



Updated version (21/11/2017 – UM) see: [www.travelhealth.be](http://www.travelhealth.be)

## TRAVELLERS' DIARRHOEA

Diarrhoea is common amongst travellers. It is usually a **benign** illness that can be bothersome, but almost always ends spontaneously after a few days. Traveller's diarrhoea is often caused by a bacterium, sometimes by a virus and occasionally by an intestinal parasite. Usually measures to compensate for fluid loss will suffice. If you wish, the disease symptoms – such as fever, vomiting, abdominal cramps and diarrhoea – can be treated. Antibiotics are rarely necessary. Antibiotics can be indicated for diarrhoea with warning symptoms. In practice, many travellers will receive a prescription to take with them for self-treatment. Quick and correct (self-)treatment can shorten the duration of the illness and in some cases can prevent a hospital admission.

### PREVENTION OF DIARRHOE

**The prophylactic use of antibiotics or other medicines is not recommended!**

You can **reduce the risk of severe diarrhoea** by paying attention to what you eat and drink.

Basic hand hygiene also reduces the risk of infections: **hand washing** with water and soap or disinfectant alcoholic gels (hydro-alcoholic solutions) in special dispensers before cooking, before eating and after using the lavatory.

#### 1. FOOD

**Avoid** (as far as possible):

- uncooked vegetables and cold salads, uncooked or raw food in general;
- fruit that cannot be peeled by yourself before eating; damaged fruit;
- unpasteurized or unboiled dairy products or food based on unpasteurized or unboiled dairy products (pudding, ice cream);
- dishes based on raw or insufficiently boiled eggs;
- raw or insufficiently cooked fish, and especially seafoods such as oysters;
- raw or insufficiently cooked meat;
- boiled dishes that are left for hours on room temperature (only eat food that is thoroughly cooked and still warm).
- Ice-cream from vendors (industrially prepared ice-cream from the freezer is probably safe).

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 is usually 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. 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. In some countries it is usual to add unboiled cold water to hot tea or coffee before serving.

**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 possible 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:

### A. BOILING

Bringing water to boiling point and then covering it is sufficient. Obviously, it is better to filter turbid water before boiling.

### B. DISINFECTION

**If the water is murky, then it should be filtered first**, e.g. by pouring the water through a coffee filter or a clean handkerchief.

Various disinfectant products are commercially available, but it is important to allow the product enough time to work (1 to 2 hours for the standard dose at room temperature, less time for the higher dose). Follow the instructions for use.

- Chloramine-tablets: Chloramina Pura<sup>®</sup>, Chloraseptine<sup>®</sup>, Clonazone<sup>®</sup> (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.
- Micropur Forte<sup>®</sup> (available from pharmacies): chlorine- and silver tablets (for 1 litre), fluid or powder for 100 litres of water and more.

- Hypochlorite solution (5% sodium hypochlorite):
  - 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, which provides a slight chlorine taste. (eye dropper of 20 drops per ml).
  - 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<sup>®</sup> (10 ml for 100 litres drinking-water) and Hadex<sup>®</sup> (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<sup>®</sup>-*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 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 Classic<sup>®</sup>, Drinkwell Zilver<sup>®</sup>).

### C. FILTRATION

There are different types of portable water filter systems 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<sup>®</sup>). It is important that such systems are well maintained. Gadgets such as drinking-straws with built-in filters are regarded as useless.

### D. UV RADIATION

Portable devices that can purify water by means of UV radiation are available. The benefits of these techniques are that the water is purified instantly and the taste of the water is not altered. This technique is also effective against viruses. The disadvantages are that these are expensive products and you will always need to have access to batteries, electricity or solar panels. This technique (e.g. Steripen<sup>®</sup>) only works on clear water.

## TREATMENT OF DIARRHOE

### REHYDRATION

The most important treatment of diarrhoea is to compensate for fluid loss by taking in fluids with enough salt and sugar. This can be achieved in several ways:

- **commercial salt-sugar solutions**, e.g. O.R.S.<sup>®</sup>, Serolyte<sup>®</sup>, Soparyx<sup>®</sup>, Tropenzorg<sup>®</sup>, etc.: these are especially indicated for children and elderly people.

- **solutions made up by yourself:** 8 level coffee spoonfuls of sugar and a coffee spoonful of salt per litre of pure water. 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.<sup>®</sup> 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 teaspoon for example.

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

#### **A. ORDINARY DIARRHOE (less than 3 days, no blood-containing faeces, no high temperature)**

##### **Treatment:**

##### **1. Rehydration**

##### **2. Intestinal transit inhibitors, if desired.**

Loperamide, (e.g. Imodium<sup>®</sup>), we advise a dose of 1 capsule or instant tablet after every soft defecation with a maximum of 4 capsules per day (this concerns a lower measurement of the dose than indicated on the information leaflet of the medicine). 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 (one has to stop the administration as soon as the faeces become more solid or when no stools have passed for 12 hours; do not use for longer than 3 days!). 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.

Extreme caution should be exercised when administering loperamide to children, and it must not be administered to any child under 6 years of age.

- ##### **3. In the case of ordinary diarrhoea, antibiotics are not necessary and not recommended** due to the risk associated with the selection of resistant bacteria.

#### **B. COMPLICATED DIARRHOE**

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

## 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°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, when there is no medical help available:

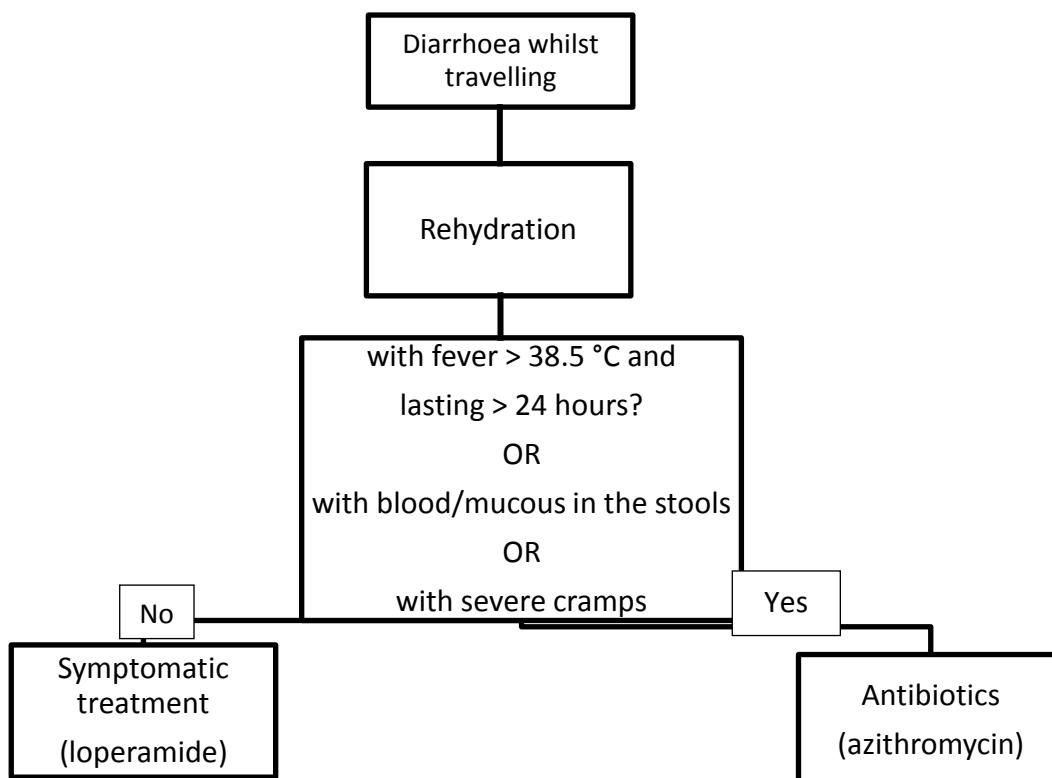
#### Adults:

Azithromycin generic/Zithromax<sup>®</sup>: 1,000 mg single dose. Can be used during pregnancy.

**Children and adolescents under 15 years old:** A reliable physician should be consulted, but this is not always possible on a journey. Rehydration is the cornerstone of the treatment. In children Azithromycin Zitromax<sup>®</sup> is administered at a dose of 10 mg/kg/day for 3 days (a syrup form exists).

4. 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, pregnant women and elderly people.

Schematic presentation:



The above mentioned schedule should **only** be used as an emergency treatment during travel. Do **not** use this treatment after returning home but seek medical advice from your doctor! Store the **antibiotic** carefully and only use it as an emergency treatment during your next long-distance journey. Check the expiry date; any expired products should be returned to the pharmacy.

## **AMOEBIc DYSENTERY**

Severe diarrhoea is only in rare cases due to **amoebic dysentery**.

In these cases one usually has:

- **normally formed faeces containing some mucous pus and/or blood**
- or **mucous bloody diarrhoea**, but usually **without any fever**
- or **small amounts of mucous stools**
- or a false **urge** to defecate.

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

### **Treatment:**

#### **1. Rehydration**

#### **2. Anti-amoeba treatment**

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

## **GARDIA LAMBLIA**

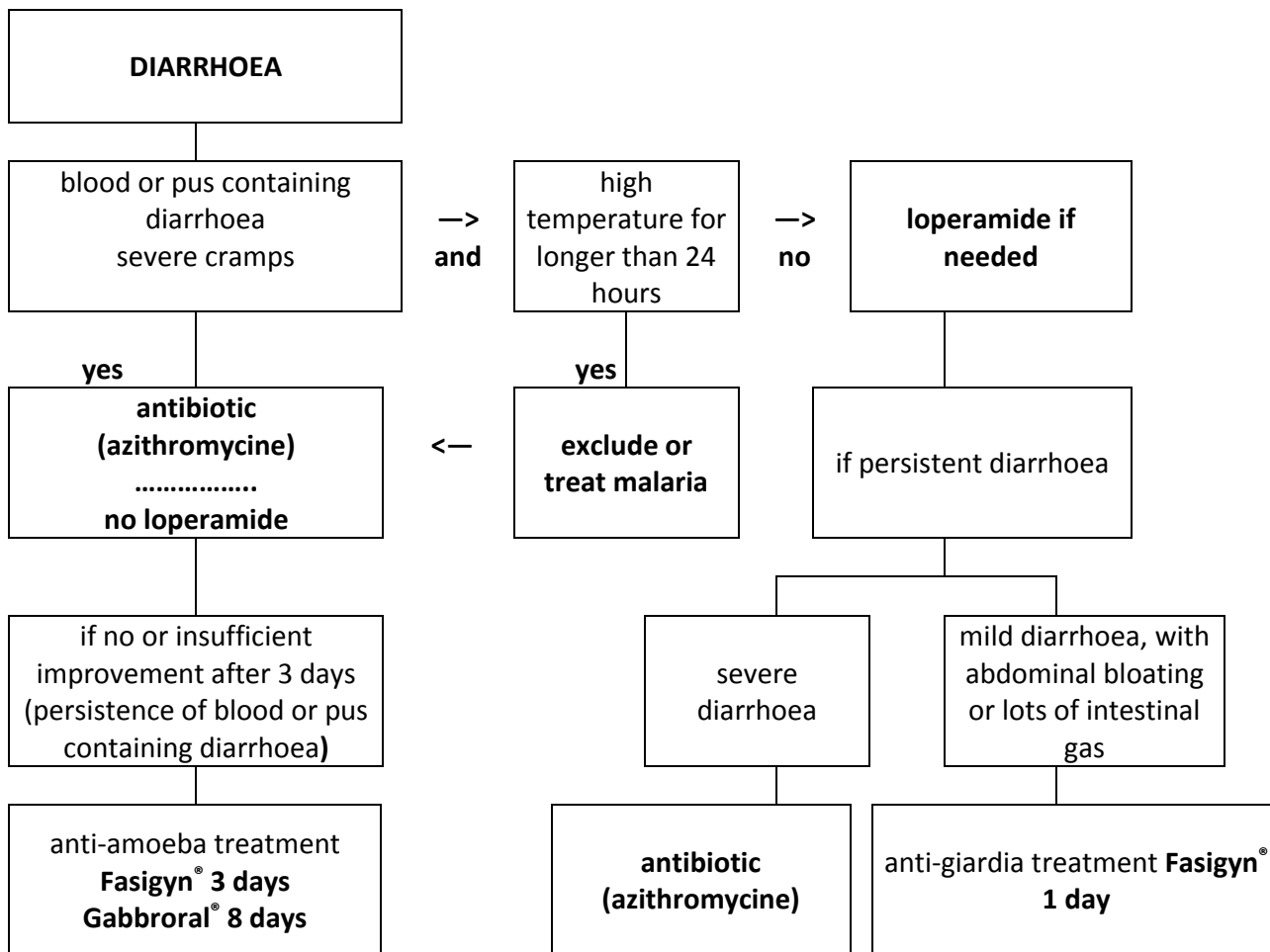
In these cases one usually has:

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

### **Treatment:**

Fasigyn<sup>®</sup> 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



This scheme is **only** for emergency use when travelling.

Do **not** use it when you get back home, but always consult your doctor!