

# Human Biology, Science, and Society



*Crew of the space shuttle Atlantis, November 20, 2007.*

## Mandatory Childhood Vaccinations

**O**n January 1, 2009, New Jersey became the first state to require flu shots for children who attend licensed day care and preschool programs. New Jersey now requires immunization (vaccinations) for 13 vaccine-preventable communicable diseases, more than any other state. New Jersey is not alone, however, in requiring vaccinations—all 50 states currently have some kind of school immunization requirement. (All 50 states also permit exemptions under certain conditions.)

### Childhood Vaccinations Save Lives

The states' rationale is clear: Childhood vaccines introduced since the 1950s have all but wiped out many communicable diseases in the United States, including measles, mumps, whooping cough (pertussis), polio, and diphtheria. In the 1940s and '50s, before vaccines against these diseases were available, the five diseases combined caused an estimated 900,000 cases of disease and 7,700 deaths per year. By 2004 there were only 27 deaths from all five diseases combined—a 99.6% reduction. The number of cases of measles dropped from

more than 500,000 per year before the measles vaccine was available to only 62 cases per year in recent years.

Recently, however, public health officials have noticed an uptick in the number of cases of measles and whooping cough, two diseases that are highly sensitive to vaccination rates. In the first 10 months of 2010 there were more than triple the usual number of cases annually in the United States, according to the Centers for Disease Control and Prevention. Most of the measles victims had not been vaccinated, even though they were eligible for the vaccine (children under 12 months of age are not yet eligible).

## Parents Resist Mandatory Vaccination

The rise in measles and whooping cough coincides with more than a doubling of exemptions from school immunization programs granted for “philosophical or personal beliefs” between 1991 and 2004.

Why are parents increasingly refusing to have their children vaccinated when the evidence is so overwhelming that vaccinations prevent communicable diseases? Their reasons tend to fall into two categories: 1) a belief that the vaccines (or something in them) may be contributing to what they view as an epidemic of childhood chronic diseases, including autism, and 2) a dislike of government intervention into personal decisions.

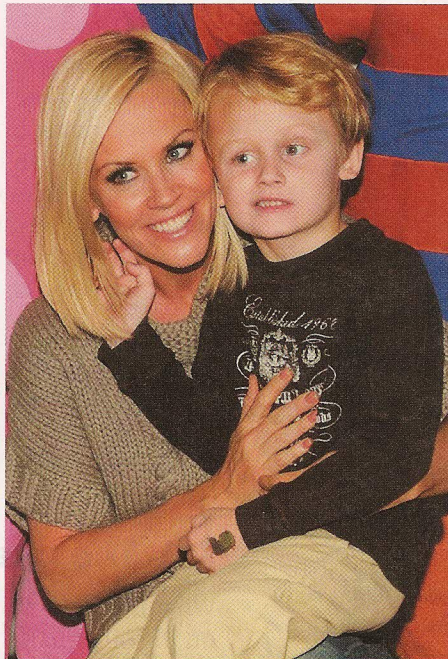
Compared to parents who vaccinate their children, parents who choose not to vaccinate their children tend to believe that the risk of their child getting the disease is low and that the disease itself is not very severe. The latter view is understandable, because most parents today have not lived through a major outbreak of any communicable disease. Today’s parents were born after the scourge of polio, for example. Polio killed nearly 10% of its victims and crippled countless others for life before the polio vaccine became available in 1955.

Public health officials are watching these developments with concern. Not all people in a community can be vaccinated, and so the prevention of widespread outbreaks of vaccine-preventable diseases in communities depends in part on “herd immunity.” The concept is that when most people in a community (or herd) have been vaccinated, the disease has a much harder time spreading from individual to individual. In other words, high vaccination rates benefit the community overall (especially young children), in addition to protecting the individual who has been vaccinated. Says Dr. Anne

Schuchat, director of the National Center for Immunization and Respiratory Diseases, “The vaccine against measles is highly effective in preventing infections, and high immunization levels in the community are effective at preventing or drastically reducing the size of outbreaks.”<sup>1</sup>

## A Link Between Vaccinations and Autism?

Parents who oppose mandatory vaccinations for safety reasons often point to cases of children who developed autism shortly after receiving a vaccine. Their celebrity spokesperson is actress and former *Playboy* model Jenny McCarthy, whose son is autistic. Ms. McCarthy is on the board of Generation Rescue, a nonprofit organization that claims to be able to treat autism effectively with a special diet.



Actress Jenny McCarthy has appeared on the *Oprah Winfrey Show* opposing mandatory vaccinations.

Medical professionals and research scientists continue to point out that the available scientific evidence does not support the argument that vaccination can cause childhood diseases, including autism. But for many parents, scientific studies are not as convincing as an appearance by Ms. McCarthy on the *Oprah Winfrey Show* with an emotional story about ill children.

Some parents oppose mandatory childhood vaccinations because they are philosophically opposed to government intervention into what they see as a personal choice. Says Barbara Loe Fisher, a mother and the cofounder of the National Vaccine Information Center, representing parents against forced vaccinations, “... If the State can tag, track down and force citizens against their will to be injected with biologicals of unknown toxicity today, there will be no limit on which individual freedoms the State can take away in the name of the greater good tomorrow.”<sup>2</sup>

Parents in favor of vaccines are mounting lobbying campaigns as well. Their celebrity advocate is actress Amanda Peet, now a spokesperson for Every Child By Two, a vaccine-advocacy group founded by former first lady Rosalynn Carter. Ms. Peet once called anti-vaccine parents “parasites” for relying on other children’s immunity to protect their own. She later apologized for the word, and suggested that parents should get their advice from doctors, not celebrities like herself (and presumably Ms. McCarthy).

It would be a shame if vaccines became such a hot-button issue that preventable diseases such as polio returned. We need to find a way to address parents’ concerns about vaccine safety and about the role of government in our lives, while at the same time protecting the public from preventable, communicable diseases. How we choose to do that is up to all of us.

## QUESTIONS TO CONSIDER

- 1 What should medical professionals, politicians, or even just concerned citizens do, if anything, to help parents understand the risks and benefits of vaccines?
- 2 Will you vaccinate your children? Why or why not? What would you like to know in order to make an informed decision?

<sup>1</sup>[www.cdc.gov/media/pressrel/2008/r080821.htm](http://www.cdc.gov/media/pressrel/2008/r080821.htm)

<sup>2</sup>[www.vaccineawakening.blogspot.com](http://www.vaccineawakening.blogspot.com)

## THE FACTS...

- Childhood vaccination programs have been effective in all but eliminating certain communicable diseases.
- All 50 states have childhood vaccination (immunization) programs as a requirement for school attendance—all states also allow for certain exemptions.
- Exemptions from vaccination (and communicable diseases) are on the rise. Many parents object to mandatory vaccination programs out of concern that the vaccines may cause autism or certain other chronic childhood diseases.
- The available scientific evidence does not support the argument that vaccinations can cause childhood diseases, including autism.