

## COVID-19 Evidence Digest 4/21/21

### [A Randomized Controlled Trial of a Video Intervention Shows Evidence of Increasing COVID-19 Vaccination Intention \(medRxiv – pre-print\)](#)

**Bottom Line:** In this pre-print study, participants watching a video about mRNA COVID-19 vaccines with a male narrator expressed greater vaccination intent than the control group; responses were more varied among participants watching the same video with a female narrator, with those identifying as politically conservative showing a decrease in vaccination intent.

**Details:** In this randomized controlled trial, investigators looked at whether intentions to receive an mRNA COVID-19 vaccine changed after watching an eight-minute YouTube video explaining how these vaccines work, including their high efficacy, and highlighted the concept of altruism in vaccination. Participants were randomized to 1 of 4 interventions: 1) watching the video with a male narrator (n=270); 2) watching the video with a female narrator (n=255); 3) reading the transcript of the video content on a blog post (n=282) and 4) receiving no information (control group; n=393) and then completed a survey to assess vaccination intentions, attitudes about COVID-19 vaccines, and various vaccine deliberation domains (e.g., perceptions of vaccine safety and efficacy, trust in various authorities, common vaccine misconceptions), and characteristics of the video or blog post. Participants were recruited from Amazon Mechanical Turk on 2/25-2/26/21, and had to be located in the US. Participants who watched the video with the male narrator had statistically significantly increased vaccination intention compared to the control group. When looking at everyone who watched the video with the female narrator, vaccination intention increased but was not statistically significant. When looking at participants who self-identified as politically conservative and received the intervention with the female narrator, however, vaccination intentions decreased, especially among those who were previously undecided. When the conservative subgroup was removed from analysis, both videos were associated with increased vaccination intention at similar rates relative to the control group.

#### **Key Takeaways:**

- Findings from this pre-print study suggest that the gender of the person delivering information about COVID-19 vaccines may influence some recipients' opinions about vaccination.
- Study limitations/caveats include lack of a nationally representative sample, limiting generalizability, and the fact that vaccination intentions were not assessed prior to receiving the intervention.

### [SARS-CoV-2–Specific Antibodies in Breast Milk After COVID-19 Vaccination of Breastfeeding Women \(JAMA\)](#)

**Bottom Line:** In this study of 84 breastfeeding women who received the Pfizer-BioNTech vaccine, immunoglobulin G (IgG) SARS-CoV-2 antibody levels found in breast milk samples increased significantly following the second dose.

**Details:** This study looked at whether SARS-CoV-2 antibodies were present in breast milk following maternal vaccination in a sample of exclusive and partially breastfeeding women (n=84) who received both doses of the Pfizer-BioNTech vaccine in Israel between 12/23/20-1/15/21. Breast milk samples were obtained prior to receiving the vaccine and once per week for 6 weeks beginning 2 weeks after the first dose (n=504 samples). Immunoglobulin G (IgG) and

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immunoglobulin A (IgA) levels were then evaluated in the samples. Average IgA antibody levels increased rapidly; at 2 weeks after the first dose, 62% of samples tested positive, which increased to 86% 1 week after the second dose and then dropped to 66% at week six. IgG antibody levels remained low for the first 3 weeks, but increased significantly at week 4, when 92% of samples tested positive. By weeks 5 and 6, this increased to 97%.

### Key Takeaways:

- This study demonstrated that SARS-CoV-2 antibodies acquired from vaccination can be passed from mothers to infants through breast milk for at least 6 weeks post-vaccination.

### Spike Antibody Levels of Nursing Home Residents with or without Prior COVID-19 3 Weeks after a Single BNT162b2 Vaccine Dose (JAMA)

**Bottom Line:** In this study, all 36 nursing home residents with prior lab-confirmed SARS-CoV infection were positive for spike protein immunoglobulin G (IgG) antibodies after 1 Pfizer-BioNTech vaccine dose compared to about half of residents with no prior SARS-CoV-2 infection.

**Details:** This study compared immunoglobulin G (IgG) levels in nursing home residents with and without a prior COVID-19 infection after receiving 1 dose of the Pfizer-BioNTech vaccine. Six weeks after SARS-CoV-2 outbreaks in nursing homes in France in 2020, residents completed blood testing to assess IgG antibody levels against the SARS-CoV-2 nucleocapsid (N) protein. In January 2021, residents were offered the Pfizer-BioNTech vaccine, and 3 weeks later, completed additional blood testing to assess IgG antibody levels against the virus' spike and N protein. 60 of 102 residents had no prior SARS-CoV-2 infection; 42 had a positive RT-PCR test and/or had N protein IgG antibodies in June of 2020. Of the 36 residents who both had a positive RT-PCR test and were seropositive for N protein IgG antibodies, 72% remained seropositive in January-February of 2021. These 36 residents were all positive for S protein IgG antibodies after 1 vaccine dose compared to 49% of the 60 residents with no prior SARS-CoV-2 infection. Median S-protein IgG levels for those residents with prior SARS-CoV-2 infection were 40,000 AU/mL or greater vs 48 AU/mL in those without prior SARS-CoV-2 infection. In the 6 residents with prior SARS-CoV-2 infection who had either a positive RT-PCR test or were seropositive for N protein IgG, S protein IgG antibody levels were significantly higher than among those without prior SARS-CoV-2 infection. In addition, these levels were not statistically significantly different from the 36 residents who had both a positive RT-PCR test and were seropositive for N protein IgG.

### Key Takeaways:

- Findings from this study suggest that 1 dose of the Pfizer-BioNTech vaccine may produce sufficient immunoglobulin G (IgG) levels against the SARS-CoV-2 spike protein in nursing home residents with prior lab-confirmed SARS-CoV-2 infection.
- Study limitations include small sample size that may lack representativeness and lack of neutralization assays.

### [Fitted Filtration Efficiency of Double Masking During the COVID-19 Pandemic](#) (JAMA Internal Medicine)

**Bottom Line:** In this small study of fitted filtration efficiency (FFE) of single, double, and combined use of procedure and cloth masks in human participants, a procedure mask under a cloth mask resulted in significant improvements in overall FFE, with an average range of 66% to 81%.

**Details:** This study looked at fitted filtration efficiency (FFE) of common mask types worn singly, doubled, or in combinations in human participants – 1 female and 2 males with no facial hair. FFE was measured on participants as they completed a series of repeated movements of the head, facial muscles, and torso via OSHA’s Quantitative Fit Testing protocol. When procedure and cloth masks were doubled, the single mask served as a control. When procedure and cloth masks were combined, the same procedure mask was used, and the single cloth mask was the control. Single procedure masks had a range of average FFE between 43% and 62%. A second procedure mask increased the average FFE across masks and participants from 55% (single mask) to 66% (double mask). Single cloth masks had an average FFE range of 41% to 44%, and wearing two cotton masks improved FFE but could reduce breathability. Wearing a procedure mask over a cloth mask modestly increased FFE, but the overall performance was the same as wearing a single procedure mask; however, a procedure mask under a cloth mask resulted in significant improvements in overall FFE (average range 66% to 81%).

#### **Key Takeaways:**

- Findings suggest that double masking, particularly with a procedure mask under a cloth mask or two procedure masks, improves FFE, likely because it minimizes leaks between the mask and skin, including the nose bridge.
- Study limitations include using only 1 procedure mask type and 3 participants in the evaluation of double masking combinations.