

## < Scientists Crack A 50-Year-Old Mystery About The Measles Vaccine

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DAVID GREENE, HOST:

Back in the 1960s, the U.S. started vaccinating kids for measles. And then something surprising happened; childhood deaths caused by all infections plummeted. As NPR's Michaeleen Doucleff reports, scientists think they have finally figured out this connection.

MICHAELEEN DOUCLEFF, BYLINE: Scientists saw the same measles-related decline in England and parts of Europe, and it still happens today. When a developing country starts to give kids the measles vaccine, right away other <sup>contagious</sup> diseases become less deadly.

*- not autoimmune diseases*

MICHAEL MINA: So it's really been a mystery. Why do children stop dying at such high rates from all of these other infectious diseases following introduction of the measles vaccine?

DOUCLEFF: That's Michael Mina, a postdoc in biology at Princeton University. He and his colleagues have been using computer models and medical records to figure out what happens to children after they get measles. Now, there's an obvious answer here, right? If children are getting the measles vaccine, they're probably already in a position to get better health care, [maybe more antibiotics or vaccines.]  
But Mina says that's not what's going on here.

*not useful*

define all other

MINA: What we found is that measles infections predispose children to all other infectious diseases for up to a few years.

DOUCLEFF: And that's because the virus zaps a child's immune system. That makes them more vulnerable to new infections. Mina and his colleagues published the findings this week in the journal Science. But there's something else really intriguing. Measles seems to erase immunity previously built up. So what does that mean?

Well, say you're 4, and you get the chickenpox. Your immune system figures out how to fight it so you won't get it again. But then you're 5, and you get measles and it looks like measles might wipe out your immune system's memory of the chickenpox. So if you get exposed to chickenpox, you might get it again. Mina says it's like the immune system gets amnesia.

*Why doesn't the old medical literature have a ton of of medical articles of all these children who were getting repeat chickenpox after measles?*

MINA: The immune system comes back. The only problem is that it's forgotten what it once knew.

DOUCLEFF: So after measles, a child's immune system has to start over, rebuilding its protection system against diseases it has already seen before. Over at Johns Hopkins University, William Moss has studied the measles vaccine for more than a decade. He says more research is needed on this idea of immune amnesia, but the new findings do suggest measles damages the immune system for two to three years.

WILLIAM MOSS: Hence the reduction in overall child mortality that follows measles vaccination is much greater than previously believed.

DOUCLEFF: Which Moss says should give parents more motivation to vaccinate their kids because if the world can eliminate measles, it will help protect kids from many other infections, too. Michaelen Doucleff, NPR News.

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