

Giardiasis

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Introduction

Giardiasis is a diarrhoeal illness caused by the protozoan parasite *Giardia intestinalis* also known as *lamblia* or *duodenalis*. The disease occurs world-wide with nearly all children acquiring infection in resource poor regions.

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Epidemiology

(Data from the [Travel Health Surveillance Section](#) of the Health Protection Agency Communicable Disease Surveillance Centre)

Global epidemiology

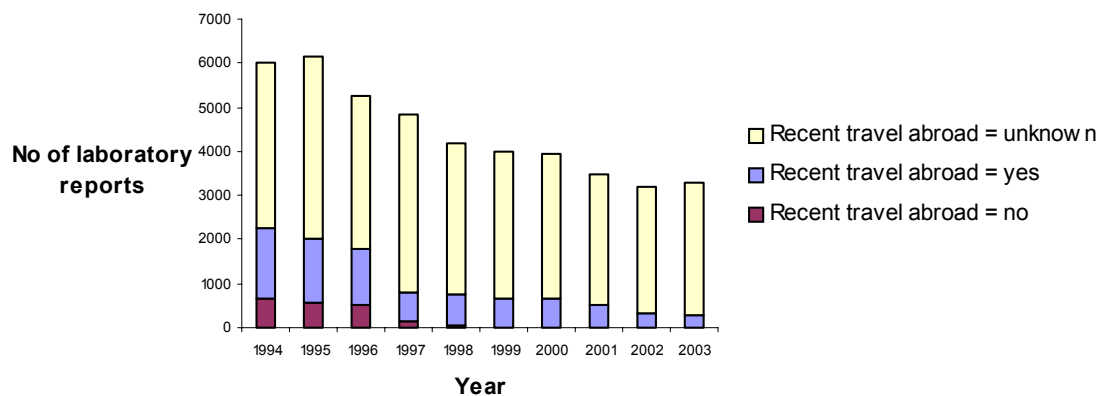
Giardiasis occurs worldwide and is a common infectious cause of diarrhoea. The incidence of diarrhoea associated with *Giardia* is generally higher in resource-poor countries (e.g. many countries of Africa, Asia, and South and Central America) where access to clean water and basic sanitation is lacking. The prevalence rate for *Giardia lamblia* in resource-rich countries is around 2-5% but in resource-poor countries may be up to 20-30% (1). Nearly all children in resource poor countries will acquire *Giardia* at some point in their childhood. In resource-rich countries such as Western Europe and the United States, *Giardia* infection is associated with ingestion of contaminated water, person-to-person spread, recent foreign travel, and recreational swimming.

Giardia can be a cause of travellers' diarrhoea (TD) in up to 12% of travellers (2). For example, a study of German travellers (3) who presented to an infectious disease clinic outpatients department between 1994 and 1997, showed that out of 13,566 patients who presented with various medical conditions (including infectious and non-infectious) after international travel, 352 (2.6%) were confirmed to have

giardiasis (with no other concomitant infection). The infection was more common among those visiting the Indian subcontinent or West Africa, although this probably reflected travelling patterns. A study conducted on those staying at resort hotels in Jamaica found that 1.2% of travellers reporting to medical units had diarrhoea caused by *Giardia* (4). In Tasmania, the prevalence of *Giardia* infection has been reported to be as high as 11% in refugees, immigrants and returned travellers (5).

Giardiasis in travellers from England and Wales

Figure 1 Laboratory reports of *Giardia* by travel history, England and Wales: 1994 to 2003

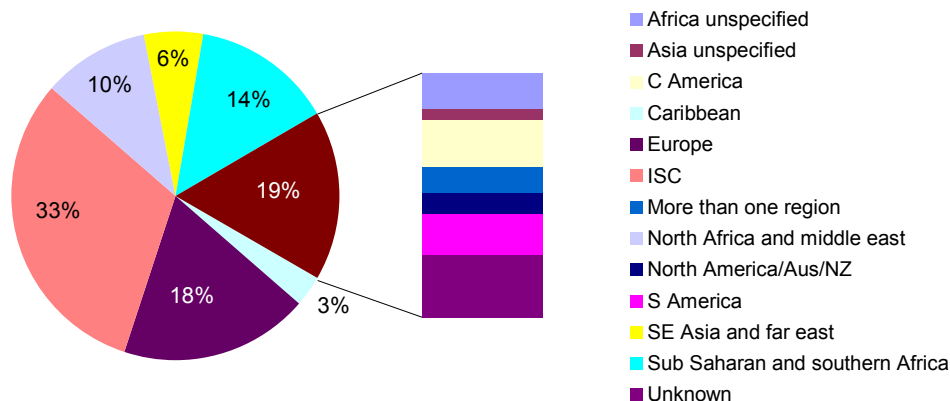


Between 1994 and 2003, more than 3,000 cases of giardiasis were reported to CDSC each year (see figure 1). The Environmental Surveillance Unit of the HPA undertook an enhanced surveillance project for giardiasis in 2002, which involved interviews with patients to ascertain epidemiological information (including travel history) combined with laboratory results. The project estimated that between 30% and 60% of cases had acquired their infection abroad within the previous year (6). Travel history reporting via routine surveillance systems based on laboratory confirmed reports (Labbase¹) is likely to underestimate the role of travel. There has also been a decline in travel history reporting from 37% in 1994 to 9% in 2003. Therefore, the above figures should be interpreted with caution.

Of the 282 *Giardia* infections reported that specified recent travel abroad in 2003, 32% travelled to the Indian sub-continent, 18% to Europe, 14% to Sub-Saharan and southern Africa, 10% to north Africa and the middle east, and 6% to south east Asia and the far east.

¹ Labbase is the database that collects laboratory reports of all micro organisms isolated at nearly 400 NHS and other laboratories throughout England and Wales. The database is managed and accessed at the HPA Centre for Infections.

Figure 2 Laboratory reports of *Giardia lamblia* by region of recent foreign travel, England and Wales: 2003



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Risk for Travellers

Giardia is prevalent throughout the world, including temperate resource rich countries, such as the UK and the United States.

A German study of travellers presenting with giardiasis found that the infection was more common amongst those visiting the Indian subcontinent or West Africa, (3) although this may reflect their travel patterns.

The risk of parasitic diarrhoeal infections, including giardiasis, appears to be greater in those travellers who spend prolonged periods of time in endemic areas. In one study the rate of infection was highest amongst trekkers. (7)

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Transmission

Giardia is present in both humans and non human mammalian reservoirs such as sheep and cattle.

Infection is acquired via the faecal oral route, primarily through the ingestion of *Giardia* cysts from faecally contaminated water. Food borne outbreaks do occur, but are less common. Person to person transmission also occurs, particularly between small children in day care facilities, and amongst men who have sex with men.

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Signs and Symptoms

The majority of cases are asymptomatic, but in those that do experience clinical illness the incubation period is between 1 and 3 weeks, and therefore symptoms may begin after a traveller has returned home. (8) The most common symptoms are diarrhoea, accompanied by abdominal cramps, bloating, nausea, anorexia and weight loss.

Less common are vomiting, fever and urticaria.

Symptoms often last for more than 10 days and sometimes longer than a month.

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Treatment

Persons who have appropriate risk factors and a prolonged diarrhoeal illness often with weight loss should be suspected of having giardiasis. A confirmed diagnosis can be made by a stool examination for ova and parasites or a stool antigen detection assay.

Giardiasis responds promptly to treatment with metronidazole or tinidazole. Lactose intolerance and an irritable-bowel like syndrome can occur following giardiasis and need to be distinguished from relapse of infection.

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Prevention

There is no vaccine or chemoprophylaxis for *Giardia*. Travellers should be advised to observe [food and water](#) hygiene practices.

Giardia intestinalis parasites are moderately resistant to chlorine levels found in drinking water, and if there has been a faecal accident in a swimming pool, swimmers may become infected. Travellers should therefore be advised to avoid swallowing water whilst swimming and refrain from using swimming pools if experiencing diarrhoea.

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References

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8. Okhuysen PC. Traveler's diarrhea due to intestinal protozoa. *Clin Infect Dis* 2001; 33:110-114

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Reading List

Ericsson C, DuPont H, Steffen R. Travelers' Diarrhea. 2003. BC Decker Inc. Ontario

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Links

Health Protection Agency www.hpa.org.uk/infections/topics_az/giardia/menu.htm

World Health Organisation www.who.int/ith/chapter05_03.html#giardiasis

Centers for Disease Control and Prevention
www2.ncid.cdc.gov/travel/yb/utis/ybDynamic.asp

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