The background of the slide is a spiral-bound notebook with a light beige, textured cover. The spiral binding is visible on the left side. The text is centered on the page.

# **Quick Answers to Tough Questions**

**Vaccine Talking Points for Busy Health Professionals**

# Origins of the “Quick Answers to Tough Questions” presentation

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- Presented initially at a workshop at the 2005 National Immunization Conference
- Updated in March 2010
- Developed by Teresa A. Anderson, DDS, MPH, consultant to the Immunization Action Coalition
- This material can be adapted for your organization or personal use. Please acknowledge the Immunization Action Coalition as the source.

# Newsweek

July 31, 2000 : \$3.50

## MIDEAST FALLOUT

## TOBACCO'S NEXT WAR

# Understanding Autism

Why More  
**Kids & Families**  
Are Facing the  
Challenge of  
**'Mindblindness'**

By Geoffrey Cowley

Russell Rollens, 9

## Parents Wonder: Is it Safe to **Vaccinate?**

Many families of autistic kids blame the MMR shot for the disorder. Experts say they shouldn't.

newsweek.msnbc.com

WHY NOT TO INDUCE • GENDER-FREE KIDS' CLOTHES

The Natural  
Family Living  
Magazine

# Mothering

NO. 105 MAR/APRIL 2001


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“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, and providers should be prepared to listen and respond effectively.”

From CDC’s “Providers Guide: Helping Parents Who Question Vaccines”

# Ask questions

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- 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 religious or philosophical reservations?)

# Ask questions

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- 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.

## Now the hard part: Respect and address concerns

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- Provide factual information in understandable language that addresses the specific concerns or misconceptions the parent has about vaccination.

Here a miracle occurs?

# Be prepared! Quick answers to tough questions

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- Outline of answers to questions about vaccine effectiveness and safety
- Suggestions for further reading
- Handouts for patients

# Most people who get a disease have been vaccinated against it

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- This occurs because 1) almost everyone is vaccinated, but 2) no vaccine is 100% effective.
- This is true when considering raw numbers, but it doesn't mean vaccines aren't 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%.

# References

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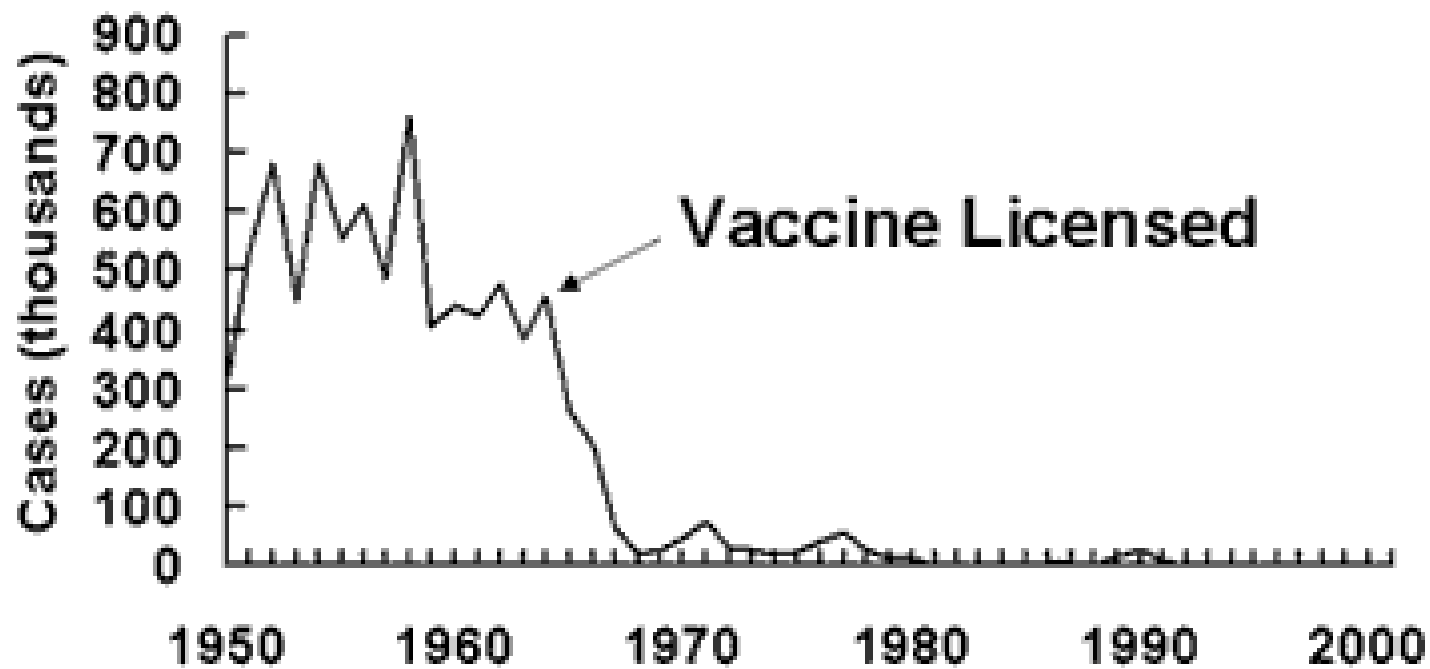
- CDC's "Six Common Misconceptions About Vaccination and How to Respond to Them"  
<http://www.cdc.gov/vaccines/vac-gen/6mishome.htm>
- NNii's "Common Questions about Vaccine Effectiveness"  
[http://www.immunizationinfo.org/assets/files/pdfs/4\\_VAC\\_E.pdf](http://www.immunizationinfo.org/assets/files/pdfs/4_VAC_E.pdf)

# Disease rates have dropped due to improved hygiene, not vaccination

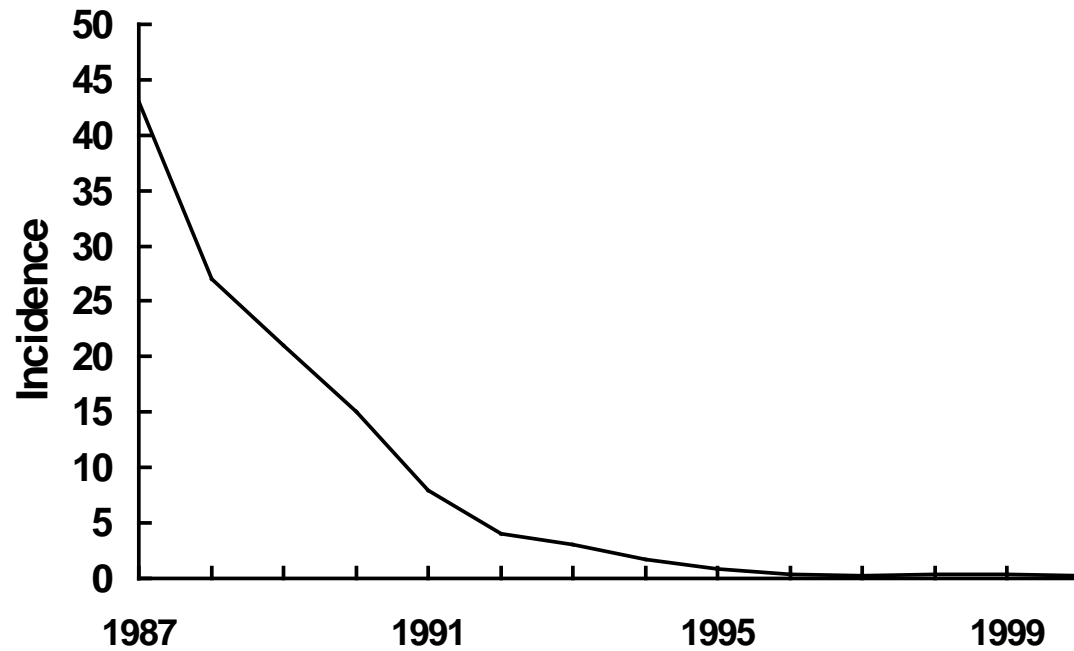
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- Better conditions (less crowded housing, better nutrition, etc.) have had an impact on disease rates. BUT, the only real decrease in a VPD has occurred after the introduction of a vaccine to prevent it.
- This also true for newer vaccines like Hib (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.

## Measles—United States, 1950-2001



## **Estimated Incidence\* of Invasive Hib Disease, 1987-2000**



\*Rate per 100,000 children <5 years of age

# References

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- CDC's "Six Common Misconceptions About Vaccination and How to Respond to Them"  
<http://www.cdc.gov/vaccines/vac-gen/6mishome.htm>

# There are dangerous “hot lots” of vaccines

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- 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.
  - As the size of vaccine lots varies widely (a lot may vary from several hundred thousand to several million), it’s not unexpected that some lots would generate more reports (i.e., the larger lots).

# References

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- CDC's "Six Common Misconceptions About Vaccination and How to Respond to Them"  
<http://www.cdc.gov/vaccines/vac-gen/6mishome.htm>
- CDC's "Why It's Important to Monitor Vaccine Safety"  
[http://www.cdc.gov/vaccinesafety/Vaccine\\_Monitoring/Index.html](http://www.cdc.gov/vaccinesafety/Vaccine_Monitoring/Index.html)
- NNii's "Common Questions about Vaccine Safety"  
[http://www.immunizationinfo.org/assets/files/pdfs/4\\_VAC\\_S.pdf](http://www.immunizationinfo.org/assets/files/pdfs/4_VAC_S.pdf)

# Natural infection is better than immunization

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

# References

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- “Natural Infection vs. Immunization” by Paul Offit, MD

<http://www.chop.edu/service/vaccine-education-center/hot-topics/natural-infection-vs-immunization.html>

- NNii’s “Exposure Parties”

[http://www.immunizationinfo.org/exposure\\_parties.cfm](http://www.immunizationinfo.org/exposure_parties.cfm)

# Giving an infant multiple vaccines can overwhelm its immune system

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- Vaccines use only a tiny proportion of the immune system's ability to respond; in theory, a child could respond to 10,000 vaccines.
- Using this estimate, 11 vaccines would “use up” 0.1% of an infant's immune system.
- Though children receive more vaccines than in the past, today's vaccines contain fewer antigens (e.g., sugars and proteins). Smallpox vaccine alone contained 200 proteins: the 11 currently recommended routine vaccines contain fewer than 130 immunologic components.

# References

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- VEC's "Too Many Vaccines? What you should know"  
<http://www.chop.edu/export/download/pdfs/articles/vaccine-education-center/too-many-vaccines.pdf>
- NNii's "The Immune System and Vaccines"  
[http://www.immunizationinfo.org/assets/files/pdfs/4\\_IMM\\_SYS.pdf](http://www.immunizationinfo.org/assets/files/pdfs/4_IMM_SYS.pdf)
- FAQs about Multiple Vaccinations and the Immune System  
<http://www.cdc.gov/vaccinesafety/Vaccines/multiplevaccines.html>

# It's better to space out vaccines using an alternative schedule

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- Delaying vaccines increases the time children will be susceptible to diseases.
  - From 1/08-7/08, the number of measles cases (131) in the U.S. was the highest since 1996, primarily due to school-aged children whose parents chose not to vaccinate them.
  - In 2004, 25,827 cases of pertussis were reported to CDC, the highest number since 1959.
- 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

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- “The Problem With Dr Bob's Alternative Vaccine Schedule” by Paul Offit, MD, and Charlotte Moser  
[http://www.immunize.org/concerns/offit\\_moser2009.pdf](http://www.immunize.org/concerns/offit_moser2009.pdf)
- AAP’s “Adhering to Vaccine Schedule is Best Way to Protect Children from Disease” <http://www.immunize.org/aap/fisher.pdf>
- VEC’s “Too Many Vaccines? What you should know”  
<http://www.chop.edu/export/download/pdfs/articles/vaccine-education-center/too-many-vaccines.pdf>
- IOM Report: “Multiple Immunizations and Immune Dysfunction”  
[http://www.nap.edu/catalog.php?record\\_id=10306](http://www.nap.edu/catalog.php?record_id=10306)
- “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>

# MMR vaccine causes autism

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- Many large, well-designed studies have found no link between MMR and autism.
- The 1998 study that started this concern was based on 12 children. In 2004, 10 of the 13 authors of this study 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.

# MMR vaccine causes autism, cont...

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- Autism usually becomes apparent around the same time MMR is given--no causality proven.
- Autism probably has multiple components, including genetics (twin studies).

# References

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- IAC's "MMR vaccine does not cause autism. Examine the evidence!"  
<http://www.immunize.org/catg.d/p4026.pdf>
- IAC's "Clear Answers & Smart Advice about Your Baby's Shots" by Ari Brown, MD, FAAP  
<http://www.immunize.org/catg.d/p2068.pdf>
- CDC's "MMR Vaccine"  
<http://www.cdc.gov/vaccinesafety/Vaccines/MMR/index.html>

## MMR References, cont...

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- IOM Report: “MMR Vaccine and Autism”  
[http://www.nap.edu/catalog.php?record\\_id=10101](http://www.nap.edu/catalog.php?record_id=10101)
- “Vaccines and Autism: What you should know”  
<http://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://www.journals.uchicago.edu/doi/pdf/10.1086/596476?cookieSet=1>

# MMR References, cont...

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- "Fitness to Practise Panel Hearing" report from the U.K.'s General Medical Council regarding Dr. Andrew Wakefield  
[http://www.neurodiversity.com/wakefield\\_gmc\\_ruling.pdf](http://www.neurodiversity.com/wakefield_gmc_ruling.pdf)
- The Lancet retraction  
[http://www.lancet.com/journals/lancet/article/PIIS0140-6736\(10\)60175-7/fulltext](http://www.lancet.com/journals/lancet/article/PIIS0140-6736(10)60175-7/fulltext)
- "How a zealot's word led us astray on autism" by Arthur Caplan, PhD  
[http://www.msnbc.msn.com/id/35218819/ns/health-health\\_care](http://www.msnbc.msn.com/id/35218819/ns/health-health_care)

# It's safer to receive MMR as three individual antigens

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- There is no credible 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.

# References

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- Monovalent Vaccines No Longer Available for Measles, Mumps, and Rubella  
[https://www.merckvaccines.com/monovalentMessage\\_102109.pdf](https://www.merckvaccines.com/monovalentMessage_102109.pdf)
- Q&As about Monovalent M-M-R Vaccines  
<http://www.cdc.gov/vaccines/vac-gen/Shortages/mmr-faq-12-17-08.htm>

# The preservative thimerosal causes autism

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- 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 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.

# The preservative thimerosal causes autism, cont...

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- Multiple studies have shown that thimerosal in vaccines does not cause autism when comparing vaccinated and unvaccinated children.
- 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.

# Thimerosal References, cont...

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- CDC's Vaccine Safety Concerns web page  
<http://www.cdc.gov/vaccinesafety/concerns>
- NNii's "Mercury in Vaccines"  
[http://www.immunizationinfo.org/thimerosal\\_mercury\\_detail.cfv?id=3](http://www.immunizationinfo.org/thimerosal_mercury_detail.cfv?id=3)
- IAC's collection of related resources  
<http://www.immunize.org/thimerosal>
- Institute of Medicine reports on thimerosal  
<http://www.nap.edu/books/030909237X/html> and  
<http://books.nap.edu/catalog/10208.html>

# Thimerosal References, cont...

- VEC's "Thimerosal: What you should know"  
<http://www.chop.edu/export/download/pdfs/articles/vaccine-education-center/thimerosal.pdf>
- VEC's "Autism: What you should know"  
<http://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://www.journals.uchicago.edu/doi/pdf/10.1086/596476?cookieSet=1>
- "Continuing Increases in Autism Reported to California's Developmental Services System" (Schechter R, Grether JK, *Arch Gen Psychiatry*, Jan. 2008)  
<http://www.ncbi.nlm.nih.gov/pubmed/18180424?dopt=AbstractPlus>

# Didn't the courts just decide that vaccines cause autism?

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- 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

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- IAC's "Clear Answers & Smart Advice about Your Baby's Shots" by Ari Brown, MD, FAAP  
<http://www.immunize.org/catg.d/p2068.pdf>
- CDC's "Mitochondrial Disease: Frequently Asked Questions"  
<http://www.cdc.gov/ncbddd/autism/mitochondrial-faq.html>
- IAC's web page on the Poling case  
<http://www.immunize.org/concerns/poling.asp>

# Aluminum in vaccines hurts children

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- Aluminum is used in some vaccines as an adjuvant—an ingredient that improves the immune response. Adjuvants can allow for use of less vaccine and 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.

# References

---

- VEC's "Aluminum in Vaccines: What you should know"  
<http://www.chop.edu/export/download/pdfs/articles/vaccine-education-center/aluminum.pdf>
- NNii's "Aluminum Adjuvants in Vaccines"  
[http://www.nnii.org/vaccine\\_components\\_detail.cfv?id=61](http://www.nnii.org/vaccine_components_detail.cfv?id=61)
- AAP's "Questions and Answers about Vaccine Ingredients"  
<http://www.cispimmunize.org/pro/pdf/Vaccineingredients.pdf>
- IAC's "Adjuvants and Ingredients" web section  
<http://www.immunize.org/concerns/adjuvants.asp>

# VAERS data prove that vaccines are dangerous

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- 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

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- NNii’s “Vaccine Adverse Reporting System”  
[http://www.immunizationinfo.org/immunization\\_issues\\_detail.cfv?id=35](http://www.immunizationinfo.org/immunization_issues_detail.cfv?id=35)
- NNii’s “Vaccine Safety: Cause or Coincidence?”  
[http://www.immunizationinfo.org/vaccine\\_safety\\_detail.cfv?id=67](http://www.immunizationinfo.org/vaccine_safety_detail.cfv?id=67)
- CDC’s “Six Common Misconceptions About Vaccination and How to Respond to Them”  
<http://www.cdc.gov/vaccines/vac-gen/6mishome.htm>
- WHO’s “Causality assessment of adverse events following immunization”  
[http://www.who.int/vaccine\\_safety/causality/en](http://www.who.int/vaccine_safety/causality/en)

# Drug companies make big profits from vaccines

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- Vaccines are not high-profit products. Vaccine sales are dwarfed by prescription sales (2003 data: \$2 bil vaccine sales; \$243 bil prescription sales).

- Costs for research, development, and compliance with standards are high.

- Decreasing government funding for buying vaccines causes instability in the vaccine market.

- If vaccines are highly profitable, why do only 4 companies produce almost all of the U.S. childhood vaccines now, when there used to be 25 companies producing vaccines?

# References

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- IOM's "Financing Vaccines in the 21st Century: Assuring Access and Availability"  
<http://www.nap.edu/books/0309089794/html>
- NNii's "Vaccine Supply"  
[http://www.immunizationinfo.org/immunization\\_issues\\_detail.cfv?id=78](http://www.immunizationinfo.org/immunization_issues_detail.cfv?id=78)
- Merck's presentation to NVPO "The Environment Facing US Vaccine Manufacturers"  
<http://www.os.dhhs.gov/nvpo/meetings/jun2004/Gannon%20-%20NVAC%20IOM%20-%20June%2025-3.ppt>

# Even though vaccines are dangerous, doctors give them to make money

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- Delivering vaccination services is not highly profitable--it requires handling, storing, and administering vaccines correctly, tracking patients' vaccination status, screening for contraindications, & dealing with hysterical kids.
- “Do you really think I would purposefully do anything to hurt a child just to make money?”

# THE NJ VACCINATION EXEMPTION LETTER

Hey Mom!  
Can you read what's  
in here?



# Mandatory vaccination violates my civil rights

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- Massachusetts enacted the first mandatory vaccination law in the U.S. in 1809.
- 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, 48 allow religious exemptions, and 20 allow philosophical 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 may have to stay home from school or daycare during outbreaks.

# References

---

- NNii's "Indications, Recommendations and Immunization Mandates"  
[http://www.immunizationinfo.org/immunization\\_policy\\_detail.cfv?id=41](http://www.immunizationinfo.org/immunization_policy_detail.cfv?id=41)
- IAC's "What if you don't immunize your child?"  
<http://www.immunize.org/catg.d/p4017.pdf>
- AAP's "Refusal to Vaccinate" form  
<http://www.aap.org/immunization/pediatricians/pdf/RefusaltoVaccinate.pdf>
- All Star Pediatric's sample vaccine policy statement  
[http://www.immunize.org/aap/pediatrics\\_vaccine\\_letter.pdf](http://www.immunize.org/aap/pediatrics_vaccine_letter.pdf)

# Vaccines are grown in human cell lines

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- 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 35 years--no new fetal tissue is required.

# References

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- IAC's web page about ethical and religious objections to vaccination  
<http://www.vaccineinformation.org/concern.asp>
- NNii's "Human Fetal Links with Some Vaccines"  
[http://www.immunizationinfo.org/immunization\\_issues\\_detail.cfv?id=32](http://www.immunizationinfo.org/immunization_issues_detail.cfv?id=32)

# Don't worry about every possible question

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- 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 research a question and get back with more information.
- It's worth your time--people still respect the opinion of their healthcare providers.

# Good Resources for Providers

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- CDC's vaccine web section <http://www.cdc.gov/vaccines>
- IAC's Vaccine Concerns web section  
<http://www.immunize.org/concerns> and Talking with Parents web section  
[http://www.immunize.org/concerns/comm\\_talk.asp](http://www.immunize.org/concerns/comm_talk.asp)
- Vaccine Education Center <http://www.vaccine.chop.edu>
- AAP's immunization website  
<http://www.aap.org/immunization>
- National Network for Immunization Information  
<http://www.immunizationinfo.org>

# Good Resources for Parents

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- Print pieces for communicating with parents and patients from IAC  
<http://www.immunize.org/printmaterials/topic.asp#talk>
- IAC's website for the public  
<http://www.vaccineinformation.org>
- CDC's "Parents Guide to Childhood Immunization"  
<http://www.cdc.gov/vaccines/pubs/parents-guide>
- Every Child By Two's websites: <http://www.ecbt.org> and <http://www.vaccinateyourbaby.org>

## Reliable Sources of Immunization Information: Where to go to find answers!

### Websites

#### Allied Vaccine Group

[www.vaccine.org](http://www.vaccine.org)

The Allied Vaccine Group is composed of select organizations dedicated to presenting valid scientific information about vaccines.



#### CDC's Division of Viral Hepatitis

[www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis)

The Division of Viral Hepatitis is part of the Centers for Disease Control and Prevention. This website provides a substantial amount of information on the prevention of viral hepatitis.

#### CDC's National Immunization Program

[www.cdc.gov/nip](http://www.cdc.gov/nip)

The National Immunization Program provides leadership for the

### Phone Numbers

#### CDC's Immunization Information Hotline

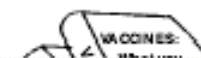
A toll-free number for consumers and health professionals who have questions about vaccine-preventable diseases.  
English: (800) 232-2522; Spanish: (800) 232-0233;  
TTY: (800) 243-7889 (teletypewriter)



#### CDC's Hepatitis Hotline

A toll-free number for consumers and health professionals about viral hepatitis. Get information by recording, fax, or voice in English or Spanish. (888) 443-7232 (888-4HEPCDC)

### Books for Parents





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