


Quick Answers to Tough Questions


Vaccine Talking Points for Healthcare Professionals

Updated January 2017




Are you spending more and more time with vaccine-hesitant parents?

Parents Wonder: Is it Safe to Vaccinate?
Many families of autistic kids blame the MMR shot for the disorder. Experts say they shouldn't.




Talking about vaccines

- **Effective, empathetic communication** is critical in responding to parents who are considering not vaccinating their children
 - **Parents** should be helped to feel comfortable voicing any concerns or questions they have about vaccination
 - **Providers** should be prepared to listen and respond effectively


“A successful discussion about vaccines involves a two-way conversation, with both parties sharing information and asking questions.”

Talking with Parents about Vaccines for Infants (CDC)
www.cdc.gov/vaccines/hcp/conversations/downloads/talk-infants-color-office.pdf



Ask questions


- **Evaluate** whether the child has a valid contraindication to a vaccine by asking about medical history, allergies, and previous experiences
- **Assess** the parent's reasons for wanting to delay or forgo vaccination in a non-confrontational manner
 - Have they had a bad experience?
 - Obtained troubling information?
 - Do they have a religious or personal belief that they think conflicts with vaccination?

Talking about vaccines


“Take advantage of early opportunities such as the prenatal, newborn, 1-week, and 1-month visits to initiate a dialogue about vaccines. These also are good opportunities to provide take-home materials or direct parents to immunization websites that you trust. This gives parents time to read and digest reputable vaccine information before the first and all future immunizations. And when parents have questions, you can build on the reputable information that they already have reviewed. With parents who have many questions, consider an extended visit to discuss vaccinating their child.”

Talking with Parents about Vaccines for Infants (CDC)
www.cdc.gov/vaccines/hcp/conversations/downloads/talk-infants-color-office.pdf



Dialogue

- If parents have safety concerns or misconceptions about vaccination, ask them to identify the source(s) of those concerns or beliefs
- Listen carefully, paraphrase to the parent what they have told you, and ask them if you have correctly interpreted what they have said
- Provide factual information in understandable language that addresses the specific concerns or misconceptions the parent has about vaccination





Be prepared with quick answers to tough questions

- The following is an **outline** of answers to questions about vaccine effectiveness and safety
- It includes:
 - **suggestions** for further provider reading
 - helpful **handouts** for patients



Common Questions Asked by Vaccine-Hesitant Parents and Patients



Won't giving my baby so many vaccines overwhelm his/her immune system?

- **Babies begin being exposed to immunological challenges immediately at the time of birth.**
 - As babies pass through the birth canal and breathe, they are immediately colonized with trillions of bacteria, which means that they carry the bacteria in their bodies but aren't infected by them.
 - Healthy babies constantly make antibodies against these bacteria and viruses.
- **Vaccines use only a tiny proportion of a baby's immune system's ability to respond.**
 - Though children receive more vaccines than in the past, today's vaccines contain fewer antigens (e.g., sugars and proteins) than previous vaccines.
 - Smallpox vaccine alone contained 200 proteins; the 11 currently recommended routine vaccines contain fewer than 130 immunologic components.



Why don't you recommend spacing out vaccines using an alternative schedule?

- Delaying vaccines **increases the time children will be susceptible** to serious diseases.
 - *Measles*: There were 667 cases of measles in the U.S. in 2014. The majority of people who got measles were unvaccinated. Measles is still common in many parts of the world including some countries in Europe, Asia, the Pacific, and Africa, and can easily be imported.
 - *Pertussis*: This disease is especially dangerous in infants before they're fully vaccinated. In 2014, 32,971 pertussis cases were reported in the U.S., and many more cases were undiagnosed.
- Requiring many extra appointments for vaccinations **increases the stress for the child** and may lead to a fear of medical procedures.
- There is **no evidence that spreading out the schedule decreases the risk of adverse reactions.**



References

- ***Too Many Vaccines? What you should know*** (Vaccine Education Center, Children's Hospital of Philadelphia – VEC)
www.chop.edu/export/download/pdfs/articles/vaccine-education-center/too-many-vaccines.pdf
- ***Multiple Vaccines and the Immune System*** (CDC)
www.cdc.gov/vaccinesafety/Vaccines/multiplevaccines.html
- ***The Problem With Dr. Bob's Alternative Vaccine Schedule*** by Paul Offit, MD and Charlotte Moser
www.immunize.org/concerns/offit_moser2009.pdf
- ***Vaccines and Autism: A Tale of Shifting Hypotheses*** by Paul Offit, MD and Jeffery Gerber, MD
<http://cid.oxfordjournals.org/content/48/4/456.full>

References

- ***Multiple Immunizations and Immune Dysfunction*** (Institute of Medicine Report)
www.nap.edu/read/10306/chapter/1
- ***The Childhood Immunization Schedule: Why Is It Like That?*** (AAP)
www.aap.org/en-us/advocacy-and-policy/Documents/Vaccineschedule.pdf
- ***Parental Refusal of Pertussis Vaccination Is Associated with an Increased Risk of Pertussis Infection in Children*** (Glanz et al, *Pediatrics*, June 2009)
<http://pediatrics.aappublications.org/cgi/content/abstract/123/6/1446>

Hasn't the mercury in vaccines been shown to cause autism?

- The form of mercury found in thimerosal is **ethylmercury** (not methylmercury, which is the form that has been shown to damage the nervous system.)
- Although no evidence of harm has been proven, thimerosal was taken out of vaccines in the U.S. as a precaution and "because it can be" (due to single dose vials, other preservative options)
- Since 2001, with the exception of some influenza vaccines, thimerosal has not been used as a preservative in routinely recommended childhood vaccines in the U.S.



Hasn't the mercury in vaccines been shown to cause autism? (continued)

- Multiple studies comparing vaccinated and unvaccinated children have shown that thimerosal in vaccines does not cause autism.
- Studies of three countries compared the incidence of autism before and after thimerosal was removed from vaccines (in 1992 in Europe and 2001 in the U.S.) and found no decrease in autism with the use of thimerosal-free vaccines.



References

- **Common Vaccine Safety Concerns web page (CDC)** www.cdc.gov/vaccinesafety/concerns
- **Collection of related resources (IAC)** www.immunize.org/thimerosal
- **Report on thimerosal (Institute of Medicine)** www.nap.edu/books/030909237X/html and www.nap.edu/read/10208/chapter/1
- **Understanding Thimerosal, Mercury, and Vaccine Safety (CDC)** www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-thimerosal-bw-office.pdf



References (continued)

- **Thimerosal: What you should know (CHOP)** www.chop.edu/export/download/pdfs/articles/vaccine-education-center/thimerosal.pdf
- **Autism: What you should know (CHOP)** www.chop.edu/export/download/pdfs/articles/vaccine-education-center/autism.pdf
- **Studies on Thimerosal in Vaccines (CDC)** www.cdc.gov/vaccinesafety/pdf/cdcstudiesonvaccinesandautism.pdf
- **Vaccines and Autism: A Tale of Shifting Hypotheses** by Paul Offit, MD and Jeffery Gerber, MD <http://cid.oxfordjournals.org/content/48/4/456.full>



Don't the ingredients found in vaccines hurt children?

Aluminum

- Aluminum is used in some vaccines as an adjuvant—an ingredient that improves the immune response.
 - Adjuvants can allow for use of less antigen.
 - They have been used for this purpose for more than 70 years.
- Aluminum is the most common metal found in nature. It is in the air and in food and drink. Infants get more aluminum through breast milk or formula than vaccines.
- Most of the aluminum in the body is quickly eliminated.



Don't the ingredients found in vaccines hurt children?

Formaldehyde

- Formaldehyde is used to detoxify diphtheria and tetanus toxins or to inactivate a virus.
- The *tiny* amount which may be left in these vaccines is safe.
- Formaldehyde is also in products like paper towels, mascara, and carpeting.
- Humans normally have formaldehyde in the blood stream at levels higher than in vaccines.



Don't the ingredients found in vaccines hurt children?

Miscellaneous

- Antibiotics are present in some vaccines to prevent bacterial contamination when the vaccine is made.
- Additives such as gelatin, albumin, sucrose, lactose, MSG, and glycine help the vaccine stay effective while being stored.
- Trying to make vaccines without adjuvants, additives, and preservatives is difficult—**these ingredients keep vaccines safe and effective.**



References

- **Vaccine Ingredients web page (AAP)**
<https://www.healthychildren.org/English/safety-prevention/immunizations/Pages/Vaccine-Ingredients-Frequently-Asked-Questions.aspx>
- **Ingredients of Vaccines web page (CDC)**
www.cdc.gov/vaccines/vac-gen/additives.htm
- **Package Inserts web section (IAC)**
www.immunize.org/packageinserts
- **Adjuvants and Ingredients web section (IAC)**
www.immunize.org/concerns/adjuvants.asp



References (continued)

- **Vaccine Safety and Your Child (VEC)**
<http://media.chop.edu/data/files/pdfs/vaccine-education-center-vaccine-safety-eng.pdf>
- **Aluminum in Vaccines: What you should know (VEC)**
www.chop.edu/export/download/pdfs/articles/vaccine-education-center/aluminum.pdf



Wasn't there a study that proved MMR vaccine causes autism?

- Many large, well-designed studies have found no link between MMR and autism.
- Autism usually becomes apparent around the same age MMR is given—no causality proven.
- Autism probably has multiple components, including genetics (twin studies).



Wasn't there a study that proved MMR vaccine causes autism? (continued)

- 1998 study by Andrew Wakefield that started this concern was based on 12 children who were preselected for study.
- In 2004, 10 of the 13 authors retracted the study's interpretation.
- On 2/2/10, the editors of *The Lancet* retracted the paper following the ruling of the U.K.'s General Medical Council that stated the primary author's conduct regarding his research was "dishonest" and "irresponsible" and that he had shown a "callous disregard" for the suffering of children involved in his studies.
- In January 2011, the *BMJ* published a series of articles showing Wakefield's work was not just bad science, but deliberate fraud.



References

- **MMR Vaccine Does Not Cause Autism. Examine the evidence! (IAC)**
www.immunize.org/catg.d/p4026.pdf
- **Clear Answers & Smart Advice about Your Baby's Shots by Ari Brown, MD, FAAP**
www.immunize.org/catg.d/p2068.pdf
- **Measles, Mumps, and Rubella (MMR) Vaccine Safety (CDC)**
www.cdc.gov/vaccinesafety/Vaccines/MMR/index.html



References (continued)

- **The Fraud Behind the MMR Scare** (web section)
www.immunize.org/bmj-deer-mmr-wakefield
- **Evidence Shows Vaccines Unrelated to Autism** (IAC)
www.immunize.org/catg.d/p4028.pdf
- **Vaccine Safety and Your Child** (VEC)
<http://media.chop.edu/data/files/pdfs/vaccine-education-center-vaccine-safety-eng.pdf>



References (continued)

- **MMR Vaccine and Autism** (IOM)
www.nap.edu/catalog.php?record_id=10101
- **Vaccines and Autism: What you should know** (VEC)
www.chop.edu/export/download/pdfs/articles/vaccine-education-center/autism.pdf
- **“Vaccines and Autism: A Tale of Shifting Hypotheses”** by Paul Offit, MD and Jeffery Gerber, MD
<http://cid.oxfordjournals.org/content/48/4/456.full>



References (continued)

- **Fitness to Practice Panel Hearing** (report from the U.K.'s General Medical Council regarding Dr. Andrew Wakefield)
www.neurodiversity.com/wakefield_gmc_ruling.pdf
- **The Lancet retraction**
[www.thelancet.com/journals/lancet/article/PIIS0140-6736\(97\)11096-0/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(97)11096-0/abstract)
- **How a Zealot's Word Led Us Astray on Autism** by Arthur Caplan, PhD
http://www.nbcnews.com/id/35218819/ns/health-health_care/t/how-zealots-word-led-us-astray-autism/#.WEcQ0fkrKM8



Wouldn't it be safer to receive MMR as three separate shots?

- There is no evidence that MMR vaccine causes autism.
- There is no evidence that dividing the vaccine into three antigens would provide any benefit.
- Requiring more doses would leave the child potentially susceptible to serious diseases while waiting to receive the additional doses.
- Separate doses would increase the number of doctor visits, costs, and discomfort to child.
- Moot point now: the manufacturer has stopped producing single antigen measles, mumps, and rubella vaccines.



Reference

- **Q&As about Monovalent M-M-R Vaccines**
www.cdc.gov/vaccines/vac-gen/Shortages/mmr-faq-12-17-08.htm

See also the references in the previous section.



Isn't it true that most people who get a disease have been vaccinated against it?

- This occurs because:
 - almost everyone is vaccinated, *but*
 - no vaccine is 100% effective.
- In an outbreak:
 - The **NUMBER** of vaccinated people who get a disease will be greater than the number of unvaccinated people simply because the number of unvaccinated people is so small.
 - However, the **PERCENTAGE** of vaccinated people getting the disease will be tiny, whereas the **percentage of unvaccinated people getting the disease will be close to 100%**.
- Most childhood vaccines are very effective when properly administered and all doses are received according to the recommended schedule. (~80–100%, depending on the vaccine)

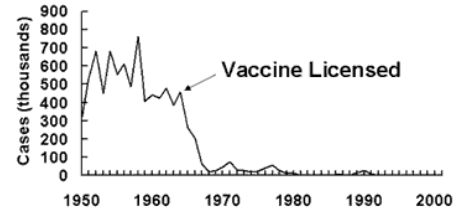


Isn't better sanitation really the reason disease rates have dropped?

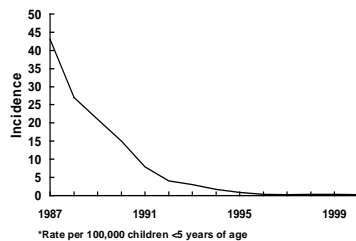
- It's true that better living conditions (less crowded housing, better nutrition, etc.) have had an impact on disease rates. BUT, the **only real decrease in a vaccine-preventable disease (VPD) has occurred after the introduction of a vaccine to prevent it.**
- This also is true for newer vaccines like Hib (1987) and varicella (1995), which were introduced during times of modern hygiene.
- When developed countries (U.K., Sweden, Japan) stopped using DTP vaccine, their pertussis rates jumped dramatically.
- Several recent outbreaks of measles, pertussis, and varicella in the U.S. have been traced to pockets of unvaccinated children in states that allow personal belief exemptions. When vaccination rates go down, disease rates go up.



Measles—United States, 1950-2001



Estimated Incidence* of Invasive Hib Disease, 1987-2000



References

- **What Would Happen If We Stopped Vaccinations?** (CDC) www.cdc.gov/vaccines/vac-gen/whatifstop.htm
- **Personal belief exemptions for vaccination put people at risk. Examine the evidence for yourself.** (IAC) www.immunize.org/catg.d/p2069.pdf
- **Top 20 Questions about Vaccination** (History of Vaccines) www.historyofvaccines.org/content/articles/top-20-questions-about-vaccination
- **Vaccines Are Effective** (HHS) www.vaccines.gov/basics/effectiveness



Doesn't VAERS data prove that vaccines are dangerous?

VAERS data cannot "prove" anything:

- Anyone can report anything...no proof of causality is required.
- Only reports of special interest (e.g., hospitalizations) are verified. When checked, many reports are not accurate.
- Reports include many non-serious reactions.
- The number of reported adverse events is influenced by publicity.
- VAERS is properly used to detect early warning signals and generate hypotheses.



References

- **Vaccine Safety Monitoring web page** (CDC) www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/index.html
- **Ensuring Vaccine Safety** (CDC) www.cdc.gov/vaccinesafety/ensuringsafety/index.html
- **Causality assessment of adverse events following immunization** (WHO) www.who.int/vaccine_safety/causality/en
- **Understanding the Vaccine Adverse Event Reporting System (VAERS)** (CDC) www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-vaers-color-office.pdf
- **Vaccine Adverse Events Reporting System** www.vaers.hhs.gov



Hasn't it been proven that there are dangerous "hot lots" of vaccines?

- The Food and Drug Administration regulates the production of vaccines carefully.
- The concept of "hot lots" is based on the presumption that more reports to VAERS mean that a vaccine lot is more dangerous.
 - Reports to VAERS prove nothing about causality.
 - Because the size of vaccine lots varies widely (a lot may vary from several hundred thousand to several million doses), it's not unexpected that some lots would generate more reports (i.e., the larger lots).



Isn't natural infection better than immunization?

- Infection usually *does* cause better immunity than vaccination.
- *However*, the price paid for natural disease can include:
 - paralysis
 - permanent brain damage
 - liver cirrhosis/cancer
 - deafness
 - blindness
 - pneumonia
 - death



References

- **Natural Infection vs. Immunization** by Paul Offit, MD <http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-safety/immune-system-and-health>
- **Photos of people with vaccine-preventable diseases** www.immunize.org/photos
- **Unprotected People: Real-life accounts of people who have suffered or died from vaccine-preventable diseases** www.immunize.org/reports



Didn't the courts decide that vaccines cause autism?

- The Vaccine Injury Compensation Program awarded *ONE* family a monetary settlement for a very specific situation.
- The child, Hannah Poling, was born with a rare genetic disorder (mitochondrial disorder). The health of individuals with mitochondrial disorder can deteriorate after many types of stresses, including contracting a vaccine-preventable disease.
- In this case, the government concluded that vaccines aggravated a rare underlying metabolic condition in one child, *not* that vaccines cause autism in general, or even that vaccines are contraindicated for all children with mitochondrial disorder.



References

- **Clear Answers & Smart Advice About Your Baby's Shots** by Ari Brown, MD, FAAP www.immunize.org/catg.d/p2068.pdf
- **Mitochondrial Disease: Frequently Asked Questions (CDC)** www.cdc.gov/ncbddd/autism/mitochondrial-faq.html



Don't drug companies make big profits from pushing vaccines?

- Vaccines are not high-profit products. Vaccine sales are dwarfed by prescription sales.
- Costs for research, development, and compliance with standards are high, with no guarantee that a vaccine will be licensed.
- If vaccines were highly profitable, why would only a few companies produce almost all of the U.S. childhood vaccines today, when there used to be 25 companies producing vaccines?
- Vaccine manufacturing is a public service.



References

- **The Vaccine Enterprise** (*Health Affairs*, May 2005, Supplement)
<http://content.healthaffairs.org/content/24/3.toc>
- **Big Pharma Vaccine Profits—The Real Conspiracy** (The Skeptical Raptor's Blog)
www.skepticalraptor.com/skepticalraptorblog.php/big-pharma-supports-antivaccine-movement-conspirac-vaccines-maybe-not
- **Drug versus vaccine investment: a modelled comparison of economic incentives**
www.ncbi.nlm.nih.gov/pmc/articles/PMC3846654



Aren't abortions required to make vaccines?

- It's true that production of varicella, rubella, rabies, and hepatitis A vaccines involves growing the viruses in human cell culture.
- Two human cell lines provide these cultures; they were developed from two legally aborted fetuses in the 1960s.
- The donor fetuses were not aborted for the purpose of obtaining these cells.
- The same cell lines have been used for 40 years—no new fetal tissue is required.



References

- **Web page about religious concerns** (IAC)
www.immunize.org/concerns/religious.asp
- **Human Cell Strains in Vaccine Development**
www.historyofvaccines.org/content/articles/human-cell-strains-vaccine-development



Isn't it my right not to vaccinate my child?

- Vaccination laws have been found to be constitutional in U.S. courts. Seminal case was *Jacobson v. Massachusetts* in 1905.
- All states offer medical exemptions.
- Parents need to be aware that if they don't vaccinate their children, they are putting them, and their contacts, at risk of serious disease.
- Unvaccinated children often have to stay home from school or daycare during outbreaks.



References

- **What If You Don't Vaccinate Your Child?** (IAC)
www.immunize.org/catg.d/p4017.pdf
- **Decision to Not Vaccinate My Child** (declination form) (IAC)
www.immunize.org/catg.d/p4059.pdf
- **Personal belief exemptions for vaccination put people at risk. Examine the evidence for yourself.** (IAC)
www.immunize.org/catg.d/p2069.pdf
- **Sample Vaccine Policy Statement** (IAC)
www.immunize.org/catg.d/p2067.pdf
- **Mandates and Exemptions web page** (IAC)
www.immunize.org/laws
- **Documenting Parental Refusal to Have Their Children Vaccinated** (AAP)
https://www.aap.org/en-us/Documents/immunization_refusaltovaccinate.pdf



Good Resources for Providers

- **Vaccine web section for health professionals** (CDC)
www.cdc.gov/vaccines/hcp
- **Provider Resources for Vaccine Conversations with Parents** (CDC) www.cdc.gov/vaccines/conversations
- **Talking about Vaccines web section** (IAC)
www.immunize.org/talking-about-vaccines
- **Responding to Parents web section** (IAC)
www.immunize.org/talking-about-vaccines/responding-to-parents.asp
- **Vaccine Education Center website**
www.chop.edu/centers-programs/
- vaccine-education-center



Good Resources for Providers

- **AAP's immunization website**
www.aap.org/immunization
- ***Making the CASE for Vaccines: A new model for talking to parents about vaccines***
www.albany.edu/sph/cphce/phlhandouts/12_9_10.pdf
- **Addressing Vaccine Hesitant Parents: Role-playing Videos for Healthcare Providers**
<http://whyimmunizekids.org/role-playing-video-clips>



Good Resources for Parents

- **Parent immunization education handouts (IAC)**
www.immunize.org/handouts/discussing-vaccines-parents.asp
- **Vaccine- and Vaccine Safety-Related Q&A Sheets (VEC)** www.chop.edu/centers-programs/vaccine-education-center/resources/vaccine-and-vaccine-safety-related-qa-sheets#.V5kYd63Xkqp
- **IAC's website for the public**
www.vaccineinformation.org
- **Parents Guide to Childhood Immunization (CDC)**
www.cdc.gov/vaccines/pubs/parents-guide
- **Provider Resources for Vaccine Conversations with Parents (CDC)**
www.cdc.gov/vaccines/conversations



Good Resources for Parents

- **Immunization website for parents (CDC)**
www.cdc.gov/vaccines/parents/index.html
- **Every Child By Two's websites:**
www.ecbt.org and vaccinateyourfamily.org
- **Website for parents (AAP)**
www.healthychildren.org
- **Videos for parents**
www.vaccineinformation.org/videos/index.asp



Finally... Don't worry about every possible question

- Be able to recommend good websites and handouts for patients/parents.
- Be aware of major vaccine-critical groups and individuals and become familiar with their websites.
- Be ready to answer the most common questions—many concerns haven't changed in over 200 years!
- Remember, it's acceptable to say you'll look into a particular question and get back with more information.
- It's worth your time—studies show that people respect the opinion of their healthcare providers

