

PARENTS PACK

MONTHLY UPDATES ABOUT
VACCINES ACROSS THE LIFESPAN

SCIENCE MADE EASY: Viral transmission, human immunity & the gap called “immunity debt”

Perhaps one of the most obvious outcomes of the shutdowns early during the COVID-19 pandemic was that not only did we stop the spread of SARS-CoV-2 virus, but we also stopped many other respiratory pathogens that circulate each year. Rates of influenza, respiratory syncytial virus (RSV), and other viruses plummeted during 2020. In 2021, while we were resuming normal activities, we still hadn't returned completely to our pre-pandemic schedules. As such, we saw increases in respiratory viruses, but not like we have seen in late 2022 and early 2023.

Much has been made of the so-called “immunity debt,” or “immunity gap,” that pandemic restrictions caused, so this issue of *Parents PACK* features a “Science Made Easy” video in which Dr. Paul Offit, VEC Director, discusses this concept.

Regardless of whether you view the “immunity debt” as a necessary outcome or yet another fallout of the restrictions, our collective experience over the last few years has clearly demonstrated that we coexist with many pathogens that seek to infect us for their survival — even if we can't see them or are not directly affected by them.

Watch the video [bit.ly/3VNalPG] or read the transcript.

January 2023

Trivia Corner



What is believed to be one of the roles viruses play within the environment?

- a) To facilitate diversity by making sure no one type of bacteria becomes dominant
- b) To create coral reefs in the tropics
- c) To remove algae from the water's surface
- d) To create optimal conditions for plant growth and survival

Video transcript

Paul Offit, MD: Hi, my name is Paul Offit. I'm talking to you today from the Vaccine Education Center at the Children's Hospital of Philadelphia. One thing that's happened recently is that we've seen an increase, a pretty dramatic increase in respiratory syncytial virus infections in our hospital. We've also seen a pretty large increase in influenza. And so, what some people wonder is, why? Why especially has there been an increase in respiratory syncytial virus infections?

And I think you can go back to 2020, because that was an unusual year. What happened in 2020 when SARS-CoV-2 virus came into our country, around January/February of 2020, we didn't have vaccines. We didn't have monoclonal antibodies. We didn't have antiviral agents. The only thing we had to try and protect ourselves from getting this virus was to limit our ability to interact with other people. And so, what did we do? We closed schools, we closed businesses, we restricted travel, we masked, we social distanced, we isolated, we quarantined, we tested and tested and tested, and we dramatically limited human-to-human contact. With that, we virtually eliminated respiratory syncytial virus, which is a common respiratory virus that we see every winter coming into our hospital, usually around October and November; we didn't see any respiratory syncytial virus infections. Similarly, with influenza, usually influenza causes epidemics every year, where hundreds of thousands of people will be hospitalized and tens of thousands will die. That didn't happen in 2020. Normally, about 75 to 150 children die every year from influenza in this country. In 2021, one child died.

So, what that meant was we had successfully actually reduced the transmission of these respiratory viruses, like respiratory syncytial virus or like influenza virus, both of which can cause children to be hospitalized and suffer. And so, did that have an effect ... did that have an effect? Did it create a so-called “immunity gap,” where when a virus circulates, it sorts of keeps boosting people's immunity so the following year they're somewhat better protected than against moderate or severe disease. And I think that is what happened. I think the reason that we, at the end of 2022, saw a dramatic increase in respiratory syncytial virus infections coming into our hospital and a dramatic increase in influenza was that you didn't have those viruses circulating two years ago. And similarly, last year in 2021, also you ... because we were still masking and social distancing and isolating and testing and trying to restrict our travel, you also didn't see as much of that virus, those viruses as we're seeing now.

So, I think there was this immunity debt. I think this will be the end of it. I think now with us going back basically to living and working and playing as we did before, that this will be the last year that that is likely to happen. But that is a consequence I think of what was such an unusual year in 2020. Thank you.

[Continued on next page]

Trivia Answer: The correct answer is A. Viruses play many roles in the environment, including facilitating biodiversity so that one type of bacteria does not become dominant.

Go to vaccine.chop.edu/trivia to play *Just the Vax*, the Vaccine Education Center's trivia game, where you can find this question and others like it.

DR. HANDY'S CORNER: How can I teach my toddler healthy habits?

Find out how Dr. Lori Handy teaches her own young children to develop healthy habits, like toothbrushing and handwashing.

Watch the video [bit.ly/3GP4KEx].



NEWS & NOTES

For links to referenced resources, visit the online version of the *New & Notes* article [bit.ly/3GGkaun].

New CDC video describes how vaccine recommendations are made

In this new 5-minute video released by the Centers for Disease Control and Prevention (CDC), viewers can find out how vaccines recommendations are developed.

Studies reveal average one-day change in menstrual cycle length following COVID-19 vaccination

As COVID-19 vaccines rolled out, women reported experiencing changes in their menstrual cycles. It was not immediately apparent why this would happen, but due to the concerns and anecdotes, scientists began to take a closer look.

To date, the studies have shown about a one-day lengthening in menstruation after receipt of the first or second dose of COVID-19 vaccine. If the two doses are administered during the same cycle, the length could increase to two days.

A few hypotheses regarding why this happens have been described, but more data will be needed.

Find out more:

- “Do COVID-19 Vaccines Affect Menstruation?” — video with Dr. Paul Offit
- “News & Views: Reproductive Health and COVID-19 Vaccines” — Vaccine Update article

Other questions about COVID-19 or the vaccines? Don't forget about our dedicated page, COVIDVaccineAnswers.org. We recently reviewed and updated the dozens of questions and answers. Don't see your question? Email us from the page.

“Vaccine-Preventable Disease: The Forgotten Story”

The Immunization Project at Texas Children's Hospital offers a series of videos in which families share their personal stories of being affected by vaccine-preventable diseases, including COVID-19.

Check out the videos or learn more about The Immunization Project.

Subscribe to our newsletter

If you're interested in receiving our free email newsletter, visit our website: www.vaccine.chop.edu/parents to sign up. If you have a question about vaccines, visit the Vaccine Education Center website: www.vaccine.chop.edu.

Send us your comments

If you have any comments about this newsletter or suggestions about how we can make our program more helpful, please send them to contactPACK@chop.edu.