

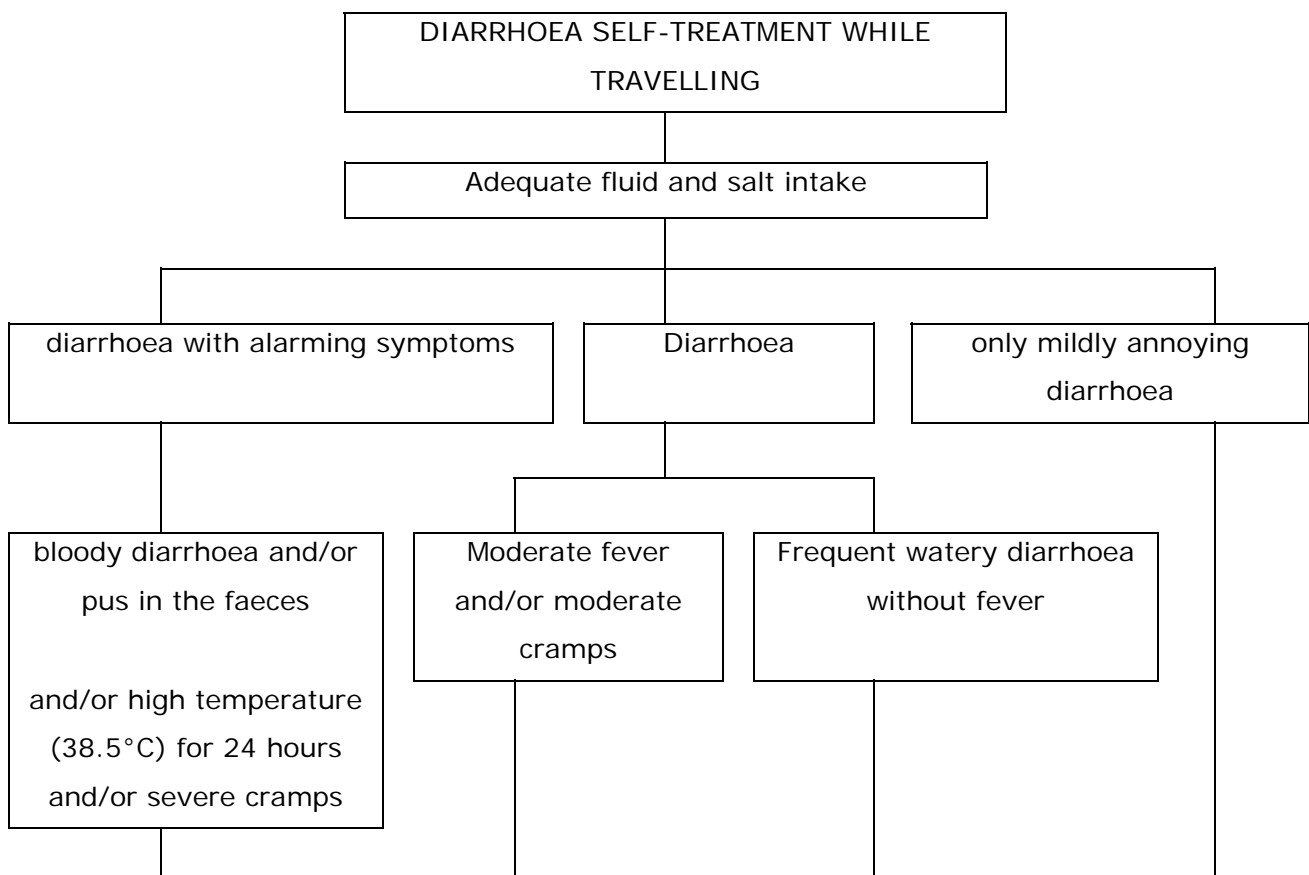
TRAVELLER'S DIARRHOEA

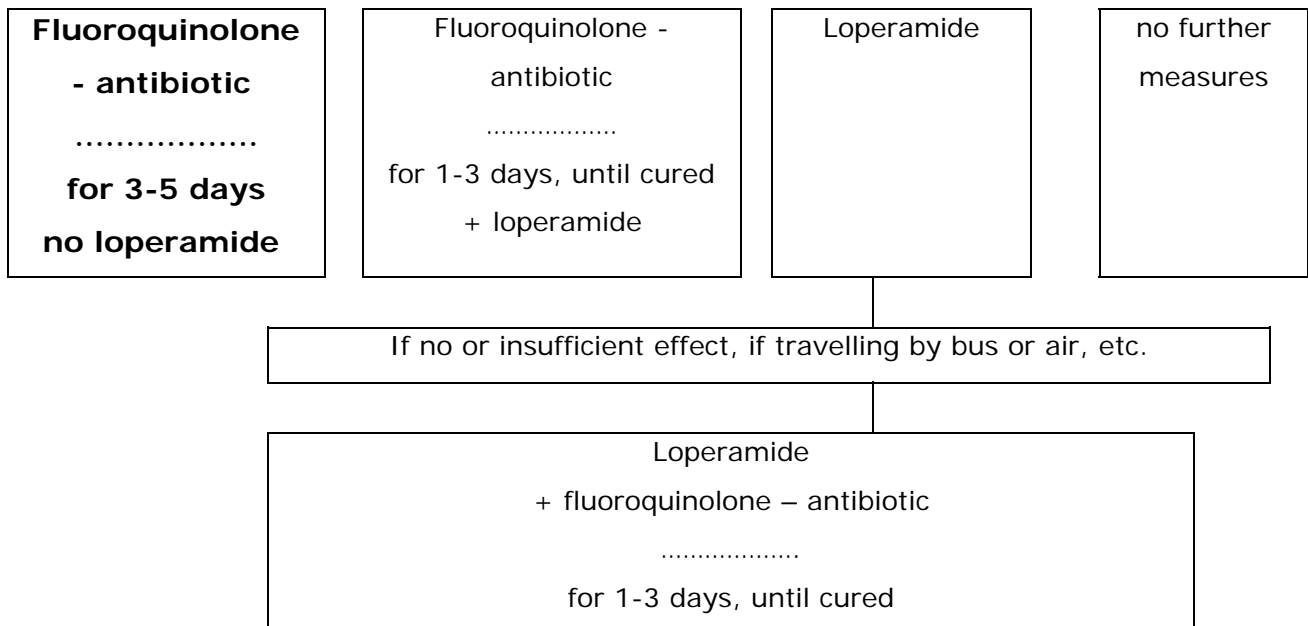
1 General

Diarrhoea occurs very frequently in travellers. It usually occurs as a mild condition, which can nevertheless be annoying, though it spontaneously resolves within a few days. The cause of such traveller's diarrhoea is usually an infection by a bacterium, occasionally by a virus and only seldom by an intestinal parasite. The great majority of cases (but unfortunately not all cases) of traveller's diarrhoea can be prevented with a few simple measures. However, no specific treatment is necessary for the vast majority of cases, apart from measures for preventing too great a loss of fluid, and perhaps a few others to alleviate the symptoms of illness such as fever, vomiting, intestinal spasms and the diarrhoea itself.

Occasionally there may be a more severe diarrhoea, for which treatment with antibiotics may well be indicated, or where admission to hospital for intravenous fluid administration may be indispensable. A quick, correct (self)treatment can shorten the duration of the illness and avoid an admission to hospital in a distant foreign country with less elaborate healthcare provisions.

Represented schematically:





This diagram is an emergency aid, only to be used when you can find no medical help in the foreign country within 24 hours. Do not use it on return to Belgium, but always consult your doctor !

2 Prevention of diarrhoea

Total prevention of diarrhoea is impossible.

It is however important to be aware that preventive use of antibiotics and other medications is not advisable!

By being careful of what you eat and drink you can substantially reduce the risk of getting serious diarrhoea.

Elementary hygiene (washing the hands) also substantially reduces the risk of infections!

2.1 Food

Avoid (as far as possible):

- Uncooked vegetables;
- fruit that cannot be peeled by yourself before eating;
- unpasteurized or unboiled milk / dairy products, or dairy product-based foods (puddings, ice cream);
- raw or insufficiently cooked fish, and especially seafoods such as oysters;
- raw or insufficiently cooked meat.

Avoid cold buffets, which are very tempting when the weather is hot, especially when the food

has been directly cooled with ice.

The place where you eat can be important. A meal obtained from a street vendor may be more risky than in a restaurant, although well-cooked food that is eaten immediately on site can be safer than a meal served in an apparently clean restaurant.

Flies are major carriers of germs: food should be covered to protect it from flies; restaurants full of flies are best avoided.

2.2 Drinks

In countries with low hygiene standards you are best advised to drink only bottled water. Sparkling drinks are safer than plain mineral water, due to their higher acidity and especially in view of the very small chance of tampering with the crowncaps. Make sure the bottles are opened in your presence and watch out especially for soft drinks in bottles with recycled crowncaps or corks. Unfortunately, however, not all locally bottled mineral waters are safe.

If no bottled water is available, tea or coffee are good alternatives.

Ice cubes are to be avoided, even in alcoholic drinks, due to the uncertainty over the water that is used. A number of disease-inducing microorganisms can survive in ice.

Cleaning your teeth with tapwater can pose a certain risk, though this is usually very small.

Swallowing water while swimming is also a major source of infection.

Rendering drinking-water completely free of bacteria and parasites is difficult. You can nevertheless substantially reduce the risk by taking the following measures:

2.3 Reducing risk

2.3.1 Boiling

It suffices to bring the water just to boiling temperature. None of the known disease pathogens survives this. The earlier rule that the water should be boiled for 10 minutes + 1 minute for every 300 metres above sea-level is outdated. Obviously, it is better to filter turbid water before boiling.

2.3.2 Disinfection

Filtration of drinking-water before disinfecting (or boiling) it is necessary if the water contains a lot of organic material! The largest particles are readily removed by pouring the water through a coffee filter or, for example, a clean handkerchief.

There are various disinfectant products on the market. It is important to allow enough time for

the agent to act (1 to 2 hours for the usual dose, which may be shortened with a dose):

- Chloramine-tablets: Chloramina Pura®, Chloraseptine®, Clonazone® (available from pharmacies)
 - Drinking-water: 1 x 250 mg tablet per 10 litres (dirty) to 50 litres (relatively clean) water
 - water for washing vegetables: 5 tablets per litre water, the vegetables must be immersed for 10 minutes in this water.
- Certisil Combina® (available from pharmacies): chlorine- and silver tablets, fluid or powder for 1, 5, 10 and 100 litres of water.
- Sodium hypochlorite solution:
 - 2 to 4 drops of concentrated sodium hypochlorite solution per litre of dirty water to 5 to 10 drops per 20 litres of clean water (slight chlorine taste)
 - water for rinsing vegetables: 5 ml per litre of water, the vegetables must be immersed for 10 minutes in this water.
- Commercial sodium hypochlorite solutions such as Drinkwell-chloor® (10 ml for 100 litres drinking-water) and Hadex® (50 ml for 250 litres drinking-water) are available from camping shops. These also produce a slight chlorine taste, which can then be removed by *passing* the water through an activated charcoal filter (advised for Hadex) or by adding Drinkwell®-*antichlorine drops* (based on the non-toxic sodium thiosulphate), allowing the necessary action time of 30-60 minutes (a longer contact time is required for cold water).
- 2% iodine tincture solution: 0.4 ml or 8 drops per litre of water. Iodine is more active against amoeba cysts, and should produce less unpleasant taste than chlorine. The aftertaste can subsequently be removed by *filtering* the water with an activated charcoal filter or by adding vitamin C. Prolonged use (more than 3 months) of iodine is generally not advised. Iodine should not be used if there is any suspicion of thyroid pathology or by pregnant women, or at any rate it should be used for at most 3 weeks in these cases.
- Silver salts are not active against viruses and are not really suitable for disinfecting water, rather they are more suitable for keeping disinfected water stored in water tanks bacteria-free for a long time (up to months). They are obtainable in specialist outdoor sport shops (Micropur®) and in pharmacies (Certisil Argento®).

2.3.3 Filtration

Many different types of portable water filter systems are now available on the market. Expert advice and opinions on these is best obtained in the specialist outdoor sport shops. Individuals who go to live in the tropics are advised to obtain a large filter system (Berkefield®). It is important that such systems are well maintained. Gadgets such as drinking-straws with built-in filters are regarded as useless.

3 Treatment of diarrhoea

3.1 Rehydration

If you get diarrhoea it is of vital importance to have an adequate fluid intake with an sufficient salt and sugar content to compensate for the fluid loss that has occurred.

This can be achieved in various ways:

- commercial salt-sugar solutions, e.g. O.R.S.®, Serolyte®, Soparyx®, Tropenzorg®, etc.: these are especially indicated for children and elderly people.
- solutions made up by yourself: 5 level coffee spoonfuls of sugar and half a coffee spoonful of salt per litre of fluid, preferably a mixture of pure water or weak tea with fruit juice or mashed banana. Because of the risk of making mistakes in the composition and the consequences of this it is not advisable to make up the fluid yourself for children, but instead you should always have the ready to use O.R.S.® preparations at hand.
- For adults there are more tasty alternatives: tea + lemon, broth, soft drinks and fruit juice with salted biscuits or crisps.

Fasting is not needed. If you are not vomiting you are advised to eat a normal quantity of easily digestible food, divided over more frequent but smaller meals.

The following measures are recommended for babies and young children:

Breast-feeding can be continued unchanged. Between the breast-feeds oral rehydration fluid (O.R.F.) can be given alternately with pure water.

Bottle-feeding is replaced for the first 6 hours by adequate O.R.F.: 10 - 15 ml per hour per kg bodyweight of the baby. After that normal feeding can be resumed, with addition of 20% fluid. This can be done by adding water to the milk or by administration of fluid between feeds. If vomiting occurs O.R.F. should be administered frequently and in very small quantities with a spoon.

It is important to be aware of the fact that ingestion of O.R.F. does not diminish the diarrhoea.

3.2 Ordinary diarrhoea

= no blood-containing faeces, no high temperature)

Treatment:

1. Rehydration

2. Intestinal transit inhibitors

- Loperamide, (e.g. Imodium®), 1 to 4 capsules per day. This can sharply reduce the number of defaecations, which means a substantial alleviation of the complaints. If this has no effect, it is not advisable to increase the dose! If there is a good effect, constipation must of course be avoided (by reducing or stopping the dose in time). The diarrhoea will nevertheless not necessarily disappear completely, as loperamide does not cure it, but merely alleviates the symptoms.
- NOTE! Loperamide is contraindicated for pregnant women.
- NOTE! Extreme caution should be exercised when administering loperamide to children, and it must not be administered to any child under 2 years of age.

3. Antibiotics are NOT indicated for ordinary diarrhoea, EXCEPT in certain

circumstances: Antibiotics can (in combination with an intestinal transit inhibitor) nevertheless rapidly alleviate the symptoms and shorten the duration of the illness from several days to only one day or even a few hours. For this reason a short antibiotic course may be indicated in a number of cases (e.g. **for travel by bus, boat or air**, for business trips, for sportspeople, and the like). Ordinary traveller's diarrhoea is a particularly annoying problem, and can spoil a trip, certainly on short journeys. Although an antibiotic should not be prescribed in normal situations, it may be justified to start a quick self-treatment. In some cases of previously existing disease conditions the doctor may also judge that a rapid intake of antibiotics is indicated for diarrhoea. It is not superfluous to point out to travellers to whom a self-treatment is given for an emergency situation that the treatment is exclusively intended for use during the journey. The risk of this diarrhoea treatment being used on one's own initiative for gastrointestinal problems or fever / high temperature or other symptoms after returning home is indeed not imaginary and can lead to dangerous situations.

3.3 Complicated diarrhoea

The following symptoms may indicate the presence of a more severe form of diarrhoea, namely

3.3.1 Bacterial dysentery

- diarrhoea with blood and/or mucus in the faeces.
- diarrhoea persisting for longer than 1 to 2 days:
 - with persistent presence of high temperature ($>38.5^{\circ}\text{C}$),
 - or accompanied by heavy abdominal cramps,

- or if the defaecation frequency remains at more than 6 per 24 hours, and certainly if nocturnal defaecation occurs.

Treatment:

1.Rehydration

2.In these cases use of intestinal transit inhibitors (e.g. loperamide) is not advised.

3.A suitable **antibiotic** is indicated here:

- **Adults:**
 - Ofloxacin Tarivid® 400, 1 tablet per day for 3-5 days; ciprofloxacin Ciproxine®500 2 tablets per day for 3-5 days or Zoroxin® or Norfloxacin EC®: 2 tablets per day for 3 days.
 - Azithromycin Zitromax ® 500 mg per day for 3 days or 1000 mg in one dose (also for pregnant women)
- **Children and adolescents under 15 years old:** A reliable physician should be consulted. Rehydration is the cornerstone of the treatment. In children Azithromycin Zitromax® is administered at a dose of 10 mg/kg/day for 3 days (a syrup form exists). A ciproxine syrup for children under 15 years old is due to appear on the market in the future. Cotrimoxazole is no longer advised.

An adult can complete the self-treatment schedule. Medical assistance should be sought, if this is available, if the symptoms have not been alleviated within 48 hours. Medical help should be sought more quickly for children and elderly people.

Note:

- It is stated on the package insert of a number of these antibiotics that their use is indicated for urinary infections, without stating other indications. Do not let yourself be misled by this: these antibiotics have only recently been approved for the specific treatment of most of the bacteria that can be the cause of a severe bacterial dysentery.
- Watch out for possible hypersensitivity to exposure to the sun while these products are being taken.

3.3.2 Amoebic dysentery

Severe diarrhoea is only in rare cases due to **amoebic dysentery** (i.e. colitis due to infection with *Entamoeba histolytica*).

In these cases one usually has

- normally formed faeces containing some mucous pus and/or blood, or else

- mucous bloody diarrhoea, but
- usually no fever
- one often has to defaecate small amounts of mucous stools, or else
- one has the feeling that one must defaecate, but no defaecation takes place.

Only for adventure travellers or tourists who are travelling for a long time is it really useful to have a treatment for amoebic dysentery with them !

Treatment:

1.Rehydration

2.Anti-amoeba treatment

- Fasigyn®: 2 x 500 mg tablets each morning and 2 x 500 mg tablets each evening for 3 days (alternatives: Flagyl® or Tiberol®). Consumption of alcohol with each of these medications is dangerous !!!
- Always followed by
 - Gabbroral® 10 mg/kg 3 times per day for 8 days 3x2 tablets/day
 - Or Furamide® 3 x 500mg tablets/day for 10 days.

If this treatment has no or insufficient effect, it is advisable to start administration of one of the above-named antibiotics, if this has not yet been done.

3.3.3 Giardia lamblia

- persistent diarrhoea
- without loss of blood or mucus
- without fever
- with upper abdominal complaints and loss of appetite.

Treatment

- Fasigyn® 4 tablets in one single dose is effective in the vast majority of cases (no alcohol must be taken for the next 48 hours).

FLOWCHART FOR ADVENTURE TRAVELLERS OR TOURISTS WHO ARE TRAVELLING FOR AT LEAST SEVERAL MONTHS

