

# COVID-19 MYTHBUSTING: COMMON FALSEHOODS ABOUT MASKS AND VACCINES

September 2021

## Common Mask Myths

### **Myth: Masks do not prevent the transmission of COVID-19.**

FALSE: Masks prevent respiratory droplets from being released into the air or from landing on shared surfaces. The fibers in masks are small enough to catch respiratory droplets, which may contain virus particles, to prevent the spread of COVID-19.<sup>1</sup> Multiple studies have confirmed that when masks are worn properly and combined with other recommended mitigation measures, they provide both individual-level protection and community-level protection.<sup>2</sup>

### **Myth: Children do not need to wear masks in school because they are unlikely to get or become severely ill from COVID-19.**

FALSE: While children were less likely to contract serious COVID-19 infection earlier in the pandemic, the delta variant has a greater impact on children because it causes more infections and spreads faster than earlier forms of SARS-CoV-2 (the virus which causes COVID-19). The American Academy of Pediatrics (AAP) has reported a significant increase in the number of COVID-19 cases among children aged 18 and under, likely attributed to the delta variant's higher transmissibility and lower vaccination rates among the 18-and-under population.<sup>3</sup> Children under age 12 are also not eligible to receive vaccination against COVID-19, further reinforcing the needs for masks.

As of August 31, 2021, there were 6,784 active cases among children aged 0 to 18 in Arkansas, comprising 30% of all active cases.<sup>4</sup>

### **Myth: Wearing a mask will cause a person to become sick with carbon dioxide poisoning.**

FALSE: While it is true that when a person exhales they release carbon dioxide, carbon dioxide is a gas made up of very small molecules. These molecules are so small that they easily pass through most mask materials and are unable to build-up inside of a person's mask. Healthcare providers have also been wearing masks for a long time without any carbon dioxide-related issues.<sup>5</sup>



**Myth: Children, particularly young children, are not capable of properly wearing masks consistently to prevent COVID-19 transmission.**

FALSE: Children, including younger children, have proven to be capable of wearing masks over the last 18 months of the pandemic. A study from France which surveyed parents and pediatricians found that despite some reported inconveniences, children were compliant with mask wearing.<sup>6</sup> Children also learn by following the actions of adults. Adults who demonstrate proper mask wearing, including covering both their nose and mouth, can set a great example for children.<sup>7</sup>

**Myth: Children’s masks are dirty and likely cause worse illnesses than COVID-19.**

FALSE: The proper laundering or handwashing of cloth masks will remove any contagions such as viruses, bacteria, or other substances that may build up on a child’s mask. It is also important to ensure that children have a clean mask to wear every day. Sending an extra mask with your child to school can also help in the event a mask becomes wet or otherwise compromised during the school day.

## **Common Vaccine Myths**

**Myth: COVID-19 vaccines are dangerous for children.**

FALSE: There has been extensive review by experts of the Pfizer vaccine, the only vaccine that is currently available for use in children age 12 and older. Pfizer studied the use of the vaccine in 2,260 children aged 12 to 15 before the U.S. Food and Drug Administration granted an emergency use authorization for its use in children in this age range. The risk of serious adverse events is low for the vaccine, and reported side effects in children were similar to what was reported in adults, including injection-site pain, fatigue, and body aches.<sup>8</sup>

**Myth: Natural immunity gained from COVID-19 infection is better than getting vaccinated.**

FALSE: While it is true that some level of immunity is gained after recovering from COVID-19, it is unknown how long that immunity lasts. It is also possible for a person to become reinfected with COVID-19 after previously recovering from a prior infection. A recent study of COVID-19 infections in Kentucky found that people who were previously infected with SARS-CoV-2 (the virus which causes COVID-19) were twice as likely to be reinfected than people who were fully vaccinated after they initially contracted the virus.<sup>9</sup> The Centers for Disease Control and Prevention (CDC) advises that individuals who have had COVID-19 and have recovered should still get vaccinated, noting that research has not yet demonstrated how long a person is protected from getting COVID-19 after recovery and that vaccination helps protect a person even if he or she has already had COVID-19.<sup>10</sup>

**Myth: COVID-19 vaccines cause fertility issues.**

FALSE: There is no evidence that the COVID-19 vaccines cause infertility, with the American College of Obstetricians and Gynecologists stating earlier this year that “no loss of fertility has been reported among trial participants or among the millions who have received the vaccines since their authorization.”<sup>11</sup>

**Myth: COVID-19 vaccines were developed too quickly to be safe.**

FALSE: The technology used to develop the messenger RNA (mRNA) COVID-19 vaccine is not new — it has been studied for years. Additionally, no shortcuts were taken in the clinical trials for the COVID-19 vaccines, which adhered to the same standards and rigors that would be required of any other vaccine trial. Collaboration between government entities, private partners, and vaccine developers allowed for the vaccine to become available in a relatively short timeframe.<sup>12</sup>

**Myth: COVID-19 vaccines alter a person’s DNA.**

FALSE: Both mRNA (Pfizer and Moderna) and viral vector (Johnson & Johnson) COVID-19 vaccines do not alter or interact at all with a person’s DNA. Both types of vaccines simply deliver instructions to the cells of our immune system, which allows them to identify and build protection against the virus which causes COVID-19. The vaccine material never enters into the nucleus of the cell, which houses our DNA.<sup>13</sup>

**Myth: COVID-19 vaccines are not effective.**

FALSE: COVID-19 vaccines reduce the risks associated with COVID-19 and its potentially severe complications. Vaccine effectiveness studies have shown that COVID-19 vaccines provide protections in real-world conditions similar to the protections shown in clinical trials, including reductions in severe illness among people who are fully vaccinated by 90% or more for the mRNA vaccines.<sup>14</sup> Additionally, the majority of those hospitalized with COVID-19 are unvaccinated, with 91% of all hospitalizations in Arkansas among unvaccinated individuals.<sup>15</sup> No vaccines are 100% effective, including the COVID-19 vaccines, and breakthrough infections are occurring. However, in these breakthrough infections, prior vaccination greatly decreases the severity of disease and frequency of poor outcomes.<sup>16</sup>

For additional information on these topics, see ACHI’s publication on the “Evidence for Effectiveness and Safety of Masks to Reduce Transmission of COVID-19” and “COVID-19 in Children: Why We Should be Concerned.”

## REFERENCES

- <sup>1</sup> Lindsley, W.G., et al. Efficacy of face masks, neck gaiters and face shields for reducing the expulsion of simulated cough-generated aerosols. *Aerosol Science and Technology*, January 7, 2021.
- <sup>2</sup> Brooks JT, Butler JC. Effectiveness of Mask Wearing to Control Community Spread of SARS-CoV-2. *JAMA*. 2021 Mar 9;325(10):998-999. doi: 10.1001/jama.2021.1505. PMID: 33566056.
- <sup>3</sup> Mayo Clinic, "How the COVID-19 delta variant is impacting younger people." August 13, 2021. Retrieved from <https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/how-the-covid-19-delta-variant-is-impacting-younger-people>.
- <sup>4</sup> Data from the Arkansas Department of Health's COVID-19 Dashboard, Active Cases, as of August 31, 2021.
- <sup>5</sup> LaForme, K. "Myths about Masks and Other Coronavirus Facial Coverings." July 22, 2020. Johns Hopkins Medicine. Retrieved from <https://www.hopkinsallchildrens.org/ACH-News/General-News/Myths-about-Masks-and-Other-Coronavirus-Facial-Cov>.
- <sup>6</sup> Assathiany R, Salinier C, Béchet S, et al. Face Masks in Young Children During the COVID-19 Pandemic: Parents' and Pediatricians' Point of View. *Front Pediatr*. 2021;9:676718. Published 2021 Jun 23. doi:10.3389/fped.2021.676718.
- <sup>7</sup> Ruba AL, Pollak SD. Children's emotion inferences from masked faces: Implications for social interactions during COVID-19. *PLoS One*. 2020 Dec 23;15(12):e0243708. doi: 10.1371/journal.pone.0243708. PMID: 33362251; PMCID: PMC7757816.
- <sup>8</sup> Pfizer, "Pfizer-BioNTech Announce Positive Topline Results of Pivotal COVID-19 Vaccine Study in Adolescents." Wednesday, March 31, 2021. Retrieved from <https://www.pfizer.com/news/press-release/press-release-detail/pfizer-biontech-announce-positive-topline-results-pivotal>.
- <sup>9</sup> Centers for Disease Control and Prevention, "New CDC Study: Vaccination Offers Higher Protection than Previous COVID-19 Infection." August 6, 2021. Retrieved from <https://www.cdc.gov/media/releases/2021/s0806-vaccination-protection.html>.
- <sup>10</sup> Centers for Disease Control and Prevention, "Frequently Asked Questions about COVID-19 Vaccination." Updated August 19, 2021. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html#:~:text=Yes%2C%20you%20should%20be,had%20COVID%2D19>.
- <sup>11</sup> American College of Obstetricians and Gynecologists, "Medical Experts Continue to Assert that COVID Vaccines Do Not Impact Fertility." February 4, 2021. Retrieved from <https://www.acog.org/news/news-releases/2021/02/medical-experts-assert-covid-vaccines-do-not-impact-fertility>.
- <sup>12</sup> American Academy of Family Physicians, "COVID-19 Vaccine Myths." Retrieved from [https://www.aafp.org/dam/AAFP/documents/patient\\_care/public\\_health/COVID19-Vaccine-Myths.pdf](https://www.aafp.org/dam/AAFP/documents/patient_care/public_health/COVID19-Vaccine-Myths.pdf).
- <sup>13</sup> Centers for Disease Control and Prevention, "Myths and Facts about COVID-19 Vaccines." Updated August 27, 2021. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/facts.html>.
- <sup>14</sup> Centers for Disease Control and Prevention, "COVID-19 Vaccines Work." Updated August 16, 2021. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/effectiveness/work.html>.
- <sup>15</sup> Data from the Arkansas Department of Health's COVID-19 Dashboard, Vaccines, as of August 31, 2021.
- <sup>16</sup> Centers for Disease Control and Prevention, "The Possibility of COVID-19 after Vaccination: Breakthrough Infections." Updated August 23, 2021. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/effectiveness/why-measure-effectiveness/breakthrough-cases.html>.

