Hepatitis A vaccination in children - temporary recommendations

July 2018 update
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-leading 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 Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

Public Health England
Wellington House
133-155 Waterloo Road
London SE1 8UG
Tel: 020 7654 8000
www.gov.uk/phe
Twitter: @PHE_uk
Facebook: www.facebook.com/PublicHealthEngland

For queries relating to this document, please contact: Immunisation.lead@phe.gov.uk

© Crown copyright 2018
You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v3.0. To view this licence, visit OGL or email psi@nationalarchives.gsi.gov.uk. Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Published July 2018
PHE publications gateway number: 2018269

PHE supports the UN Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOALS

Corporate member of Plain English Campaign
Committed to clearer communication

339

 Issued 19/07/2018
Hepatitis A vaccine recommendations and options for pre and post exposure immunisation and boosting in children

Hepatitis A immunisation recommendations have been updated in light of the global shortage of hepatitis A vaccine that has severely impacted the UK supply. These recommendations include updated travel vaccine recommendations and recommendations for children where the availability of paediatric monovalent hepatitis A vaccine is limited. Supplies are improving, particularly for paediatric monovalent and all combination hepA/hepB vaccine products, and are expected to improve further throughout 2018. As a result recommendations have been modified in June 2018 to encourage the use of paediatric vaccines in children where possible. However, as the full UK vaccine allocation will not be available from all manufacturers the market is likely to remain constrained and these recommendations offer alternatives when the availability of paediatric monovalent hepatitis A vaccine is limited.

1.1: Vaccine recommendations

Hepatitis A vaccination is recommended as pre-exposure prophylaxis for travel to certain countries. NaTHNaC has recently updated its hepatitis A immunisation recommendations and vaccination is no longer 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.

Hepatitis A is also recommended post exposure within 14 days of contact with a hepatitis A case, or during outbreaks. See the Public health control and management of hepatitis A guidance for further details. Note that post exposure vaccination should not be delayed and vaccine should be prioritised for these individuals.

1.2: Vaccine options

Several alternative vaccine options can be considered to mitigate the shortage of hepatitis A vaccine.

Vaccines with full paediatric antigen content are preferred for pre and post-exposure situations. Children with chronic liver disease or who are immunocompromised should also receive full paediatric antigen content vaccine.
Paediatric dosages are based on a lower dose of antigen needed to achieve an adequate immune response in children, rather than any concerns about safety. There are therefore no expected safety issues from using adult dose vaccines in children, which can be considered when paediatric vaccines are not available.

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 advice for pre-exposure vaccination of children travelling abroad, for post exposure prophylaxis and for boosting primed children.

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: Prioritisation

Post exposure vaccination should not be delayed and vaccine should be prioritised for these individuals.

With regards to travel vaccination, there have been recent transmission incidents likely related to imported cases in unvaccinated children who have travelled overseas. With improving paediatric vaccine supplies, sufficient vaccine should be available and offered to all children travelling to countries where hepatitis A vaccine is recommended prior to travel.

However, if in situations remain where there is insufficient vaccine to immunise a whole group of travellers, the decision to prioritise children or adults should be made on a case by case basis, based on criteria including:

- destination and length of travel
- what vaccines are available
- any co-morbidities among individuals travelling
- purpose of travel (holidays vs visiting friends and relatives)
- age of the travellers
- the type of activities undertaken during travel

Due to poorer hygiene standards, young children are more likely than older children and adults to acquire infection and to risk spreading it upon return to the UK. In contrast, older travellers are more likely to develop severe clinical disease, but may be more likely to be immune (particularly if they were raised in an endemic country).
When a group is travelling and not all individuals were vaccinated, extra attention should be paid to hygiene and the food and water consumed. See https://travelhealthpro.org.uk/disease/70/hepatitis-a for further advice.

1.4: Advice tables

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

Table 2: **Pre-exposure options** for hepatitis A vaccination in children travelling overseas

Table 3: **Post-exposure options** for hepatitis A vaccination

Table 4: Vaccine options for **boosting** primed children
**Table 1 Antigen content of hepatitis A containing vaccines available in the UK**

<table>
<thead>
<tr>
<th>HepA Vaccine formulation</th>
<th>Trade name</th>
<th>HepA vaccine antigen content</th>
<th>Adult dose HepA antigen equivalent</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADULT MONOVALENT HEPA</td>
<td>AVAXIM</td>
<td>160 U</td>
<td>Full dose</td>
<td>Sanofi Pasteur (SP)</td>
</tr>
<tr>
<td></td>
<td>HAVRIX</td>
<td>1440 EU</td>
<td>Full dose</td>
<td>GlaxoSmithKline (GSK)</td>
</tr>
<tr>
<td></td>
<td>VAQTA</td>
<td>50 U</td>
<td>Full dose</td>
<td>Merck Sharp &amp; Dohme Limited (MSD)</td>
</tr>
<tr>
<td>PAEDIATRIC MONOVALENT HEPA</td>
<td>HAVRIX</td>
<td>720 EU</td>
<td>Half-dose</td>
<td>GSK</td>
</tr>
<tr>
<td></td>
<td>VAQTA</td>
<td>25 U</td>
<td>Half-dose</td>
<td>MSD</td>
</tr>
<tr>
<td>ADULT COMBINATION HEPATITIS A/B</td>
<td>TWINRIX</td>
<td>720 U</td>
<td>Half-dose</td>
<td>GSK</td>
</tr>
<tr>
<td></td>
<td>TWINRIX</td>
<td>360 U</td>
<td>Quarter-dose</td>
<td>GSK</td>
</tr>
<tr>
<td></td>
<td>AMBIRIX</td>
<td>720 U</td>
<td>Half-dose</td>
<td>GSK</td>
</tr>
</tbody>
</table>

**Table 2 Pre-exposure vaccine options for hepatitis A vaccination in children travelling overseas**

<table>
<thead>
<tr>
<th>Travelers to high risk countries</th>
<th>Order of preference</th>
<th>Immunocompetent children</th>
<th>Suitable vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower and short term risk in areas of poor sanitation</td>
<td>1st</td>
<td>Single dose of paediatric monovalent HepA vaccine OR Single dose of high dose paediatric combination HepA/HepB vaccine</td>
<td>Havrix monodose junior OR VAQTA paediatric OR Ambirix</td>
</tr>
<tr>
<td>Note: it is important that vaccine is given at least 4 weeks prior to travelling, to allow sufficient time for an immune response</td>
<td>2nd</td>
<td>Single dose of adult monovalent hepatitis A vaccine or adult combination HepA/HepB vaccine</td>
<td>Havrix monodose OR VAQTA adult OR Avaxim OR Twinrix adult</td>
</tr>
<tr>
<td></td>
<td>3rd</td>
<td>Two doses of low dose paediatric combination HepA/HepB vaccine</td>
<td>Twinrix paediatric</td>
</tr>
</tbody>
</table>

**Rationale and considerations**

- Combination vaccine may be preferred if Hep B vaccination is also indicated for travel.
- In the context of improving paediatric vaccine supply, it is preferable to use vaccines with a full paediatric antigen dose as data on adequate immune response to half dose is available for adult products in adults only and are extrapolated to paediatric population.
Table 3 Post-exposure vaccine options for hepatitis A vaccination in children

<table>
<thead>
<tr>
<th>Post exposure vaccination of contacts of cases</th>
<th>Order of preference</th>
<th>Immunocompetent children</th>
<th>Suitable vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>See also PHE Public Health Control and Management of Hepatitis A, June 2017. Available at: <a href="https://www.gov.uk/government/publications/hepatitis-a-infection-prevention-and-control-guidance">https://www.gov.uk/government/publications/hepatitis-a-infection-prevention-and-control-guidance</a></td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Single dose of paediatric monovalent HepA vaccine</td>
<td>Havrix monodose junior OR VAQTA paediatric</td>
</tr>
<tr>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Single dose of high dose paediatric combination HepA/HepB vaccine</td>
<td>Ambirix</td>
</tr>
<tr>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>Single dose of adult combination HepA/HepB vaccine</td>
<td>Twinrix adult</td>
</tr>
<tr>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Single dose of adult monovalent hepatitis A</td>
<td>Havrix monodose OR VAQTA adult OR Avaxim</td>
</tr>
</tbody>
</table>

Rationale and considerations

- Although adequate immune response to vaccines with half the normal antigen content is seen at one month, there is limited data to understand whether the early immune response is sufficient for post-exposure protection.
### Table 4 Vaccine options for boosting primed children

<table>
<thead>
<tr>
<th>Priming status History of having received:</th>
<th>Fully primed with full paediatric antigen content</th>
<th>Inadequately primed with half paediatric antigen content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single dose paediatric monovalent HepA vaccine (Havrix monodose junior or VAQTA paediatric)</td>
<td>Single dose paediatric combination HepA/HepB vaccine (Twinrix)</td>
<td>Single dose paediatric combination HepA/HepB vaccine (Twinrix paediatric)</td>
</tr>
<tr>
<td>Single high dose paediatric combination HepA/HepB vaccine (Ambirix)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two doses of paediatric combination HepA/HepB vaccine a month apart (Twinrix paediatric)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult monovalent HepA vaccine (Havrix or VAQTA or Avaxim)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination hepatitis A /typhoid vaccine (Hepatyrix or Viatim)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult combination HepA/HepB vaccine (Twinrix)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Booster recommendations for immunocompetent children**

- Single dose paediatric combination HepA/HepB vaccine at 5 years OR
- Single dose paediatric monovalent HepA vaccine at 5 years

**If no paediatric vaccine is available:**

- Adult monovalent HepA vaccine at 5 years OR
- Adult combination HepA/HepB vaccine at 5 years

**Booster recommendations for Immunocompromised children or children with chronic liver disease**

- Single dose paediatric combination HepA/HepB vaccine at 1 year OR
- Single dose paediatric monovalent HepA vaccine at 1 year

**If no paediatric vaccine is available:**

- Adult monovalent HepA vaccine at 1 year OR
- Adult combination HepA/HepB vaccine at 1 year

**Rationale / considerations for choice of boosting dose**

- Boosting can be delayed for up to 5 years in most situations. Boosting should not be delayed if there is ongoing risk of exposure.
- 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.
- 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](https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book))
Other resources

The Green Book: Immunisation against Infectious Disease


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