually necessary. However, a medicine called **loperamide** may be advised in some situations. For example, to help you over a special event such as a wedding, or if you have difficulty reaching the toilet quickly. Loperamide works by slowing down your gut's activity and it can reduce the number of trips that you need to make to the toilet. You can buy loperamide from pharmacies. The adult dose of loperamide is two capsules at first. This is followed by one capsule after each time you pass some diarrhoea, up to a maximum of eight capsules in 24 hours. You should not take loperamide for longer than five days.

**Note:** although loperamide is usually safe, there have been reports of very serious gut problems developing in some people who have taken loperamide. These problems were mainly in people who had severe inflammation of the gut. So, do not use loperamide or any other antidiarrhoeal medicine if you pass blood or mucus with the diarrhoea or if you have a high temperature (fever). Also, people with certain conditions should not take loperamide. Pregnant women should not take loperamide. Therefore, to be safe, read the leaflet that comes with the medicine.

**Paracetamol** or **ibuprofen** is useful to ease a high temperature or headache.

As with children, a course of antibiotic medicine is sometimes needed to treat campylobacter if the infection is severe. This might be necessary if symptoms are very bad, or if the infection is not improving as expected. For example if symptoms are still persisting after one week. It may also be needed if your immune system is not working as well as normal - for example, due to chemotherapy or if you have an illness such as AIDS.

**Are there any complications?**

Complications are uncommon in the UK. They are more likely in the very young, or in the elderly. They are also more likely if you have an ongoing (chronic) condition such as diabetes or if your immune system is not working normally. (For example, if you are taking long-term steroid medication or you are having chemotherapy treatment for cancer.)

Possible complications include the following:
- **Salt (electrolyte) imbalance and lack of fluid (dehydration) in your body.** This is the most common complication. It occurs if the salts and water that are lost in your stools (faeces), or when you are sick (vomit), are not replaced by your drinking adequate fluids. If you can manage to drink plenty of fluids then dehydration is unlikely to occur, or is only likely to be mild and will soon recover as you drink. Severe dehydration can lead to a drop in your blood pressure. This can cause reduced blood flow to your vital organs. If dehydration is not treated, your kidneys may be damaged. Some people who become severely dehydrated need a ‘drip’ of fluid directly into a vein. This requires admission to hospital. People who are very young, elderly or pregnant are more at risk of dehydration.

- **Reactive complications.** Rarely, other parts of your body can ‘react’ to an infection that occurs in your gut (intestines). This can cause symptoms such as joint inflammation (arthritis), skin inflammation and eye inflammation (either conjunctivitis or uveitis).

- **Spread of infection to other parts of your body** such as your bloodstream, your liver and your pancreas gland can occur; however, this is rare.

- **Persistent diarrhoea syndromes** may rarely develop - for example:
  - **Irritable bowel syndrome** is sometimes triggered by a bout of food poisoning.
  - **Lactose intolerance** can sometimes occur for a period of time after food poisoning. This is known as ‘secondary’ or ‘acquired’ lactose intolerance. This is more common in children. Your child’s gut lining can be damaged by the episode of gastroenteritis. This leads to lack of a chemical (enzyme) called lactase that is needed to help the body digest a sugar (lactose) that is in milk. Lactose intolerance leads to bloating, tummy (abdominal) pain, wind and watery stools after drinking milk. The condition gets better over time as the gut lining heals.

- **Guillain-Barré syndrome** may rarely be triggered by campylobacter infection. This is a condition that affects the nerves throughout your body and limbs, causing weakness and sensory problems. See the separate leaflet called Guillain-Barré syndrome for more details.

- **Reduced effectiveness of some medicines.** During any episode of food poisoning, certain medicines that you may be taking for other conditions or reasons may not be as effective. This is because the diarrhoea and/or vomiting means that reduced amounts of the medicines are absorbed into your body. Examples of such medicines are those for epilepsy, diabetes and contraception. Speak to your doctor or practice nurse if you are unsure of what to do if you are taking other medicines and have food poisoning.

### How do I prevent campylobacter spreading?

If you (or your child) have campylobacter, the following are recommended to prevent the spread of infection to others:

- Wash your hands thoroughly after going to the toilet. Ideally, use liquid soap in warm running water but any soap is better than none. Dry properly after washing. If your child wears nappies, be especially careful to wash your hands after changing nappies and before preparing, serving, or eating food.
- If a potty has to be used, wear gloves when you handle it, dispose of the contents into a toilet, then wash the potty with hot water and detergent and leave it to dry.
- Don’t share towels and flannels.
- Don’t prepare or serve food for others.
- If clothing or bedding is soiled, first remove any stools (faeces) into the toilet. Then wash in a separate wash at as high a temperature as possible.
- Regularly clean with disinfectant the toilets that you use. Wipe - with hot water and detergent - the flush handle, toilet seat, bathroom taps, surfaces and door handles, at least once a day. Keep a cloth just for cleaning the toilet (or use a disposable one each time).
- Stay off work, school, college, etc, until at least 48 hours after the last episode of diarrhoea or being sick (vomiting). Avoid contact with other people as far as possible during this time.
- Food handlers: If you work with food and develop diarrhoea or vomiting, you must inform your employer and immediately leave the food-handling area. If campylobacter is confirmed, you should inform your employer and stay away from work until 48 hours after the last episode of diarrhoea or vomiting.
- If you have campylobacter infection and you work with vulnerable groups of people such as the elderly, the unwell or the young, you should inform your employer.

### Can campylobacter be prevented?

The Foods Standards Agency in the UK has identified the ‘4 Cs’ to help prevent food poisoning, including food poisoning caused by campylobacter:

**Cleanliness**

- Keep work surfaces and utensils clean.
- Wash and dry your hands regularly but especially after going to the toilet, before preparing food, after handling raw food and before touching ‘ready-to-eat’ food.
- Don’t prepare food for others if you have diarrhoea or sickness (vomiting).
- Cover sores or cuts on hands with a waterproof plaster before you touch food.
- Change dishcloths and tea towels regularly.

To help avoid campylobacter infection, you should also wash your hands after touching pets or animals, after visiting farms and after gardening.
Cooking

- Make sure that you cook food thoroughly, especially meat. This will kill germs (bacteria). Food should be cooked right through and be piping hot in the middle.
- If you are reheating food, it needs to be cooked right through and be piping hot in the middle.
- Don’t reheat food more than once.

You should also make sure that you only drink pasteurised or boiled milk and avoid drinking water thought to be unsafe (including avoiding drinks containing ice cubes that may have been made from unsafe water).

Chilling

- Food that needs to be chilled or refrigerated, should be. If food is left out of the fridge, bacteria may multiply to levels that can cause food poisoning.
- Your fridge needs to be kept between 0°C and 5°C. Also, don’t leave the door open unnecessarily.
- Cool leftover food quickly and then refrigerate. Taking it out of the cooking pot and putting it into a shallow container can speed up the cooling process.

Cross-contamination

This occurs when bacteria pass from foods (commonly raw foods) to other foods. It can occur if foods touch directly, if one food drips on to another, if your hands, or utensils or equipment - such as knives or chopping boards - touch one food and then another.

- Wash your hands after touching raw foods.
- Separate raw and cooked or ‘ready-to-eat’ foods.
- Keep raw meat in a sealable container at the bottom of the fridge.
- Don’t use the same surface or chopping board for preparing raw and ready-to-eat foods.
- Make sure that knives and utensils are cleaned after preparing raw foods.

Further reading & references

- Campylobacter: guidance, data and analysis; Public Health England
- Gastroenteritis; NICE CKS, July 2015 (UK access only)
- Campylobacter; World Health Organization (WHO) Fact sheet. October 2011
- Diarrhoea and vomiting in children under 5; NICE Clinical Guideline (April 2009)

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