

Vaccines and Food allergy

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Objectives:

Review vaccinating
children with egg allergy

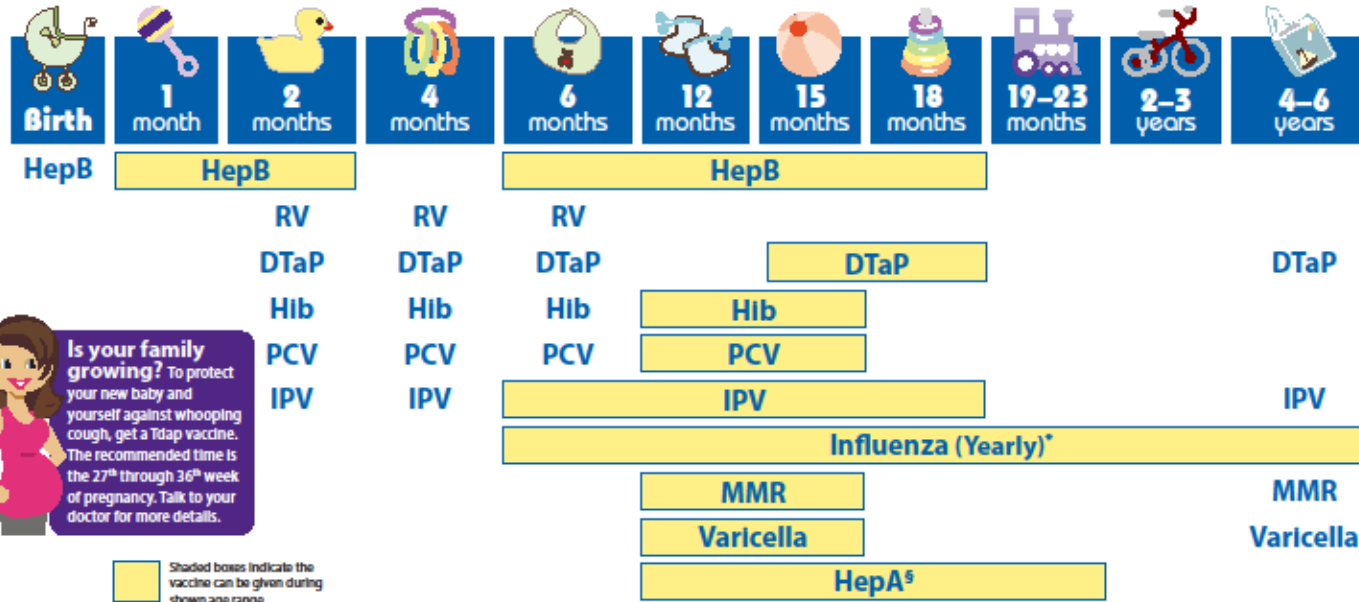


Egg Allergy Epidemiology

- Prevalence up to 2.6% of children
- 2nd most common food causing allergy in children
- Symptoms range from urticarial to anaphylaxis upon ingestion
- Current testing does not identify dose that may elicit reaction
- Diagnosed within first year when children receive vaccine series

Leo, SH et al. Allergy, Asthma Clin Immunology. 2010;6(2):214-16.

2017 Recommended Immunizations for Children from Birth Through 6 Years Old



Is your family growing? To protect your new baby and yourself against whooping cough, get a Tdap vaccine. The recommended time is the 27th through 36th week of pregnancy. Talk to your doctor for more details.

Shaded boxes indicate the vaccine can be given during shown age range.

NOTE:
If your child misses a shot, you don't need to start over, just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

FOOTNOTES:
* Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.
§ Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 to 18 months later. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk, should be vaccinated against HepA.
If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.

SEE BACK PAGE FOR MORE INFORMATION ON VACCINE-PREVENTABLE DISEASES AND THE VACCINES THAT PREVENT THEM.

For more information, call toll free
1-800-CDC-INFO (1-800-232-4636)
or visit
www.cdc.gov/vaccines/parents



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

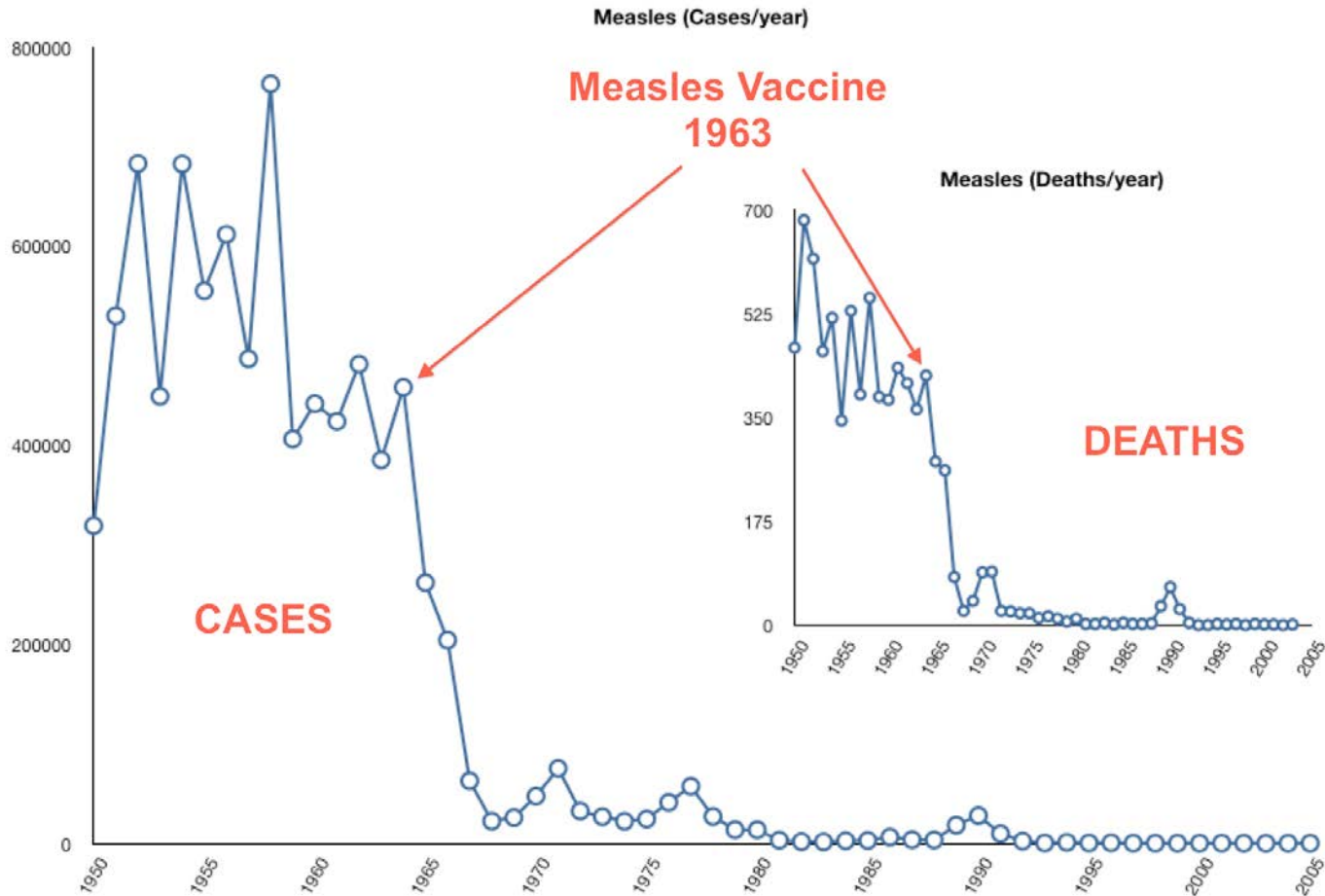


Complications of infection

- Measles: encephalitis, pneumonia
- Mumps: encephalitis, meningitis, orchitis, deafness
- Influenza: secondary pneumonia, respiratory distress
- Risk of death
- 1900 40% of deaths from vaccine preventable diseases in children <5 years of age

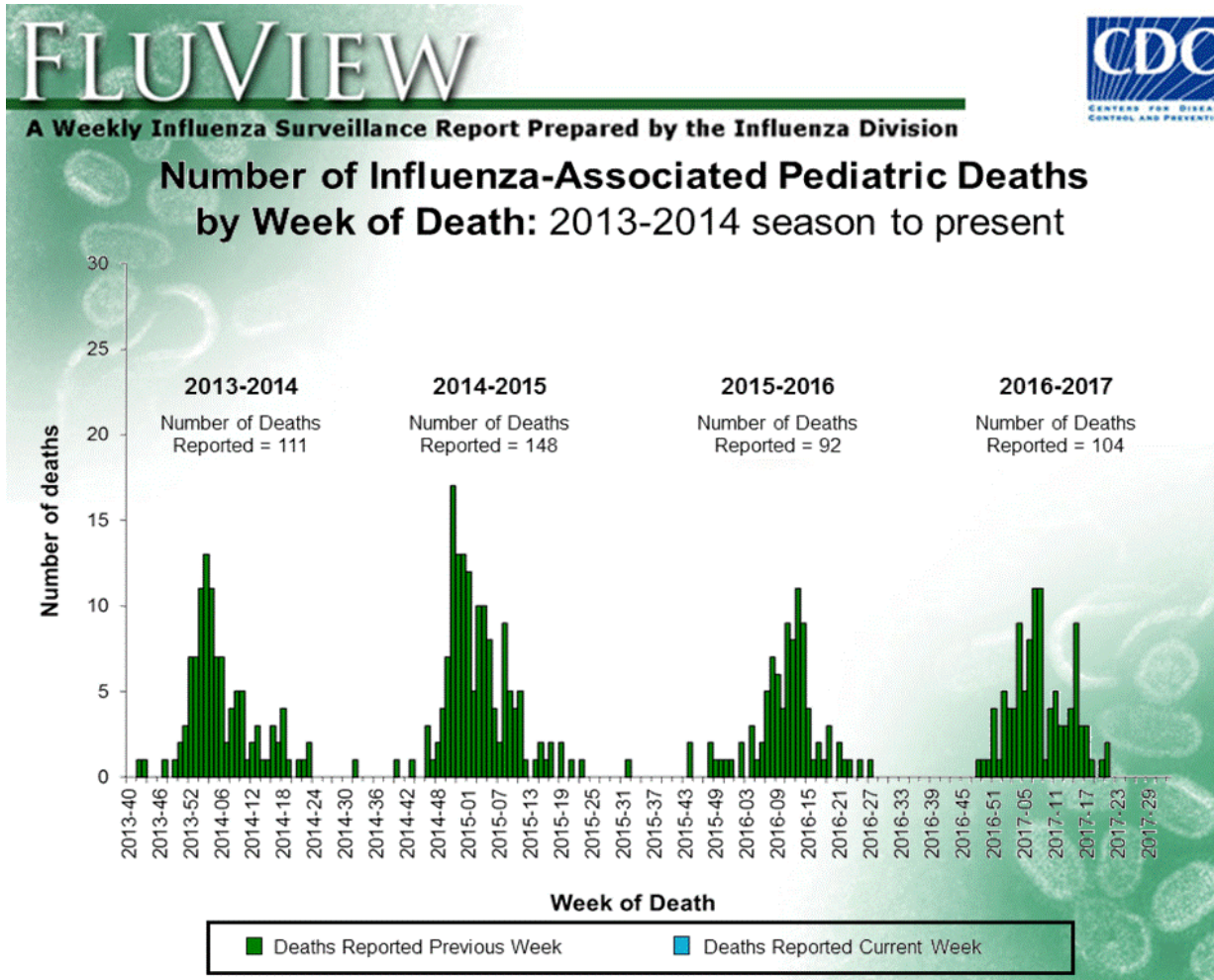
Centers for Disease Control Data

MMR Vaccination Effect



CDC data

Why Vaccinate?



Briefly how vaccines are made

- Production involves culture of pathogen in chick embryo cells
- Minute amounts of ovalbumin (egg protein) may be present
- Some vaccines mass produced outside of egg (cell culture based) have less ovalbumin content
- <1 mcg/ml of ovalbumin (varies by brand)
- Only egg free influenza vaccine is recombinant

Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases (NCIRD)

September 2016

But...

Are they safe to give
to children with food
allergy?



MMR Safety Data Summary

- 1985 Dr Hugh Sampson published study safely administering MMR to 140 children with egg allergy
- There was no reaction regardless of skin test result
- Estimated 9 picograms of ovalbumin/0.5ml in MMR
- Greenberg's group vaccinated 15 children without adverse reaction (1988)
- Total 434 egg allergic children received MMR without adverse reaction (Buscino)

Sampson HA et al. Pediatric Research 1990;27(4):181-2.

Buscino L, et al. Safety of Measles Vaccine. Ped Allergy Immunology. 1991;4:195-8.

Influenza Safety Data

- 81 received H1N1 or seasonal flu vaccine safely
- Even those who skin tested positive for flu vaccine did not have adverse reaction
- Skin testing to flu vaccine did not predict tolerance of vaccine

Leo SH et al. Allergy, Asthma, Clin Immunology 2010;6(2):P4.

High Dose tolerated

- 64 patients received a total of 96 doses of influenza vaccine without reactions
- Group reported higher dose of ovalbumin >1.2 mcg/ml
- Max range referenced 0.7mcg-1.4mcg/0.5ml in pharmacy studies (Croegaert KA 2013)
- Exact content not always available

Owens et al. J of Allergy Clin Immunol 2011;127(1):264-5.

Live Intranasal Flu

- UK study 779 egg allergic 2-18 years of age given live nasal vaccine (LAIV)
- 35% had anaphylaxis to egg in the group
- No systemic reactions in any patients
- 6 reactions were not IgE mediated (these patients tolerated 2nd dose)

Turner P et al. J of Allergy Clin Immunol 2014.

Influenza Safety Cont'd

- 28 studies published
- 4315 total children with egg allergy in studies
- 656 with anaphylaxis to egg
- All given influenza vaccine without reaction

- Amount of egg protein insufficient to cause a reaction
- Vaccines are safe to give and should not be withheld due to egg allergy

Kelso et al. J All Clin Immunol in Practice 2015;3:140-1.

Summary

- Influenza infection is serious!
 - 20,000 hospitalizations
 - >100 pediatric deaths annually in unvaccinated
- Influenza vaccine can be safely given to children with egg allergy
- Current recommendations do not need to test first to administer
- No need to split the dose of vaccine
- Mild egg reactions may receive vaccine in pediatrician's office
- Anaphylaxis to egg, may consider administration at allergist's office

Thank you!

