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19 Studies on Vaccine Efficacy that Raise Doubts on Vaccine Mandates

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As some people have now been vaccinated for more than half a year, evidence is pouring in about Covid vaccine efficacy. When evaluating vaccine efficacy, it is important to distinguish between efficacy against infection, symptomatic disease, and transmission versus efficacy against hospitalization and death. For infection and symptomatic disease, the COVID-19 vaccines are not as efficacious as hoped, with immunity gradually waning after a few months. For hospitalization and death, immunity is stronger, lasting for at least six months.

The gestalt of the findings implies that the infection explosion globally that we have been experiencing– post double vaccination in e.g. Israel, UK, US etc. –may be due to the vaccinated spreading Covid as much or more than the unvaccinated.

A natural question to ask is whether vaccines with limited capacity to prevent symptomatic disease may drive the evolution of more virulent strains? In a PLoS Biology article from 2015, Read et al. observed that:

> *"Conventional wisdom is that natural selection will remove highly lethal pathogens if host death greatly reduces transmission. Vaccines that keep hosts alive but still allow transmission could thus allow very virulent strains to circulate in a population."*

Hence, rather than the unvaccinated putting the vaccinated at risk, it could theoretically be the vaccinated that are putting the unvaccinated at risk, but we have not yet seen any evidence for that.

Here I summarize 16 studies and reports that shed light on vaccine induced immunity against Covid. They highlight the problems with vaccine mandates that are currently threatening the jobs of millions of people. They also raise doubts about the arguments for vaccinating children.

1) Gazit et al. out of Israel showed that "SARS-CoV-2-naïve vaccinees had a 13-fold (95% CI, 8-21) increased risk for breakthrough infection with the Delta variant compared to those previously infected." When adjusting for the time of disease/vaccine, there was a 27-fold increased risk (95% CI, 13-57).

2) Ignoring the risk of infection, given that someone was infected, Acharya et al. found "no significant difference in cycle threshold values between

vaccinated and unvaccinated, asymptomatic and symptomatic groups infected with SARS-CoV-2 Delta."

3) Riemersma et al. found "no difference in viral loads when comparing unvaccinated individuals to those who have vaccine "breakthrough" infections. Furthermore, individuals with vaccine breakthrough infections frequently test positive with viral loads consistent with the ability to shed infectious viruses." Results indicate that "if vaccinated individuals become infected with the delta variant, they may be sources of SARS-CoV-2 transmission to others." They reported "low Ct values (<25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people."

4) In a study from Qatar, Chemaitelly et al. reported vaccine efficacy (Pfizer) against severe and fatal disease, with efficacy in the 85-95% range at least until 24 weeks after the second dose. As a contrast, the efficacy against infection waned down to around 30% at 15-19 weeks after the second dose.

5) From Wisconsin, Riemersma et al. reported that vaccinated individuals who get infected with the Delta variant can transmit SARS-CoV-2 to others. They found an elevated viral load in the unvaccinated and vaccinated symptomatic persons (68% and 69% respectively, 158/232 and 156/225). Moreover, in the asymptomatic persons, they uncovered

elevated viral loads (29% and 82% respectively) in the unvaccinated and the vaccinated respectively. This suggests that the vaccinated can be infected, harbor, cultivate, and transmit the virus readily and unknowingly.

6) Subramanian reported that "at the country-level, there appears to be no discernable relationship between percentage of population fully vaccinated and new COVID-19 cases." When comparing 2947 counties in the United States, there were slightly less cases in more vaccinated locations. In other words, there is no clear discernable relationship .

7) Chau et al. looked at transmission of SARS-CoV-2 Delta variant among vaccinated healthcare workers in Vietnams. Of 69 healthcare workers that tested positive for SARS-CoV-2, 62 participated in the clinical study, all of whom recovered. For 23 of them, complete-genome sequences were obtained, and all belonged to the Delta variant. "Viral loads of breakthrough Delta variant infection cases were 251 times higher than those of cases infected with old strains detected between March-April 2020".

8) In Barnstable, Massachusetts, Brown et al found that among 469 cases of COVID-19, 74% were fully vaccinated, and that "the vaccinated had on average more virus in their nose than the unvaccinated who were infected."

9) Reporting on a nosocomial hospital outbreak in Finland, Hetemäli et al. observed that "both symptomatic and asymptomatic infections were found among vaccinated health care workers, and secondary transmission

occurred from those with symptomatic infections despite use of personal protective equipment."

10) In a hospital outbreak investigation in Israel, Shitrit et al. observed "high transmissibility of the SARS-CoV-2 Delta variant among twice vaccinated and masked individuals." They added that "this suggests some waning of immunity, albeit still providing protection for individuals without comorbidities."

11) In the UK COVID-19 vaccine Surveillance Report for week #42, it was noted that there is "waning of the N antibody response over time" and "that N antibody levels appear to be lower in individuals who acquire infection following 2 doses of vaccination." The same report (Table 2, page 13), shows the in the older age groups above 30, the double vaccinated persons have greater infection risk than the unvaccinated, presumably because the latter group include more people with stronger natural immunity from prior Covid disease. As a contrast, the vaccinated people had a lower risk of death than the unvaccinated, across all age groups, indicating that vaccines provide more protection against death than against infection.

12) In Israel, Levin et al. "conducted a 6-month longitudinal prospective study involving vaccinated health care workers who were tested monthly for the presence of anti-spike IgG and neutralizing antibodies". They found that "six months after receipt of the second dose of the BNT162b2 vaccine, humoral response was substantially decreased, especially among

men, among persons 65 years of age or older, and among persons with immunosuppression."

13) In a study from New York State, Rosenberg et al. reported that "During May 3–July 25, 2021, the overall age-adjusted vaccine effectiveness against hospitalization in New York was relatively stable 89.5%–95.1%). The overall age-adjusted vaccine effectiveness against infection for all New York adults declined from 91.8% to 75.0%."

14) Suthar et al. noted that "Our data demonstrate a substantial waning of antibody responses and T cell immunity to SARS-CoV-2 and its variants, at 6 months following the second immunization with the BNT162b2 vaccine."

15) In a study from Umeå University in Sweden, Nordström et al. observed that "vaccine effectiveness of BNT162b2 against infection waned progressively from 92% (95% CI, 92-93, P<0·001) at day 15-30 to 47% (95% CI, 39-55, P<0·001) at day 121-180, and from day 211 and onwards no effectiveness could be detected (23%; 95% CI, -2-41, P=0·07)."

16) Yahi et al. have reported that "in the case of the Delta variant, neutralizing antibodies have a decreased affinity for the spike protein, whereas facilitating antibodies display a strikingly increased affinity. Thus, antibody dependent enhancement may be a concern for people receiving vaccines based on the original Wuhan strain spike sequence."

17) Goldberg et al. (BNT162b2 Vaccine in Israel) reported that "immunity against the delta variant of SARS-CoV-2 waned in all age groups a few months after receipt of the second dose of vaccine."

18) Singanayagam et al. examined the transmission and viral load kinetics in vaccinated and unvaccinated individuals with mild delta variant infection in the community. They found that (in 602 community contacts (identified via the UK contract-tracing system) of 471 UK COVID-19 index cases were recruited to the Assessment of Transmission and Contagiousness of COVID-19 in Contacts cohort study and contributed 8145 upper respiratory tract samples from daily sampling for up to 20 days) "vaccination reduces the risk of delta variant infection and accelerates viral clearance. Nonetheless, fully vaccinated individuals with breakthrough infections have peak viral load similar to unvaccinated cases and can efficiently transmit infection in household settings, including to fully vaccinated contacts."

19. Keehner et al. in NEJM, has recently reported on the resurgence of SARS-CoV-2 infection in a highly vaccinated health system workforce. Vaccination with mRNA vaccines began in mid-December 2020; by March, 76% of the workforce had been fully vaccinated, and by July, the percentage had risen to 87%. Infections had decreased dramatically by early February 2021…"coincident with the end of California's mask mandate on June 15 and the rapid dominance of the B.1.617.2 (delta) variant that first emerged in mid-April and accounted for over 95% of UCSDH isolates by the end of July, infections increased

rapidly, including cases among fully vaccinated persons...researchers reported that the "dramatic change in vaccine effectiveness from June to July is likely to be due to both the emergence of the delta variant and waning immunity over time."

20. Juthani et al. sought to describe the impact of vaccination on admission to hospital in patients with confirmed SARS-CoV-2 infection using real-world data collected by the Yale New Haven Health System. "Patients were considered fully vaccinated if the final dose (either second dose of BNT162b2 or mRNA-1273, or first dose of Ad.26.COV2.S) was administered at least 14 days before symptom onset or a positive PCR test for SARS-CoV-2. In total, we identified 969 patients who were admitted to a Yale New Haven Health System hospital with a confirmed positive PCR test for SARS-CoV-2"...Researchers reported "a higher number of patients with severe or critical illness in those who received the BNT162b2 vaccine than in those who received mRNA-1273 or Ad.26.COV2.S..."

These finding are not unknown to public health authorities. In fact, CDC Director Rochelle Walensky have said that the Covid vaccines are working "exceptionally well" against severe illness and death, but "what they can't do anymore is prevent transmission."

What these studies show, are that vaccines are important to reduce severe disease and death, but unable to prevent the disease from spreading and eventually infect most of us. That is, while the vaccines provide individual

benefits to the vaccinee, and especially to older high-risk people, the public benefit of universal vaccination is in grave doubt. As such, Covid vaccines should not be expected to contribute to eliminating the communal spread of the virus or the reaching of herd immunity. This unravels the rationale for vaccine mandates and passports.

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Dr Alexander holds a PhD. He has experience in epidemiology and in the teaching clinical epidemiology, evidence-based medicine, and research methodology. Dr Alexander is a former Assistant Professor at McMaster University in evidence-based medicine and research methods; former COVID Pandemic evidence-synthesis consultant advisor to WHO-PAHO Washington, DC (2020) and former senior advisor to COVID Pandemic policy in Health and Human Services (HHS) Washington, DC (A Secretary), US government; worked/appointed in 2008 at WHO as a regional specialist/epidemiologist in Europe's Regional office Denmark, worked for the government of Canada as an epidemiologist for 12 years, appointed as the Canadian in-field epidemiologist (2002-2004) as part of an international CIDA funded, Health Canada executed project on TB/HIV co-infection and MDR-TB control

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