

## Hepatitis A

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### Key Messages

**Hepatitis A is an infection of the liver caused by the hepatitis A virus.**

**The virus is transmitted through contaminated food and water or by direct contact with an infectious person.**

**Infection may occur without symptoms or may result in a mild illness lasting a few weeks. However, the disease tends to become more severe with advancing age. The mortality (death) rate in those over 50 years of age is approximately two percent.**

**The incidence of hepatitis A is closely related to socio-economic conditions. Areas with high levels of infection include low-income countries with poor sanitary conditions and hygiene practices.**

**Travellers should take care with [food, water and personal hygiene](#).**

**Hepatitis A vaccines are available for travellers visiting risk areas and other individuals considered to be at risk due to their occupation, lifestyle choice or underlying medical condition.**

### Overview

Hepatitis A virus (HAV) is a small, unenveloped RNA virus within the genus Hepatovirus, a member of the family Picornaviridae. It can cause acute inflammation of the liver which can be associated with debilitating symptoms and death in some cases [1]. Each year there are an estimated 1.4 million cases globally [1].

### Risk areas

The incidence of hepatitis A is closely related to socio-economic conditions, and sero-epidemiological studies show that prevalence of anti-hepatitis A antibodies varies from 15 percent to close to 100 percent in different parts of the world [2].

Areas with high levels of infection include low-income countries with poor sanitary conditions and hygiene practices [1]. Regions where hepatitis A is highly endemic include the Indian sub-continent (particularly Bangladesh, India, Nepal and Pakistan), Sub-Saharan and North Africa, parts of the Far East (except Japan), South and Central America and the Middle East. Clinical cases of hepatitis A in

adults are uncommon in highly endemic countries as approximately 90 percent of children will have been infected before the age of 10 years [1]. Young children often do not display symptoms but acquire life-immunity following infection.

In some countries of the Americas, Asia and the Middle East, there has been a reduction in the incidence of hepatitis A [3]. These countries are now in transition from high to intermediate or low endemicity. Children often escape infection in early childhood in these areas but these improved conditions may lead to higher susceptibility in older age groups (as they may not have acquired immunity) and higher disease rates can occur in adolescents and adults, causing large outbreaks [1, 2].

Most high-income countries such as Australia, Japan and New Zealand, and those in North America and Northern Europe are of low endemicity for hepatitis A (areas with low levels of infection). The majority of the population in these countries will have no immunity to hepatitis A and are therefore susceptible to the infection. Disease may occur among adolescents and adults in high risk groups such as people who inject drugs, men who have sex with men, and people travelling to areas of high endemicity.

Countries or areas with moderate to high risk can be seen on the [World Health Organization map](#). Please note, risk areas can change, check country specific information and vaccine recommendations on our [Country Information pages](#).

## **Risk for travellers**

The risk of acquiring hepatitis A from contaminated food and water in high-income countries is low. Non-immune travellers are at risk of contracting the disease during visits to countries of high or intermediate endemicity. The risk during travel depends on living conditions, length of stay and standards of food and water hygiene. Those at higher risk include travellers visiting friends and relatives (VFRs) [4], long-term travellers, and those visiting areas of poor sanitation. However, cases have occurred in tourists staying in good quality hotel accommodation [5, 6].

Hepatitis A remains one of the most common travel-related vaccine preventable diseases. However, the incidence in travellers is declining. The incidence of hepatitis A amongst non-immune travellers to high or intermediate risk areas has been estimated as between six and 30 cases per 100,000 travellers per month [6].

## **Hepatitis A in UK travellers**

Since the mid-1990s there has been a decline in laboratory-confirmed cases of hepatitis A reported in England and Wales [7, 8]. However, travel history or other risk factor information is seldom reported, so it is difficult to say whether the decline is due to a change in travel patterns or to other factors.

During 2013 there were 283 confirmed laboratory reports of hepatitis A virus infection in England

and Wales [9]. Travel history was available for only 14 percent of reported cases [9].

Public Health England (PHE) state the highest risk areas for UK travellers are the Indian subcontinent and the Far East, but the risk extends to Eastern Europe [10].

## Transmission

Hepatitis A is usually acquired through consumption of food or water contaminated by human faeces [1]. Foods that grow close to the ground such as strawberries and lettuce can be a risk as can raw or undercooked food such as meat and fish. Crustaceans that feed at the bottom of the ocean such as oysters and clams can concentrate the virus and be a risk if ingested under-cooked or raw. Food handlers excreting hepatitis A virus can contaminate foods if they do not observe good personal hygiene.

Person to person transmission in conditions of poor faecal hygiene is also a risk factor. This mode of transmission can occur during certain sexual practices (e.g. oral/anal sexual contact) or through unhygienic injection drug use [1, 10].

Virus shedding in the faeces occurs during the incubation period of hepatitis A, and continues for a week after the onset of symptoms or jaundice (yellowing of the eyes and skin), if present. It is at this stage that patients are most infectious. Virus shedding can be prolonged in immunosuppressed persons. Children may excrete the virus for longer than adults but a chronic carrier state does not exist [11].

## Signs and symptoms

Hepatitis A is usually a sub-clinical infection (without symptoms) in young children. However, the disease becomes more serious with advancing age, with an approximate mortality (death) rate of two per cent in those over 50 years of age [2, 12].

After an average incubation period of approximately 28 days (range of 15-50 days), patients may experience malaise, anorexia (loss of appetite), nausea and fever before developing jaundice [2]. Recovery takes about a month in young people, but some patients are ill for many weeks. Complications are more likely in those with pre-existing chronic liver disease, and can include fulminant hepatitis (severe liver damage).

Hepatitis A infection does not cause chronic (long-term) liver disease [1]. Following clearance of hepatitis A infection patients acquire lifelong immunity.

## Diagnosis and treatment

Diagnosis is made by the detection of specific antibodies in the blood. Health professionals should be alert to the possibility of hepatitis A in travellers who have returned from endemic areas and who develop symptoms. Appropriate samples and a [hepatitis investigation request form](#) should be

completed and sent to the PHE Virus Reference Department.

There is no specific antiviral treatment for hepatitis A, but rather supportive intervention (treatment to help manage the symptoms).

## Preventing hepatitis A

Hepatitis A is transmitted via the faecal-oral route; therefore the most common mode of infection for travellers is through eating contaminated food, or drinking contaminated water. The risk of acquiring hepatitis A can be reduced by following advice on [food and water hygiene](#) and by ensuring good personal hygiene. Hands should be washed after visiting the toilet, changing nappies and always before preparing or eating food.

Several effective hepatitis A vaccines are available for travellers intending to visit endemic areas. The vaccine is a complement to food and water hygiene precautions.

## Vaccine information

A number of factors are considered when determining whether hepatitis A vaccine is advised for travel to a particular country. These factors include the prevalence of hepatitis A in the local population, access to improved sanitation and economic development of the country.

Vaccination is recommended for most travellers to countries where the prevalence of hepatitis A infection in the local population is considered to be high [2].

In countries where there is a lower risk of hepatitis A infection, factors such as access to improved sanitation, travel plans and medical conditions are considered in the risk assessment. Travellers who may be at increased risk of hepatitis A infection include:

- those staying with or visiting the local population
- frequent and/or long-stay travellers to areas where sanitation and food hygiene are likely to be poor
- those with existing medical conditions such as liver disease or haemophilia
- men who have sex with men
- people who inject drugs
- those who may be exposed to the virus through their work
- those going to areas of hepatitis A outbreaks who have limited access to safe water and medical care

Country-specific information on the risk of hepatitis A can be found in our [Country Information pages](#)

In countries with a low prevalence of hepatitis A infection, vaccination is not usually recommended unless a traveller is at particular risk of hepatitis A due to their work, lifestyle choice or underlying

medical condition. See Public Health England's [Immunisation against infectious disease known as the 'Green Book'](#).

## Availability of vaccine

Several vaccines are licensed for use in the UK, all of which are inactivated.

Details of these can be found in the summary table below. The Summary of Product Characteristics (SmPC), available via the [electronic Medicines Compendium \(eMC\)](#) should be consulted prior to the administration of any vaccine.

Combined hepatitis A and B vaccines, and combined hepatitis A and typhoid vaccines are available.

## Vaccine schedules

(listed alphabetically)

Vaccine	Schedule	Length of protection against hepatitis A	Age range
<a href="#">Ambirix</a> Combined hepatitis A and B	2 doses, given 6-12 months apart	Hepatitis A*: 10 years following 2nd dose. <a href="#">See also hepatitis B factsheet</a>	1 to 15 years
<a href="#">AVAXIM</a>	2 doses, given 6-12 months apart	10 years following 2nd dose*	≥ 16 years
<a href="#">Epaxal</a> (Discontinued)	2 doses, given 6-12 months apart	Up to 30 years following 2nd dose*	Adults & children from ≥1 year
<a href="#">Havrix Monodose</a>	2 doses, given 6-12 months apart	Up to 25 years following 2nd dose*	≥ 16 years
<a href="#">Havrix Junior Monodose</a>	2 doses, given 6-12 months apart	Up to 25 years following 2nd dose*	1 to 15 years
<a href="#">Hepatyrix</a> Combined hepatitis A and typhoid (Discontinued)	1 dose followed by a single antigen hepatitis A vaccine 6-12 months later	Hepatitis A*: up to 25 years following 2nd dose. <a href="#">See also typhoid and paratyphoid factsheet</a>	≥15 years
<a href="#">Twinrix Adult</a> Combined	3 doses, 0, 1, and 6 months	Hepatitis A*: up to 25 years following 3rd	≥16 years

hepatitis A and B	A		dose. <a href="#">See also hepatitis B factsheet</a>	
		4 doses, days 0, 7 and 21, 4th dose at 12 months.	Hepatitis A*: up to 25 years following 4th dose. <a href="#">See also hepatitis B factsheet</a>	≥18 years
<a href="#">Twinrix Paediatric</a> Combined hepatitis A and B	A	3 doses, 0, 1 and 6 months	Hepatitis A: up to 25 years following 3rd dose* <a href="#">See also hepatitis B factsheet</a>	1 to 15 years
<a href="#">VAQTA Adult</a>		2 doses, given 6-12 months apart	At least 6 years following the 2 <sup>nd</sup> dose*	≥18 years
<a href="#">VAQTA Paediatric</a>		2 doses, given 6-18 months apart	At least 10 years following 2nd dose*	1 to 17 years
<a href="#">ViATIM</a> Combined hepatitis A and typhoid	A	1 dose followed by a single antigen hepatitis A vaccine 6-12 months later	At least 10 years following 2nd dose* <a href="#">See also typhoid and paratyphoid factsheet</a>	≥16 years

**\* There is no evidence that further reinforcing doses of hepatitis A vaccine are needed in immunocompetent individuals following completion of the primary course (two dose of hepatitis A or three-four doses of combined hepatitis A/B vaccination depending on the schedule-see above) [13]. The duration of protection from a completed course of vaccine can be expected to be at least 25 years and probably indefinite. However, PHE recommend that until further evidence is available on persistence of protective immunity, a booster dose at 25 years is indicated for those at ongoing risk of hepatitis A [10]. Specific advice should be sought for individuals with altered immune responses; an earlier booster may be recommended.**

It is good practice to continue a course of hepatitis A vaccination with the same brand of vaccine. However, evidence suggests that hepatitis A vaccines are likely to be compatible with each other [13-15], and if necessary a different preparation of hepatitis A vaccine could be given.

### Interrupted courses

The Summary of Product Characteristics (SPC) for Avaxim states that the second dose may be

administered up to 36 months after the primary dose [16].

The SPC for Epaxal states that the second dose can be delayed for up to 10 years [17].

The SPC for Havrix Monodose states that a second dose that is delayed for up to 5 years can be expected to obtain a satisfactory antibody response but approximately 30 percent of individuals receiving a delayed booster have no detectable anti-HAV antibodies prior to booster dosing [18]. For Havrix Junior Monodose, a booster that is delayed for up to 3 years can be expected to induce similar antibodies as a second dose given within the recommended 6-12 months [19].

Vaqta Paediatric second doses can be administered up to 18 months following the primary dose [20].

Although booster doses delayed beyond the recommended intervals described above are not covered by the product licence, research indicates that a second dose given at long intervals will still result in a boosting immune response [15, 21-24].

Thus, based on evidence from available studies, there is no maximum interval which would require restarting a course of hepatitis A vaccine.

## Contraindications

- Current febrile illness
- Individuals who develop hypersensitivity reactions after vaccination should not receive further doses
- Hypersensitivity to a component of the vaccine. For Epaxal this includes hypersensitivity to eggs and chicken protein

## Adverse events

Adverse reactions following hepatitis A vaccine tend to be mild and transient. They include tenderness, redness and swelling at the injection site. Less commonly, fever, headaches, dizziness and malaise have been reported.

## Resources

- [World Health Organization: Position paper: hepatitis A vaccines](#)
- [Public Health England. Immunisation against infectious disease; Chapter 17: hepatitis A.](#)
- [Public Health England: Hepatitis A: guidance, data and analysis](#)
- [NHS Choices: Hepatitis A](#)
- [World Health Organization and Unicef: Progress on drinking water and sanitation, 2014 Update](#)

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