# 4 Ways Vaccine Skeptics Mislead You on Measles and More

A growing number of parents are deciding not to get their children vaccinated against measles as well as diseases like polio and pertussis.

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Measles is on the rise in the United States. In the first quarter of this year, the number of cases was about 17 times what it was, on average, during the same period in each of the four years before, according to the Centers for Disease Control and Prevention. Half of the people infected — mainly children — have been hospitalized.

It's going to get worse, largely because a growing number of parents are deciding not to get their children vaccinated against measles as well as diseases like polio and pertussis. Unvaccinated people, or those whose immunization status is unknown, account for 80% of the measles cases this year.

Many parents have been influenced by a flood of misinformation spouted by politicians, podcast hosts, and influential figures on television and social media. These personalities repeat decades-old notions that erode confidence in the established science backing routine childhood vaccines.

KFF Health News examined the rhetoric and explains why it's misguided:

## The No-Big-Deal Trope

A common distortion is that vaccines aren't necessary because the diseases they prevent are not very dangerous, or too rare to be of concern. Cynics accuse public health officials and the media of fear-mongering about measles even as 19 states report cases.

For example, an article posted on the website of the National Vaccine Information Center — a regular source of vaccine misinformation — argued that a resurgence in concern about the disease "is 'sky is falling' hype." It went on to call measles, mumps, chicken pox, and influenza "politically incorrect to get."

Measles kills roughly 2 of every 1,000 children infected, according to the CDC. If that seems like a bearable risk, it's worth pointing out that a far larger portion of children with measles will require hospitalization for pneumonia and other serious complications. For every 10 measles cases, one child with the disease develops an ear infection that can lead to permanent hearing loss. Another

strange effect is that the measles virus can destroy a person's existing immunity, meaning they'll have a harder time recovering from influenza and other common ailments.

Measles vaccines have averted the deaths of about 94 million people, mainly children, over the past 50 years, according to an April analysis led by the World Health Organization. Together with immunizations against polio and other diseases, vaccines have saved an estimated 154 million lives globally.

Some skeptics argue that vaccine-preventable diseases are no longer a threat because they've become relatively rare in the U.S. (True — due to vaccination.) This reasoning led Florida's surgeon general, Joseph Ladapo, to tell parents that they could send their unvaccinated children to school amid a measles outbreak in February. "You look at the headlines and you'd think the sky was falling," Ladapo said on a News Nation newscast. "There's a lot of immunity."

As this lax attitude persuades parents to decline vaccination, the protective group immunity will drop, and outbreaks will grow larger and faster. A rapid measles outbreak hit an undervaccinated population in Samoa in 2019, killing 83 people within four months. A chronic lack of measles vaccination in the Democratic Republic of the Congo led to more than 5,600 people dying from the disease in massive outbreaks last year.

The 'You Never Know' Trope

Since the earliest days of vaccines, a contingent of the public has considered them bad because they're unnatural, as compared with nature's bounty of infections and plagues. "Bad" has been redefined over the decades. In the 1800s, vaccine skeptics claimed that smallpox vaccines caused people to sprout horns and behave like beasts. More recently, they blame vaccines for ailments ranging from attention-deficit/hyperactivity disorder to autism to immune system disruption. Studies don't back the assertions. However, skeptics argue that their claims remain valid because vaccines haven't been adequately tested.

In fact, vaccines are among the most studied medical interventions. Over the past century, massive studies and clinical trials have tested vaccines during their development and after their widespread use. More than 12,000 people took part in clinical trials of the most recent vaccine approved to prevent measles, mumps, and rubella. Such large numbers allow researchers to detect rare risks, which are a major concern because vaccines are given to millions of healthy people.

To assess long-term risks, researchers sift through reams of data for signals of harm. For example, a Danish group analyzed a database of more than 657,000 children and found that those who had been vaccinated against measles as babies were no more likely to later be diagnosed with autism than those who were not vaccinated. In another study, researchers analyzed records from 805,000 children born from 1990 through 2001 and found no evidence to back a concern that multiple vaccinations might impair children's immune systems.

Nonetheless, people who push vaccine misinformation, like candidate Robert F. Kennedy Jr.,

dismiss massive, scientifically vetted studies. For example, Kennedy argues that clinical trials of new vaccines are unreliable because vaccinated kids aren't compared with a placebo group that gets saline solution or another substance with no effect. Instead, many modern trials compare updated vaccines with older ones. That's because it's unethical to endanger children by giving them a sham vaccine when the protective effect of immunization is known. In a 1950s clinical trial of polio vaccines, 16 children in the placebo group died of polio and 34 were paralyzed, said Paul Offit, director of the Vaccine Education Center at Children's Hospital of Philadelphia and author of a book on the first polio vaccine.

The Too-Much-Too-Soon Trope

Several bestselling vaccine books on Amazon promote the risky idea that parents should skip or delay their children's vaccines. "All vaccines on the CDC's schedule may not be right for all children at all times," writes Paul Thomas in his bestselling book "The Vaccine-Friendly Plan." He backs up this conviction by saying that children who have followed "my protocol are among the healthiest in the world."

Since the book was published, Thomas' medical license was temporarily suspended in Oregon and Washington. The Oregon Medical Board documented how Thomas persuaded parents to skip vaccines recommended by the CDC, and reported that he "reduced to tears" a mother who disagreed.  Several children in his care came down with pertussis and rotavirus, diseases easily prevented by vaccines, wrote the board. Thomas recommended fish oil supplements and homeopathy to an unvaccinated child with a deep scalp laceration, rather than an emergency tetanus vaccine. The boy developed severe tetanus, landing in the hospital for nearly two months, where he required intubation, a tracheotomy, and a feeding tube to survive.

The vaccination schedule recommended by the CDC has been tailored to protect children at their most vulnerable points in life and minimize side effects. The combination measles, mumps, and rubella vaccine isn't given for the first year of a baby's life because antibodies temporarily passed on from their mother can interfere with the immune response. And because some babies don't generate a strong response to that first dose, the CDC recommends a second one around the time a child enters kindergarten because measles and other viruses spread rapidly in group settings.

Delaying MMR doses much longer may be unwise because data suggests that children vaccinated at 10 or older have a higher chance of adverse reactions, such as a seizure or fatigue.

Around a dozen other vaccines have discrete timelines, with overlapping windows for the best response. Studies have shown that MMR vaccines may be given safely and effectively in combination with other vaccines.

'They Don't Want You to Know' Trope

Kennedy compares the Florida surgeon general to Galileo in the introduction to Ladapo's new book on transcending fear in public health. Just as the Roman Catholic inquisition punished the renowned astronomer for promoting theories about the universe, Kennedy suggests that scientific institutions oppress dissenting voices on vaccines for nefarious reasons.

“The persecution of scientists and doctors who dare to challenge contemporary orthodoxies is not a new phenomenon,” Kennedy writes. His running mate, lawyer Nicole Shanahan, has campaigned on the idea that conversations about vaccine harms are censored and the CDC and other federal agencies hide data due to corporate influence.

Claims like “they don’t want you to know” aren’t new among the anti-vaccine set, even though the movement has long had an outsize voice. The most listened-to podcast in the U.S., “The Joe Rogan Experience,” regularly features guests who cast doubt on scientific consensus. Last year on the show, Kennedy repeated the debunked claim that vaccines cause autism.

Far from ignoring that concern, epidemiologists have taken it seriously. They have conducted more than a dozen studies searching for a link between vaccines and autism, and repeatedly found none. “We have conclusively disproven the theory that vaccines are connected to autism,” said Gideon Meyerowitz-Katz, an epidemiologist at the University of Wollongong in Australia. “So, the public health establishment tends to shut those conversations down quickly.”

Federal agencies are transparent about seizures, arm pain, and other reactions that vaccines can cause. And the government has a program to compensate individuals whose injuries are scientifically determined to result from them. Around 1 to 3.5 out of every million doses of the measles, mumps, and rubella vaccine can cause a life-threatening allergic reaction; a person’s lifetime risk of death by lightning is estimated to be as much as four times as high.

“The most convincing thing I can say is that my daughter has all her vaccines and that every pediatrician and public health person I know has vaccinated their kids,” Meyerowitz-Katz said. “No one would do that if they thought there were serious risks.”

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