

## Neurological conditions

**Information on pre-travel preparation, tips to stay healthy abroad and links to useful resources for travellers with neurological diseases**

### Key messages

- **Pre-travel preparation is key for individuals with neurological conditions.**
- **Specialist advice should be sought before travel. If appropriate, decisions regarding vaccinations and malaria prophylaxis should be made in consultation with the traveller's neurologist.**
- **Appropriate medication supplies should be carried as hold luggage.**
- **All travellers should obtain comprehensive travel health insurance and declare all pre-existing health conditions.**

### Overview

Neurological conditions cover a broad range of diagnoses. Conditions can affect one or more of the central, peripheral or autonomic nervous systems. Symptoms can vary widely and can be intermittent, unpredictable, progressive or stable. A person's mental function, mobility, speech, ability to swallow and bladder or bowel control can all be affected.

One in six people in the UK lives with a neurological condition [1].

Globally, the burden of neurological disease has increased due to an expanding and ageing population; more people are reaching ages where neurological diseases are most prevalent. Individuals with neurological conditions should discuss the suitability of their proposed trip and planned activities, with a healthcare professional, and/or specialist, ideally prior to booking. A traveller should consider the nature of their condition, its control, causes of exacerbations/flare-ups, health risks at their destination and availability of health facilities.

Travellers are advised to inform their travel companions, and if appropriate, their tour guide and/or the crew of their boat, train or plane of their neurological condition.

This factsheet outlines general guidance for travellers with neurological conditions and provides more specific information for some conditions such as migraine, epilepsy, multiple sclerosis and

myasthenia gravis.

## Pre-travel preparation

Specific issues to address pre-travel include:

- Is the individual fit to travel/fly?
- Is their neurological condition and/or treatment stable?
- Can specific interventions (e.g. behavioural measures, vaccination or preventative medication) be recommended to reduce disease risks?
- Does the condition/treatment contraindicate or decrease effectiveness of any recommended vaccines and/or malaria chemoprophylaxis (antimalarials)?
- Is appropriate specialist emergency care available at the destination?
- Does the individual have comprehensive travel insurance which covers travel with neurological conditions?

## Fitness to fly

Neurological conditions account for half of all in-flight medical emergencies and 54.1% of all in-flight diversions [2]. Health professionals should follow guidelines issued by the UK Civil Aviation Authority [3] when assessing travellers with neurological conditions.

The interval between a neurological event and fitness to fly depends on the condition's stability, as assessed by a specialist. The requirements of airlines and insurers should also be considered. Individuals who had recent neurosurgery are advised to discuss the appropriate observation period prior to flying with their surgical team. Intracranial air is commonly present post neurosurgery, during a flight this air can expand and increase intracranial pressure, which carries a risk of neurological deterioration [4].

Travellers need to consider if they are at risk of a sudden exacerbation, such as a seizure. Ideally, they should ensure that their travelling companions, cabin and train crew are aware of this risk.

Travellers with additional needs should contact airlines for guidance before travel, as airlines have regulations on conditions of travel for passengers with disabilities [5].

Mobility limitations and bladder/bowel control issues should be considered. Pre-arranged seating can ensure timely access to toilet facilities [6].

If there is a possibility of a traveller becoming distressed during the flight, travelling with a companion is recommended. This is particularly important for travellers with dementia [7]. For further advice, see our factsheet on [Travelling with additional needs and/or disability](#).

## Insurance

Comprehensive travel health insurance is essential for all travellers. A full declaration of neurological conditions and treatment, including medication, should be made. All equipment and planned activities should also be covered.

## Medication

Travellers taking medication should ensure they carry enough for the duration of their trip and that the medication is legal at the destination; this is particularly important for some anti-epileptic drugs.

Special consideration is needed when travelling with the following:

- Controlled medication
- Subcutaneous or intramuscular drugs and pumps
- Electronic devices
- Implanted devices

Time differences - careful adjustment of medication timing may be necessary when crossing time zones. Strict medication compliance should be emphasised to travellers with epilepsy. For long distance travel, adequate supplies of medication should be assured along with accessibility during flight [6] Carrying and storing medicine during travelling needs careful planning: see our [medicines and travel factsheet](#) for further advice.

## First Aid

Travellers should prepare a basic first aid kit tailored to their destination.

[Medical alert jewellery](#) gives first responders and health staff essential medical information in emergency situations and can be particularly useful for travellers with epilepsy.

## Vaccination

Vaccinations should be discussed in a pre-travel consultation with a healthcare professional. Individuals with neurological conditions may be immunosuppressed, either due to their condition or drug treatment. Live vaccines are contraindicated in [immunosuppression](#). Inactivated vaccines are safe to administer in immunosuppressed travellers, however their immune response can be sub-optimal. See specific consideration for some neurological conditions below.

UK Health Security Agency's [Immunisation against infectious disease](#) and individual Summary of Product Characteristics (accessible via the [electronic medicines compendium](#)) provide specific cautions and contraindications to individual vaccines.

## Food and water-borne risks

All travellers should take care with [food and water hygiene](#) and discuss the management of diarrhoea with their health care provider. Certain antibiotics (fluoroquinolones) sometimes used to treat gastrointestinal illness can, in rare circumstance induce convulsions. An alternative drug for the self-treatment of gastrointestinal illness should be prescribed.

Neurological conditions can affect ability to swallow. It is vital to consider if appropriate food will be available prior to travel or how best to travel if a person is tube fed.

## Malaria

Individuals with neurological conditions should discuss the A, B, C, and D of malaria prevention during a pre-travel consultation with a healthcare professional, and consider carefully which anti-malarial drug is most appropriate for them. See specific consideration for some neurological conditions below.

Chloroquine and Mefloquine are contraindicated in epilepsy as they can lower the seizure threshold [8, 9].

## COVID-19

Individuals with chronic neurological disease are considered clinically vulnerable to COVID-19 and have been included in the groups to continue to receive COVID-19 vaccination in the UK (see [Table 2 and 3 in Immunisation against Infectious Disease](#)).

All individuals should follow [current UK recommendations](#) to reduce their risk of catching COVID-19 and passing it on to others.

Travellers with chronic neurological conditions should assess their individual circumstances, including medical facilities at their destination and consider whether postponing travel would be appropriate.

General guidance regarding [risk assessment for travel](#) during the COVID-19 pandemic and information about the [COVID-19 vaccination programme](#) is available. The [Association of British Neurologists](#) also have some useful advice and links for people with neurological conditions.

## Other health risks

### Driving

Travellers planning to drive overseas who have restrictions on their UK driving licence must check if their licence is valid abroad.

### Environmental risks

High-altitude travel, defined as an elevation above 1500m [10] is not contraindicated for those with a stable neurological condition. However, exacerbation of the condition including seizures, may be life-threatening in a remote setting. See our [Altitude illness](#) factsheet for more information.

Extremes of hot and cold should be avoided as they can trigger seizures in some individuals. Suitable clothing should be worn, and adequate hydration maintained.

## **Water safety**

Those with an unstable neurological condition should avoid activities, including swimming and diving, as loss of consciousness or awareness would result in danger to themselves and others.

Supervision is recommended for those with a stable neurological condition to maximise personal safety.

## **Multiple sclerosis (MS)**

Travellers with MS should discuss their travel plans with their MS nurse or specialist, well in advance of booking a trip. This is particularly important if they have functional limitations or are taking an MS disease modifying treatment.

Vaccination should be delayed during clinically significant relapses until travellers have stabilised or begun to improve from the relapse, typically four to six weeks after it began [11] If steroids have been started due to a relapse, the traveller's specialist needs to advise when it is appropriate to receive vaccines. Disease-modifying drugs and/or steroids, often used to treat/stabilise neurological symptoms in MS, can cause immune-suppression and contraindicate use of live vaccines.

There is insufficient evidence to show an increased risk of developing MS after vaccination against BCG, cholera, diphtheria, hepatitis B, influenza, MMR, polio, rabies, tetanus and typhoid. Additionally, there is also insufficient evidence to demonstrate an increased risk of a relapse of MS after vaccination against BCG, hepatitis B, tetanus and tick-borne encephalitis [12].

One study suggests yellow fever vaccine can exacerbate symptoms in MS patients. This risk, together with risk of yellow fever at the destination should be considered, in consultation with the traveller's neurologist before offering the vaccine to those at risk of yellow fever [11].

## **Myasthenia gravis (MG)**

### **Vaccination**

Yellow fever vaccination is contraindicated in those with an abnormality of the thymus gland or thymectomy [13]. Travellers with myasthenia gravis may have thymus gland dysfunction, so yellow fever vaccination is contraindicated [14].

## Malaria prevention

Prophylactic and treatment doses of certain antimalarials can exacerbate the symptoms of MG. Chloroquine and doxycycline should be avoided or used with caution. Specialist advice should be sought.

## Guillain-Barre syndrome (GBS)

GBS has been reported very rarely after immunisation with influenza vaccine (one case per million people vaccinated) [15].

## Epilepsy, seizures and febrile convulsions

Travellers with epilepsy should be aware of the risk of lowered seizure threshold triggered by sleep deprivation, interrupted sleep and circadian rhythm related disturbances. Individuals with frequent, uncontrolled seizures should be advised against air travel. Incomplete control is likely for those experiencing one or more seizures in the previous month, and air travel is not recommended [6].

Travel companions should be familiar with managing a seizure. Resources like Epilepsy Action's: [What to do when someone has a seizure](#) are invaluable.

## Vaccination

Epilepsy or a family history of epilepsy or seizures is not a contraindication to any vaccination. Seizures caused by a fever (febrile convulsions) are not a contraindication to vaccines, providing the febrile episode has resolved.

## Malaria

As previously stated, Mefloquine and Chloroquine are contraindicated in epilepsy, as they can lower the seizure threshold [8, 9].

Doxycycline or atovaquone/proguanil are suitable alternatives. However, the half-life of doxycycline may be reduced by phenytoin, carbamazepine and barbiturates. If a traveller is taking any of these, and another antimalarial cannot be given, the doxycycline dose should be increased to 100 mg twice a day. The traveller needs to be advised regarding measures to reduce adverse events [8].

A past history of febrile convulsions does not contraindicate any currently available UK malaria chemoprophylactic drugs [8].

## Migraine

Common migraine triggers are fatigue, dehydration, a change in caffeine or alcohol intake and

irregular or missed meals. Migraine sufferers should try to minimise their risk of exposure to potential triggers. Also consider there may be new triggers when travelling in unfamiliar environments.

## Illness abroad

Travellers should know when and how to seek prompt medical advice, for example if they experience fever, prolonged diarrhoea, dehydration, signs of skin infection such as swollen, painful/red skin around a wound with pus or any other concerning symptoms. Keep any receipts for treatment and the travel insurance company should be informed as soon as possible.

## Resources

- [Conquer Myasthenia Gravis: Travel Tips](#)
- [Epilepsy Action: Travel advice for people with epilepsy](#)
- [Epilepsy Action: Medical ID products](#)
- [International Bureau for Epilepsy: Traveller's Handbook for People with Epilepsy \(available in several languages\)](#)
- [Multiple Sclerosis Society: Going abroad](#)
- [National Migraine Centre: Migraine Triggers](#)
- [NHS: Guillain-Barré syndrome](#)

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