

## Yellow fever

**Yellow fever is a viral disease transmitted by mosquitoes causing a spectrum of disease from mild to severe symptoms**

Yellow fever (YF) is a vaccine preventable viral infection spread predominantly by certain species of day biting mosquitoes. Most people who get YF either have no symptoms or a mild illness and then fully recover. A small proportion of patients develop a severe illness with fever, jaundice (yellowing of the skin and eyes), bleeding and organ failure. The death rate is high in those who develop severe disease.

YF is a risk in some parts of Africa, South and Central America and in Trinidad (Caribbean). Areas with a risk of YF transmission are countries (or areas within countries) where mosquito species known to transmit the disease are present and where the infection is reported in monkeys and/or humans.

YF is rare in international travellers. The most recent reported case in the UK was in 2018 in a traveller who had returned from Brazil. Prior to that, the last reported case in the UK was acquired by a laboratory technician working with the virus in London in the 1930s.

Between 1970 and 2015, eleven YF cases were reported in travellers from Europe and the United States who visited risk areas. From 2016 to 2018 an increase in travel associated cases was seen, mostly linked to outbreaks in Brazil and Angola. More than 35 unvaccinated travellers who were residents of non-endemic areas or countries (including at least 13 European travellers and one American traveller) contracted YF.

The risk of contracting YF is determined by the following factors:

- Travel destination.
- Intensity of YF transmission in the area to be visited.
- Season of travel (most cases in travellers have occurred in the late rainy season to early dry season).
- Duration of travel.
- Activities allowing exposure to mosquitoes.
- Immunisation status.

In order to prevent the international spread of YF, under International Health Regulations, countries may require proof of vaccination, recorded in an International Certificate of Vaccination or Prophylaxis (ICVP). Country specific certificate requirements can be found in our [Country Information pages](#).

### Prevention

Those visiting YF risk areas should practise meticulous mosquito bite avoidance.

### Yellow fever vaccine

A highly effective live YF vaccine is available and in general vaccination is recommended for all persons visiting countries where there is a risk of YF virus transmission. Very rarely yellow fever vaccination is associated with serious adverse reactions. Prior to vaccination a careful risk assessment is required that takes into account:

- Risk of disease to the individual.
- Certificate requirements for vaccination according to International Health Regulations.
- Risk of complications following vaccination.

### Vaccine schedule

Vaccine	Schedule	Age range
Stamaril®	Single dose	Minimum age 9 months. Seek medical advice for infants 6-8 months who are travelling to a high risk area

A four week minimum interval period should be observed between the administration of yellow fever and measles, mumps and rubella (MMR) vaccines. There is some data to suggest co-administration of these two vaccines can lead to sub-optimal antibody responses to yellow fever, mumps and rubella antigens. Where protection is required rapidly then the vaccines should be given at any interval. An additional dose of MMR should be considered and re-vaccination with the yellow fever vaccine can also be considered on a case-by-case basis for those at ongoing risk.

### Contraindications

YF vaccine should not be given to the following:

- Infants less than six months of age.
- Persons with a confirmed anaphylactic reaction to a previous dose of YF vaccine or any of the components of the vaccine including egg.
- Persons who are immunocompromised (have a weakened immune system) due to a congenital condition, disease process or treatment.
- Persons with a history of a thymus disorder\* or removal of the thymus gland (thymectomy) for any reason including incidental thymectomy (e.g. during cardiac surgery).
- Persons who have a first-degree\*\* family history of yellow fever vaccine-associated viscerotropic disease (YEL-AVD) or yellow fever vaccine-associated neurological disease (YEL-AND) following vaccination that was not related to a known medical risk factor (i.e. in case of an unidentified genetic predisposition).
- Persons over the age of 60 years who are travelling to areas with low potential for YF exposure where vaccination is 'generally not' recommended, or not recommended by the World Health Organization (WHO).

\*including myasthenia gravis and thymoma

\*\*close blood relative - parents, full siblings, or children

### Precautions

For those with a febrile illness (fever) or who are acutely unwell, YF vaccination should be postponed until full recovery.

YF vaccination may be considered for the following groups (expert opinion may be advisable, see resources below for details on adverse events):

- Breast feeding women.
- Infants aged six to eight months.
- Individuals aged 60 years and older (see also contraindications for those going to areas where vaccination is 'generally not' recommended or not recommended by WHO).
- Those taking low dose steroid or non-biological oral immune modulating drugs.
- Individuals living with HIV (with a CD4 count greater than 200 and a suppressed viral load, specialist advice should be sought).
- Pregnant women.

## Length of protection

With some exceptions, a single dose of YF vaccine appears to confer life-long protective immunity against YF disease. Reinforcing immunisation (booster dose) should be offered to a small subset of travellers who may be at continued risk see [UK Health Security Agency guidance](#).

According to WHO, from 11 July 2016, the yellow fever vaccination certificate will be valid for the duration of the life of the person vaccinated. As a consequence, a valid certificate, presented by arriving travellers, cannot be rejected on the grounds that more than ten years have passed since the date vaccination became effective as stated on the certificate; and that boosters or revaccination cannot be required. See [WHO Amendment to International Health Regulations \(2005\), Annex 7 \(yellow fever\)](#).

Individual country certificate requirements should be checked on our [Country Information pages](#).

## Resources

- More detailed information can be found in our [Yellow fever factsheet](#)
- [UKHSA: Immunisation against infectious disease. Yellow fever](#)
- Further details on yellow fever vaccine can be found on the [Summary of Product Characteristics \(SPC\) on the electronic medicines compendium](#)
- [Public Health England, Medicines and Healthcare products Regulatory Agency, NaTHNaC and Health Protection Scotland joint letter: Yellow fever vaccine: stronger precautions in people with weakened immunity and those aged 60 years or older](#)