Medical Xpress

Research suggests America may over-vaccinate

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A new study published in the *New England Journal of Medicine* this week by Oregon Health & Science University researchers suggests that timelines for vaccinating and revaccinating Americans against disease should possibly be reevaluated and adjusted. The study shows that in many cases, the established duration of protective immunity for many vaccines is greatly underestimated. This means that people are getting booster shots when their immunity levels most likely do not require it. The results are published in the November 8 edition of the journal.

“The goal of this study was to determine how long immunity could be maintained after infection or vaccination. We expected to see long-lived immunity following a viral infection and relatively short-lived immunity after vaccination, especially since this is the reasoning for requiring booster vaccinations. Surprisingly, we found that immunity following vaccination with tetanus and diphtheria was much more long-lived than anyone realized and that antibody responses following viral infections were essentially maintained for life,” explained Mark Slifka, Ph.D. Slifka serves as an associate scientist at the Vaccine and Gene Therapy Institute with joint appointments at the Oregon National Primate Research Center and the department of molecular microbiology and immunology in the OHSU School of Medicine.

“We want to emphasize that proper vaccination is vital for protecting people against infectious disease. We also need to mention that over-vaccinating the population poses no health or safety concerns – it may just be unnecessary under certain circumstances. What our study found

was that the lifespan of protective immunity for certain vaccines is much longer than previously thought. So what does this mean" Based on this data and other studies, we may want to consider adjusting some of our recommended vaccination schedules. Doing so may reduce the number of required shots that are administered each year in this country while at the same time help extend limited health care resources," Dr. Slifka explained.

To conduct the research, Slifka and his colleagues evaluated 630 blood samples from a total of 45 study participants. In the case of some participants, archived serum samples provided data going back as far as 26 years. Once gathered, the data was then analyzed to determine the level of immunity in each individual for measles, mumps, rubella, chickenpox (Varicella-zoster virus), mononucleosis (Epstein-Barr virus), tetanus and diphtheria over an extended period of time. Upon further examination, researchers found that antibody responses caused by viruses such as measles mumps, and rubella remained at protective levels for several decades and in most cases, for life. This is interesting because these three viruses were classically described as "childhood infections" because it was rare to be infected twice in a lifetime.

The research also reconfirmed a previous finding by Slifka and his colleagues: that the duration of immunity after smallpox vaccination is much longer than previously thought. In that earlier study published in the journal Nature Medicine in 2003, these OHSU researchers observed surprisingly long-lived antiviral antibody responses but they were unable to measure the slow rate of decline. In this current study, they demonstrate that this type of immunity is maintained with a calculated half-life of 92 years – a number that is substantially longer than the estimate of only 3 to 5 years of immunity following vaccination that was previously proposed by experts at the Centers for Disease Control and Prevention.

“Another example is the tetanus vaccine,” said Slifka. “Doctors are told that vaccination is effective for a period of 10 years – but after that, people should be revaccinated. Based on our studies and the work of others, once a person has received their primary series of vaccinations they are likely to be protected for at least three decades. Indeed, other countries such as Sweden have changed their vaccination policies and doctors are advised to offer tetanus revaccination only once every 30 years.” Importantly, this has not resulted in any increase in the number of tetanus cases in Sweden and demonstrates first-hand that switching from the 10-year to 30-year policy is safe and effective. Taking this small step in vaccination scheduling could save hundreds of millions of dollars on health care here in the US.”

Source: Oregon Health & Science University

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