Pediatric Vaccinations - Age 12 to 15 Months

Vaccinations are a type of primary prevention, meaning that their goal is to decrease the overall incidence of disease in the population. At 12-15 months of age, infants should receive 6-7 vaccinations. All infants should receive their fourth dose of the diphtheria, tetanus, and acellular pertussis (DTaP) and pneumococcal vaccines, their 1st dose of the MMR and varicella vaccinations, and a haemophilus influenzae type B booster. Some infants may receive a 3rd dose of the inactivated poliovirus (IPV) vaccination. General contraindications to all vaccinations include serious (anaphylactic) allergic reaction to any vaccine component or previous dose of the particular dose of the particular vaccination and those with severe immunodeficiency. Live vaccines (MMR, varicella, yellow fever, nasal influenza, oral rotavirus) should not be given to immunosuppressed or pregnant patients.

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1 Very MAD HIP-ster

Varicella Zoster

Varsity Zorro Virus

VZV is a herpesvirus that causes the illness known as chicken pox upon primary infection. The varicella vaccine contains a single strain of live attenuated VZV. It is available alone (VARIVAX) or as a part of the MMRV vaccine. Vaccination is recommended at 12 months or age or older for healthy people who have not had varicella illness, with 2nd dose at age 4-6 years. Immunized patients may still have breakthrough varicella, though milder than unimmunized patients and rarely spreads. Vaccination is contraindicated in patients with allergy to neomycin or gelatin. Although rare, it has been associated with development of herpes zoster after immunization. Even without a reliable history of varicella infection, most people over 18 years of age will still be immune.

MMR

M&M-aRt Syringe

The illnesses caused by the measles, mumps, and rubella viruses have all been known to cause significant complications, morbidity and mortality, including encephalitis, aseptic meningitis, and significant birth defects. Two formations are used to vaccinate against these viruses in the U.S. The MMR and MMRV (measles, mumps, rubella and varicella) vaccinations are both live attenuated vaccines. Two doses of MMR or MMRV are required for complete vaccination, the first of which is given at 12-15 months. MMR is recommended for use in children 12-46 months old, with a separate varicella vaccination. MMRV is recommended for use in children 4-12 years of age. As live vaccines, they are contraindicated in immunocompromised hosts, patients allergic to the vaccine components gelatin and neomycin, and pregnancy (due to theoretical risk of congenital rubella syndrome). Documented egg allergy is not a contraindication to the MMR.

Hepatitis A

Happy-tie-liver Apple

Hepatitis A virus (HAV) causes 60% of viral hepatitis in the U.S. Immunization of all children >1 year is recommended. Two total doses are required for full vaccination, and should be given 6 months apart between 12 and 23 months. Two forms are available for use in patients over 12 months of age, both containing formalin-inactivated HAV antigen. The HepA vaccine is also recommended routinely for chronic liver disease patients, users of illegal drugs, patients with clotting-factor disorders and those at risk for occupational exposure.

DTaP - Diphtheria Tetanus acellular pertussis

DTaP-dancer

Diphtheria is an acute respiratory illness caused by Corynebacterium diphtheriae, and has a fatality rate of up to 20% among children < 5 yrs old. Tetanus is a spasmodic nervous system disorder caused by Clostridium tetani toxin. Bordetella pertussis causes an acute respiratory illness known as "whooping cough". The DTaP vaccine contains diphtheria and tetanus toxoids (inactivated toxins), and inactivated acellular pertussis to protect against these three infections. It is administered intramuscularly (IM), and the 4th of 5 doses of DTap is recommended between 15 and 18 months. Contraindications to immunization include encephalopathy without an identifiable cause within 7 days of a previous dose, or progressive neurologic disease such as infantile spasms or uncontrolled epilepsy. Pertussis booster (Tdap) vaccine is now recommended during adolescence, regardless of immunization status and is also recommended even if the patient has already had pertussis.

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HiB - Haemophilus Influenzae Type B

He-man in-flute (B) Bee

Prior to development of the vaccination, Hib was the most common cause of bacterial meningitis in children. It also frequently caused other serious diseases including epiglottitis, pneumonia, septic arthritis, and bacteremia. The Hib vaccine consists of the type B capsular polysaccharide conjugated to a carrier protein. This conjugation strengthens the T cell dependent response to vaccination. The vaccination only covers type B, it does not offer any protection against other types or non-typable haemophilus. It is administered IM and all children should receive one booster of Hib between 15 and 18 months.

IPV - Inactivated Polio Vaccine

Polio-player Syringe

There are two polio vaccines - inactivated poliovirus vaccine (IPV) and live attenuated poliovirus vaccine (OPV) - although OPV is no longer used in the U.S. it is still used in many parts of the world. IPV induces active immunity against poliovirus types 1, 2, and 3. It is available alone and in combination with other pediatric vaccines. It is administered IM or subcutaneously. The 3rd of 4 doses is given between 6-18 months of age. If not given at the 6th month visit it may be given between 12-15 months up through 18 months of age. Any child up to 18 years of age should receive all doses, if behind. IPV is contraindicated in pregnancy or those with a pregnant female at home.

PCV - Pneumococcal

Nude-cock Syringe

PCV is derived from a capsular polysaccharide, which allows for type-specific antibody killing. Polysaccharide vaccines were found to have poor efficacy in children under age 2, however conjugation of the polysaccharide to immunogenic non-pneumococcal carrier proteins elicits a T cell-dependent memory response that is effective in infants. The Pneumococcal conjugate vaccine (PVC13) contains purified polysaccharides of 13 serotypes conjugated to a diphtheria protein. The 4th and final dose of PCV13 is given between 12 and 15 months, as long as there has been a minimum of 8 weeks between the 3rd dose and the last dose. The 23-valent pneumococcal polysaccharide vaccine (PS23) is given to provide additional protection to the PCV13 in some high-risk children (e.g. functional or anatomic asplenia) whom are >2 years old.

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