

The Peril of Ignoring Vaccines—and a Solution

Once considered eradicated in the U.S., measles is back. A look at the dangers of shunning vaccines and what can be done.



A measles vaccine is given in Upper Darby, Pa., in 1963. Once thought eradicated, the disease is making a comeback. Photo: Everett Collection

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In 2000 the U.S. considered measles eradicated, but the picture has changed alarmingly since then. In 2014, 667 unvaccinated people contracted measles.^[1] Last year an outbreak that began in California's Disneyland infected more than 100.^[2]

Many Americans have been refusing to protect themselves and their children with the measles vaccine. According to a recent study in the American Journal of Public Health^[3], as much as 5.5% of children are unvaccinated in some U.S. communities, and the parents most likely to refuse vaccines tend to be affluent, well-educated and white. Their resistance can largely be traced to a 1998 article in a British medical journal that falsely linked childhood vaccines to autism. That study was debunked^[4], but the damage had been done.

Now doctors must figure out how to persuade these parents to change their minds. Late last year they got some help from a team of psychologists from the University of Illinois at Urbana-Champaign and the University of California, Los Angeles, who were interested in what might sway anti-vaxxers' opinions.

Measles can be devastating. A highly contagious and virulent disease, it can lead to convulsions, hearing loss, brain damage and even death. Vaccination efforts have been so successful up to now, however, that almost half of the nation's pediatricians have never seen a real case. The question is how to make people understand that the threat is real.

Would correcting misconceptions about the childhood vaccine-autism myth do the trick? Or would testimonials and graphic photos of sick children be more effective?

The study, led by Dr. Zachary Horne of the University of Illinois and published last August in the Proceedings of the National Academy of Science^[5], asked 315 participants to complete questionnaires about their attitudes to vaccines and their plans to vaccinate their children. The subjects were chosen at random and not prescreened, although some dropped out or were later disqualified for not paying attention to the testing.

The researchers randomly divided subjects into three groups. They showed the

“disease risk” group photos of young, infected children with florid rashes and a paragraph written by a mother of a child with measles, as well as three short warnings about the disease. The “autism correction” group read research summaries showing that childhood vaccines do not cause autism. And a control group read unrelated scientific vignettes.

Once again, all the participants completed the questionnaire about attitudes to vaccines. Which intervention was most likely to alter their views?

Surprisingly, the “autism correction” approach was no more influential in changing anti-vaxxers’ minds than the control condition. Telling people that their beliefs aren’t true just didn’t work. But showing people images of sick children with ugly rashes did, as did reading a parent’s account of how it feels to have a baby with measles who is spiking a fever of 106 degrees. “We spent three days in the hospital fearing we might lose our baby boy,” the mother wrote. “He couldn’t drink or eat, so he was on an IV, and for a while he seemed to be wasting away.”

Why would frightening people change their minds more than giving them the facts? The human brain evolved to give priority to appalling, negative events over positive ones, according to a seminal paper published in the *Review of General Psychology* in 2001. Lead author Roy Baumeister, a psychology professor at Florida State University, documented hundreds of ways that “bad is stronger than good,” as he and his colleagues titled the paper. It’s a position that has been confirmed by the PNAS study on vaccines and by a 2015 analysis ^[6]in *Psychological Bulletin* of the impact of fear-based appeals on changing people’s behavior.

So, public officials, go ahead—scare parents silly.

Corrections & Amplifications

An earlier version of this column incorrectly said that the 2001 paper of which Roy Baumeister was the lead author appeared in *Psychological Bulletin*. It appeared in the *Review of General Psychology*.

1. <http://www.cdc.gov/measles/cases-outbreaks.html>
2. <http://www.wsj.com/articles/measles-outbreak-traced-to-disneyland-is-declared-over-1429293580>

3. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302926>
4. <http://www.ncbi.nlm.nih.gov/pubmed/24814559>
5. <http://www.pnas.org/content/112/33/10321.abstract>
6. <http://www.apa.org/pubs/journals/releases/bul-a0039729.pdf>