

Centers for Disease Control and Prevention
National Center for Immunization and Respiratory Diseases



Hepatitis A and Hepatitis A Vaccine

Chapter 9
September 2018

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Hepatitis A

- Epidemic jaundice described by Hippocrates
- Differentiated from hepatitis B in 1940s
- Serologic tests developed in 1970s
- Vaccines licensed in 1995 and 1996

Hepatitis A Clinical Features

- Incubation period 28 days (range 15-50 days)
- Illness not specific for hepatitis A
- Likelihood of symptomatic illness directly related to age
- Children generally asymptomatic, adults symptomatic

Hepatitis A Epidemiology

- **Reservoir** Human
- **Transmission** Fecal-oral
- **Temporal pattern** None
- **Communicability** 2 weeks before to 1 week after onset of jaundice

Single-Component HepA Vaccine Products

Vaccine Product	Age Indications
Havrix	
Pediatric formulation	Birth through 18 years of age
Adult formulation	19 years of age and older
Vaqta	
Pediatric formulation	Birth through 18 years of age
Adult formulation	19 years of age and older

Administer the appropriate formulation based on the patient's age

Hepatitis A Vaccine Efficacy

- **HAVRIX (GSK)**
 - 40,000 Thai children 1 to 16 years of age
 - Vaccine efficacy 94%
- **VAQTA (Merck)**
 - 1,000 New York children 2 to 16 years of age
 - Vaccine efficacy 100%

ACIP HepA Vaccine Recommendations

Pediatric

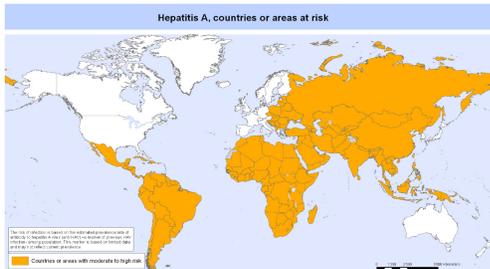
- All children should receive vaccine at 12 through 23 months of age
- Vaccination should be integrated into the routine vaccination schedule
- Children who are not vaccinated by 2 years of age can be vaccinated at subsequent visits

The table shows the recommended vaccination schedule for Hepatitis A in children aged 12 through 23 months. It includes columns for 'Age (months)', 'Vaccine', and 'Dose'. A red box highlights the '12-23 months' section, indicating that one dose of Hepatitis A vaccine should be administered during this period. The table also lists other routine vaccines like DTaP, Hib, Polio, and MMR.

Hepatitis A Vaccination of Children

- Existing hepatitis A vaccination programs for children 2–18 years of age should be maintained
- New efforts for routine vaccination of children 12 months of age should enhance, not replace, ongoing vaccination programs for older children
- Areas without an existing hepatitis A vaccination program can consider catch-up vaccination for unvaccinated children 2–18 years of age

Hepatitis A and International Travel



World Health Organization map of countries of area of risk for hepatitis A. Accessed 4/3/2018. http://apps.who.int/mediacentre/files/2009/06/hepat_a_risk_map.png

Hepatitis A Vaccination for International Travelers: Children

- One dose of a monovalent hepatitis A vaccine protects most healthy people 1–40 years of age
- Administer hepA vaccine to unvaccinated persons 1 year of age and older
 - Start the series as soon as travel is being considered to an area outside the U.S. where protection against hepatitis A is recommended
 - The series should be completed for life-long protection—even if the trip is over
 - Post-vaccination testing is not recommended

MMWR 2007;56(No.41):1080-4

Hepatitis A Vaccine for International Travelers: Infants



- Administer a single dose of hepA vaccine to infants 6–11 months of age*
- Infants should restart the 2-dose series of HepA vaccine at 12 months of age or older as recommended



*This recommendation has been adopted by the CDC Director and will become official once published in MMWR
 CDC website: Advisory Committee on Immunization Practices (ACIP) accessed on 4/3/2018: <https://www.cdc.gov/vaccines/acip/index.html>

Summary: Hepatitis A Vaccine Recommendations and International Travel

Age	
Infants 6 months of age or younger	Immunoglobulin (IG)
Infants 6 through 11 months of age	Vaccine ¹ (or IG ²)
Healthy persons 1 year of age or older	Vaccine
Special Populations	
Persons with a vaccine contraindication	IG
Immunocompromised persons	Vaccine with addition of IG ³
Persons with chronic liver disease	Vaccine
Pregnant women	Vaccine

¹This recommendation has been adopted by the CDC Director and will become official once published in MMWR
²Based on provider guidance risk assessment and availability of vaccine or IG
³If measles is not endemic in the region

Vaccination for Close Contacts of Newly Arriving International Adoptees

- Hepatitis A vaccination for unvaccinated persons who anticipate close personal contact during the first 60 days after arrival of an international adoptee from a country of high or intermediate endemicity

- Administer dose 1 as soon as adoption is planned, ideally 2 or more weeks before the arrival of the adoptee

MMWR 2009;58(No.36):1006-7

Hepatitis A Serologic Testing

- Prevaccination serologic testing is not indicated for children
 - Older adolescents: Testing may be cost effective for certain populations

- Postvaccination
 - Not indicated

Vaccine Administration

- **Route: IM injection**
 - Needle gauge: 22 – 25 gauge
 - Needle length*: 1 – 1.5 inch depending on the patient’s age and/or weight

- **Site*:**
 - 1 – 3 years: Vastus lateralis muscle is preferred; deltoid muscle may be used if the muscle mass is adequate
 - 4 years and older: Deltoid muscle is preferred; vastus lateralis muscle may be used

*Professional judgement should be used to determine the proper needle length and site. Influencing factors include injection technique, local reaction, number of vaccines to be administered, patient age, size and muscle mass

**Hepatitis A
Vaccine Administration Errors**

We administered:	Now:
Adult formulation to a child	Dose counts, revaccination is not indicated*
HepB, Hib or HPV instead of HepA vaccine	Dose does not count towards completion of the HepA series

*if meets minimum age and interval (if applicable)

**Hepatitis A Vaccine
Contraindications and Precautions**

- Severe allergic reaction to a vaccine component or following a prior dose

- Moderate or severe acute illness

**Hepatitis A Vaccine
Adverse Reactions**

- Local reaction 20%-50%

- Systemic reactions
 (malaise, fatigue) Less than 10%

- No serious adverse reactions reported

Vaccine Storage and Handling

- Store hepatitis A vaccine in a refrigerator between 2°C - 8°C (36°F - 46°F)
- Store pediatric and adult formulations:
 - In the original packaging with the lids closed
 - In a clearly labeled bin and/or area of the storage unit – not next to each other

HepA (Havrix)-Pediatric Formulation
 Ages: 12 months through 18 years
 Use for: Any dose in the series
 Route: Intramuscular (IM) injection

HepA (Havrix)-Adult Formulation
 Ages: 19 years and older
 Use for: Any dose in the series
 Route: Intramuscular (IM) injection

HepA (Vaqta)-Pediatric Formulation
 Ages: 12 months thru
 Use for: Any dose in the series
 Route: Intramuscular

HepA (Vaqta)-Adult Formulation
 Ages: 19 years and older
 Use for: Any dose in the series
 Route: Intramuscular (IM) injection

Vaccine storage label example
 Available at www.cdc.gov/vaccines/hcp/admin/storage/qa/qa/vaccine-storage-labels.pdf

Case Study: Sophia

- Sophia is 12 months old, healthy, with no significant medical history, and is due for her well-child evaluation
- Sophia was born and lived in Mexico until recently
- She was adopted and now lives in the U.S.
- Vaccines documented in Sophia's immunization record include:

• Antihepatitis B	Birth	2 months	8 months
• Pentavalente		2 months	5 months 8 months
• Neumocóccica		2 months	5 months 8 months

What Do You Think?

- After reviewing Sophia's immunization history and records, you:
 - Contact the Mexican Embassy in Washington, D.C., for clarification
 - Contact U.S. Citizenship and Immigration Services
 - Sneak out the back door and go home
 - Check the CDC website

Foreign Language Terms Job Aids



2018 Binational Immunization Resource Tool for Children from Birth through 18 Years



Appendix B: Foreign Language Terms: Aids to translating foreign immunization records



Quick Chart of Vaccine-Preventable Disease Terms in Multiple Languages

CDC. 2017 Binational Immunization Resource Tool for Children from Birth through 18 Years <https://www.cdc.gov/vaccines/imz/downloads/child/binational-schedule-ar.pdf>
 CDC. Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition, Appendix B <https://www.cdc.gov/vaccines/imz/downloads/epidemiology-and-prevention-of-vaccine-preventable-diseases-13th-edition-appendix-b.pdf>
 IAC. Quick Chart of Vaccine-Preventable Disease Terms in Multiple Languages <http://www.immunize.org/qaq/p122.pdf>

Interpreting Foreign Immunization Records

- You determine Sophia has received these vaccines:
 - Antihepatitis B = Hepatitis B vaccine
 - Pentavalente = DTaP, IVP and Hib vaccines
 - Neumocóccica = PCV vaccine

CDC. Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition, Appendix B <https://www.cdc.gov/vaccines/imz/downloads/epidemiology-and-prevention-of-vaccine-preventable-diseases-13th-edition-appendix-b.pdf>

Immunization Records and International Adoptions

- Adopted children’s birth countries often have vaccination schedules that differ from the U.S. immunization schedule
- Differences include vaccines administered, recommended ages, and number and timing of doses

ACIP General Best Practice Guidelines on Immunization <https://www.cdc.gov/mmwr/pdf/r/r1302.pdf>

General Recommendations for Persons Vaccinated Outside the U.S.

- Vaccines administered outside the U.S. can be accepted as valid if the schedule is similar to U.S. recommendations

- With the exception of influenza and PPSV23 vaccines, only written documentation should be accepted as evidence of previous vaccination

ACIP General Best Practice Guidelines on Immunizations <https://www.cdc.gov/mmwr/pdf/rr/r6002.pdf>

Determining What to Do Next

- **Questions? Health care providers may:**
 - Repeat the vaccinations—safe and prevents the need for serologic testing
 - Use serologic testing judiciously – may avoid unnecessary injections
 - But for most vaccines, many serologic tests cannot document protection against infection
 - Cost can be a factor

ACIP General Best Practice Guidelines on Immunizations <https://www.cdc.gov/mmwr/pdf/rr/r6002.pdf>

What Do You Think?

- After checking the immunization information system, you learn Sophia's immunization history includes a dose of Hepatitis A vaccine at 11 months of age. Does she need hepatitis A vaccine today?
 - Yes
 - No

**Hepatitis A Vaccine for International Travelers:
Infants**



- **Infants should restart the 2-dose series of HepA vaccine at 12 months of age or older as recommended**
 - The 1st dose does not count
 - Administer a dose now
 - Administer the second dose at least 6 months after the dose given today

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CDC website: Advisory Committee on Immunization Practices (ACIP) accessed on 4/3/2018 <http://www.cdc.gov/vaccines/acip/index.html>

Questions?