VE against infection and transmission

Source	*Title including link*	*Vaccine*	*Date*	*Conclusion*
Peer-reviewed published articles				
Embase	Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine (Baden LR et al.)	Moderna	Dec 30, 2020	In discussion: - The data were not sufficient to assess asymptomatic infection, although our results from a preliminary exploratory analysis suggest that some degree of prevention may be afforded after the first dose. Evaluation of the incidence of asymptomatic or subclinical infection and viral shedding after infection are under way, to assess whether vaccination affects infectiousness.
Embase	Safety and efficacy of the ChAdOx1 nCoV-19 vaccine (AZD1222) against SARS-CoV-2: an interim analysis of four randomised controlled trials in Brazil, South Africa, and the UK.	AstraZeneca	Dec 8, 2020	- UK participants provided a weekly self-administered nose and throat swap. - LD/SD recipients are aged 18-55 yr only. - VE for asymptomatic COVID19 or symptoms unknown all UK recipients: 27.3% (95%CI -17.2, 54.9); LD/SD recipients 58.9% (1.0, 82.9); SD/SD recipients 3.8% (95%CI -72.4, 46.3).
Pre-prints				
MedRxiv	Initial real world evidence for lower viral load of individuals who have been vaccinated by BNT162b2	Pfizer (BNT162b2)	Feb 8, 2021	Results/conclusion: - Our results showed a statistically significant difference in the average Ct value in late January but not before between 60+ individuals, who were the first to be vaccinated, and 40-60 individuals that were vaccinated in lower rates by this time point. - Our results predict that positive vaccinated individuals are expected to have a lower viral load that is proportional to 0.72-4.29 cycles. - Our estimate suggests that vaccination reduces the viral load by 1.6x to 20x in individuals who are positive for SARS-CoV-2 Details: - Israeli population - We traced the Ct value distribution of 16,297 positive qPCR tests in our lab between Dec 1st to Jan 31st that came from these two age groups. As we do not have access to the vaccine status of each test, our hypothesis was that if vaccines reduce viral load, we should see a difference in the Ct values between these two age groups in late January but not before - We also used a series nested linear models to explain the Ct values of the positive tests. - We then used demographic data and the daily vaccination rates to estimate the effect of vaccination on viral load reduction

				- 2nd vaccination dose not always given yet
MedRxiv	Decreased SARS-CoV-2 viral load following vaccination	Pfizer (BNT162b2)	Feb 8, 2021	Conclusion: - Our results show that infections occurring 12 days or longer following vaccination have significantly reduced viral loads, potentially affecting viral shedding and contagiousness as well as severity of the disease - The viral load is reduced 4-fold for infections occurring 12-28 days after the first dose of vaccine. Details: - We retrospectively collected and analyzed the RT-qPCR test measurements of the 3 viral genes, E, N and RdRp (Allplex™ 2019-nCoV assay, SeeGene) for positive post-vaccination tests performed at MHS central laboratory between December 23rd 2020 and January 25th 2021 (n=2,897 patients). - Analyzing infection Ct values over time, we find that mean viral load substantially decreased 12 days post-vaccination, coinciding with the known onset of the early vaccine protection. Calculating the mean Ct values for post-vaccination infections identified on each day following vaccination, we found that Ct values of positive samples collected 12-28 days after vaccination were higher than Ct values of positive samples taken during the first 11 days following vaccination. - We next compared the Ct values of these post-vaccination infections with Ct values of positive tests of unvaccinated patients. Comparing post-vaccination positive tests from days 1-11 (n=1,755) with their corresponding demographically-matched control group of the same size, we found no significant difference in the distribution of Ct values for any of the 3 genes. However, comparing the Ct values distribution of post-vaccination infections identified during the early protection period (days 12-28, n=1,142) with its demographically-matched unvaccinated control group of the same size, we identified a significant increase in Ct.
The Lancet	Single dose administration, and the influence of the timing of the booster dose on immunogenicity and efficacy of ChAdOx1 nCoV-19 (AZD1222) vaccine	AstraZeneca	Feb 1, 2021	- UK participants (N=8948) provided a weekly self-administered nose and throat swap. - VE for asymptomatic COVID19 occurring more than 14 days after a booster dose in UK SD/SD recipients 2.0% (95%CI -50.7%, 36.2%); LD/SD recipients 49.3% (95%CI 7.4%, 72.2%) - If there was no impact of a vaccine on asymptomatic infection, it would be expected that an efficacious vaccine would simply convert severe cases to mild cases and mild cases to asymptomatic, with overall PCR positivity unchanged. A measure of overall PCR positivity is appropriate to assess whether there is a reduction in the burden of infection. Analyses presented here show that a single standard dose of the vaccine reduced PCR positivity by 67.6% (95%CI 49.5%, 78.7%), and that, after the second dose, the SD/SD schedule reduced PCR positivity by 49.5% (95%CI 37.7%, 59.0%) overall. These data indicate that ChAdOx1

				nCoV-19, used in the authorised schedules, may have a substantial impact on transmission by reducing the number of infected individuals in the population.
MedRxiv	The effectiveness of the first dose of BNT162b2 vaccine in reducing SARS-CoV-2 infection 13-24 days after immunization: real-world evidence	Pfizer (BNT162b2)	Jan 29, 2021	Conclusion: - We demonstrated an effectiveness of 51% of BNT162b2 vaccine against SARS-CoV-2 infection 13-24 days after immunization with the first dose. Details: - We conducted a retrospective cohort study using data from 2·6 million-member state-mandated health provider in Israel. - SARS-CoV-2 infection case definition was having at least one record of primary positive SARS-CoV-2 PCR test in the MHS databases. - Daily and cumulative infection rates in days 13-24 were compared to days 1-12 after first dose using Kaplan-Meier survival analysis and generalized linear models.
News items				

Zoekopdrachten (alleen humane studies meegenomen):

Embase -> gezocht op

#10	#8 AND #9	0 results
#9	**'chadox1'**:ti,ab OR **'bnt162b2'**:ti,ab OR **'janssen'**:ti,ab OR **'astrazeneca'**:ti,ab OR **'sanofi'**:ti,ab OR **'gsk'**:ti,ab OR **'curevac'**:ti,ab OR **'moderna'**:ti,ab OR **'mrna-1273'**:ti,ab OR **'comirnaty'**	
#8	#7 AND (**2020**:py OR **2021**:py)	54 results
#7	#5 AND #6	
#6	**'disease transmission'**/exp OR **'transmission'**:ti,ab OR **'contagious*'**:ti,ab OR **'asymptom*'**:ti,ab OR **'viral load'** OR **'infecti*'**	
#5	#3 AND #4	
#4	**'coronavac*'**:ti OR **'corona vac*'**:ti OR **'corona-vac*'**:ti OR ((**'corona*'** NEAR/2 **'vaccin*'**):ti)	
#3	#1 AND #2	
#2	**'vaccination'**/exp/mj OR (**'vaccination'**/exp AND **'vaccin*'**:ti) OR **'vaccine'**/exp/mj OR (**'vaccine'**/exp AND **'vaccin*'**:ti) OR **'vaccin*'**:ti	
#1	**'coronavirus*'**:ti OR **'coronavirus disease 2019'**/exp/mj OR **'2019 novel coronavirus'**/exp/mj OR **'covid-19*'**:ti OR **'sars-cov-2*'**:ti OR **'sars-ncov*'**:ti OR **'2019-ncov*'**:ti OR **'hcov-19*'**:ti OR **'coronavac*'**:ti OR **'corona vac*'**:ti OR **'corona-vac*'**:ti OR ((**'corona*'** NEAR/2 **'vaccin*'**):ti) OR (**'corona'**:ti AND (**'patient*'**:ti OR **'disease*'**:ti OR **'ill*'**:ti OR **'virus*'**:ti))	

MedRxive -> "sars-cov-2 and vaccine" & publication date 2021 = 254 results, searched results manually for 'transmission', 'viral load', 'infection' and 'asymptomatic'.

Google -> Used combinations of (SARS-CoV-2 OR COVID 19), ("vaccine efficacy against transmission" OR "vaccine efficacy against infection"), 'viral load', transmission, infection, asymptomatic, ('vaccine effectiveness' OR 'vaccine efficacy') = too many (irrelevant) results