



Public Health
England

Protecting and improving the nation's health

Hepatitis A vaccination in adults- temporary recommendations

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Hepatitis A vaccine recommendations and dose sparing advice for pre and post exposure immunisation and boosting in adults

Hepatitis A immunisation recommendations have been updated in light of the ongoing hepatitis A outbreak primarily affecting men who have sex with men (MSM) and the shortage of global hepatitis A vaccine that has severely impacted UK supply. These recommendations include updated travel vaccine recommendations and temporary dose sparing advice to preserve adult monovalent hepatitis A vaccine stock for those with the greatest ability to benefit.

1.1 Vaccine recommendations

Hepatitis A vaccine is highly effective in preventing infection if given prior to exposure.

PHE recommends that all MSM without reliable evidence of previous vaccination or infection attending GUM and HIV clinics should be opportunistically offered hepatitis A vaccination.

NaTHNaC has updated its hepatitis A immunisation recommendations. As a result, hepatitis A vaccination will no longer be recommended for most travellers visiting a number of countries. Please visit the NaTHNaC website for a full [list of countries for which hepatitis A vaccine is recommended](#) prior to travel.

1.2 Dose-sparing vaccine advice

Dose sparing alternative vaccine options have been formulated following anticipated shortages of adult hepatitis A vaccine, following a review of immunogenicity data, and have been agreed by the Joint Committee for Vaccination and Immunisation (JCVI) in June 2017. PHE has converted those options into temporary dose sparing advice to preserve adult monovalent hepatitis A vaccine stock for those with the greatest ability to benefit.

The advice is based on a broad assessment considering the following criteria:

- risk of acquiring infection
- risk of complications of infection
- immune response to vaccine products of varying antigen content
- vaccine availability and number of doses required
- compliance with vaccine schedule
- feasibility of delivery in settings

- likelihood of individual already being immune

The advice provided is not absolute; it requires some clinical judgement and hence is not presented in an algorithm, but in tables. The advice will be updated as vaccine availability changes.

The tables below include dose-sparing advice for pre-exposure vaccination of men who have sex with men (MSM) and of people travelling abroad, for post exposure prophylaxis and for boosting primed adult patients. Note that post exposure vaccination should not be delayed and vaccine should be prioritised for these individuals.

Many of these vaccine options will be off-label use of licensed products. For further information on off-label use of vaccines see:

<https://www.gov.uk/government/publications/off-label-vaccine-leaflets>

1.3 Advice tables

- Table 1: **Antigen content** of hepatitis A containing vaccines available in the UK
- Table 2: **Pre-exposure dose-sparing options** for hepatitis A vaccination in **MSM** to preserve adult monovalent stock for groups most likely to benefit
- Table 3: **Pre-exposure dose-sparing options** for hepatitis A vaccination in **adults travelling overseas** to preserve adult monovalent stock for groups most likely to benefit
- Table 4: **Post-exposure dose-sparing options** for hepatitis A vaccination to preserve adult monovalent stock for groups most likely to benefit
- Table 5: Vaccine options for **boosting** primed patients

Table 1 Antigen content of hepatitis A containing vaccines available in the UK

HepA Vaccine formulation	Trade name	HepA vaccine antigen content	Adult dose hepA antigen equivalent	Manufacturer
ADULT MONOVALENT HEPA	AVAXIM	160 U	Full dose	Sanofi Pasteur (SP)
	HAVRIX	1440 EU	Full dose	GlaxoSmithKline (GSK)
	VAQTA	50 U	Full dose	Merck Sharp & Dohme Limited (MSD)
PAEDIATRIC MONOVALENT HEPA	HAVRIX	720 EU	Half-dose	GSK
	VAQTA	25 U	Half-dose	MSD
ADULT COMBINATION HEPATITIS A/B	TWINRIX	720 U	Half-dose	GSK
PAEDIATRIC COMBINATION HEPA/HEPB	TWINRIX	360 U	Quarter-dose	GSK
	AMBIRIX	720 EU	Half-dose	GSK
COMBINATION HEPA/TYPHOID	HEPATYRIX	1440 EU	Full dose	GSK
	VIATIM	160 U	Full dose	SP

Table 2 Pre-exposure dose-sparing options for hepatitis A vaccination in MSM to preserve adult monovalent stock for groups most likely to benefit

Pre-exposure vaccination of Men who have sex with men attending GUM clinics	Order of preference	Immunocompetent adults under 60 years (including HIV positive with CD4 count ≥ 500 cells/mm ³)	Immunocompromised adults of any age Including HIV+ with CD4 count < 500 cells/mm ³	Adults of any age with chronic liver disease	Aged 60 years or over
High sustained risk due to high risk of exposure and current susceptibility in network (estimated incidence in 2016/2017 is 224/100,000)	1 st	Single dose of paediatric monovalent HepA vaccine (unless requiring hepatitis B)	Single dose of adult monovalent HepA vaccine	Single dose of adult monovalent HepA vaccine	Test for anti-HAV (IgG) antibody - if negative, recall and give single dose of adult monovalent HepA vaccine
	2 nd	Single dose of adult combination HepA/HepB vaccine	Single dose of combination HepA/typhoid vaccine	Single dose of combination HepA/typhoid vaccine	Test for anti-HAV (IgG) antibody - if negative, recall and give single dose of adult HepA/typhoid
	3 rd	Single dose of adult monovalent hepatitis A vaccine	Two simultaneous doses of paediatric monovalent HepA vaccine (unless also requiring hepatitis B)	Two simultaneous doses of paediatric monovalent HepA vaccine (unless also requiring hepatitis B)	Test for anti-HAV (IgG) antibody - if negative, recall and give two simultaneous doses of paediatric monovalent HepA
	4 th	Single dose of combination HepA/typhoid vaccine	Two simultaneous doses of adult combination HepA/HepB vaccine	Two simultaneous doses of adult combination HepA/HepB vaccine	Test for anti-HAV (IgG) antibody- if negative, recall and give two simultaneous doses of adult combination HepA/HepB vaccine
Rationale and considerations		<ul style="list-style-type: none"> A single dose of vaccines containing half (720EU/25U) the adult hepatitis A antigen content has equivalent immunogenicity at one month to vaccines containing twice the antigen content in immunocompetent younger adults. Those who are immunocompromised, have chronic liver disease or aged over 60 years have a lower and slower response to vaccine. Those with chronic liver disease and those aged over 60 years are also at higher risk of the complications of hepatitis A infection. Simultaneous doses (at same site) are preferred to separate doses for improved compliance Although those aged over 60 years of age are at higher risk of complications of hepatitis A, unpublished evidence suggests that the vast majority of MSM in this age group attending GUM clinic are already immune to hepatitis A (HAV IgG positive). 			

Table 3 Pre-exposure dose-sparing options for hepatitis A vaccination in people travelling overseas to preserve adult monovalent stock for groups most likely to benefit

Travellers to high risk countries	Order of preference	Immunocompetent adults under 60 years (including HIV positive with CD4 count ≥ 500 cells/mm ³)	Immunocompromised adults of any age Including HIV+ with CD4 count <500 cells/mm ³	Adults of any age with chronic liver disease	Aged 60 years or over
Lower and short term risk in areas of poor sanitation <i>Note: it is important that vaccine is given at least 4 weeks prior to travelling, particularly for individuals who are HIV positive, have chronic liver disease or are over 60 years old, to allow sufficient time for an immune response</i>	1 st	Single dose of combination HepA/ typhoid vaccine	Single dose of combination HepA/ typhoid vaccine	Single dose of combination HepA/ typhoid vaccine	Single dose of combination HepA/ typhoid vaccine
	2 nd	Single dose of paediatric monovalent HepA vaccine	Single dose of adult monovalent HepA vaccine	Single dose of adult monovalent HepA vaccine	Single dose of adult monovalent HepA vaccine
	3 rd	Single dose of adult combination HepA/HepB vaccine	Two simultaneous doses of paediatric monovalent HepA vaccine (unless also requiring hepatitis B)	Single dose of paediatric monovalent HepA vaccine* (unless also requiring hepatitis B)	Single dose of paediatric monovalent HepA vaccine*
	4 th	Single dose of adult monovalent hepatitis A vaccine	Two simultaneous doses of adult combination HepA/HepB vaccine	Single dose of adult combination HepA/HepB vaccine*	Single dose of adult combination HepA/HepB vaccine*
Rationale and considerations		<ul style="list-style-type: none"> • A single dose of vaccines containing half (720EU/25U) the adult hepatitis A antigen content has equivalent immunogenicity at one month to vaccines containing twice the antigen content in immunocompetent younger adults. • Those who are immunocompromised, have chronic liver disease or aged over 60 years have a lower and slower response to vaccine. • Those with chronic liver disease and those aged over 60 years are also at higher risk of the complications of hepatitis A infection; however among travellers, there is more time to respond and they are at overall lower risk than MSM. • Combination HepA/HepB vaccine may be preferred if Hep B vaccination is also indicated for travel. • Combination HepA /typhoid vaccine may be preferred if typhoid vaccination is also indicated for travel. • Simultaneous doses (at same site) are preferred to separate doses for improved compliance • Other measures such as careful attention to food and water hygiene and scrupulous hand washing are particularly important in travellers who have chronic liver disease and aged over 60 years. <p>*If the travel is assessed to be very high risk and there is concern that hygiene measures cannot be followed, then two simultaneous doses of paediatric /adult combination vaccine could be considered.</p>			

Table 4 Post-exposure dose-sparing options for hepatitis A vaccination to preserve adult monovalent stock for groups most likely to benefit

Post exposure vaccination of contacts of cases	Order of preference	Patient characteristics			
		Immunocompetent adults under 60 years (including HIV positive with CD4 count ≥ 500 cells/mm ³)	Immunocompromised adults of any age Including HIV+ with CD4 count <500 cells/mm ³	Adults of any age with chronic liver disease	Aged 60 years or over
See also PHE Public Health Control and Management of Hepatitis A. June 2017. Available at: https://www.gov.uk/government/publications/hepatitis-a-infection-prevention-and-control-guidance	1 st	Single dose of combination HepA/typhoid vaccine	Single dose of adult monovalent HepA vaccine +HNIG if CD4 count <200 cells/mm ³	Single dose of adult monovalent HepA vaccine +HNIG	Adult monovalent HepA vaccine + HNIG
	2 nd	Single dose of adult monovalent HepA vaccine	Single dose of combination HepA/typhoid vaccine +HNIG if CD4 count <200 cells/mm ³	Single dose of combination HepA/typhoid vaccine +HNIG	Single dose of combination HepA/typhoid vaccine +HNIG
	3 rd	Single dose of paediatric monovalent HepA vaccine	Two simultaneous doses of adult combination HepA/HepB vaccine +HNIG if CD4 count <200 cells/mm ³	Two simultaneous doses of adult combination HepA/HepB vaccine +HNIG	Ring PHE Colindale for advice
	4 th	Single dose of adult combination HepA/HepB vaccine	Two simultaneous doses of paediatric monovalent HepA vaccine +HNIG if CD4 count <200 cells/mm ³	Two simultaneous doses of paediatric monovalent HepA vaccine +HNIG	
Rationale and considerations	<ul style="list-style-type: none"> • A single dose of vaccines containing half (720 EU/ 25 U) the adult hepatitis A antigen content has equivalent immunogenicity at one month to vaccines containing twice the antigen content in immunocompetent younger adults; however there is a lack of data and experience on post exposure use of half-adult antigen content in adults. • Those who are immunocompromised, have chronic liver disease or aged over 60 years have a lower and slower response to vaccine. • Those with chronic liver disease and those aged over 60 years are also at higher risk of the complications of hepatitis A infection • Two simultaneous doses of combination hepatitis A/B vaccine may be preferred to two simultaneous doses of paediatric vaccine in immunocompromised persons who are HIV positive as they may also have poorer response to hepatitis B vaccine so additional hepatitis B dose may improve their hepatitis B response • Simultaneous doses are preferred to separate doses for improved compliance • People over 60 years may already be immune to Hepatitis A (HAV IgG positive) so testing should be considered prior to providing HNIG if feasible 				

Table 5 Vaccine options for boosting primed patients

Adult antigen content of priming dose	Full-dose hepatitis A antigen (1440 EU / 50U)	Half-dose hepatitis A antigen (720 EU / 25U)
HepA containing vaccines that could have been given as priming dose	<i>Adult monovalent HepA vaccine</i> <i>Combination hepatitis A /typhoid vaccine</i> <i>Two doses of paediatric monovalent HepA vaccine</i> <i>Two doses of adult combination HepA/HepB vaccine</i>	<i>Single dose of combination hepatitis A/B vaccine (Twinrix Adult or Ambirix)</i> <i>Single dose of paediatric monovalent HepA vaccine</i>
Recommendations for boosting in immunocompetent individuals (including HIV positive with CD4 cell count ≥ 500 cells/mm³)	Single dose of adult monovalent HepA vaccine at 5 years OR Single dose of combination HepA/typhoid at 5 years OR Single dose of paediatric monovalent HepA vaccine at 5 years OR Single dose of adult combination HepA/HepB vaccine at 5 years	Single dose of adult monovalent HepA vaccine at 1 year OR Single dose of combination HepA/typhoid vaccine at 1 year OR Single dose of paediatric monovalent HepA vaccine at 1 year OR Single dose of adult combination HepA/HepB vaccine at 1 year
Recommendations for boosting immunocompromised individuals including those HIV positive with CD4 cell count < 500 cells/mm³, persons with chronic liver disease, and those over 60 years old	Single dose of adult monovalent HepA vaccine at 5 years OR Single dose of combination HepA/typhoid at 5 years OR Single dose of paediatric monovalent at 5 years OR Single dose of combination HepA/HepB at 5 years	Single dose of adult monovalent HepA vaccine at 1 year OR Two consecutive paediatric monovalent HepA vaccine doses at 1 year at least 4 months apart OR Two consecutive adult combination HepA/HepB vaccine doses at 1 year at least 4 months apart
Rationale / considerations for choice of boosting dose	<ul style="list-style-type: none"> • Boosting can be delayed for up to 5 years in most situations • If an adult is primed with half dose antigen content vaccine, waning may occur sooner • If priming has been effective, boosting does not require a large amount of antigen: in an immunocompetent person primed with full-dose antigen content vaccine, half-dose antigen content vaccine is likely to provide adequate boosting • In those in whom priming may not have been optimal, e.g. immunocompromised HIV positive individuals, those with chronic liver disease, and persons over 60 years who received half dose antigen content, a further prime before boost (prime-prime-boost) is recommended with an interval of at least 4 months between doses • If at continuing risk of hepatitis B, further doses of hepatitis B containing vaccine should be given according to the recommended schedule (see chapter 18, The Green Book: Immunisation against Infectious Disease https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book) • If at continuing risk of typhoid, further doses of inactivated typhoid containing vaccine should be given according to the recommended schedule (see chapter 23, The Green Book : Immunisation against Infectious Disease https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book) 	

Other resources

The Green Book: Immunisation against Infectious Disease <https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book>) chapter 17 (hepatitis A)

PHE Public Health Control and Management of Hepatitis A. June 2017. Available at: <https://www.gov.uk/government/publications/hepatitis-a-infection-prevention-and-control-guidance>

Immunoglobulin handbook for hepatitis A: <https://www.gov.uk/government/publications/immunoglobulin-when-to-use>

NaTHNaC: list of countries for which hepatitis A vaccine is recommended prior to travel: <https://travelhealthpro.org.uk/countries>