vScience Bites

small bites you can remember
to bite them in the behind

We will cover one vaccine per month in great detail.

May, 2019:
Measles and the MMR
www.Courses4Mastery.com (will be available TOMORROW)
text: 555888 to join our MVI email list

1. The Illness

2. The history of the vaccine

3. The vaccine ingredients - and studies pointing to problems with at least some of the ingredients

4. The Vaccine Side effects

….and answer a few burning questions

1. The Illness: Measles

The first symptoms of measles occur after a 10- to 14-day incubation period that follows wild measles virus exposure from a measles-infected person. A systematic review estimated the median incubation period to be 12.5 days

The prodromal stage – looks like any other common respiratory infection: onset of fever, malaise, conjunctivitis, runny nose, and cough and lasts 2 to 4 days. The temperature rises over the next 4 days and may reach as high as 40.6°C. (105F)

Sometimes, a blue-white plaque can appear on the inside cheek near the molars. This is called a Koplik spot, and is believed to be the classic sign of a measles infection. The Koplik spots are believed to occur in greater than 70% of measles patients

The measles rash, which is a flat red rash, starts about 14 days after exposure and spreads from the face down the trunk to the extremities. Notably, it can blanch with pressure. During the next 3 to 4 days, the rash fades in the order of its appearance and assumes a non-blanching brownish appearance.

The most common complication is ear infection, pneumonia and diarrhea. Brain encephalitis – called SSPE – is thought to be rare and occur primarily in children who are Vitamin A deficient – and I would add children who are Vitamin D and iodine deficit are also at risk.

2. The Vaccine: history

The attenuated Edmonston strain of measles was first discovered in September 1958. It was passed human amnion cells 28 times followed by 24 passages through monkey kidney cells to weaken, or attenuate, the virus. It was first tested on 13 mentally retarded, institutionalized residents of a state institution.. The measles vaccine was first licensed in 1963; mumps in 1967 and rubella in 1969. Here's the link to that article, published in 1962 in the Am Journal of Health - Nations Health in 1962: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1522581/

3. **The Vaccine: ingredients**
MMR Package insert: https://www.fda.gov/media/75191/download

Each 0.5 mL dose contains not less than 1,000 units of measles virus; 12,500 units of mumps virus; and 1,000 units of rubella virus.
Each dose contains:

- 14.5 mg of sorbitol
- **14.5 mg of hydrolyzed gelatin**
- 0.3 mg of recombinant human albumin
- 25 mcg of neomycin
- Fetal bovine serum
- other buffers and media ingredients

Gelatin is added to many vaccines as a heat stabilizer. Japanese researchers found a strong association between immediate hypersensitivity reactions – anaphylaxis – vaccines with gelatin: MMR, Varicella, Zostavax, and Jap Enceph. They found IgE antibodies to gelatin.

This study: **"Prevalence of Anti-Gelatin IgE Antibodies in People With Anaphylaxis After Measles-Mumps-Rubella Vaccine in the United States**" was published in Pediatrics in 2002 – https://pediatrics.aappublications.org/content/110/6/e71.full

> Conclusion:
> "***Almost one fourth of patients with reported anaphylaxis after MMR seem to have hypersensitivity to gelatin in the vaccine.***

In 2000, Japanese researchers published a study entitled, **"Change in gelatin content of vaccines associated with reduction in reports of allergic reactions."** https://www.jacionline.org/article/S0091-6749%2800%2968940-6/fulltext

> They found that porcine gelatin was less reactive than bovine gelatin, but the investigators believe that the MMR anaphylaxis stopped because manufacturers discontinued making gelatin-containing DTaP – so they were not previously sensitized when given the MMR.

Now, interestingly study, "**Removal of gelatin from live vaccines and DTaP-an ultimate solution for vaccine-related gelatin allergy."** published in the journal *Biologicals* in 2003 found this: https://www.ncbi.nlm.nih.gov/pubmed/14624794

> "From the early 1990s, infants received gelatin-containing DTaP. Then, when they received gelatin-containing MMR, there was a huge increase number of

cases of allergic reactions and anaphylaxis. These reactions dramatically decreased **immediately after each manufacturer marketed gelatin-free or gelatin** (hypo-allergenic) measles vaccine. Since the end of 1998 reports on anaphylactic/allergic reactions to live measles vaccine have almost ceased

Question: Can you contract measles from the vaccine or from those vaccinated with the measles vaccines.

To answer that, we have two articles:

The first article, "**Local public health response to vaccine-associated measles: case report**," was published in BioMed Central's Public Health Journal in 2013. Local public health response to vaccine-associated measles: case report (pdf)

> This is a case report of a five-year-old Canadian-born by who received a stem cell transplant at two years of age and then received an MMR vaccine about 3 years later. He then contracted all the signs/symptoms of measles. Blood tests and swabs were positive for measles and the WHO confirmed it was genotype A-vaccine strain measles.
>
> Vaccine-associated measles infections are clinically indistinguishable from wild-type measles and have occurred in both healthy and immunocompromised children

A second was a case report was published in December, 2013 in the Journal of Eurosurveillance https://www.eurosurveillance.org/content/10.2807/1560-7917.ES2013.18.49.20649

> In this report we describe a case of measles-mumps-rubella (MMR) vaccine-associated measles illness that was positive by both PCR and IgM, five weeks after administration of the MMR vaccine. Virus genotype was determined by the National Microbiology Laboratory in Winnipeg, Canada as vaccine strain, genotype A,

******Comment: For those who say that a vaccine cannot cause an illness, here are two solid example of measles being caused by an MMR vaccine.***