Measles vaccination may help preserve defences against other ills

By preventing measles, 'you preserve your ability to fight off all of these other infections,' researcher says

The Associated Press

- Measles: What you need to know
- Public health officials say Joliette measles outbreak is over
- Measles outbreak: The loopholes in Canada's vaccination laws
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- Long-term benefits of measles vaccination to prevent childhood disease, Science

Measles vaccination campaigns were followed by a drop in deaths for other infectious diseases. (Rebecca Naden/Reuters)

A new study suggests the measles shot comes with a bonus: By preventing that disease, the vaccine may also help your body fight off other illnesses for years.

It's long been known that contracting measles weakens the immune system for weeks or months, putting people, especially children, at increased risk for potentially fatal infection by a host of germs.

Now, scientists find that this vulnerable period goes on much longer than thought, up to three years. So the benefit of avoiding measles also extends longer than was appreciated. Researchers also found that measles vaccination campaigns were followed by a drop in deaths for other infectious diseases.
**Measles: What you need to know**

**The long history of the anti-vaccination movement**

Experts said the work is a wake-up call to parents who don't vaccinate their children out of unfounded fears about a link between vaccines and autism.

“The message is clear,” said Dr. Richard Wenzel, an infectious disease specialist at Virginia Commonwealth University who was not involved in the study. Not only is the vaccine safe and effective against measles, he said, but it may also save a child's life by helping to guard against other infections.

Debate about the measles vaccine came into focus this year after a large outbreak tied to Disneyland sickened 147 people in the U.S., including 131 in California. Infections also spread to Mexico and Canada where 159 people fell ill in Quebec. Many stricken with measles were not immunized because of personal reasons or their age.

Measles, marked by fever, cough and a blotchy rash, has been eliminated in the U.S. for more than a decade thanks to an aggressive vaccination effort. Outbreaks still crop up when Americans or foreign visitors become infected overseas and spread the virus among populations that are not vaccinated.

**In the latest study, an international team of researchers analyzed measles cases and death rates from other infections before and after widespread measles vaccination campaigns in the U.S., England and Wales, and Denmark.**

**After vaccinations, measles cases declined in all the countries.**

**Deaths from non-measles infections also dropped.**

In the U.S., deaths from infections such as respiratory or diarrheal disease fell from 18 per 100,000 before vaccination to 6 per 100,000 after vaccination. Researchers attribute the drop to fewer measles cases caused by the introduction of the vaccine.

Using mathematical modeling, the team also found it took two to three years after getting measles for the immune system to rebuild itself. The study, released Thursday by the journal Science, was funded by the Bill and Melinda Gates Foundation and federal grants.

**By preventing measles, "you preserve your ability to fight off all of these other infections," said Michael Mina, a medical student at Emory University who led the study while at Princeton University.**

While vaccination played a role, other factors such as better nutrition and smaller family size may also explain the drop in non-measles infections, said Dr. James Cherry, a pediatric infectious disease expert at the University of California, Los Angeles, who had no role in the study.
Long-term measles-induced immunomodulation increases overall childhood infectious disease mortality

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**ABSTRACT**

Immunosuppression after measles is known to predispose people to opportunistic infections for a period of several weeks to months. Using population-level data, we show that measles has a more prolonged effect on host resistance, extending over 2 to 3 years. We find that nonmeasles infectious disease mortality in high-income countries is tightly coupled to measles incidence at this lag, in both the pre- and post-vaccine eras. We conclude that long-term immunologic sequelae of measles drive interannual fluctuations in nonmeasles deaths. This is consistent with recent experimental work that attributes the immunosuppressive effects of measles to depletion of B and T lymphocytes. Our data provide an explanation for the long-term benefits of measles vaccination in preventing all-cause infectious disease. By preventing measles-associated immune memory loss, vaccination protects polymicrobial herd immunity.

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**EDITOR'S SUMMARY**

A small jab – a big effect: nonspecific immunomodulation by vaccines

**Christine S. Benn**, Mihai G. Netea, Liisa K. Selin, Peter Aaby

Recent epidemiological studies have shown that, in addition to disease-specific effects, vaccines against infectious diseases have nonspecific effects on the ability of the immune system to handle other pathogens. For instance, in randomized trials tuberculosis and measles vaccines are associated with a substantial reduction in overall child mortality, which cannot be explained by prevention of the target disease. New research suggests that the nonspecific effects of vaccines are related to cross-reactivity of the adaptive immune system with unrelated pathogens, and to training of the innate immune system through epigenetic reprogramming. Hence, epidemiological findings are backed by immunological data. This generates a new understanding of the immune system and about how it can be modulated by vaccines to impact the general resistance to disease.
"In other words, reducing measles incidence appears to cause a drop in deaths from other infectious diseases due to indirect effects of measles infection on the human immune system.

At the population level, the data suggests that when measles was rampant, it may have led to a reduction in herd immunity against other infectious diseases."

Vaccinating kids against measles could protect them from other diseases as well, a new study suggests.
Measles vaccine protects against other deadly diseases

By Mitch Leslie
7 May 2015 2:00 pm

Measles kills about 140,000 people worldwide every year, but the millions of kids who have survived the disease aren’t in the clear. A new epidemiological study suggests that they remain susceptible to other infections for more than 2 years, much longer than researchers anticipated. The results bolster a hypothesis that the measles virus undermines the immune system’s memory—and indicate that the measles vaccine protects against other deadly diseases as well.

Researchers have long known that measles inhibits the immune system, but they generally thought this effect wore off after a few months at the most. However, studies of children in developing countries, where most cases occur, found that measles vaccination reduces the overall death rate from infections for up to 5 years, suggesting that preventing the disease somehow provides protection against other illnesses.
One possible explanation for this benefit is that the measles vaccine somehow spurs the immune system to produce defenses against these other diseases. But work on monkeys recovering from measles spawned an alternative hypothesis. In 2012, Rik de Swart of Erasmus MC in Rotterdam, Netherlands, and colleagues revealed that the measles virus kills large numbers of memory cells, white blood cells that prevent subsequent infections by the same pathogen. Thus, the measles virus might cause what the scientists termed immunological amnesia, impairing the immune system’s ability to remember and quickly eliminate other microbes it has already beaten. As a result, “you are vulnerable to diseases you shouldn’t be vulnerable to,” says Michael Mina, lead author of the new paper and a medical student at Emory University School of Medicine in Atlanta.

To test this explanation, a team that included De Swart and Mina, then a postdoc at Princeton University, obtained data on the numbers of measles cases and deaths from other infectious diseases in the United States, Denmark, and part of the United Kingdom. Measles vaccination started in the 1960s in the United Kingdom and United States and in the 1980s in Denmark, and the researchers had statistics from before and after its introduction.

The team’s mathematical analysis tried to determine whether there was a relationship between the number of measles cases and the number of kids who died from other diseases. If the virus inhibits immunity for only a short time, for example, the number of deaths from other infections in a specific year might correlate to the number of measles cases in that year. But if the virus triggers a prolonged immune amnesia, the number of deaths in a particular year might correlate to the total number of cases in that year and the previous year or two.

Using this approach, the researchers calculated that children who survive measles remain vulnerable to other diseases for an average of 2.5 years. The value was almost the same for all three countries, the team reports online today in Science. “Our results suggest that the adverse effects of measles are much more lasting,” Mina says.

To check that the immune impairment resulted from measles, the researchers analyzed statistics for whooping cough, which doesn’t suppress the immune system. They found no link between the number of whooping cough cases and mortality from other infectious diseases.

Mina and his colleagues also determined that the length of susceptible period didn’t change in any of the three countries after introduction of vaccination. That finding supports the idea that the measles vaccine benefits children not just because it prevents them from getting measles, but also because it provides protection against the other diseases. In the days before vaccination, measles was responsible for about half of childhood deaths from other illnesses, the team says. With that many dead children,
why didn’t researchers detect this connection before? Many assumed that measles’ impact on the immune system quickly faded, Mina says. “So when a kid gets pneumonia 6 months later, nobody would link that to measles.” Other studies of children in West Africa didn’t show a lasting “measles shadow.” Mina and colleagues note that half of the kids in these studies died from other diseases within 2 months after they had measles, which would have made it difficult to detect a long-term effect.

“That there could be a prolonged immunosuppression is possible,” says vaccine immunologist Katie Flanagan of Monash University in Melbourne, Australia. But the study “is a long way from really proving it.” For example, researchers need to show that the kids who had measles are the ones dying from other illnesses, she says.

“It is indirect evidence,” says William Moss, an epidemiologist at the Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland. But he says that the results are “highly suggestive” that measles is contributing to this longer period of immune suppression. And if the researchers are right, he says, “the benefits of measles vaccination are far greater than simply the reduction in measles deaths.”

Dr. Burtok, Berczi, Selye and Nelson had proven just how immunization or endotoxin tolerance to certain nosodes could produce cross immunity to others. By using endotoxins to stimulate immunity and immune defense there are cross immune stimulation to other nosodes

E-coli had the largest full band of immuno stim adding a touch of heavy metal lead intensified the effect
A Balanced Immune System

**Internal Threat**

Autoimmune problem
(Hashimoto's Thyroiditis, Rheumatoid Arthritis, Lupus, Inflammatory bowel disease, Type 1 Diabetes)

**External Threat**

Allergic Reaction
(food sensitivities, allergies, eczema, asthma, sinusitis)

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**Immune Over-reaction**

**Balanced Immune System = Optimal Effectiveness**

**Immune Under-reaction**

Cancer
(Hepatitis, HIV, Shingles, TB)

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Infection
(Bacteria, Mold/Fungus, Parasites, Viruses)
How to make a Homeopathic Immunization formula

1. Get a sample of an infected person’s nasal mucous from their sinuses
2. Put into a one oz bottle of 40% good vodka like Finlandia
3. Succus for 15 times every 3 hours over 24 hours in a cool place
4. Dilute by putting one ounce of pure water in with the mixture
5. Succus again 15 times
6. Now use 4 drops into the nasal mucosal area of the person twice a day for three days

The researchers could only find a link between measles infection and an increased risk of other infectious diseases. The study wasn’t able to prove a cause-and-effect relationship.

References:
