

TRAVEL ADVICE





Sun Protection

Enjoy the sun safely - limit your sun exposure, protect your skin and eyes to avoid damage from the sun's ultra violet rays

Key Messages

UVA and UVB cause skin damage; UVB is the form of irradiation most responsible for sunburn.

A tan is not a sign of health - it is a visible sign of sun damage.

Use sun protection cream with a sun protection factor (SPF) of 30 or above and 4 or 5-star UVA protection rating.

Shade, clothing, hats and sunglasses help protection too.

Highest risk is when the sun is high in the sky (around noon) so limit sun exposure between 11am and 3pm. The sun's rays are strongest in countries near the equator and at high altitude. Snow also increases sun exposure by reflecting UV rays.

Children should be protected with high factor sun cream, clothes, hats and sun shelters. Babies under six months should NEVER be left in direct sunlight.

Urgent medical advice should be sought for any changes to moles: bleeding, itching, increases in size and changes in shape.

Overview

Sun damages skin by ultraviolet (UV) radiation, with UVA and UVB rays posing the greatest risk for sun damage. Overexposure to sunlight is the underlying cause of damage to skin, eyes and the immune system [1]. UVA is primarily responsible for skin aging, but can cause skin cancer, while irradiation by UVB causes the majority of sunburn, which is linked to the development of malignant skin cancers [2].

While a tan is often associated with looking healthy, it actually indicates that skin has been damaged by UV radiation and is trying to protect itself. Tans increase skin cancer risk: both sunburn and heavy tans are harmful [2].

Everyone should avoid excessive sun exposure, but those at greatest risk of damage are [3]:

- · Anyone with fair skin
- Babies and young children



- Immunosuppressed individuals (those with a weakened immune system)
- Those taking certain medicines, including some cancer treatments [4]
- Those with medical conditions such as polymorphous light eruption, rosacea and vitiligo [4].

Dark skin has more protective melanin pigment and skin cancer is less common, but there is still a risk [5]. When skin cancer is detected, it may present at a late, more dangerous stage [3, 5].

UV radiation

Levels of UV radiation depend on a number of environmental factors [3] including:

Altitude

At higher altitudes, a thinner atmosphere filters less UV radiation.

Cloud cover and wind

Burning is possible on cool, cloudy days, as the water content in clouds does not absorb UV radiation in the way it absorbs heat. A cool wind is falsely reassuring as UVB levels remain unchanged on windy days.

Time of day

Ideally sun exposure should be limited between 11am and 3pm (local time) when the sun is usually at its strongest.

Reflection

Sand and snow reflect UV radiation, increasing risk of sunburn. Rippling water and rough seas reflect more UVB radiation than calm water.

Season

UVA and UVB levels can vary greatly between winter and summer in areas such as northern Europe. However, they are consistently high all year round in tropical and sub-tropical countries near the equator.

Effects of UV radiation:

Tanning

There is no such thing as a healthy tan - it is a sign of UV radiation skin damage [3].

UVA radiation stimulates melanin pigment production in upper skin cell layers, resulting in a short lasting tan. UVB radiation stimulates skin cells to produce a thicker epidermis (outer skin layer) and more melanin, increasing skin pigment further [6]. Thickening and darkening of the epidermis are natural defence mechanisms against more sun damage [2, 6]. Although skin darkening may offer some limited protection from sunburn, it offers no protection against aging effects or the skin cancer risk of sun damage [6].

Sunburn

When UVB penetrates deep skin layers, it is absorbed by DNA and cell damage occurs. As a result, cells try to repair themselves by releasing chemicals [2]. Sunburn is a visible reaction, causing redness, heat and pain. Sometimes damage is so severe that cells die, causing blistering, swelling and weeping. Fluids and pain relief can help relieve symptoms.

Sun cream absorbs UV light, but is not 100 per cent protective.

Photo-ageing

Photo-ageing is long-term skin damage from both UVA and B radiation. The skin's structure deteriorates; resulting in dryness, roughness and thickening. Sometimes skin also becomes thin and fragile.

Skin cancers

Skin cancers are divided into non-melanoma skin cancers (NMSC) and melanomas. NMSC include basal cell and squamous cell carcinomas. Frequency of both NMSC and melanomas has been increasing over the past decades and one in every three cancers diagnosed worldwide is now a skin cancer [7]. Higher risk factors include:

- · A family history of skin cancer
- Blue, green or hazel eyes
- · Fair skin that burns easily
- Freckles
- · Light coloured hair
- · Lots of moles
- Anyone being treated with immunosuppressive drugs [3].

UV radiation is the main reason that people develop skin cancer [3].

Skin cancers occur when cells undergo malignant transformation due to UV radiation damage to their DNA. These cells reproduce independently and can spread to neighbouring tissues or spread via the bloodstream to the body's major organs. Skin cancers are usually treated with surgery, although sometimes radiotherapy or chemotherapy is needed too.



Between two to three million cases of NMSC occur worldwide each year [6]. NMSC can be painful and disfiguring and are usually found on body parts more exposed to the sun: arms, ears, face and neck. NMSC accounts for less than 1% of all cancer deaths in the UK [7]; cure rates are very high and generally the outlook is very good [8].

Basal cell skin cancer

Basal cell carcinoma is the most common NMSC accounting for 80 percent of all cases. It can cause disfigurement and presents as a scab that does not heal or a nodule with a pearly rim and central crater. Basal cell skin cancers can be cured in most cases; it is extremely rare for this type of skin cancer to spread to another area of the body [9].

Squamous cell skin cancer

Squamous cell carcinoma is less common, but potentially more serious than basal cell carcinoma. This type of skin cancer can vary in appearance, but often presents as a raised, crusty area of skin with an inflamed base; sometimes the affected areas may be sore and/or bleed. Squamous cell skin cancers can be cured in most cases, but in a small number of people spread to the lymph nodes or to other parts of the body occurs [9].

Melanomas

Malignant melanomas are the most serious form of skin cancer which may spread to other parts of the body. Since the 1990s, the rate of melanoma skin cancers has increased; in the UK rates have increased through all age groups (25 to >80 years), with the biggest increases occurring in older persons [7]. These increases are likely to be due to many factors, including exposure to UV radiation. Intermittent exposure to UV light from strong sunlight, or exposure from artificial sources to UV light i.e. use of sunbeds, are risk factors that increase the risk of developing melanoma [9]. Treatment is surgery to remove the lesion and chemotherapy or radiotherapy, if the cancer has spread to other parts of the body [9].

Photosensitivity

Some people have an abnormal skin reaction to UV radiation, called photosensitivity. Symptoms include: a red, itchy rash and blistering. This can also be caused by certain creams or gels applied to the skin, or tablets, injections or intravenous infusions. Photosensitivity may occur within minutes of sun exposure and typically appear, usually as a rash on the face, back of the neck and upper chest.

Drugs that can cause photosensitivity include acetazolamide (sometimes taken for altitude illness), amiodarone, antibiotics: fluoroquinolones, sulphonamides and tetracyclines, diuretics: furosemide, hydrochlorothiazide, and non-steroidal anti-inflammatory painkillers: ibuprofen or naproxen [4].



Eye problems

Unprotected, eyes can be damaged by repeated exposure to sunlight.

Photokeratitis is inflammation of the cornea, whilst photoconjunctivitis is inflammation of the conjunctiva. Both conditions are comparable to sunburn of eye tissues. They are very painful, but reversible and not usually associated with long-term damage. An extreme form of photokeratitis, called snow blindness, can occur in skiers and climbers exposed to extreme UV radiation levels due to high altitude and strong sun reflection from snow. Blindness results from inflammation of conjunctiva and cornea. These damaged tissues usually renew quickly and sight returns in a few days. However, very severe snow blindness can cause chronic irritation [6].

Eyes should be protected by sunglasses or goggles that block UVA/B rays and which carry the <u>CE</u> standard mark.

Before travel

It is still possible to enjoy the sun, but extra precautions should be taken. The best way to avoid risk associated with UV radiation is by reducing sun exposure.

Travellers should check sun strength at their destination and take a good supply of appropriate SPF (sun protection factor) sun cream, protective clothing and sun glasses.

The <u>World UV App</u> - developed by the British Association of Dermatologists and the <u>Met Office</u> provides live UV ratings worldwide and is free to download.

Sun creams are one of the most common ways to protect skin against the damaging effects of the sun. They contain either physical filters to block UV or chemicals that absorb various wavelengths of UV radiation. Sunscreens are rated by their sun protection factor (SPF). This is the relative protection against sunburn received after applying the sunscreen, compared to not using it. The higher the SPF rating, the better the protection.

As an example: if it takes 10 minutes for a person to burn, applying an SPF 15 sun cream means that it will take 15 times as long (150 minutes) for them to burn. Broad spectrum sun creams block UVA radiation as well as UVB. The 'star' system used in the UK shows the amount of UVA protection a sunscreen offers: 0 is the lowest and five the highest. Physical sunscreens containing titanium oxide or zinc oxide reflect both UVA and UVB rays.

Studies show that DEET insect repellents (33 percent) can decrease protection of SPF 15 sunscreen [10]. There is no evidence that sunscreen reduces efficacy of DEET when used at concentrations above 33 percent [11, 12]. When both sunscreen and DEET repellents are needed, **DEET should** be applied after the sunscreen. 30 to 50 SPF sunscreen should be used to compensate for the DEET- induced reduction in SPF [13].

During travel

Travellers should:

- Avoid exposure when the sun is at its highest in the sky (11 am 3pm).
- Avoid "once a day" sunscreens [9].
- Use broad spectrum, high protection factor sunscreens (30 SPF plus with UVA rating of 4/5 stars to blocks UVA/UVB rays) even on cloudy days.
- The British Association of Dermatologists recommends at least six full teaspoons of sun lotion per application for an average adult [9].
- Apply sunscreen liberally at least 30 minutes before sun exposure, reapply at least two hourly, after swimming, exercise and towel drying.
- Reapplying sunscreen is important for even coverage and to avoid missing patches of skin.
- Protect lips with sun block.
- Wear a wide-brimmed hat and cover up as much as possible with sun protective clothes, especially if peak time exposure is unavoidable.
- Wear sunglasses, with a CE mark [14] or goggles for skiing and climbing to protect the eyes from sun damage and glare. Avoid staring directly at the sun.
- Children are particularly vulnerable to sun damage. Babies under six months of age should never be placed in direct sunlight and young children should always be protected with high SPF sun cream.

To treat mild sunburn:

- Have a cool bath/shower or sponge affected areas with cold water.
- Drink plenty of fluids to prevent dehydration.
- Take painkillers like paracetamol or ibuprofen if needed. Aspirin should not be given to children under 16 years.
- When comfortable, apply moisturising cream.
- Cover up and stay out of the sun until skin has fully healed.
- Get prompt medical attention for swollen or blistered skin, chills, a high temperature, dizziness, headaches and feeling sick.

After travel

Seek urgent medical advice for any changes to moles, such as increases in size, itchiness, bleeding or oozing, or if a new mole develops very quickly. These could be potential signs of cancer.

Resources

- Cancer Research: Sun, UV and cancer
- NHS: Sunscreen and sun safety
- Public Health England: Ultraviolet radiation and sunscreen
- World Health Organization: Sun protection



REFERENCES

- 1. World Health Organization. Sun Protection. 2018. [Accessed 24 October 2018]
- 2. <u>British Association of Dermatologists. Sunscreen Fact Sheet. 2013. [Accessed 24 October 2018]</u>
- 3. <u>World Health Organization</u>. <u>International Agency for Research on Cancer</u>. <u>Sun/UV exposure</u>: 12 ways to reduce your cancer risk. 2016. [Accessed 24 October 2018]
- 4. Ansell VE, Takiguchi R. Sun Exposure Ch 2. In: US Centers for Disease Control and Prevention. Health Information for International Travel 2018. Elsevier: Atlanta: 2018 [Accessed 24 October 2018]
- 5. <u>American Academy of Dermatology. Skin cancer in people of color. 4 February 2014.</u> [Accessed 24 October 2018]
- 6. <u>World Health Organization</u>. <u>Ultraviolet radiation (UV)</u>. <u>The known health effects of UV. 2018</u>. [Accessed 24 October 2018]
- 7. Cancer Research UK. Skin cancer incidence statistics. Undated. [Accessed 24 October 2018]
- 8. <u>Cancer Research UK. Survival. Skin cancer statistics. 24 July 2017. [Accessed 24 October 2018]</u>
- 9. <u>British Association of Dermatologists: Healthy skin for all. Skin Cancer. Undated. [Accessed 24 October 2018]</u>
- 10. Montemarano AD, Gupta RK, Burge JR, Klein K. Insect repellents and the efficacy of sunscreens. The Lancet. 1997;349(9066):1670-1.13.
- 11. Murphy ME, Montemarano AD, Debboun M, Gupta R. The effect of sunscreen on the efficacy of insect repellent: a clinical trial. Journal of the American Academy of Dermatology. 2000;43(2):219-22.
- 12. Webb CE, Russell RC. Insect repellents and sunscreen: implications for personal protection strategies against mosquito-borne disease. Australian and New Zealand Journal of Public Health. 2009;33(5):485-90.
- 13. <u>Public Health England Advisory Committee on Malaria Prevention in UK travellers (ACMP)</u>
 <u>Guidelines for malaria prevention in travellers from the UK 2017, October 2017. [Accessed 24 October 2018]</u>
- 14. <u>Association of British Dispensing Opticians. Sunglasses: explaining the jargon. Undated.</u> [Accessed 24 October 2018]

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Food And Water Hygiene

Advice on avoiding food and water-borne diseases

Key Messages

Contaminated food and water can transmit a number of different infectious diseases such as cholera, hepatitis A, travellers' diarrhoea and typhoid. Travellers' diarrhoea is particularly common in those visiting low-income countries.

It can be difficult to avoid contaminated food and water, but travellers can try and reduce their risk by following the steps below.

A factsheet on <u>travellers' diarrhoea</u> is available. This includes information on how to manage symptoms and when to get medical help.

Certain travellers need to take particular care as they are at increased risk of complications. This includes older people, those with a weak immune system, young children and those taking medication to reduce stomach acid.

Overview

Contaminated food and water can transmit a number of different infectious diseases, the risk is higher in low income regions [1]. There is a wide range of infectious diseases that are transmitted by contaminated food and water. Many are caused by pathogens (bacteria, viruses or parasites) transmitted via the faecal-oral route (consumption of food and drinks contaminated with faeces).

Swallowing or inhaling contaminated water in inadequately treated swimming pools, hot tubs and spas can also transmit pathogens that can cause diarrhoea, vomiting, or infection of the ears, eyes, skin, or the respiratory system [2].

Vaccinations can prevent only a small number of these diseases (such as cholera, hepatitis A, polio and typhoid). Although contaminated food and water is difficult to avoid in areas with poor sanitation, it is sensible for travellers to try and reduce their risk by following the information below.

Risk for travellers

Standards of hygiene have improved in some areas with increasing economies and in improved tourism infrastructure [1]. The incidence rates of travellers' diarrhoea (TD) and other diseases transmitted by contaminated food and water have reduced as a result [1, 3]. However, TD remains



a common illness affecting 20-60 percent of travellers from high-income countries, visiting low-income areas of the world [4, 5]. In recent years, an increase in cases of a parasite called cyclospora has been reported in UK travellers coinciding with the summer holiday period [6].

There are several risk factors for TD including: diet, gender, age, host, genetics, destination, season of travel and choice of eating place [4, 7]. Destination and choice of eating establishment are the most important determinants of risk [4].

The effects of diseases transmitted by contaminated food and water, such as TD, may be greater in the very young, the elderly and the frail. Vulnerable travellers, such as pregnant women and those with immune suppression, inflammatory bowel disorders, chronic kidney or heart disease should also take particular care to avoid contaminated food and water, and be prepared to manage TD symptoms. Conditions that reduce stomach acidity increase risk of contracting infections with acid-sensitive organisms such as Salmonella and Campylobacter [8-9].

Before travel

Travellers should seek information on the risks of contaminated food and water at their destination in advance of travel. The <u>Country Information pages</u> on our website show details of the vaccine preventable risks where relevant. Ideally, travellers should see their healthcare provider at least 4-6 weeks before travel for advice on vaccinations (if appropriate) and food and water precautions. However, even if travelling at short notice, pre-travel advice is still important and worthwhile. Travellers should consider taking a diarrhoea treatment pack, further details can be found in our travellers' diarrhoea factsheet.

Pregnant women, those with very young infants and travellers with pre-existing medical conditions such as significant bowel disease or immune suppression should discuss the suitability of travel with their specialist or GP practice before booking.

Travellers should consider obtaining other items to help reduce their risk from contaminated food and water. Alcohol gel can be helpful for hand hygiene where hand washing facilities are not available. Those who may not have access to safe water at their destination should consider taking appropriate equipment such a water filter or chemical treatments (see details in the 'during travel' section).

During travel

Travellers should wash their hands after visiting the toilet, changing nappies and before preparing or eating food. Alcohol gel is helpful when hand-washing facilities are not available.

It is difficult to eliminate the risk from contaminated food [1] but it is sensible for travellers to try and avoid higher risk food and drinks where possible.

Water and other drinks



Drinks served in unopened, factory produced cans or bottles with intact seals such as carbonated drinks, commercially prepared fruit drinks, water and pasteurised drinks generally can be considered safe. Drinks made with boiled water and served steaming hot, such as tea and coffee are also usually safe.

In countries with poor sanitation, it is not advisable to drink tap water or use it to clean teeth, unless it has been treated. Ice should also be avoided. Water can be disinfected by bringing it to a rolling boil [10-11]. Although boiling is a reliable method of disinfection, it may not always be convenient.

Chemical treatments can be used to disinfect water. However, the effectiveness of these treatments can be reduced by low water temperatures and suspended matter in the water. Travellers should follow the instructions carefully to obtain the best results. Chlorine preparations are usually effective, but protozoan parasites such as *Cryptosporidium* and *Giardia* are not always inactivated by these agents [12]. Studies have shown chlorine dioxide to be more effective at inactivating parasites [13]. Following a European Union (EU) directive, iodine is no longer sold or supplied for use in disinfecting drinking water.

Using a water filter that has a filter size of \leq 0.2 μ m to 1.0 μ m before using a chemical disinfectant is helpful as water filters can remove suspended matter and parasites if they work correctly [11].

Portable, battery-operated devices using UV light can be used to disinfect water. However, water must be free of particulate material before treating. This method may not be practical if large quantities of water need disinfecting.

Generally bottled water is not recommended to make up formula feeds for infants [14]. This is because it may contain too much salt, or sodium (also written as Na) sulphate (also written as SO or SO4), and is usually not sterile. When travelling, however, bottled water may be safer to drink than tap water. If it is to be used, bottled water should contain:

- less than 200 milligrams (mg) a litre of sodium
- no more than 250mg a litre of sulphate

Natural mineral water is usually not recommended for infant feeds because its contents often exceed the maximum recommended levels above [14].

In the UK there are regulations on the legal requirements for the production and labelling of natural mineral, spring and bottled water [15]. Similar requirements may not be in place in other countries. Parents should be aware of fake bottled water and ensure the seal has not been tampered with at the time of purchase.

As bottled water is usually not sterile, it should be boiled, like tap water, to at least 70°C [16] and allowed to cool before mixing with the formula in preparation for a feed.

Food

Recently prepared, thoroughly cooked food that is served piping hot, fruit that can be peeled by the traveller (such as bananas and oranges), and pasteurised dairy produce such as yoghurts, milk and cheese are good options for travellers.

Certain foods are prone to contamination and where possible should be avoided:

- Salads
- Uncooked fruit and vegetables (unless washed and/or peeled by the traveller)
- Fresh or cooked food that has been left uncovered in warm environments, exposed to flies, such buffets.
- Unpasteurised dairy products, like milk, cheese, ice cream and yoghurt.
- Raw or undercooked meat, fish or shellfish, including oysters.
- Food from street traders unless thoroughly cooked in front of the traveller and served hot on clean crockery.

See our travellers' diarrhoea factsheet for details on the management of travellers' diarrhoea.

After travel

Travellers returning with diarrhoea should seek medical care if symptoms do not improve within three days. They should seek medical care immediately if they have a fever of 38°C or more, blood and/or mucous in the stool or other worrying symptoms such as altered mental status, severe abdominal pain, jaundice or rash.

Medical advice should be sought earlier for the elderly, children and other vulnerable travellers if they are not tolerating fluids or are showing signs of dehydration.

An algorithm for the investigation and management of diarrhoea is available from Public Health England in Managing suspected infectious diarrhoea [17].

Resources

- CDC: Keeping your hands clean on a cruise
- NHS Choices: Food Poisoning
- NHS Choices: Norovirus
- Public Health England: Cyclospora advice for travellers
- Travellers' diarrhoea
- World Health Organization: Food Safety Fact Sheet

REFERENCES



- 1. Steffen, R., Hill, D.R., DuPont, H.L. Traveler's diarrhea a clinical review. JAMA. 2015; 313 (1): 71-80. [Accessed July 2018]
- 2. <u>Jacobsen KH, Koopman JS. The effects of socioeconomic development on worldwide hepatitis</u>
 A virus seroprevalence patterns. Int | Epidemiology. 34:600-9, 2005. [Accessed July 2018]
- 3. <u>Griffin PM, Hlavsa MC, Yoder JS, Food and water precautions. In: Centers for Disease Control and Prevention. Health Information for International Travel 2018. Atlanta, CDC. [Accessed July 2018]</u>
- 4. <u>Hill DR, Beeching NJ. Travelers' diarrhea. Cur Opin Infect Dis. 2010; 23: 481-7. [Accessed July 2018]</u>
- 5. <u>Health Protection Agency</u>. <u>Foreign travel-associated illness a focus on travellers' diarrhoea</u>. <u>2010 report</u>. <u>London</u>: <u>Health Protection Agency</u>; <u>2010 [Accessed July 2018]</u>
- 6. <u>Public Health England. Cyclospora outbreak related to travel to Mexico. Health Protection</u>
 <u>Report vol 10, 25. 5 August 2016, updated 16 December 2016. [Accessed July 2018]</u>
- 7. Swaminathan A, Torresi J, Schlagenhauf P et al A global study of pathogens and host risk factors associated with infectious gastrointestinal disease in returned international travellers, J Infect. 2009; 59(1):19-27.
- 8. Bavishi C, Dupont HL Systematic review: the use of proton pump inhibitors and increased susceptibility to enteric infection, Aliment Pharmacol Ther. 2011 Dec;34(11-12):1269-81. doi: 10.1111/j.1365-2036.2011.04874.x. Epub 2011 Oct 17.
- 9. National Institute for Health and Care Excellence (NICE) Diarrhoea prevention and advice for travellers, May 2013 [Accessed July 2018]
- 10. World Health Organization. Preventing Travellers' Diarrhoea: How to Make Drinking Water Safe. WHO/SDE/WSH/05.07. Geneva 2005 [Accessed July 2018]
- 11. Backer H. Water disinfection for international travellers.Ch.6. In: Keystone JS (Ed). Travel Medicine. Third Edition 2013; Elsevier (Saunders).
- 12. Carpenter C, Fayer R, Trout J, Beach MJ. Chlorine disinfection of recreational water for Cryptosporidium parvum. Emerg Infect Dis 1999: 5:579-584 [Accessed July 2018]
- 13. <u>US Environmental Protection Agency Guidance Manual, Alternative Disinfectants and Oxidants, April 1999. [Accessed July 2018]</u>
- 14. NHS Choices. Can I use bottled water to make up baby formula (infant formula)? 22 June 2016. [Accessed July 2018]
- 15. <u>Food Standards Agency, UK. The Natural Mineral Water, Spring Water and Bottled Drinking Water Regulations 2007, Revised July 2010 [Accessed July 2018]</u>
- 16. <u>Department of Health. Advice on preparation of formula milks restated.</u> 23 January 2013. [Accessed July 2018]
- 17. <u>Public Health England. Managing suspected infectious diarrhoea. January 2015. [Accessed July 2018]</u>

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Travellers' diarrhoea

Following advice on food and water hygiene is sensible, but travellers should always be prepared to manage the symptoms of TD during their travels



Key Messages

Travellers' diarrhoea (TD) is the most common health problem of overseas travellers, affecting an estimated 20 to 60 percent of those who travel to high risk destinations of the world.

TD can be caused by viruses, bacteria or protozoa.

TD is difficult to prevent for those who cannot prepare their own food and drinks. Following advice on food and water hygiene is sensible, but travellers should always be prepared to manage the symptoms of TD during their travels.

Overview

Travellers' diarrhoea (TD) is the most common health problem of overseas travellers affecting an estimated 20 to 60 percent of those who travel to high risk destinations of the world [1]. It is defined as three or more unformed stools in a 24 hour period, often accompanied by at least one of the following: fever, nausea, vomiting, cramps, or bloody stools (dysentery) [1]. Symptoms usually start during or shortly after a period of foreign travel [1]. TD can cause substantial disruption to travel itineraries or business trips. Approximately 20 percent of travellers are confined to bed for one or two days, 40 per cent have to change their itinerary, and one per cent are admitted to hospital [2].

TD can be caused by viruses (such as norovirus and rotavirus), bacteria (such as *Escherichia coli*, *Campylobacter*, *Salmonella and Shigella*) and/or protozoa (such as *Giardia* and *Cryptosporidium* spp.) [3]. In up to 40 percent of TD cases, the causative pathogen is not identified [4]. Cholera is rarely seen in travellers.

Risk areas

The organisms that cause TD, particularly non-typhoidal *Salmonella* spp. and *Campylobacter* spp., are commonly reported worldwide, including in the UK. Other organisms such as *Shigella* spp. and *Giardia lamblia* for example are more commonly reported in lower-income countries that have inadequate sanitation facilities and a lack of access to clean water [1].

There are regional differences in the risk of travellers' diarrhoea and estimates of incidence rates vary in different studies [1, 3, 5, 6]. Low-risk areas include Western Europe, the United States, Canada, Australia, New Zealand and Japan. Seven percent or less of travellers are estimated to experience TD in these areas [1]. Intermediate-risk areas include southern Europe, Israel, South Africa, some parts of the Caribbean and the Pacific islands, with estimated incidence rates of between eight and 20 percent. High-risk areas include most of Asia, the Middle East, Africa, and Latin America; more than 20 percent of travellers from a high-income country may experience TD in these areas [Figure 1].

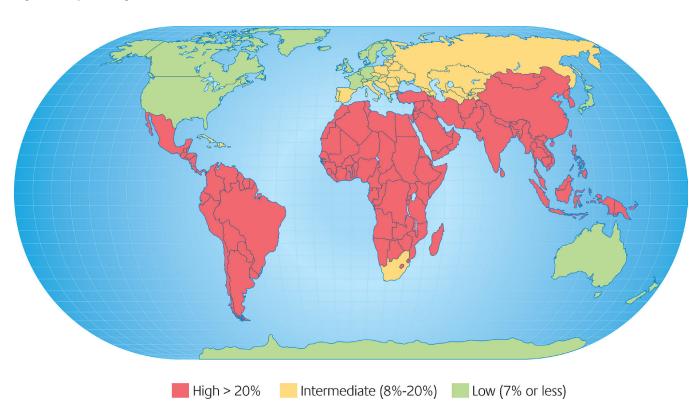


Figure 1: Map showing risk areas for TD

Source: Health Protection Agency. Foreign travel-associated illness - a focus on travellers' diarrhoea. 2010 report [1]

Risk for travellers

Estimated incidence rates for TD are described above. There are several risk factors for

acquiring TD including: diet, gender, age, host genetics, destination, season of travel and choice of eating establishment [7-9]. Of these, the destination country and choice of eating establishment are considered to be the most important factors [7].

The effects of diarrhoea are generally greater in the very young, the elderly and the frail. Those with special health needs, for example, travellers with immune suppression (lowered immunity), inflammatory bowel disease, chronic (long term) kidney or heart disease and pregnant women should take particular care to avoid contaminated food and water and be prepared to manage the symptoms of TD. Those with reduced acidity in the stomach are also at increased risk of contracting infections with acid-sensitive organisms such as *Salmonella* and *Campylobacter* [10, 11].

Travellers' diarrhoea in travellers from England, Wales and Northern Ireland

Between 2004 and 2008, there were 24,332 cases of laboratory confirmed travel-associated gastrointestinal (GI) illness reported in England, Wales and Northern Ireland (EWNI) [1]. Fifty percent of cases were caused by *Salmonella* spp. (non typhoid). Other organisms included *Campylobacter* spp., *Shigella* spp., *Giardia lamblia*, and *Cryptosporidium* spp.

In 2008, travel to countries in North Africa, the Middle East, Asia, sub-Saharan Africa, South America and the Caribbean were associated with higher rates of TD [1].

Transmission

TD is acquired through the consumption of contaminated food or water. Although a change in bowel habit can be caused by the stress of travel, a change in diet, and increased alcohol consumption, most episodes of TD are related to infection [1].

Recreational water such as swimming pools, the sea and freshwater rivers and lakes may also be a source of water-borne infection. In swimming pools, infection may occur if treatment and disinfection of the water are inadequate. Swimming pool-related outbreaks of illness are relatively infrequent, but have been linked to viruses, bacteria, protozoa and fungi [12, 13].

Signs and symptoms

TD is defined as three or more unformed stools in a 24 hour period, often accompanied by at least one of the following: fever, nausea, vomiting, cramps, or bloody stools (dysentery), with

symptoms usually starting during or shortly after a period of foreign travel [1]. Vomiting is uncommon, and dysentery (abdominal cramps with blood or mucous in the stool) is infrequent [7]. TD typically occurs during the first week of arrival and is often self-limiting, lasting three to four days. In approximately two percent of cases, symptoms persist for longer than a month [14]. An episode of TD, particularly one with severe symptoms, can lead to irritable bowel syndrome in a small number of travellers [15].

Diagnosis and treatment

TD is caused by a variety of organisms. Where aetiology is known, bacteria are responsible for most cases and include ETEC, *Salmonella* spp., *Shigella* spp., and *Campylobacter* spp. [1]. Enterotoxigenic *Bacteroides fragilis* has been identified as a likely cause of TD [16]. Other organisms include viruses, such as norovirus, and protozoa (e.g. *Cryptosporidium* spp., *Giardia lamblia*).

TD usually resolves spontaneously. Individuals with ongoing symptoms depending on the history and clinical presentation may require further tests, such as; stool microscopy, stool culture, full blood count and/or biochemistry [17].

Screening (laboratory testing) for ETEC is not usually done and up to 40 percent of TD cases never have a particular virus, bacteria, protozoa or fungi identified [4].

The aim of treatment of TD is to avoid dehydration, reduce the severity and duration of symptoms and reduce the interruption to travel plans [18].

Diet and fluid

Travellers should maintain adequate fluid intake to avoid dehydration. For a mild TD illness oral fluids are often all that is necessary.

Adults without existing health problems, with mild to moderate symptoms, can usually stay hydrated by continuing to drink and eat as normal [19]. Dehydration in adults is unusual, but is a concern for young children with diarrhoea. The elderly, pregnant women and those with preexisting illness are also more susceptible to complications from dehydration [19].

For more severe symptoms or those prone to complications from dehydration, oral rehydration powders can be diluted into clean drinking water to remedy electrolyte (sugar/salt) imbalances.

If oral rehydration powers are not available, a salt and sugar solution of six level teaspoons of sugar and one level teaspoon of salt to a litre of 'safe' water can be used [20].

Consumption of small quantities of easily digestible foods are recommended to aid gut recovery in those with TD [18]. Breastfeeding should be continued for infants. Children receiving semisolid foods or solid foods should continue to receive their usual diet [19].

Symptomatic treatment

The most common symptomatic treatments for TD are antimotility agents (e.g. loperamide), and bismuth subsalicylate. Loperamide can be considered for travellers when frequent diarrhoea is inconvenient, e.g. those travelling on long bus journeys, or for business meetings. However, it should not be used if the traveller has active inflammatory bowel disease (e.g. ulcerative colitis), a fever or bloody diarrhoea [11, 21]. Loperamide should be used with caution; travellers should follow the instructions on the pack carefully. Loperamide preparations are available over the counter for use in adults and children over 12 years of age. For younger children, parents should seek early medical advice if the child becomes unwell with TD and symptomatic treatment is required. Rehydration is the main treatment for TD in young children.

Bismuth subsalicylate can be recommended for mild diarrhoea and is helpful in reducing nausea. Bismuth subsalicylate preparations are available over the counter for use in adults and children over 16 years of age. However, loperamide has been shown to be more effective in controlling diarrhoea and cramping and works more quickly [22].

Antibiotics

Antibiotic treatment can be considered for treatment of moderate to severe travellers' diarrhoea. A study of the use of antibiotics for acute diarrhoea in travellers and determined that there were benefits from taking antibiotics [23]. Those who took antibiotics had a shorter duration of diarrhoea, decreased severity of illness, and were more frequently cured within 72 hours of illness onset. Although there were more side effects in those being treated compared with those taking a placebo, these were mostly minor or resolved once the antibiotic had been discontinued.

Fluoroquinolones are often the drugs of choice when indicated [7]. Ciprofloxacin (750mg as a single dose or 500mg twice daily for three days) is prescribed most commonly for travellers to Latin America and sub-Saharan Africa.



Fluoroquinolone resistant *Campylobacter* and *Shigella* are more common in some parts of South and Southeast Asia. For travellers to these areas azithromycin is an appropriate choice: 1,000mg single dose or 500mg once daily for three days [24 25].

Rifaximin is also licensed for the treatment of travellers' diarrhoea that is not associated with fever, blood in the stool or eight or more unformed stools in the previous 24 hours [25]. Clinical data have shown that rifaximin is not effective in the treatment of invasive enteric pathogens that cross the gut wall such as *Campylobacter*, *Salmonella* and *Shigella* which typically produce dysentery-like diarrhoea [25]. As travellers would have to carry a back-up drug in the event of these symptoms, the overall usefulness of rifaximin as a self treatment option remains to be determined.

The combination of loperamide with an antibiotic in moderate travellers' diarrhoea may lead to more rapid improvement compared with either treatment alone [19].

Medical care

Travellers should seek medical care if symptoms do not improve within three days [15]. They should seek medical care immediately if they have a fever of 38°C or more, blood and/or mucous in the stool or other worrying symptoms such as altered mental status, severe abdominal pain, jaundice or rash. Medical care should be sought earlier for the elderly, children and other vulnerable travellers if they are not tolerating fluids or are showing signs of dehydration.

Preventing Travellers' diarrhoea

TD is difficult to prevent for those who cannot prepare their own food and drinks [27]. Following [28] is sensible but these measures do not offer full protection [26]; travellers should always be prepared to manage the symptoms of TD.

- Hands should be washed after visiting the toilet, and always before preparing or eating food. Alcohol gel can be helpful when hand-washing facilities are not available.
- Antibiotic chemoprophylaxis (continuous use during travel) is not recommended for most travellers. If a traveller is considering this, the risks and benefits of such a course should be thoroughly discussed.
- Travellers should also practise good swimming pool hygiene by not swimming if they
 have diarrhoea, ensuring babies and infants are wearing suitable swimwear, and



avoiding ingesting any pool water [13, 29].

Vaccine information

There is no vaccine available for the syndrome of travellers' diarrhoea. The cholera vaccine used in the UK (Dukoral®) may provide some limited cross protection against diarrhoea caused by *Escherichia coli* producing a heat-labile enterotoxin. However, it is unlicensed in the UK for this use as there is limited data on efficacy in travellers; it is not recommended for this indication [30-32]. There are vaccines available for some organisms acquired through the consumption of contaminated food or water such as *Salmonella Typhi*, poliomyelitis, hepatitis A, and *Vibrio cholerae*, however, these organisms do not cause the illness known as travellers' diarrhoea and should be considered separately as part of the overall travel health risk assessment.

Resources

- Food and water hygiene
- World Health Organization. Preventing Travellers' Diarrhoea: How to Make Drinking Water Safe
- World Health Organization Guide on safe food for travellers
- Centers for Disease Control and Prevention (USA): Travelers Diarrhea

Further reading

- Steffen R, Hill DR & Du Pont HL. Traveler's Diarrhea A Clinical Review. JAMA 2015; 313(1):71-80
- Heather CS. Travellers' diarrhoea. BMJ Clin Evid. 2015; Apr 30; pii: 0901
- Zollner-Schwetz I, Krause R. Therapy of acute gastroenteritis: role of antibiotics
- Clin Microbiol Infect. 2015; 21(8), 744-749

REFERENCES

- Health Protection Agency. Foreign travel-associated illness a focus on travellers' diarrhoea. 2010 report. London: Health Protection Agency; 2010. [Accessed August 2015]
- 2. Ericsson CD. Travelers' diarrhea. Epidemiology, prevention, and self-treatment. Infect

- Dis Clin North Am 1998; 12: 285–303 cited in Al-Abri, S.S. Beeching, N.J. Nye F.J. Traveller's diarrhoea. Lancet Infect Dis. 2005 Jun; 5 (6):349-60.
- 3. Shah N, DuPont HL, Ramsey DJ. Global etiology of travelers' diarrhea: systematic review from 1973 to the present. Am J Trop Med Hyg. 80:609-14, 2009.
- 4. Peltola H and Gorbach SL. Chapter 12.1: Travelers' Diarrhea Epidemiology and Clinical Aspects. In: DuPont HL and Steffen R. Textbook of Travel Medicine and Health. Hamilton; BC Decker: 1997.
- 5. Greenwood Z, Black J, Weld L et al. Gastrointestinal infection among international travelers globally. J Trav Med. 15:221-8, 2008.
- 6. Steffen R. Epidemiology of traveler's diarrhea. Clin Infect Dis. 41(Suppl 8):S536-40, 2005.
- 7. Hill DR, Beeching NJ. Travelers' diarrhea. Cur Opin Infect Dis. 23:481-7, 2010.
- 8. Al-Abri, S.S. Beeching, N.J. Nye F.J. Traveller's diarrhoea. Lancet Infect Dis.2005 Jun; 5(6):349-60.
- 9. Swaminathan A, Torresi J, Schlagenhauf P et al. A global study of pathogens and host risk factors associated with infectious gastrointestinal disease in returned international travellers. J. Infect; 2009 Jul; 59(1):19-27.
- Bavishi C, Dupont HL. Systematic review: the use of proton pump inhibitors and increased susceptibility to enteric infection, Aliment Pharmacol Ther. 2011 Dec; 34(11-12):1269-81.
- 11. National Institute for Health and Care Excellence (NICE) Diarrhoea prevention and advice for travellers [Accessed August 2015]
- 12. Galmes A, Nicolau A, Gomis E, Guma M, Hernandez-Pezzi G, and Soler P.

 Cryptosporidiosis outbreak in British tourists who stayed at a hotel in Majorca, Spain.

 Eurosurveillance 2003; 7 (33). [Accessed August 2015]
- 13. World Health Organization, Guidelines for safe recreational water environments, volume 2, 2006 [Accessed June 2015]
- 14. Hill DR. Occurrence and self-treatment of diarrhea in a large cohort of Americans travelling to developing countries. Am J Trop Med Hyg. 62:585-9, 2000.
- 15. Pitzurra R, Fried M, Rogler G et al. Irritable bowel syndrome among a cohort of European travelers to resource-limited destinations. J Trav Med. 18:250-6, 2011.
- 16. Jiang ZD, Dupont HL, Brown EL et al. Microbial etiology of travelers' diarrhea in Mexico, Guatemala and India. Importance of enterotoxigenic Bacteroides fragilis and Arcobacter species. J Clin Microbiol. 48:1417-9, 2010.
- 17. Hearn P, Doherty T. Diarrhoea in travellers. Medicine 42(2):84-88, 2014.
- 18. Hill DR, Ryan ET. Management of travellers' diarrhoea. Br Med J. 337:863-7, 2008.
- 19. DuPont HL, Ericsson CD Farthing MJG et al. Expert Review of the Evidence Base for



- Self-Therapy of Travelers' Diarrhea J Trav Med. Vol 16, issue 3, 161-171, 2009. [Accessed August 2015]
- 20. World Health Organization. A guide on safe food for travellers. [Accessed August 2015]
- 21. Field VF, Ford L, Hill DR eds. Health Information for Overseas Travel. National Travel Health Network and centre, London, UK, 2010.
- 22. Johnson PC, DuPont HL, Morgan DR et al. Comparison of loperamide with bismuth subsalicylate for the treatment of acute travelers' diarrhea. JAMA. 255:757-60, 1986.
- 23. <u>De Bruyn G, Hahn S, Borwick A. Antibiotic treatment for travellers' diarrhoea.</u>

 <u>Cochrane Database of Systematic Reviews 2000; Issue 3; Art. No: CD002242.</u>

 [Reprinted 2009]. [Accessed August 2015]
- 24. Ericsson CD, DuPont HL, Okhuysen PC et al. Loperamide plus azithromycin more effectively treats travelers' diarrhea in Mexico than azithromycin alone. J Travel Med. 14:312-9, 2007.
- 25. Tribble DR, Saunders JW, Pang LW et al. Traveler's diarrhea in Thailand: randomized, double-blind trial comparing single-dose and 3-day azithromycin-based regimens with a 3-day levofloxacin regimen. Clin Infect Dis. 44:338-46, 2007.
- 26. Norgine, Rifaximin Summary of Product Characteristics, 22 February 2013 [Accessed August 2015]
- 27. Shlim DR. Looking for evidence that personal hygiene precautions prevent traveler's diarrhea. Clin Infect Dis. 41 Suppl 8:S531-5, 2005.
- 28. <u>TravelHealthPro Factsheet</u>; Food and water hygiene. February 2015 [Accessed August 2015]
- 29. ABTA, How to have a safe and healthy holiday in the sun, [Accessed August 2015]
- 30. Hill DR, Ford L and Lalloo, DG. Oral cholera vaccines: use in clinical practice. Lancet Infect Dis. 6:361-73, 2006.
- 31. <u>Jansen-Cilag Ltd. Dukoral Oral Cholera Vaccine Summary of Product Characteristics.</u> 9 October 2014. [Accessed August 2015]
- 32. Ahmed T, Bhuiyan TR, Zaman K et al. Vaccines for preventing enterotoxigenic Escherichia coli (ETEC) diarrhoea, Cochrane Database Syst Rev. 2013 Jul 5;7: [Accessed August 2015]

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Malaria

Information for people travelling overseas



This leaflet contains information about malaria and how to protect yourself and your family when travelling to malaria-risk countries

Malaria is a serious illness that is common in many tropical countries. Symptoms can develop rapidly and it can kill you, but if you take the correct precautions you can greatly reduce your risk of catching it. The disease is spread by mosquitoes that bite at night (dusk to dawn).

You can protect yourself against malaria, and you must do so every time you visit a country with malaria. This is very important, even if you grew up or lived there and are now returning to visit your friends or family. No one has full immunity to malaria. Any partial protection you may have from being brought up in a malarious country is quickly lost when you live in countries with no malaria, so everyone needs to take precautions to avoid getting malaria.

Your family are at risk as well. Babies and children, especially those born outside the tropics, can get very sick with malaria very quickly. It is also particularly dangerous for pregnant women, who should avoid visits to malarious areas. Use the ABCD approach to protect yourself.

A – be Aware of the risks

Malaria is common in many parts of Africa, Asia, the Indian subcontinent, South America and some areas in the Far and Middle East. The risk is particularly high in sub-Saharan Africa.

See your doctor, nurse or pharmacist providing travel health services or go to a travel clinic to check if there is malaria in the country you are visiting. They can give you malaria prevention advice. Seek their advice 6-8 weeks before your trip, if possible, but remember it is never too late to seek advice. Even last-minute travellers can get useful protection.

B – use Bite prevention

 use an insect repellent containing DEET. Other effective repellents are picaridin (icaridin) and lemon eucalyptus. These are readily available in pharmacies or camping and travel shops. Remember to reapply insect repellent frequently and to follow the manufacturer's recommendations, particularly when applying repellents to young children

- cover up with trousers and long-sleeved clothes after sunset.
- treat clothing with insecticides
- use knockdown sprays or coils to kill any mosquitoes before you go to bed. These products are readily available in pharmacies or travel and camping shops
- sleep in a properly screened, air conditioned room or under a mosquito net that has been treated with insecticide

Homoeopathic or herbal remedies, electronic buzzers, garlic and vitamins do not protect against mosquito bites.

C – take Chemoprophylaxis (malaria tablets)

Tablets to prevent malaria play a very important role in protecting you. There are a number of different types. Ask your doctor, nurse or pharmacist providing travel health services which type of tablets you and your family need.

Make sure you understand how and when to take your tablets. You need to start taking them before you go, continue all the time you are away and also for a period of time when you return. Remember – it is vital that you finish the course of tablets when you get back to make sure you are properly protected. Homoeopathic or herbal remedies do not protect against malaria and must not be used in place of antimalarial tablets.

D – seek early Diagnosis if you become unwell Although modern prevention methods are highly effective and can

although modern prevention methods are highly effective and can greatly reduce your risk of dying from this dangerous disease, they do not give 100% protection.

If you or any of your family has a fever or flu-like illness after being in a country with malaria you must see your doctor urgently. Tell them where you have been and mention malaria. Remember you could still have malaria, even a year after a trip to a malaria-risk region.

For more information, see your doctor or nurse, or pharmacist providing travel health services. In addition, visit the websites www.nathnac.org,www.fitfortravel.scot.nhs.uk and www.hpa.org.uk

This document is available in other formats on request. Please call: 020 8327 7018 or email: publications@phe.gov.uk

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More on Malaria Prophylaxis

Table 1. Advantage and disadvantages of drug regimens used to prevent malaria.

Drug regimen	Advantages	Disadvantages					
Chloroquine and proguanil*	Low cost Suitable for pregnant or breastfeeding women, and children	Not suitable in many areas where there is chloroquine-resistant <i>Plasmodium falciparum</i> . Complicated dosing regimen may reduce compliance. Toxic in overdose, especially in children.					
Mefloquine	Effective in most areas of the world Convenient weekly dosing	Contraindicated in epilepsy and depression. Limited evidence for use in pregnancy, not recommended in the first trimester. Only available as tablets, making child doses difficult. Needs to be started 2 to 3 weeks before departure.					
Doxycycline	Low cost Effective in most areas of the world Generally well tolerated	Contraindicated in pregnancy, breastfeeding, and in children under 12 years of age. May cause photosensitivity and predispose to vaginal candidal infections.					
Malarone ^{®†}	Effective in most areas of the world Only requires dosing for 1 week after return Generally well tolerated	Expensive. Lack of evidence of safety in pregnancy.					
* Chloroquine is rarely used alone. † Combination of proguanil and atovaquone.							
Data adapted from: [Chiodini et al, 2007] —							

A disadvantage of Malarone is that is it more expensive. This is relevant in that medication specifically to prevent malaria cannot be issued with an NHS prescription under government regulations. Malarone, Doxycyline and Mefloquine are drugs used to prevent malaria in Chloroquine resistant areas and these are prescription only drugs. A private prescription can be issued by your GP and there is currently a £10 charge for this payable to the practice.

The prescription can then be taken to a chemist where the pharmacist will dispense the medication, but there will be a charge for the cost price of the drugs along with a dispensing fee.

Some areas have malaria which is still sensitive to Chloroquine. Prophylaxis for such areas generally involve taking Chloroquine and Proguanil, which can still be purchased directly form a pharmacist without a prescription.

Please note that alternatively there are private travel clinics available which will also provide malaria drugs (and also vaccinations).

Eg.

Royal Free Hospital, London <u>www.travelclinicroyalfree.com</u>
British Airways/MASTA <u>www.masta-travel-health.com</u>

What are the risks from yellow fever vaccine?

YF vaccine is well tolerated by most people. If there are reactions they are usually mild and can consist of:

- Soreness at the injection site
- Headaches and muscle aches
- Low-grade fever

These reactions will occur in up to 30% of people, begin shortly after the vaccine is given and can last for several days. There are also very rare reactions following vaccination.

These consist of three types:

- Severe allergic reactions (anaphylaxis) usually occurring in people who are allergic to eggs. This happens about once in every 50,000 to 125,000 people who receive the vaccine.
- Severe nervous system reactions such as meningitis or brain inflammation. This happens about once to twice in every 250,000 people who receive the vaccine.
- Severe reaction involving several body organs such as the liver, lung, and kidneys. This happens about once in every 250,000 people who receive the vaccine. This reaction has symptoms similar to YF disease.

Almost all cases of the nervous system and multiple organ reactions have occurred only in people who have received YF vaccine for the first time. There is a higher risk for these two reactions in those who are aged 60 years and older, and in this group, the reactions happen about once in every 50,000 people who receive the vaccine.

What should I do about any potential risks from the vaccine?

Before you receive the vaccine you should thoroughly discuss the indications for the vaccine and be honest about your medical history. Your GP or nurse can then advise whether it is appropriate for you to have the vaccine. After you get the vaccine you should monitor your health over the next month and report any problems to your YFVC or your GP.

Where can I get more information about yellow fever and yellow fever vaccine?

NaTHNaC's TravelHealthPro website contains free travel health resources for both health professionals advising travellers and for travellers.

www.travelhealthpro.org.uk





Q NaTHNaC

Yellow fever

INFORMATION FOR TRAVELLERS



What is yellow fever?

Yellow fever (YF) is a serious illness caused by the YF virus. YF is usually passed on to humans by the bite of an infected mosquito. YF can vary from a flu-like illness that gets better on its own over several days to a severe illness with fever, jaundice (turning yellow), bleeding and organ failure.

There is no specific medicine to treat YF. Most people with the disease will need to be admitted to hospital and treated for their symptoms, some in intensive care. Many people who get YF will die from the disease.

Where does vellow fever occur?

YF occurs in some tropical parts of South America and sub Saharan Africa. Although most cases occur in the countryside, YF can also occur in cities. It is estimated that there are around 200,000 cases of YF in risk areas each year, although it is likely that many more cases occur but do not get reported. Most cases occur in Africa.

How can I prevent yellow fever? There are two ways to prevent YF:

- Prevent mosquito bites.
- Get the YF vaccine.

Travellers to YF areas should do both things.

Mosquito bites

Mosquitoes that transmit YF tend to bite during the daytime, particularly in the hours after dawn and before dusk. If visiting a YF risk area, you are advised to prevent mosquito bites day and night.

Ways of preventing bites are:

- Cover-up as much as possible with loose-fitting, lightweight clothing.
- Apply insect repellents, ideally containing 30-50% DEET, to exposed areas of skin.
- Apply an insecticide such as permethrin to clothing, which will kill mosquitoes on contact.

Permethrin should not be used directly on the skin. More detailed information about avoiding mosquito bites can be found on the TravelHealthPro website:

http://travelhealthpro.org.uk/factsheet/38/insect-and-tick-bite-avoidance

Vaccination

If you are having the YF vaccine for the first time, you should have it at least 10 days before you travel. For most travellers, the vaccine is expected to provide life-long protection. Rarely, travellers are advised to have a further dose; a health professional at a Yellow Fever Vaccination Centre (YFVC) can tell you if this applies to you.

Yellow fever vaccine

The vaccine that protects against YF has been used for more than 70 years. It works very well and lasts for a long period of time. Most people do not have any problems with the vaccine. Vaccination can only be given in approved YFVC. Your local GP may be a YFVC, but if not, you can find a YFVC in the UK by searching on the NaTHNaC YF Zone website:

www.nathnacyfzone.org.uk/search-centres

If you are having YF vaccine for the first time, it must be given 10 days or more before your trip to be effective and to be officially accepted by the country to



The ICVP is an official record of vaccination

which you are travelling. Travellers who are leaving in less than 10 days should discuss with their YFVC whether to get YF vaccine. At the time you are given your YF vaccine, you will also be given an International Certificate of Vaccination or Prophylaxis (ICVP); you should carry your ICVP with you during travel. It is an official record of your vaccination and may be requested by immigration officials.

As of 11 July 2016, the ICVP is valid for the life of the person vaccinated [existing ICVP written on any date before 11 July 2016, will be accepted as valid for life, and should not be altered in any way].

Who should get yellow fever vaccine? In general, there are two situations where travellers should be vaccinated against YF:

- Travel to countries that require vaccination as a condition for entry.
- Travel to countries where there is a risk of getting YF.

Your YFVC will be able to advise you whether or not YF vaccination is appropriate for your trip. You should still get advice from a YFVC even if you have received information about YF vaccine from your travel agent.

Who should not get yellow fever vaccine?

- Anyone with a severe allergy to eggs, or to a previous dose of YF vaccine.
- Children younger than 9 months old.
 Rarely, children 6 to 8 months old may be vaccinated.
- People whose immune system is affected because of a disease or treatment for a disease.
- People with a disorder of their thymus gland.

You should discuss with your YFVC any concerns about your health and if you should get the vaccine. You should still seek advice if any of the above applies and you must travel to a YF risk area.

What if I cannot get a yellow fever vaccine?

Travellers who cannot have the vaccine should consider if they need to travel to a YF risk destination. Where proof of vaccination is required by the country to be visited, but you are not able to have the vaccine because of medical reasons, a Medical Letter of Exemption from vaccination may be written by a health professional. This may be taken into account by immigration authorities. As the risk of YF remains, travellers should take care to avoid mosquito bites.



Venous Thromboembolism

VTE (deep vein thrombosis or pulmonary embolism) can occur as a result of long periods of immobility associated with any form of travel

Key Messages

Venous thromboembolism (deep vein thrombosis or pulmonary embolism) can occur as a result of long periods of immobility associated with any form of travel.

The risk of venous thromboembolism (VTE) for most travellers is low. For a flight > 4 hours, in healthy individuals, the risk is estimated to be 1 in 6,000. The risk increases with longer duration of travel and with multiple flights within a short period. The risk of pulmonary embolism is much lower.

Some travellers are at increased risk e.g. older travellers, pregnant women, those with a previous history of VTE or recent surgery, those with certain blood clotting disorders, malignancy, certain heart conditions and those taking oestrogen containing medicines (see risk for travellers section).

To reduce the risk of VTE, travellers should regularly mobilise their legs (walk when possible or flex and extend the ankles to encourage blood flow from the lower legs).

Those at increased risk of VTE should seek advice from their health care provider and consider the use of properly fitted compression socks. Low molecular weight heparin therapy may also be recommended.

Overview

Venous thromboembolism (VTE) is term used to cover a spectrum of diseases from deep vein thrombosis (DVT) to pulmonary embolism (PE). VTE is the result of a blood clot (a thrombus) forming in a deep vein, usually in the lower leg.

Long periods of immobility can slow the blood flow from the lower legs which can result in pooling and coagulation (clotting). Reduced blood flow can be further compounded by pressure on the popliteal vein in the back of the knee, such as that caused by a seat during prolonged travel. A clot developing in the vein can occlude (block) the blood vessel and cause swelling of the affected limb.



A pulmonary embolus is caused by the blood clot dislodging from the vein and travelling to the lungs. This is a serious complication and can be life threatening [1].

VTE can occur as a result of periods of immobility, for example following surgery, but can also occur spontaneously in otherwise healthy persons.

VTE has been known to occur following long haul air travel and has been called 'economy class syndrome'; however this term is misleading as VTE has also been reported following car and train journeys. The preferred term is now travel related VTE or travellers' thrombosis.

Risk for travellers

The risk of VTE related to long periods of immobility has been known for many years [2, 3].

Studies from the World Health Organization Research into Global Hazards of Travel (WRIGHT) project on air travel and venous thromboembolism indicates that the risk of VTE approximately doubles after a long-haul flight (>4 hours) and also with other forms of travel where travellers are seated and immobile. The absolute risk of VTE for a flight > 4 hours, in healthy individuals, is estimated to be 1 in 6,000. The risk for travellers increases with the duration of the travel and with multiple flights within a short period [4].

In addition, particular risk factors for healthy young (mean age 35-40 years) travellers identified in the WRIGHT studies are:

- obesity
- extremes of height
- · use of oestrogen containing oral contraceptives
- presence of prothombotic blood abnormalities (conditions where the blood is more prone to form clots) [3].

Several factors that increase the risk of VTE have been identified in certain groups or hospital settings [5-7]. These include:

- history of DVT or PE (or first degree relative with history of VTE)
- haematological hypercoaguable disorders (conditions where the blood is more prone to form clots e.g. Factor V Leiden deficiency, thrombocythaemia, antithrombin deficiency)
- pregnancy and women who have had a baby in the last 6 weeks
- malignancy (active cancer) or cancer treatment
- congestive cardiac failure or recent myocardial infarction (heart attack)
- recent surgery of more than 30 minutes duration, performed 4 weeks to 2 months ago
- oestrogen therapy (e.g. oral contraceptive pill, oestrogen receptor and hormone replacement therapies)
- older age (over 60 years)
- · recent serious injury / trauma



- one or more significant medical conditions (for example heart disease, metabolic, endocrine or respiratory pathologies, acute infectious diseases, inflammatory conditions
- · varicose veins with phlebitis
- · dehydration

The most severe form of VTE is pulmonary embolism. This has been estimated to occur in approximately 5 cases per million flights > 12 hours [8].

Signs and symptoms

A VTE can be asymptomatic (without symptoms), however, some persons may develop pain in the calf accompanied by swelling and redness. If the vein is completely occluded there may be a blue discoloration of the limb and severe oedema (swelling).

Pulmonary embolus (PE) is a serious complication and can be life threatening; sudden onset of dyspnoea (shortness of breath) is the most common clinical feature.

Diagnosis and treatment

A blood test (D-dimer) can be used to look for fragments of a blood clot in the blood stream. Ultrasound scans can also be used to detect clots in the deep veins of the leg. Guidance on diagnosis and management of DVT and PE are available from the <u>National Institute for Health and Care Excellence (NICE)</u> [9].

Once a VTE has been identified anticoagulation treatment with heparin and an oral anticoagulant such as warfarin is usually commenced. Anticoagulation therapy is usually continued for between 3-6 months, and patients are advised to wear a compression stocking on the affected limb for a period of time.

Preventing VTE

There are a number of measures that can be taken to reduce the risk of travel related VTE. All travellers intending to take long haul flights or other forms of travel where they will be seated or immobile for >4 hours should:

- walk around as much as is practical at regular intervals during the journey
- regularly flex and extend the ankles which will encourage blood flow from the lower legs
- avoid stowing hand luggage under the seat as it restricts movement
- avoid wearing constrictive clothing around the waist or lower extremities

Compression socks

Travellers at an increased risk of VTE are advised to consider the use of properly fitted below knee

graduated compression socks providing 15 to 30mmHg of pressure at the ankle. These socks reduce the risk of symptomatic VTE [10,11] and also reduce swelling associated with long haul flights [10, 12, 13]. Furthermore, it has been shown that the risk of asymptomatic (symptomless) VTE is reduced in travellers using compression socks [4, 10]. Pregnant travellers on flights >4 hours should have graduated compression socks fitted [11, 13]. It is important for all travellers that compression socks are correctly measured and fit properly as poorly fitted socks can cause discomfort and at worse affect the blood circulation of the leg [14].

Low molecular weight heparin (LMWH)

The value of LMWH in the prevention of VTE in persons at higher risk of VTE is well established. However, its use in the prevention of travel related VTE is less clear. Most medical practitioners recommend the use of LMWH for travellers at high risk of developing VTE, for example a history of previous VTE or pulmonary embolus [8]. Pregnant travellers with additional risk factors may be advised to have LMWH whatever the duration of the flight [15, 16]. A suitable regimen of LMWH should be discussed with a haematologist, and the traveller or companion trained in its administration unless currently anticoagulated with oral medication such as warfarin.

Aspirin

There is good evidence that aspirin is useful in preventing arterial thrombosis, but it is **not recommended** for the prevention of venous thrombosis during travel. Aspirin does not reduce VTE in high risk patients [11, 17]. Furthermore a Cochrane review noted that approximately one patient in 40 taking low dose aspirin develop gastric irritation [18].

Due to insufficient evidence supporting the use of aspirin in travel related venous thrombosis, guidelines from the American College of Chest Physicians recommend against its use for VTE prevention associated with travel [6]. UK guidelines support the view that aspirin should not be used for the prevention of VTE in hospital patients [7] or travellers [8].

NOAC

The use of new oral anticoagulants (NOAC) for the prevention of traveller related thrombosis for those at higher risk has been not established [19,20]. Some guidance is available from Advisory Committee on Malaria Prevention [21].

Resources

- <u>British Medical Association Board of Science and Education, May 2004. The impact of flying on passenger health: a guide for health professionals.</u>
- <u>Cochrane systematic review, September 2016: Compression stockings for preventing deep vein thrombosis in airline passengers</u>
- NICE guidelines, November 2015: Venous thromboembolic diseases: diagnosis,



management and thrombophilia testing

• WHO Research into Global Hazards of Travel (WRIGHT) project, 2007, final report of phase 1

REFERENCES

- 1. Parkin, L., Bell, M.L., HerbisonGP, et al. Air travel and fatal pulmonary embolism. Thrombosis and Haemostasis 2006, 95, 807–814
- 2. Ferrai E, Chevallier T, Chapelier A, Baudouy M. Travel as a risk factor for venous thromboembolic disease: a case control study. Chest 1999; 115: 440-44
- 3. Cannegieter SC, Doggen CJM, van Houwelingen HC, Rosendaal FR. Travel-related venous thrombosis: Results from a large population-based case control study (MEGA study). PLoS Med. 2006; 3: 1258-1265
- 4. <u>World Health Organization. WHO Research Into Global Hazards of Travel (WRIGHT) project:</u> final report of phase I [Accessed 21 February 2018]
- 5. Giangrande P. Thrombosis and air travel. | Travel Med. 2000; 7: 149-154
- 6. American College of Chest Physicians Evidence-Based Clinical Practice Guidelines.

 Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: Chest. 2012; 141(2 suppl):7S
- 7. National Institute for Health and Care Excellence (NICE), Venous thromboembolism: reducing the risk for patients in hospital, Updated June 2015 [Accessed 21 February 2018]
- 8. Watson HG, Baglin TP. Guidelines on travel-related venous thrombosis. Br J Haematol. 2011 Jan: 152(1):31-4 [Accessed 11 September 2018]
- 9. National Institute for Health and Clinical Excellence (NICE), Venous thromboembolic diseases: diagnosis, management and thrombophilia testing [Accessed 21 February 2018]
- 10. Hopewell S, Juszczak E, Eisinga A, et al. Compression stockings for preventing deep vein thrombosis in airline passengers. Cochrane Database Syst Rev 2006; CD004002
- 11. Kahn SR, Lim W, Dunn AS et al. Prevention of VTE in Nonsurgical Patients. Chest 2012; 141(Suppl 2):195–226
- 12. Scurr JH, Machin SJ, Bailey-King S et al. Frequency and prevention of symptomless deep-vein thrombosis in long-haul flights: a randomised trial. Lancet 2001; 357: 1485-89
- 13. Belcaro G, Cesarone M, Shah S et al. Prevention of edema, flight microangiopathy and venous thrombosis in long flights with elastic stockings. A randomized trial. Angiology 2002; 53: 635-645
- 14. Sim Lim C, Davies, AH, Graduated Compression Stockings, CMAJ. 2014 Jul 8; 186(10): E391–E398. [Accessed 21 February 2018]
- 15. Royal College of Obstetricians and Gynaecologists. Air Travel and Pregnancy. Scientific Impact Paper No.1. May 2013 [Accessed 21 February 2018]
- 16. Royal College of Obstetricians and Gynaecologists. Air Travel and Pregnancy- Information for you. January 2015 [Accessed 21 February 2018]
- 17. Cesarone MR, Belcaro G, Nicolaides AN et al. Venous thrombosis from air travel: the LONFLIT3 study- prevention with aspirin vs low molecular weight heparin (LMWH) in high-risk subjects: a randomized trial. Angiology. 2002; 53(1):1-6
- 18. Edwards JE, Oldman A, Smith L et al. Single dose oral aspirin for acute pain (Cochrane Review). In The Cochrane Library 2004, Chichester: John Wiley & Sons Ltd
- 19. Ringwald J, Grauer M, Eckstein R et al. The place of new oral anticoagulants in travel



medicine. Travel Medicine and Infectious Disease (2014); 12:7-19

- 20. Mekaj YH, Mekai AY, Duci SB, Miftari EI. New oral anticoagulants: their advantages and disadvantages compared with vitamin K antagonists in the prevention and treatment of patients with thromboembolic events. Ther Clin Risk Manag. 2015; 11:967-977
- 21. <u>Public Health England, Advisory Committee for Malaria Prevention, Guidelines for malaria prevention in travellers from the UK 2017</u>

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ACCIDENTS AND CRIME

Accidents are one of the main causes of emergency visits to hospitals and deaths abroad. The following information outlines some useful tips to help prevent accidents and crime.

- Make sure that your travel insurance is up-to-date and meets your needs
- If you are travelling to any countries in the EEA* and Switzerland, ensure that your European Health Insurance Card, EHIC, (replacement for the E111 form) is up-to-date and that you have all the relevant information with you⁵
- Buy a reliable guidebook or find out about the safer places to visit during your trip via your tour operator
- Avoid wearing or displaying expensive watches or jewellery
- · Remember that alcohol clouds judgement
- Do not use illegal drugs
- Know the fire escape routes in your accommodation
- Avoid motorcycles and mopeds if you do ride one, always wear a helmet
- Choose safe swimming areas in the sea find out about local currents
- * EEA (European Economic Area) consists of all EU member states plus Iceland, Liechtenstein and Norway.



SAFETY

The following advice on security in this section will help to make your holiday run more smoothly while you are abroad.

- Before you travel, check the Foreign Office website (www.fco.gov.uk) or call 0870 606 0290 for detailed advice on travelling abroad
- When you arrive, check you have the address and telephone number of the local British Embassy, High Commission or Consulate. The hotel, tour operator or local police should have this information
- Check you have made a note of the opening hours. Most British Consulates have an answerphone service detailing office hours and arrangements for handling emergencies at other times
- In countries outside the European Union where there are no British consular offices, you can get help from the Embassies and Consulates of other EU member states

IN CASE OF ILLNESS

- In case you become ill or have an accident whilst you are abroad, it is important that you locate the nearest health clinic when you arrive. Your travel agent or tour representative may be able to help you to do this
- Ensure your insurance covers illness and is appropriate for your destination. If travelling in the EEA and Switzerland, carry a European Health Insurance Card (EHIC)⁵
- If the illness is serious and means that you will have to stay in the country for a longer period of time, contact your local embassy or consulate for further advice

Travel Insurance

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Introduction

Many countries do not have the same access to medical treatments as the UK and it is not uncommon for overseas medical bills to run into hundreds of thousands of pounds. Comprehensive travel insurance is therefore strongly recommended for all travellers.

Travel insurance is a wide-ranging product that can provide financial cover for many eventualities and situations the policyholder may encounter when abroad. This can include:

- · Medical expenses.
- Medical repatriation.
- Loss or theft of luggage, money, passport or personal possessions.

Travel insurance may be sold as:

- A single trip policy, covering one trip.
- An annual policy, covering multiple trips taken during the period of cover.
- An "ongoing" policy such as those linked to a bank account or a credit card.

It is vital that travellers purchase the correct insurance for their trip:

- Insurance should include cover for accidents, emergency medical treatment, medical evacuation and repatriation.
- All pre-existing medical conditions and medicines (including over-the-counter medicines) should be declared. Failure to do so may nullify insurance cover.
- In pregnancy, travel insurance policies should be checked to ensure both mother and unborn child are covered. Failure to notify travel insurance providers of pregnancy may nullify insurance cover.
- Check insurance coverage covers all intended destinations.
- Check insurance covers all planned activities e.g. adventure sports, climbing, skydiving, snow sports, scuba-diving and other water sports. Injuries sustained during undeclared activities may nullify insurance cover.
- Medical care abroad often requires payment at point of service; regardless of whether insurance cover is in place, ensure you have funds available for medical treatment.
- Insurance policies are only as good as the medical facilities available.
- Insurers are unlikely to pay the healthcare bills of those that have suffered an injury perceived to be their own fault due to the influence of drugs/alcohol.
- Standard insurance policies are often sold at point of booking; however, they may not be the right policy for you. Some companies offer specialist insurance policies

e.g. those specifically tailored to older travellers, adventure travellers or those with pre-existing medical conditions.

Reciprocal Healthcare Agreements with UK

healthcare or claim refunds during a visit, please go to NHS Choices

For countries that are part of the European Economic Area (EEA) plus Switzerland, visitors may be entitled to reduced cost, sometimes free, medical treatment. To access reciprocal health care, UK residents should produce their European Health Insurance Card (EHIC). The healthcare covered by the EHIC is the same as that provided by the state for the residents of the country being visited. Private healthcare may require personal medical insurance.

Applications are free and can be made online (https://www.ehic.org.uk/Internet/startApplication.do) or by telephone (0300 330 1350) or by downloading the application form from the website. The agreements do not cover the cost of repatriation or routine monitoring of pre-existing conditions therefore additional medical insurance is still strongly recommended. For specific guidance on how to access

(https://www.nhs.uk/NHSEngland/Healthcareabroad/EHIC/Pages/about-the-ehic.aspx)

Many destinations have no reciprocal healthcare agreement with the UK and adequate medical insurance is strongly recommended.

Medical Assistance

It is worth while finding out what to do if you become ill during your travels, including how to access emergency medical treatment. Certain travellers, such as those with existing illness, travelling with children, going into remote areas, or the pregnant traveller may wish to try and identify health care facilities prior to departure. Addresses for local services are usually available at larger hotels and from tour company representatives.

The Foreign and Commonwealth Office (FCO) (https://www.gov.uk/knowbeforeyougo) provides details of the nearest British Embassy or Consulate that may be able to help locate health care facilities at the destination. Neither the FCO nor the Embassy will pay for medical care even in an emergency.

A list of Travel Clinics, run by members of the International Society of Travel Medicine, is available on their <u>Global Travel Clinic Directory</u>

(http://www.istm.org/AF CstmClinicDirectory.asp)

Further Information

Further information on travel insurance, including insurance for those with a medical condition such as asthma, diabetes, HIV or lung conditions can be found on various specialist websites:

- Foreign & Commonwealth Office Foreign Travel Insurance (https://www.gov.uk/guidance/foreign-travel-insurance)
- Which Medical Conditions Travel Insurance Reviews

 (https://www.which.co.uk/money/insurance/travel-insurance/medical-conditions-travel-insurance-reviews-axcdp6q6q4zz)
- <u>Money Saving Expert Travel Insurance For Those With Pre-Existing Conditions</u> (https://www.moneysavingexpert.com/insurance/pre-existing-travel-insurance/)
- HIV Support and AIDS Support from <u>Terrence Higgins Trust</u> (http://www.tht.org.uk/)
- Asthma UK (http://www.asthma.org.uk/)
- British Lung Foundation (http://www.blf.org.uk/Home)
- Diabetes UK (http://www.diabetes.org.uk/)

fitfortravel

http://www.fitfortravel.nhs.uk

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Useful Links

NHS Healthcare abroad -	http:/	/www.nhs.uk	/nhsenglar	nd/Healthcarea	broad
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Fit For Travel - http://www.fitfortravel.nhs.uk/home.aspx

National Travel Health Network and Centre - http://www.nathnac.org/travel/index.htm

European Health Insurance Card (EHIC) - https://www.ehic.org.uk/Internet/home.do

More information the EHIC -

http://www.nhs.uk/NHSEngland/Healthcareabroad/EHIC/Pages/about-the-ehic.aspx

Foreign & Commonwealth Office - http://www.fco.gov.uk/en/travel-and-living-abroad/