

The scientific literature on COVID-19 is rapidly evolving and these articles were selected for review based on their relevance to Washington State decision making around COVID-19 response efforts. Included in these Lit Reps are some manuscripts that have been made available online as pre-prints but have not yet undergone peer review. Please be aware of this when reviewing articles included in the Lit Reps.

Key Takeaways

- **The American Academy of Pediatrics guidelines for children returning to athletic activities recommend wearing cloth face masks during indoor sports and consulting a physician regarding potential cardiovascular symptoms in children with COVID-19 prior to their return to activity. [More and More](#)**
- **Among individuals with SARS-CoV-2 antibodies, one dose of mRNA vaccine elicited a rapid and strong immune response, with antibody levels equal to or higher than those found among individuals who were previously uninfected and received two doses of the vaccine. [More](#)**
- **During the first month of the US COVID-19 vaccination program, nearly 13 million people received at least one dose of the vaccine. Among individuals for whom demographic data were available (48%), 63% were women and 55% of vaccine recipients were over 50. [More](#)**
- **As of January 17, 2021, a median of 78% of residents and 38% of staff members across 11,460 skilled nursing facilities received at least 1 SARS-CoV-2 vaccine dose through the CDC Pharmacy Partnership for Long-Term Care Program. [More](#)**

Vaccines and Immunity

- During the first month of the US COVID-19 vaccination program (December 14, 2020-January 14, 2021) nearly 13 million people received at least one dose of the vaccine. Race/ethnicity was unknown or not reported for 6,222,052 (48.1%) persons initiating vaccination. Among individuals for whom demographic data were available, 63% were women, and 60% were non-Hispanic white, 12% Hispanic/Latino, 6% Asian, 5% Black, 2% American Indian/Alaska Native, and 0.3% Native Hawaiian/Pacific Islander. By age, 55% of vaccine recipients were over 50, 17% were 40-49, and 28% were 18-39.
Painter et al. (Feb 1, 2021). Demographic Characteristics of Persons Vaccinated During the First Month of the COVID-19 Vaccination Program — United States, December 14, 2020–January 14, 2021. MMWR. <https://doi.org/10.15585/mmwr.mm7005e1>
- IgG antibodies to SARS-CoV-2 from pregnant women with symptomatic or asymptomatic SARS-CoV-2 infection were transferred across the placenta, and cord antibody concentrations were positively correlated with maternal IgG concentrations ($r=0.9$). IgG antibodies were detected in cord blood from 72 of 83 newborns (87%), while IgM antibodies were not detected in any cord blood samples. Eleven infants were seronegative: 5 (45%) were born to mothers with IgM antibody only, and 6 (55%) were born to mothers with significantly lower IgG concentrations compared to mothers of seropositive infants.

Flannery et al. (Jan 29, 2021). Assessment of Maternal and Neonatal Cord Blood SARS-CoV-2 Antibodies and Placental Transfer Ratios. *JAMA Pediatrics*. <https://doi.org/10.1001/jamapediatrics.2021.0038>

- Among 4,081 vaccinated healthcare workers in Israel, 22 (0.54%) developed laboratory-confirmed COVID-19 between 1–10 days (median 3.5) post-immunization. Among these 22 individuals, 13 were tested because they experienced symptoms including fever, chills, cough, headache, and sore throat. 11 people had suspected community-related exposure, 4 of whom were exposed before their vaccination date. Among symptomatic individuals, the median time between symptom onset and testing was 1 day. The authors argue that post-vaccination symptoms should not be assumed to be vaccine-related, and symptomatic individuals should be tested for COVID-19.

Amit et al. (Feb 1, 2021). Post-Vaccination COVID-19 among Healthcare Workers, Israel. *Emerging Infectious Disease Journal*. <https://doi.org/10.3201/eid2704.210016>

- [Pre-print, not peer-reviewed] One dose of mRNA vaccine elicited a rapid and strong immune response among individuals already seropositive for SARS-CoV-2, with antibody titers 10-20 times higher than those of naïve vaccinees at the same timepoint. Seropositive individuals also had antibody titers that exceeded by >10-fold the median titers among individuals without previous infection who received two doses of the vaccine. Among 109 individuals who received their first vaccine dose in 2020, variable and low IgG responses were observed 9-12 days after vaccination among those who were seronegative (n=68), while uniformly high antibody titers were observed within 5-8 days among those who were seropositive (n=41).

Krammer et al. (Jan 1, 2021). Robust Spike Antibody Responses and Increased Reactogenicity in Seropositive Individuals after a Single Dose of SARS-CoV-2 mRNA Vaccine. Pre-print downloaded Feb 1 from <https://www.medrxiv.org/content/10.1101/2021.01.29.21250653v1>

- As of January 17, 2021, a median of 77.8% of residents (IQR: 61.3-93.1%) and 37.5% of staff members (IQR: 23.2-56.8%) across 11,460 skilled nursing facilities received ≥ 1 vaccine dose through the CDC Pharmacy Partnership for Long-Term Care Program, a public-private partnership between the CDC and CVS, Walgreens, and Managed Healthcare Associates. A total of 713,909 residents and 582,104 staff members received ≥ 1 COVID-19 vaccine doses. The authors note that low vaccine uptake among staff members is consistent with data from prior influenza seasons, and they suggest vaccine hesitancy and skepticism as potential drivers of low uptake.

Gharpure et al. (Feb 1, 2021). Early COVID-19 First-Dose Vaccination Coverage Among Residents and Staff Members of Skilled Nursing Facilities Participating in the Pharmacy Partnership for Long-Term Care Program — United States, December 2020–January 2021. *MMWR. Morbidity and Mortality Weekly Report*. <https://doi.org/10.15585/mmwr.mm7005e2>

- [Pre-print, not peer-reviewed] Between May and July 2020, there were an estimated 4.8 undiagnosed cases of COVID-19 for every case diagnosed in the United States, and an estimated 16.8 million undiagnosed cases by mid-July, based on findings from a serostudy conducted among adults (n = 11,3182) who had not been diagnosed with COVID-19. Undiagnosed seropositivity was highest among those who were younger (ages 18-45, 5.9%), women (5.5%), Black/African American (14.2%), Hispanic (6.1%), and urban residents (5.3%). Seropositivity was higher in locations where there were early outbreaks. During the first wave of infection over the spring/summer of 2020, 4.6% of adults were estimated to have had a prior undiagnosed SARS-CoV-2 infection.

Kalish et al. (Jan 31, 2021). Mapping a Pandemic SARS-CoV-2 Seropositivity in the United States. Pre-print downloaded Feb 1 from <https://doi.org/10.1101/2021.01.27.21250570>

- [Pre-print, not peer-reviewed] Among 514 healthcare workers in Israel who received a SARS-CoV-2 vaccine (majority Pfizer), 92% had detectable IgG antibodies 21 days post-vaccination. There was no statistically significant difference in antibody titers between males and females or by ethnicity, but titers decreased with increasing age. Individuals with prior COVID-19 who received the vaccine had

IgG titers at least one order of magnitude higher than those who had no prior infection, regardless of whether neutralizing antibodies were detectable immediately prior to vaccination.

Jabal et al. (Jan 31, 2021). Impact of Age Gender Ethnicity and Prior Disease Status on Immunogenicity Following Administration of a Single Dose of the BNT162b2 MRNA Covid-19 Vaccine Real-World Evidence from Israeli Healthcare Workers December-January 2020. Pre-print downloaded Feb 1 from <https://doi.org/10.1101/2021.01.27.21250567>

Clinical Characteristics and Health Care Setting

- A cohort study using data from the UK Biobank and Public Health England found an increased risk of COVID-19 infection (OR = 1.44), hospitalization (OR = 1.55), and death (OR = 2.03) among individuals with psychiatric conditions diagnosed before the pandemic, including depression, stress-related disorder, and substance use. The associations were stronger among individuals who had been diagnosed with multiple psychiatric conditions. In addition, there was also an increased risk of hospitalization due to other infections among this population (OR = 1.74).

Yang et al. (Oct 26, 2020). Pre-Pandemic Psychiatric Disorders and Risk of COVID-19: A UK Biobank Cohort Analysis. The Lancet Healthy Longevity. [https://doi.org/10.1016/S2666-7568\(20\)30013-1](https://doi.org/10.1016/S2666-7568(20)30013-1)

- Adjusted SARS-CoV-2 seropositivity was estimated to be 3.8% among healthcare workers (n=10,275) at a large Atlanta health care center who participated in a survey from April-June 2020. Odds of infection were higher among those with community contact with a person known or suspected to have COVID-19 (aOR = 1.9), community COVID-19 incidence (aOR = 1.5), and Black race/ethnicity (aOR = 2.1). Occupational factors, such as conducting aerosol-generating procedures, were less strongly associated with SARS-CoV-2 seropositivity.

Baker et al. (Jan 29, 2021). Quantification of Occupational and Community Risk Factors for SARS-CoV-2 Seropositivity Among Health Care Workers in a Large U.S. Health Care System. Annals of Internal Medicine. <https://doi.org/10.7326/M20-7145>

Mental Health and Personal Impact

- More than one third of adult survey respondents (n=1,405) in the US and Canada reported utilizing alcohol or substances as a source of support during the early phase of the COVID-19 pandemic in June 2020. Higher utilization of social media was related to higher alcohol and/or substance use, with participants reporting feeling overwhelmed by information online. In addition, being personally affected by COVID-19 and being concerned about childcare were related to increased use of alcohol and substances.

MacMillan et al. (Jan 26, 2021). Exploring Factors Associated with Alcohol and/or Substance Use During the COVID-19 Pandemic. International Journal of Mental Health and Addiction. <https://doi.org/10.1007/s11469-020-00482-y>

- One fifth of men who have sex with men using HIV pre-exposure prophylaxis (PrEP) in the Southern US (n = 56) between October 2019 to July 2020 reported discontinuing or changing the frequency of PrEP use due to the COVID-19 pandemic. Five participants (9%) reported discontinuing PrEP, eight experienced difficulties obtaining PrEP medication (16%), and 18 did not have an HIV (32%) or STI test (43%) in the past 3 months. Most participants indicated a decrease in sexual activity with casual partners, but few reported decreased sexual activity with main partners.

Pampati et al. (Jan 28, 2021). Changes in Sexual Behavior, PrEP Adherence, and Access to Sexual Health Services Due to the COVID-19 Pandemic among a Cohort of PrEP-Using MSM in the South. JAIDS Journal of Acquired Immune Deficiency Syndromes. <https://doi.org/10.1097/QAI.0000000000002640>

Modeling and Prediction

- A modeling study evaluating the impact of a 2-dose COVID-19 vaccination campaign in the US showed that over a period of 300 days, vaccinating 40% of the population in sequential priority groups reduced the overall attack rate from 9% (without vaccination) to 4.6%, with the greatest relative reductions among those aged 65 and older. Modeled scenarios prioritized healthcare workers and high-risk individuals and did not include vaccinations for children under 18. Vaccination reduced adverse outcomes, with non-ICU hospitalizations, ICU hospitalizations, and deaths decreasing by 63.5%, 65.6%, and 69.3%, respectively. The model assumed a vaccine efficacy of 95%, an existing population immunity level of 10%, and a SARS-CoV-2 reproductive number of 1.2.
Moghadas et al. (Jan 30, 2021). The Impact of Vaccination on COVID-19 Outbreaks in the United States. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciab079>

Public Health Policy and Practice

- Unemployment insurance was associated with a 35% relative reduction in food insecurity and a 48% relative reduction in eating less due to financial constraints among people in low- and middle-income households in the US who lost their jobs during the COVID-19 pandemic. 37% of the study population (n= 2319 adults) reported food insecurity and 39% reported eating less in 1 or more waves of the study. Receiving a \$600 per week federal supplement between April and July was associated with reductions in food insecurity.
Raifman et al. (Jan 29, 2021). Association Between Receipt of Unemployment Insurance and Food Insecurity Among People Who Lost Employment During the COVID-19 Pandemic in the United States. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2020.35884>
- A survey of older adults (n=897) sheltering in place during the pandemic found the prevalence of self-reported elder abuse was 21.3%, an 83% increase from the pre-pandemic period. Increased risk of elder abuse was associated with greater pandemic-related financial hardship, while reduced risk was associated with having a strong sense of community (OR = 0.89) and adherence to distancing measures (OR = 0.94).
Chang and Levy. (Jan 19, 2021). High Prevalence of Elder Abuse During the COVID-19 Pandemic: Risk and Resilience Factors. The American Journal of Geriatric Psychiatry. <https://doi.org/10.1016/j.jagp.2021.01.007>
- The American Academy of Pediatrics updated guidelines December 17, 2020 for children returning to athletic activities, including recommendations for cloth face mask use during all indoor sports, except for swimming and diving, cheerleading, gymnastics, and wrestling. Cloth masks are also recommended for people on the sidelines, in locker rooms, and in training sessions. The guidelines suggest that children who have asymptomatic or mild COVID-19 (less than 4 days of fever) complete a brief cardiovascular evaluation with their primary care provider including assessment for chest pain, shortness of breath, palpitations, or fainting. Children with moderate or severe COVID-19 are recommended to see a cardiologist after symptom resolution and before resuming play.
*McBride. (Jan 22, 2021). New Guidelines for Children Returning to Sports after Covid-19. Journal of Pediatric Nursing. <https://doi.org/10.1016/j.pedn.2021.01.013>
American Academy of Pediatrics. COVID-19 Interim Guidance: Return to Sports (Dec 17, 2020). <https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-interim-guidance-return-to-sports/>*

Other Resources and Commentaries

- [Covid-19: Sore Throat, Fatigue, and Myalgia Are More Common with New UK Variant](#) – BMJ (Clinical Research Ed.) (Jan 2021)
- [Athlete Medicine Applied in a Pandemic: Disparities among Athletes and Performers Reveal the Need for a True “revolution” in Health Care](#) – BMJ Open Sport & Exercise Medicine (Jan 2021)

- [The Olympiad of SARS-CoV-2 Vaccinology: Fundamentals to Complement Technical Frontiers](#) – Clinical Infectious Diseases (Jan 30 2021)
- [The Novel Coronavirus and Undocumented Farmworkers in the United States](#) – New Solutions: A Journal of Environmental and Occupational Health Policy (Jan 2021)
- [B Cell Memory: Understanding COVID-19](#) – Immunity (Jan 2021)
- [The COVID-19 Economy, Unemployment Insurance, and Population Health](#) – JAMA Network Open (Jan 29 2021)
- [Uniting Infectious Disease and Physical Science Principles on the Importance of Face Masks for COVID-19](#) – Med (Jan 2021)
- [What Social Media Told Us in the Time of COVID-19: A Scoping Review](#) – The Lancet Digital Health (Jan 2021)
- [The Differential Impact of Pediatric COVID-19 between High-Income Countries and Low- and Middle-Income Countries: A Systematic Review of Fatality and ICU Admission in Children Worldwide](#) – PloS One
- [COVID-19 Rarely Spreads through Surfaces. So Why Are We Still Deep Cleaning?](#) – Nature (Feb 4) 2021
- [How Can We Interpret SARS-CoV-2 Antibody Test Results?](#) – Pathogens and Disease (Jan 29 2021)
- [Covid-19: South Africa Variant Found in the US as Biden Expands Health Coverage](#) – BMJ (Jan 29 2021)
- [COVID and Crime: An Early Empirical Look](#) – Journal of Public Economics (Feb 2021)
- [How to Redesign COVID Vaccines so They Protect against Variants](#) – Nature (Jan 29 2021)
- [Can We Protect Pregnant Women and Young Infants From COVID-19 Through Maternal Immunization?](#) – JAMA Pediatrics (Jan 29 2021)
- [SARS-CoV-2 Testing for Public Health Use: Core Principles and Considerations for Defined Use Settings](#) – The Lancet Global Health (Jan 2021)
- [Safety and Immunogenicity of S-Trimer \(SCB-2019\), a Protein Subunit Vaccine Candidate for COVID-19 in Healthy Adults: A Phase 1, Randomised, Double-Blind, Placebo-Controlled Trial](#) – The Lancet (Feb 1 2021)
- [Publication Practices during the COVID-19 Pandemic: Biomedical Preprints and Peer-Reviewed Literature](#) – BioRxiv (Jan 1 2021)

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