SARS Covid-19
Temadag hygiejne netværk

Tobias Ibfelt

Afdelingslæge/hygiejnelæge, Hvidovre Hospital

COVID-19

- Hvem smittes?
  - Børn/voksne
  - Vaccinerede/uvaccinerede
- Hvor syge er de?
- Vaccine effektivitet?
  - Beskyttelse mod hhv. symptomer, alvorlig sygdom og indlæggelse
  - 3. stik vs. 1. og 2. stik.
- Nye varianter

Ændringer siden seneste opdatering (hele landet) opgjort på svardato

PCR-prøver	Antigenprøver	Bekræftede tilfælde	Dødsfald	Nye indlæggelser
186,100	122,412	4,290	9	69

Samlet antal siden den 27. januar 2020 (hele landet)

PCR-prøver	Antigenprøver	Bekræftede tilfælde	Dødsfald	Indlæggelser
47,973,516	45,199,717	478,927	2,872 (0.6%)	20,160

Hospitalsbelægning: ændring

Ændring i antal indlæggelser

+17

(Intensiv 1 (Respirator 5))

Hospitalsbelægning: status

Indlagte i dag

435

(Intensiv 51 (Respirator 34))

Kommunestatus de seneste 7 dage

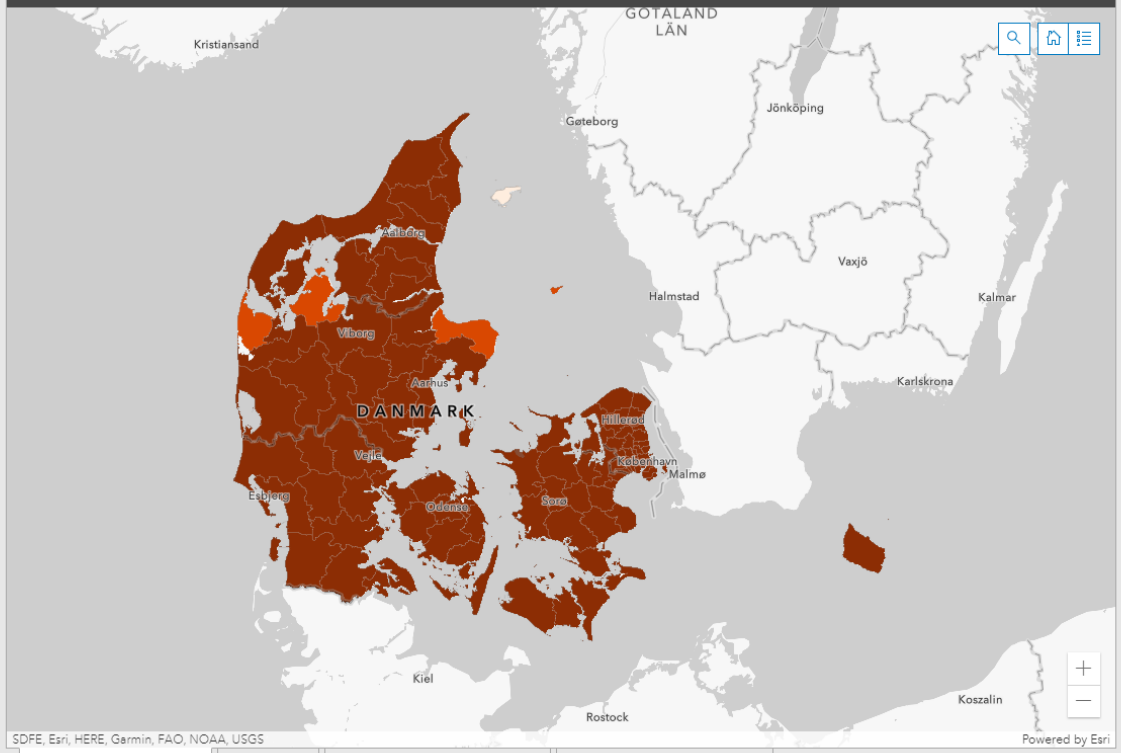
(Incidens pr. 100.000 | Bekræftede tilfælde)

- ◆ 1,069.0 455 Tårnby
- ▲ 961.8 33 Fanø
- ▲ 914.0 486 Hvidovre
- ▲ 902.9 667 Gentofte
- ▲ 893.6 368 Rødovre
- ▲ 822.1 237 Herlev
- ▲ 809.3 334 Furesø
- ▼ 807.7 369 Frederikssund
- ▼ 797.0 392 Ballerup
- ▲ 793.9 5,088 København
- ▲ 780.9 320 Gribskov
- ▲ 756.1 383 Greve
- ▼ 755.0 522 Gladsaxe
- ▼ 751.8 178 Solrød
- ▲ 751.1 266 Brøndby
- ▲ 742.6 467 Helsingør
- ▲ 734.5 420 Rudersdal
- ▲ 733.6 107 Dragør
- ▼ 712.6 411 Lyngby-Taarbæk
- ▲ 698.1 115 Vallensbæk

De seneste 7 dage

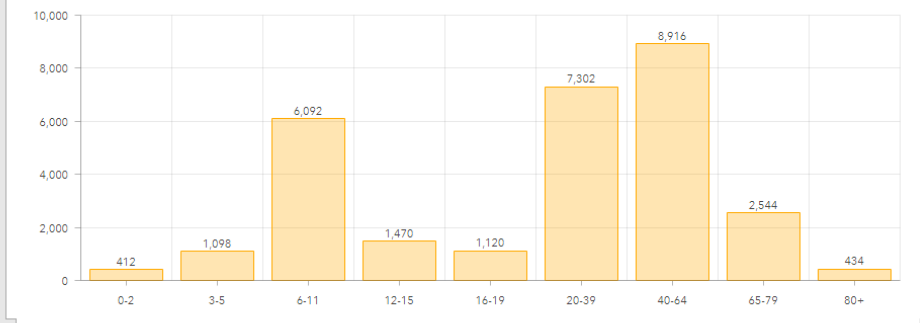
De seneste 7 dage | Siden den 27. januar 2020

Opdateret: Nov 28, 2021



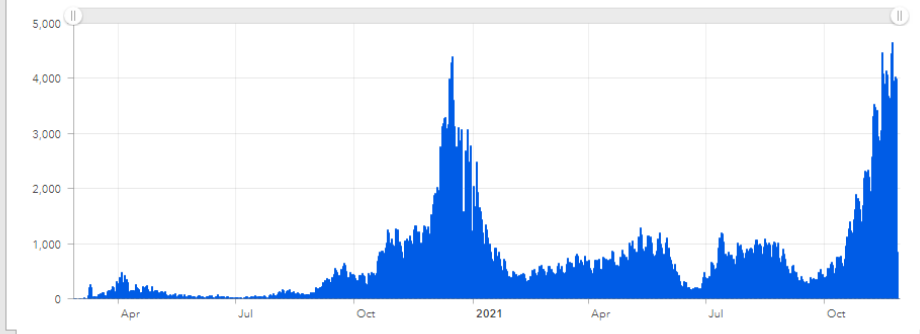
Incidens de seneste 7 dage | Incidens i alt | Positivprocent de seneste 7 dage | PCR-testede de seneste 7 dage

Bekræftede tilfælde pr. aldersgruppe de seneste 7 dage



Tilfælde pr. aldersgruppe de seneste 7 dage

Bekræftede tilfælde opgjort på prøvetagningsdato



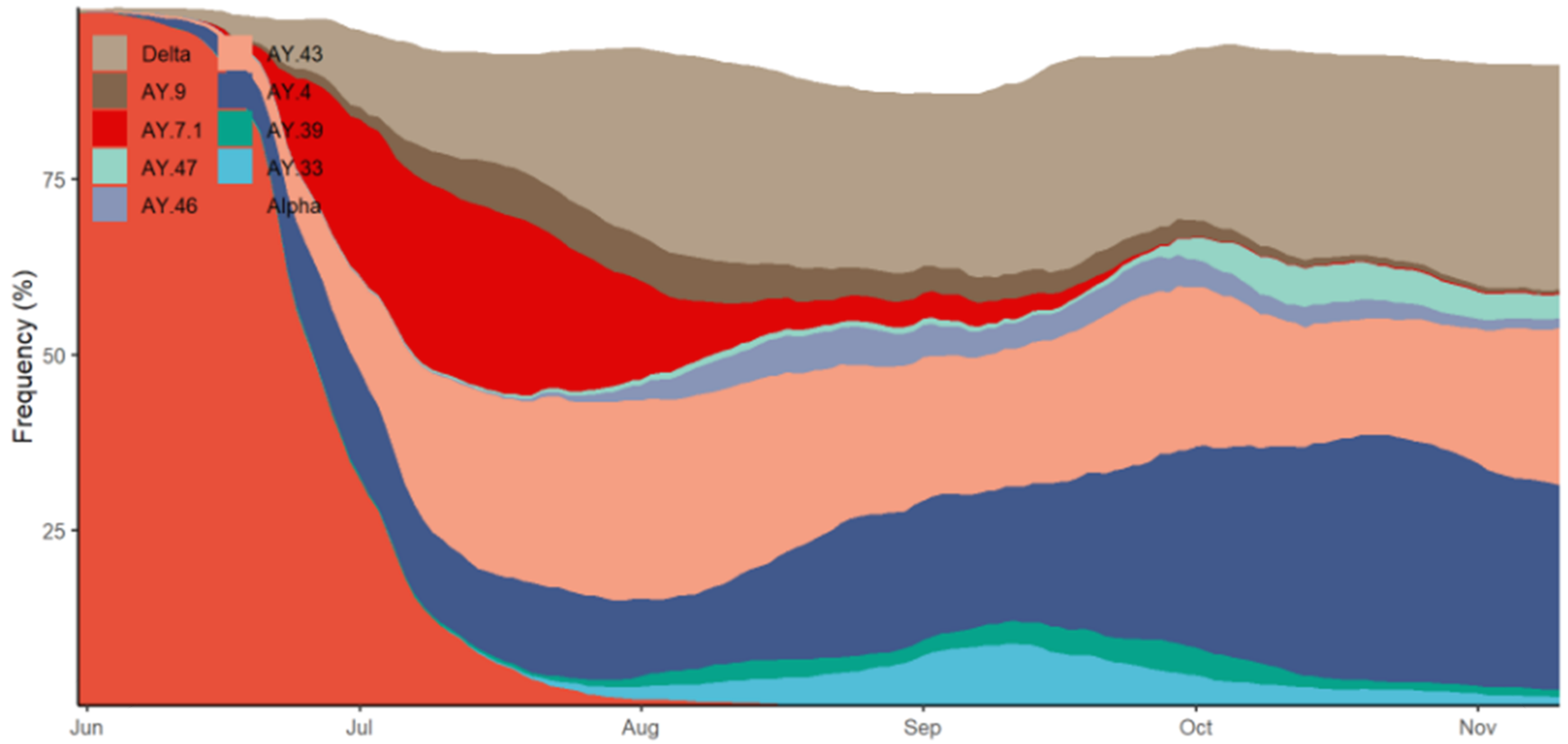
Bekræftede tilfælde pr. dag

https://experience.arcgis.com/experience/aa41b29149f24e20a4007a0c4e13db1d/page/page_0/

Dominating lineages

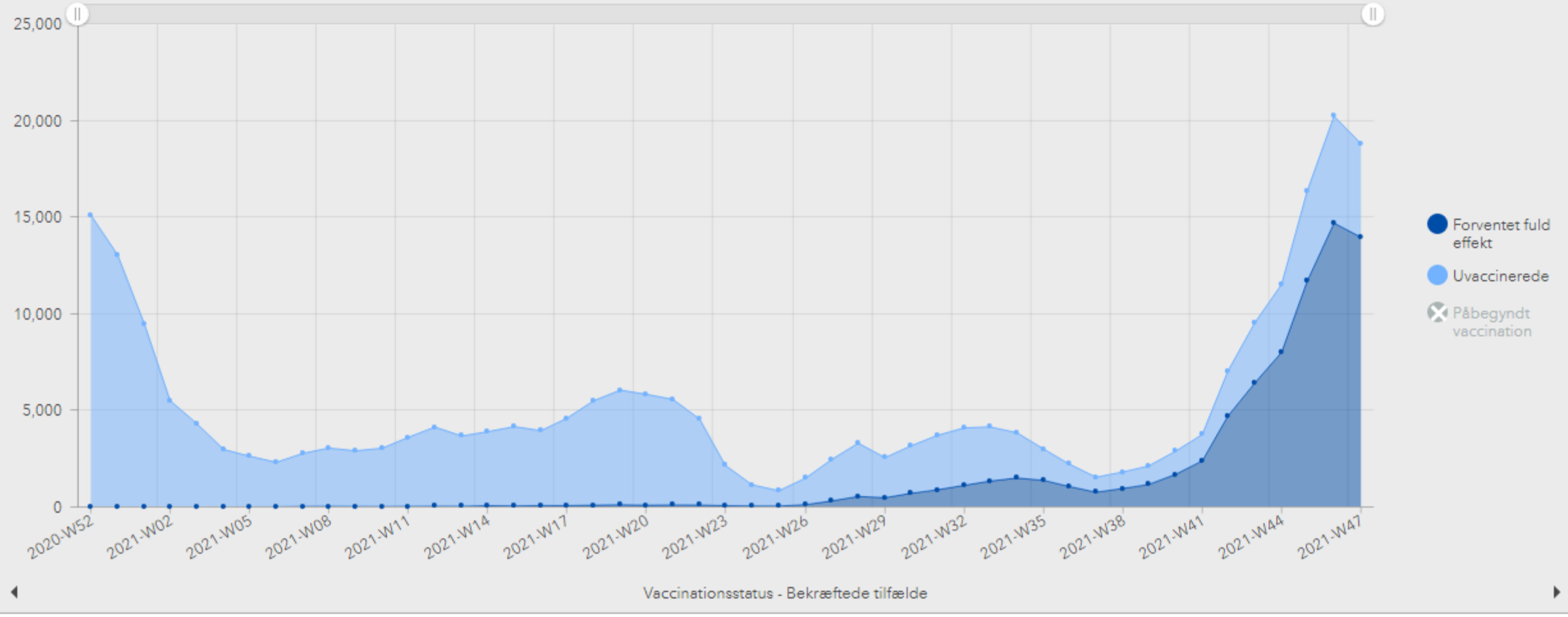
Frequency of the 10 most abundant PANGO lineages across Denmark within the last 6 months. The frequency is calculated as a centered 14-day rolling average. Note that some regions have low case-counts in some periods, which can make small absolute changes look dramatic on a relative scale.

Whole Denmark | Hovedstaden | Midtjylland | Nordjylland | Sjælland | Syddanmark

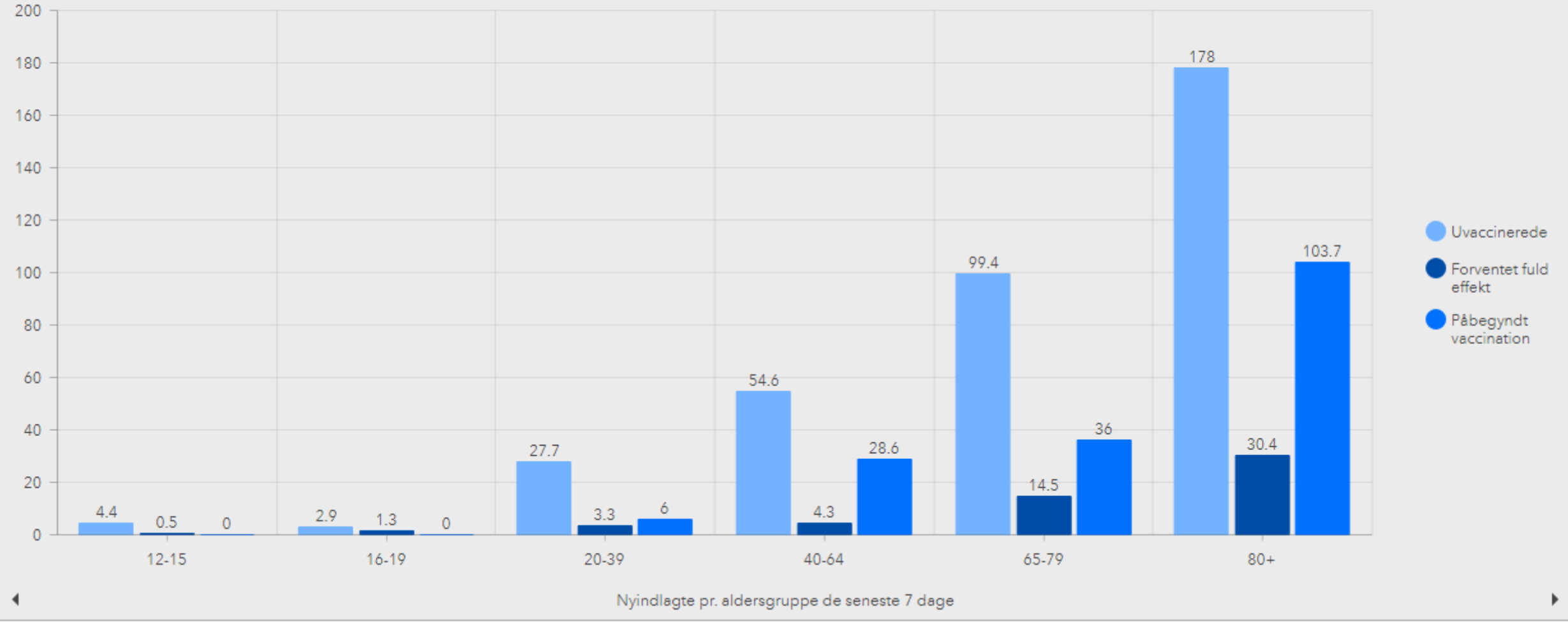


https://covid19genomics.dk/statistics

Vaccinationsstatus - Bekræftede tilfælde



Nyindlagte pr. aldersgruppe de seneste 7 dage (pr. 100.000)



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Vacciner

RESEARCH SUMMARY

Effectiveness of Covid-19 Vaccines against the B.1.617.2 (Delta) Variant

Lopez Bernal J et al. DOI: 10.1056/NEJMoa2108891

CLINICAL PROBLEM

The B.1.617.2 (delta) variant of SARS-CoV-2 became the dominant variant in India as of mid-April 2021, amid a Covid-19 surge there, and has spread rapidly around the world. The effectiveness of available vaccines in preventing symptomatic disease with this variant is unknown.

CLINICAL TRIAL

Design: A test-negative case–control study was conducted to estimate the effectiveness of the BNT162b2 (Pfizer–BioNTech) and ChAdOx1 nCoV-19 (AstraZeneca) vaccines against symptomatic disease from the delta variant of SARS-CoV-2.

Methods: Researchers examined data from symptomatic persons 16 years of age or older who underwent Covid-19 testing in England between October 2020 and May 2021. To estimate vaccine effectiveness, they assessed vaccination status in 4272 persons who tested positive for the delta variant and in 14,837 who tested positive for the B.1.1.7 (alpha) variant (the predominant strain in England at the time), as compared with test-negative controls.

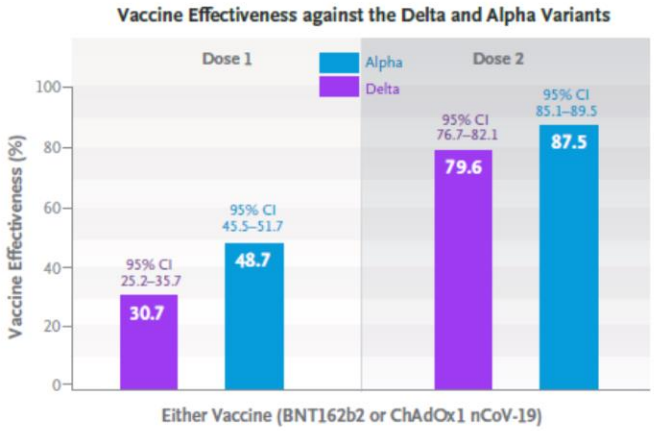
RESULTS

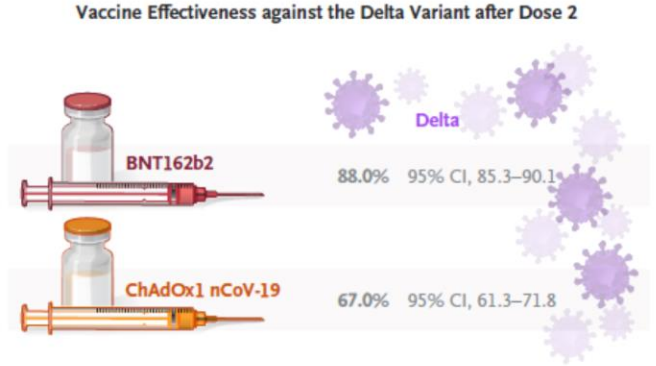
Effectiveness: After one dose of either vaccine, the estimated effectiveness was lower against delta than against alpha. After two doses, however, vaccine effectiveness was high, with only modest differences between the variants. The effectiveness of two doses against delta was lower with ChAdOx1 nCoV-19 than with BNT162b2.

LIMITATIONS AND REMAINING QUESTIONS

- How well do Covid-19 vaccines protect against severe disease, including hospitalization and death, from infection with the delta variant?

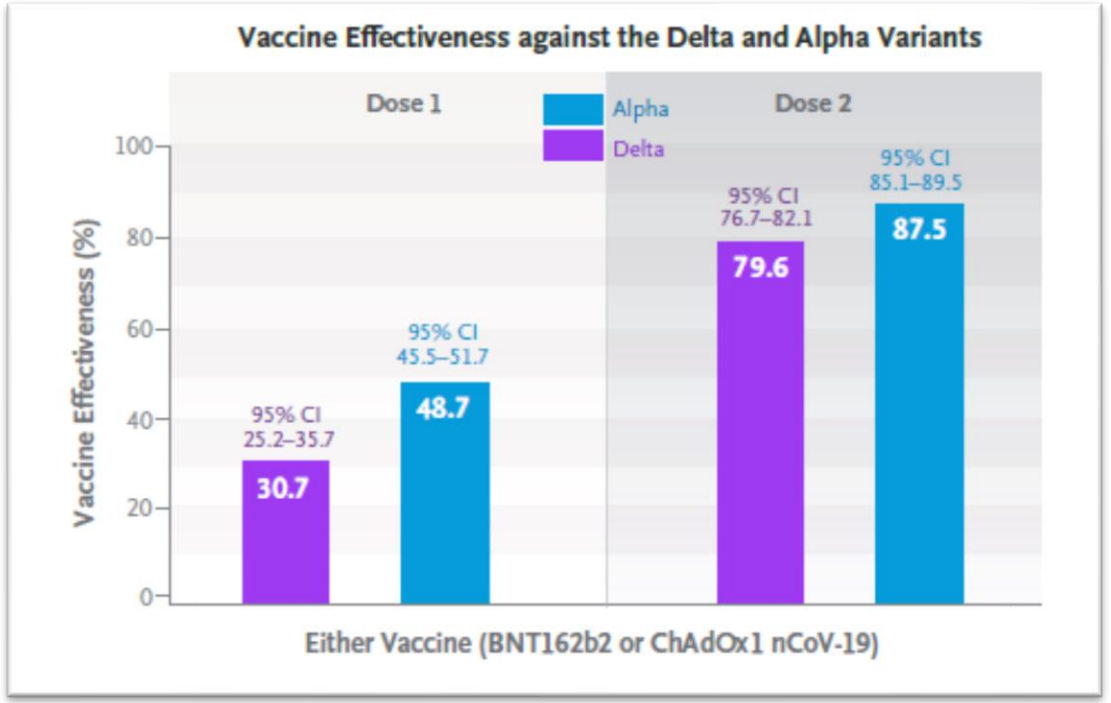
Links: Full Article | NEJM Quick Take | Editorial

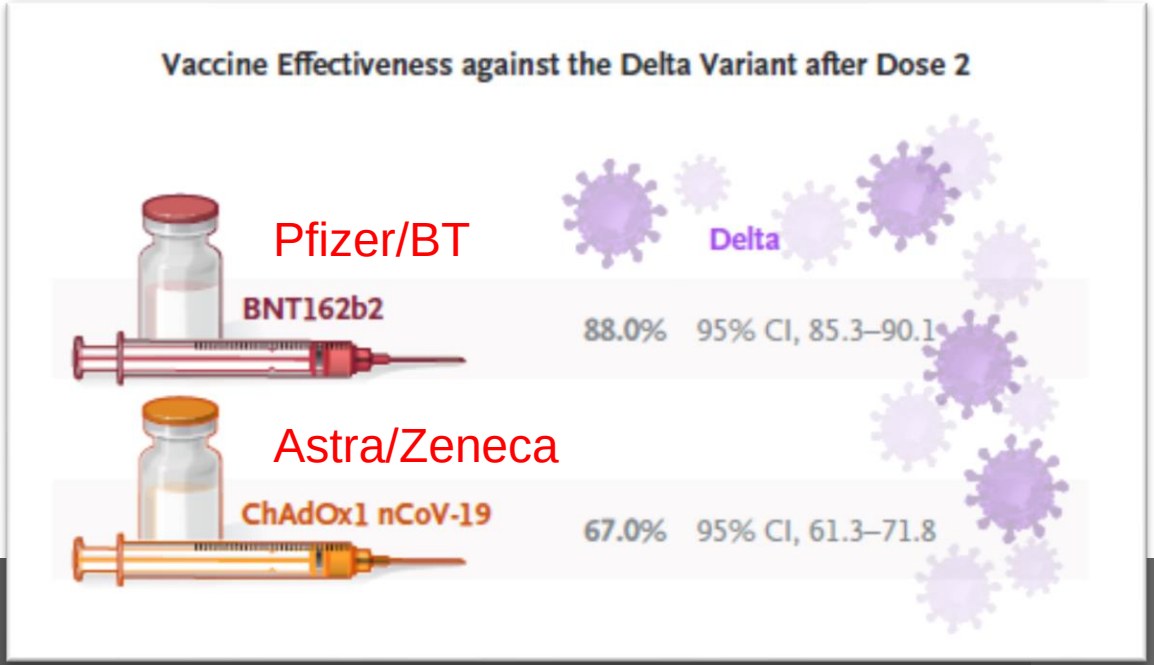




CONCLUSIONS

Two doses of the BNT162b2 or ChAdOx1 nCoV-19 vaccine were highly effective against the delta variant of SARS-CoV-2, although slightly less so than against the alpha variant.





Effectiveness of mRNA BNT162b2 COVID-19 vaccine up to 6 months in a large integrated health system in the USA: a retrospective cohort study

Sara Y Tartof, Jeff M Slezak, Heidi Fischer, Vennis Hong, Bradley K Ackerson, Omesh N Ranasinghe, Timothy B Frankland, Oluwaseye A Ogun, Joann M Zamparo, Sharon Gray, Srinivas R Valluri, Kaije Pan, Frederick J Angulo, Luis Jodar, John M McLaughlin

Lancet 2021; 398: 1407–16

Published Online
October 4, 2021
https://doi.org/10.1016/S0140-6736(21)02183-8

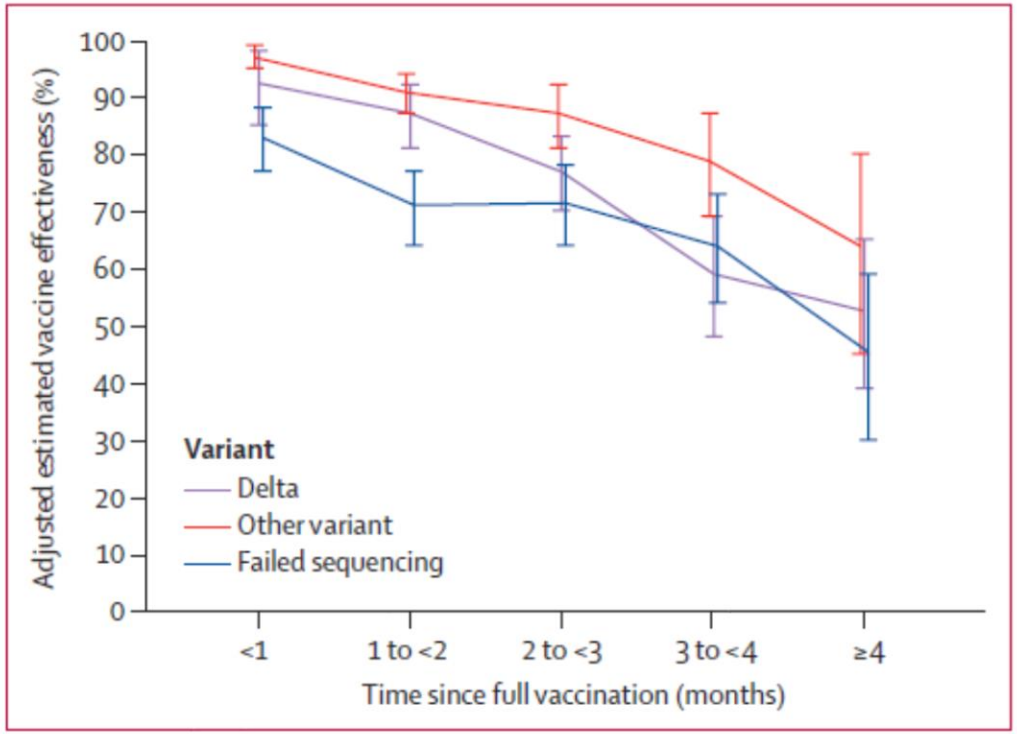


Figure 3: **Adjusted estimated vaccine effectiveness against SARS-CoV-2 infection by variant**
Data are shown for number of months since being fully vaccinated with BNT162b2 with 95% CIs.

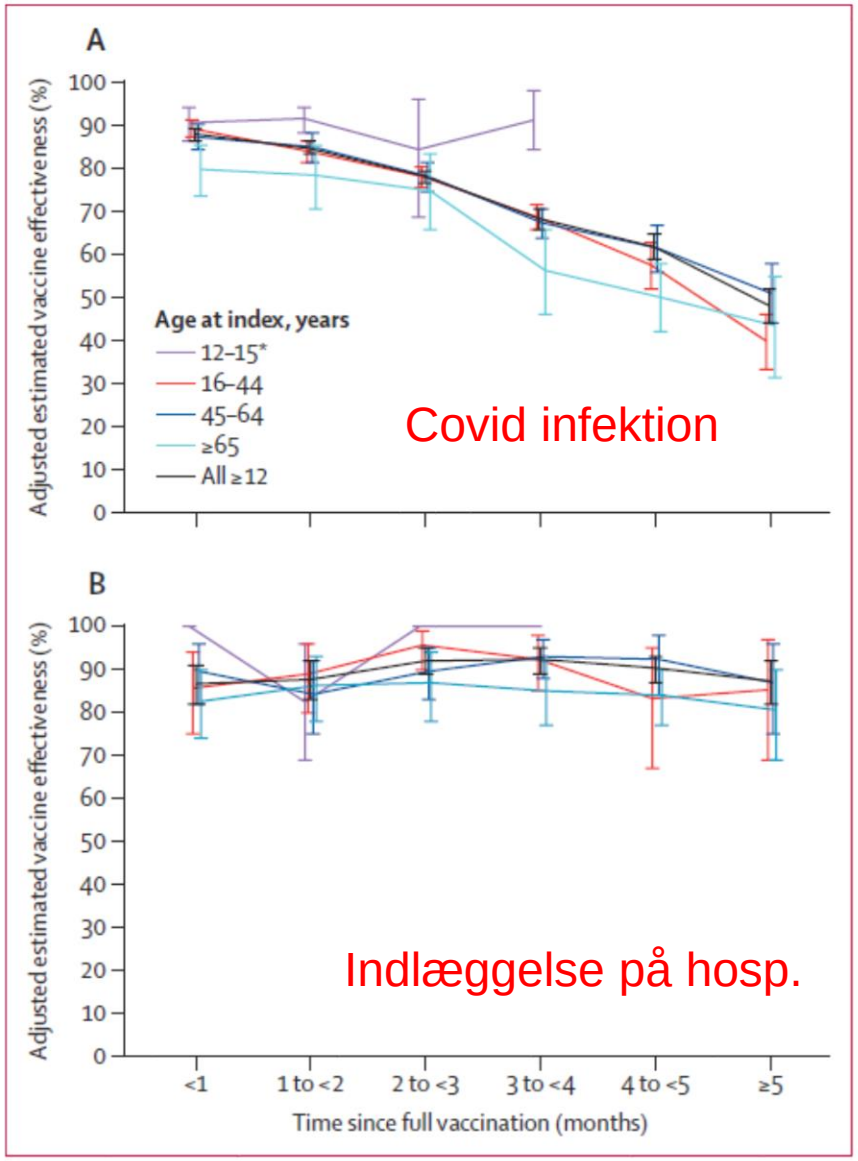
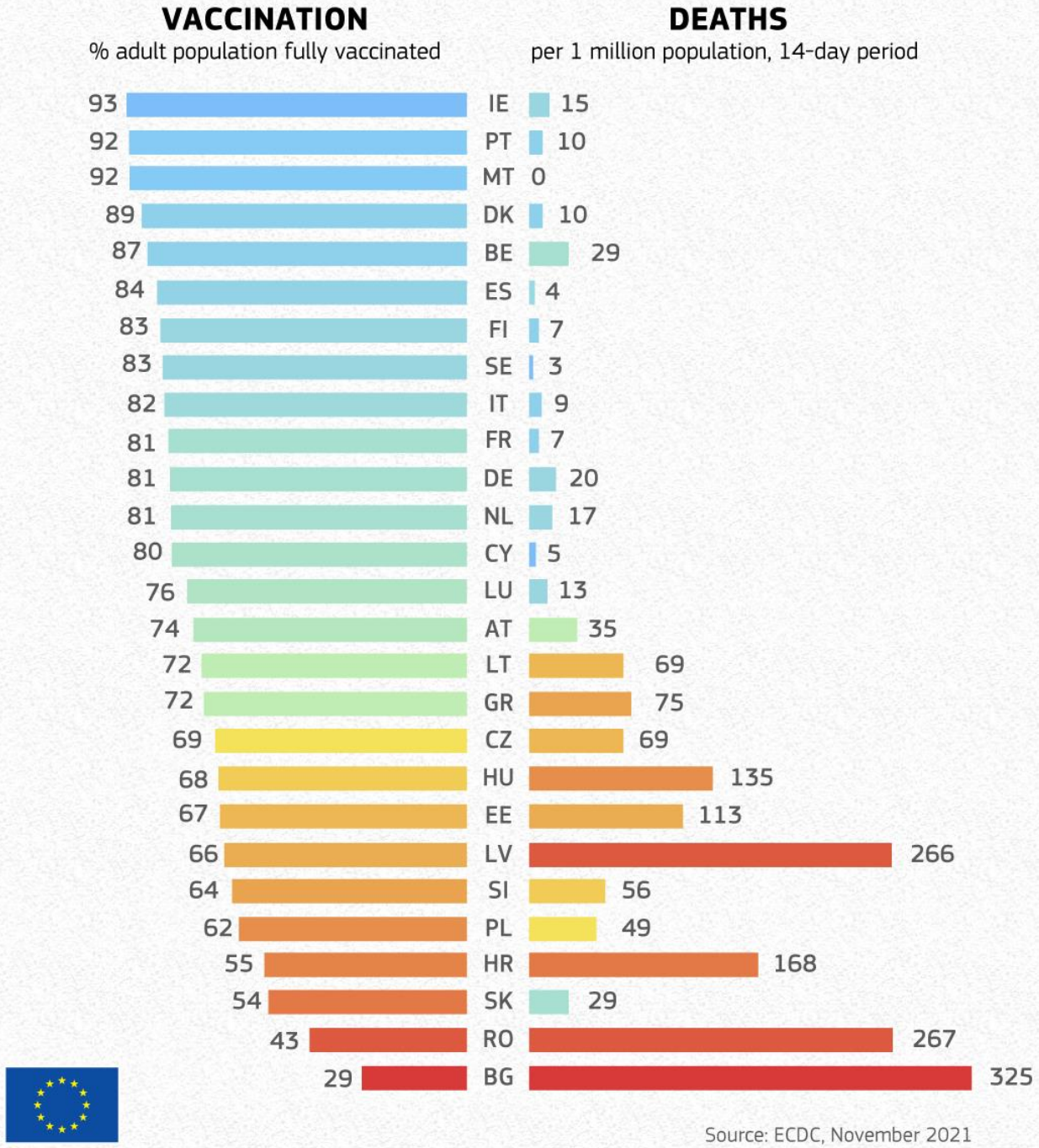


Figure 2: **Adjusted estimated vaccine effectiveness against SARS-CoV-2 infection and hospital admissions**
Vaccine effectiveness (95% CI) against SARS-CoV-2 infection (A) and COVID-19 hospital admission (B) by age group and number of months since being fully vaccinated with BNT162b2. *BNT162b2 authorised for those aged 12–15 years in May, 2021, limiting follow-up time for this age group.


VACCINATION
% adult population fully vaccinated
DEATHS
per 1 million population, 14-day period
93 IE 15
92 PT 10
92 MT 0
89 DK 10
87 BE 29
84 ES 4
83 FI 7
83 SE 3
82 IT 9
81 FR 7
81 DE 20
81 NL 17
80 CY 5
76 LU 13
74 AT 35
72 LT 69
72 GR 75
69 CZ 69
68 HU 135
67 EE 113
66 LV 266
64 SI 56
62 PL 49
55 HR 168
54 SK 29
43 RO 267
29 BG 325
Source: ECDC, November 2021

Naturlig immunitet vs vaccine-immunitet

Comments (513)

Comparing SARS-CoV-2 natural immunity to vaccine-induced immunity: reinfections versus breakthrough infections

Sivan Gazit, Roei Shlezinger, Galit Perez, Roni Lotan, Asaf Peretz, Amir Ben-Tov, Dani Cohen, Khitam Muhsen, Gabriel Chodick, Tal Patalon

doi: https://doi.org/10.1101/2021.08.24.21262415

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should *not* be used to guide clinical practice.

Abstract | Full Text | Info/History | Metrics | Preview PDF

Abstract

Background Reports of waning vaccine-induced immunity against COVID-19 have begun to surface. With that, the comparable long-term protection conferred by previous infection with SARS-CoV-2 remains unclear.

Methods We conducted a retrospective observational study comparing three groups: (1)SARS-CoV-2-naïve individuals who received a two-dose regimen of the BioNTech/Pfizer mRNA BNT162b2 vaccine, (2)previously infected individuals who have not been vaccinated, and (3)previously infected *and* single dose vaccinated individuals. Three multivariate logistic regression models were applied. In all models we evaluated four outcomes: SARS-CoV-2 infection, symptomatic disease, COVID-19-related hospitalization and death. The follow-up period of June 1 to August 14, 2021, when the Delta variant was dominant in Israel.

Results SARS-CoV-2-naïve vaccinees had a 13.06-fold (95% CI, 8.08 to 21.11) increased risk for breakthrough infection with the Delta variant compared to those previously infected, when the first event (infection or vaccination) occurred during January and February of 2021. The increased risk was significant ($P<0.001$) for symptomatic disease as well. When allowing the infection to occur at any time before vaccination (from March 2020 to February 2021), evidence of waning natural immunity was demonstrated, though SARS-CoV-2 naïve vaccinees had a 5.96-fold (95% CI, 4.85 to 7.33) increased risk for breakthrough infection and a 7.13-fold (95% CI, 5.51 to 9.21) increased risk for symptomatic disease. SARS-CoV-2-naïve vaccinees were also at a greater risk for COVID-19-related-hospitalizations compared to those that were previously infected.

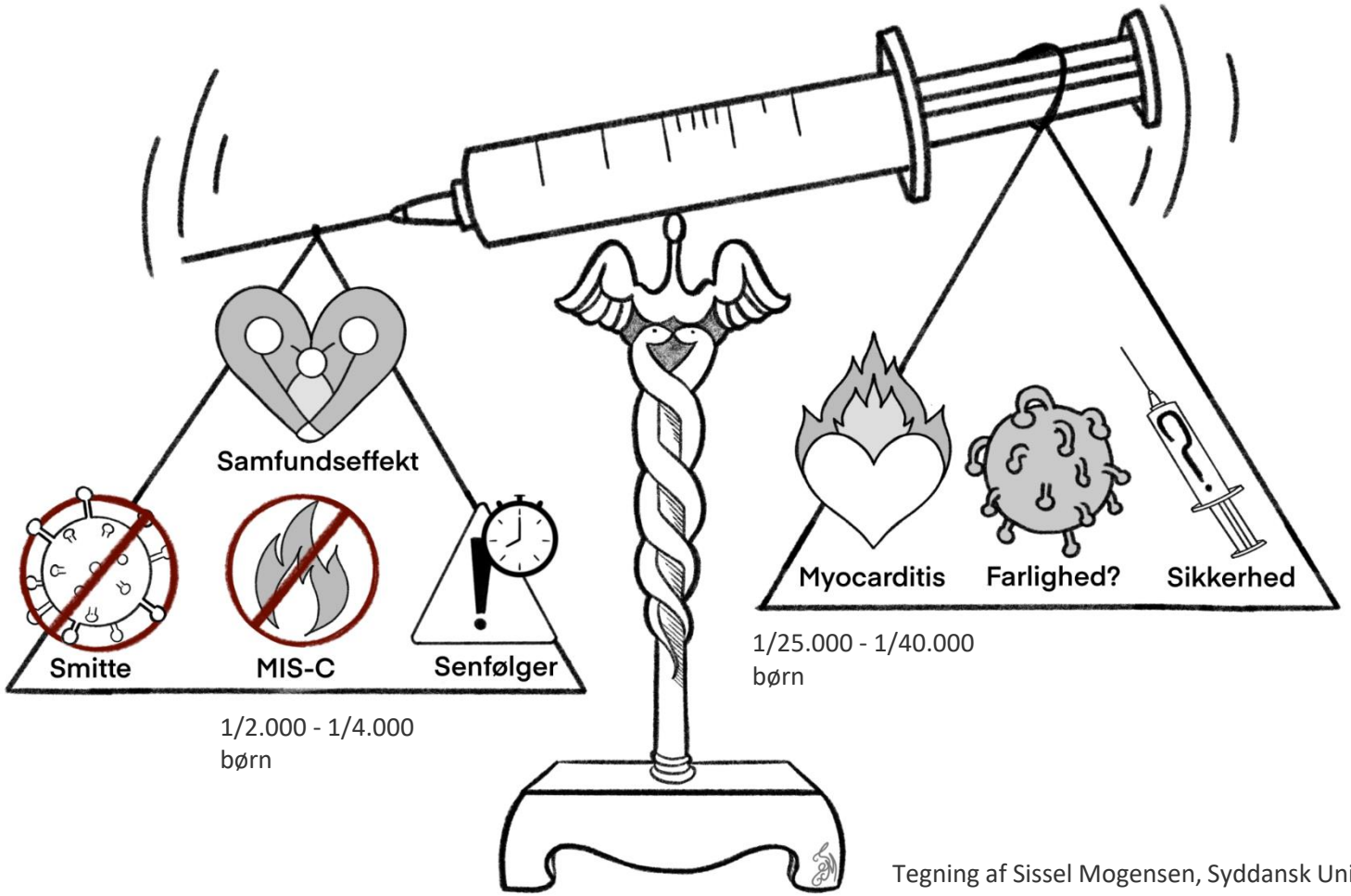
Conclusions This study demonstrated that natural immunity confers longer lasting and stronger protection against infection, symptomatic disease and hospitalization caused by the Delta variant of SARS-CoV-2, compared to the BNT162b2 two-dose vaccine-induced immunity. Individuals who were both previously infected with SARS-CoV-2 and given a single dose of the vaccine gained additional protection against the Delta variant.

https://www.medrxiv.org/content/10.1101/2021.08.24.21262415v1?fbclid=IwAR0CubkNGyhiyNllKuu8CfFFIBLsXocPKE3q993oMqrrMreXYh8YN0OZu8E

Vaccine til børn 5-12 år?

- USA FDA godkendelse til 5-12 år
  - Dosis 10 ug, 3 uger imellem 1. og 2. dosis (voksendosis 30 ug)
  - 1500 børn fik vaccinen, 750 fik placebo
  - Follow-up periode 2,5 måneder
  - Lige så godt antistof respons som hos 16-25 årige
  - Meget få tilfælde af corona infektion i både vaccine og placebo gruppen (sommer 2021)
    - 16 tilfælde i placebo gruppen, 3 i vaccinegruppen
  - Ingen alvorlige bivirkninger, mange fik dog ondt og rødme ved indstikssted samt sygdomsfølelse efter 2. stik

Afvejning ved vaccinen til børn



Tegning af Sissel Mogensen, Syddansk Universitet

https://videnskab.dk/forskerzonen/krop-sundhed/covid-19-vaccination-af-5-11-aarige-en-laegemiddelforskers-guide-til-et-reelt-dilemma

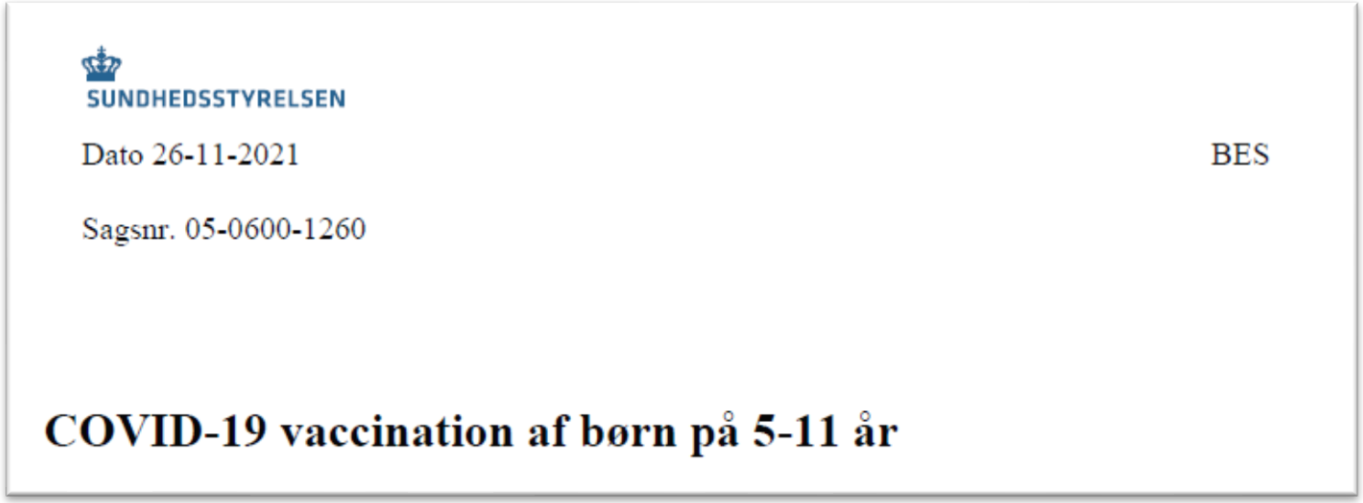
Vaccine til børn

For	Factors to consider in relation to COVID-19 vaccination of children	Against
Protection against COVID-19	 Individual	COVID-19 is generally mild in children
Protection against severe COVID-19		Risk of adverse effects
Impact of new variants uncertain		Long-term safety unknown
Protection against PIMS-TS		Efficacy against PIMS-TS unknown
Protection against long COVID		Efficacy against long COVID unknown
Contribution to reducing community transmission	 Community	Impact on transmission uncertain
Avoidance of isolation, quarantine, school closures and other indirect harms of lockdowns		Large proportion already immune
		Limited vaccine supply
		Impact on routine immunisations
Faster return to pre-pandemic activity and economic stability		Cost

https://adc.bmj.com/content/early/2021/11/01/archdischild-2021-323040?fbclid=IwAR3UZ1z1CugeiTXhDx1wvlyhTgntdObWUwWz19kYQ56MfWNIoF3x4hU0e2w

SST notat

- https://www.sst.dk/da/Udgivelser/2021/COVID-19-vaccination-af-boern-paa-5-11-aar



SUNDHEDSSTYRELSEN

Dato 26-11-2021 BES

Sagsnr. 05-0600-1260

COVID-19 vaccination af børn på 5-11 år

Debat – DR Deadline 26.11, Niels Høiby og C. Stabell-Benn

- https://www.dr.dk/drtv/se/deadline_-skal-vores-boern-vaccineres_286040?fbclid=IwAR1EPxIAK_pzeuwcY7uyJKY6KFFCONt-jw36U8ywQH3UgP0qZUfQRC1HYbo

3. dosis?

Letters | September 2021

Safety and Immunogenicity of a Third Dose of SARS-CoV-2 Vaccine in Solid Organ Transplant Recipients: A Case Series FREE

William A. Werbel, MD, Brian J. Boyarsky, MD, PhD, Michael T. Ou, BS, ... View all authors +

Author, Article and Disclosure Information

We repeated antibody testing a median of 14 days (IQR, 14 to 17 days) after the third dose of vaccine. Of the 6 patients with low-positive antibody titers before the third dose, all had high-positive antibody titers after the third dose. In contrast, of the 24 patients with negative antibody titers before the third dose, only 6 (25%) had high-positive antibody titers after the third dose. Two (8%) had low-positive antibody titers, and 16 (67%) remained negative.

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Protection of BNT162b2 Vaccine Booster against Covid-19 in Israel

Yinon M. Bar-On, M.Sc., Yair Goldberg, Ph.D., Micha Mandel, Ph.D., Omri Bodenheimer, M.Sc., Laurence Freedman, Ph.D., Nir Kalkstein, B.Sc., Barak Mizrahi, M.Sc., Sharon Alroy-Preis, M.D., Nachman Ash, M.D.,

RESULTS

At least 12 days after the booster dose, the rate of confirmed infection was lower in the booster group than in the nonbooster group by a factor of 11.3 (95% confidence interval [CI], 10.4 to 12.3); the rate of severe illness was lower by a factor of 19.5 (95% CI, 12.9 to 29.5). In a secondary analysis, the rate of confirmed infection at least 12 days after vaccination was lower than the rate after 4 to 6 days by a factor of 5.4 (95% CI, 4.8 to 6.1).

CONCLUSIONS

In this study involving participants who were 60 years of age or older and had received two doses of the BNT162b2 vaccine at least 5 months earlier, we found that the rates of confirmed Covid-19 and severe illness were substantially lower among those who received a booster (third) dose of the BNT162b2 vaccine.

NEWS

Check for updates

The BMJ

Cite this as: BMJ 2021;373:n1659

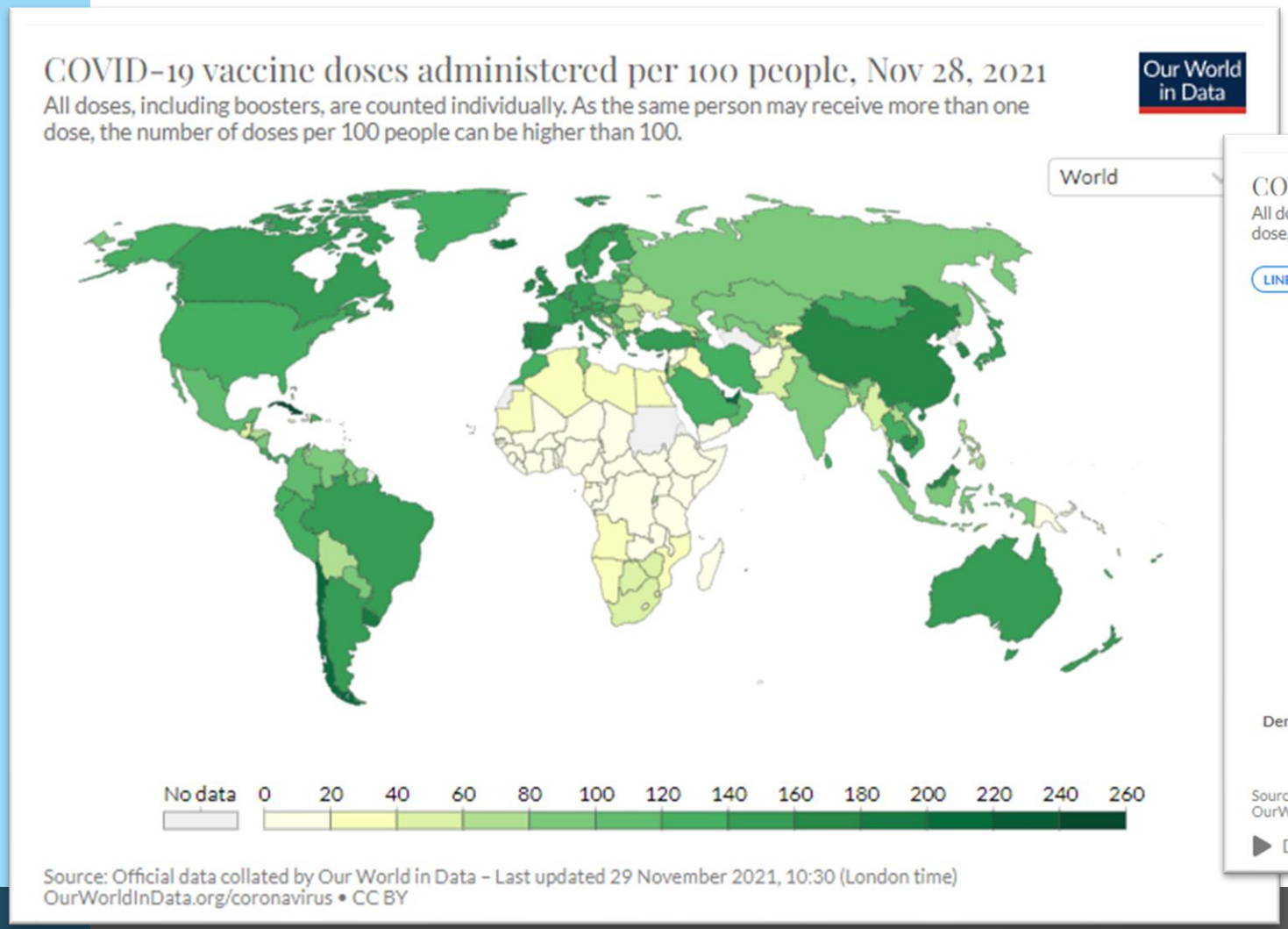
http://dx.doi.org/10.1136/bmj.n1659

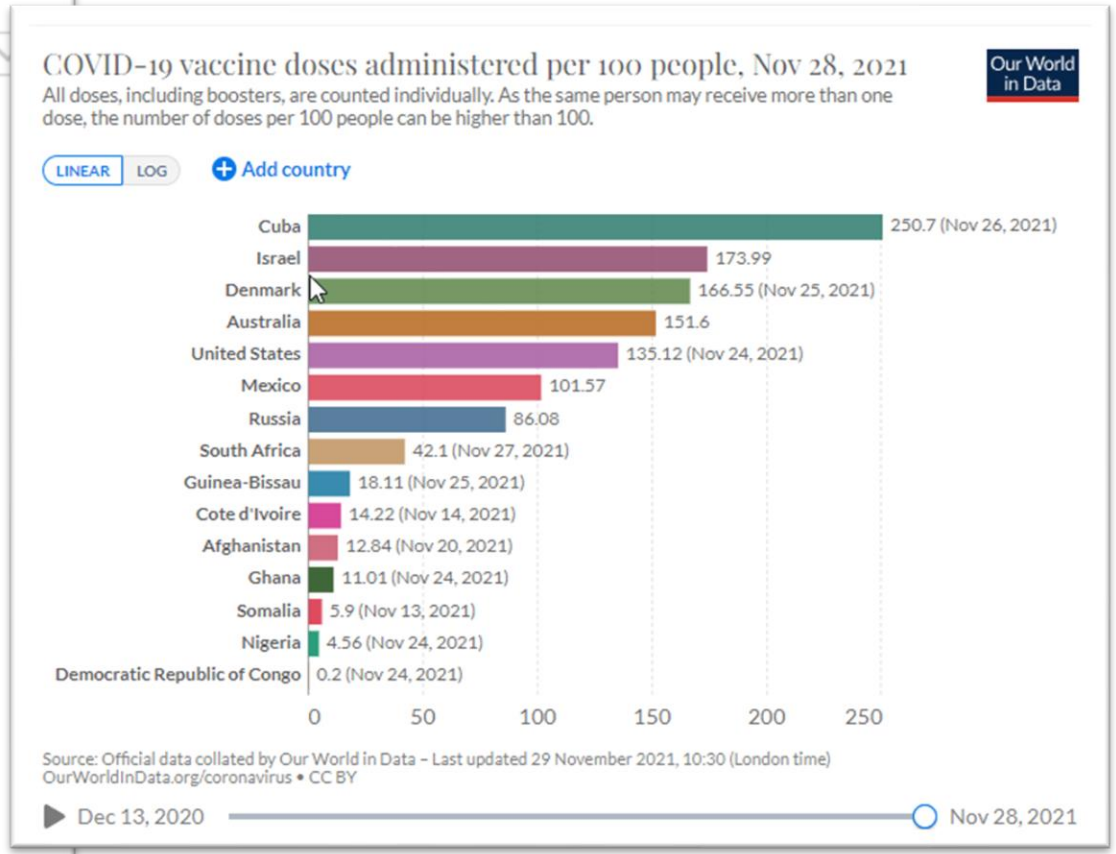
Published: 29 June 2021

Covid-19: Third vaccine dose boosts immune response but may not be needed, say researchers

Elisabeth Mahase

Men… Kan vaccinerne bruges bedre andre steder?





Behandling

- Antiviral medicin
  - Remdesivir i.v.
  - Peroral behandling – på vej
- Antistof behandling
  - Tidl. serum fra folk med overstået infektion – ingen effekt
  - Monoklonale antistoffer mod spike proteinet – syntetisk fremstillet – bedre effekt
  - Gives til uvaccinerede inficerede i risikogruppe uden målbare antistoffer i blodet

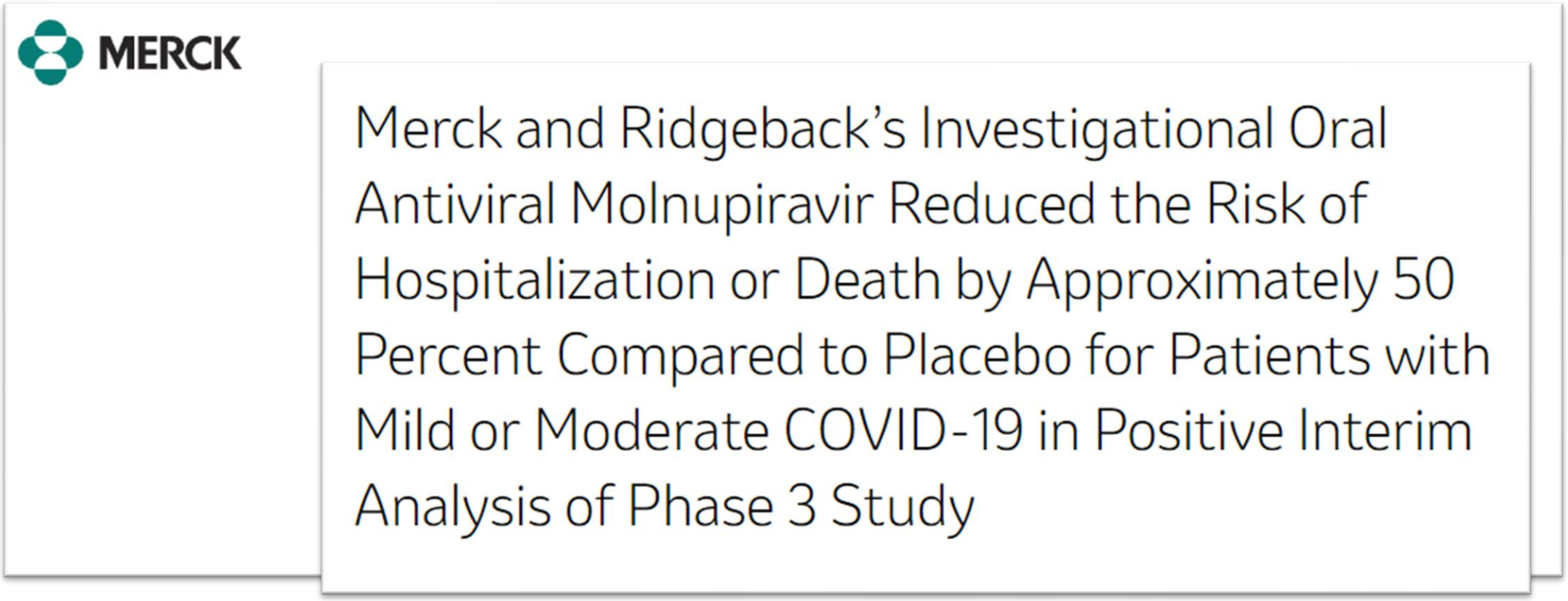
Remdesivir

Efficacy – Remdesivir has been evaluated for both severe and non-severe COVID-19 in hospitalized patients:

- **Severe COVID-19** – Overall, data from randomized trials do not demonstrate a clear, major clinical benefit with remdesivir among hospitalized patients [39,40,51,86-89]. In a meta-analysis of four trials that included over 7000 patients with COVID-19, remdesivir did not reduce mortality (OR 0.9, 95% CI 0.7-1.12) or need for mechanical ventilation (OR 0.90, 95% CI 0.76-1.03) compared with standard of care or placebo [47,51]. Meta-analyses, however, have pooled patients requiring various levels of oxygen support, and some data suggest that there may be a benefit (faster recovery and possible mortality reduction) for a select subgroup of patients, specifically those with severe disease who only require low-flow supplemental oxygen:

- **Nonsevere COVID-19** – Among hospitalized patients with nonsevere disease, remdesivir may have a modest benefit, but the clinical significance of the benefit is uncertain. In an open-label randomized trial, 584 patients with moderate severity COVID-19 (pulmonary infiltrates on imaging but oxygen saturation >94 percent on room air) were assigned to receive remdesivir for up to 5 days, remdesivir for up to 10 days, or standard of care [41]. By day 11, the five-day remdesivir group had better clinical status according to a seven-point scale compared with standard of care (odds ratio 1.65, 95% CI 1.09 to 2.48). There was not a statistically significant difference at day 11 in clinical status between the 10-day remdesivir group and the standard of care group. Although discharge rates by day 14 were higher with remdesivir (76 percent in each of the remdesivir groups versus 67 percent with standard of care), these differences were not statistically significant. Interpretation of this trial is limited by the open-label design and an imbalance in co-therapies.

Peroral Covid antiviral beh.



https://www.merck.com/news/merck-and-ridgebacks-molnupiravir-an-oral-covid-19-antiviral-medicine-receives-first-authorization-in-the-world/

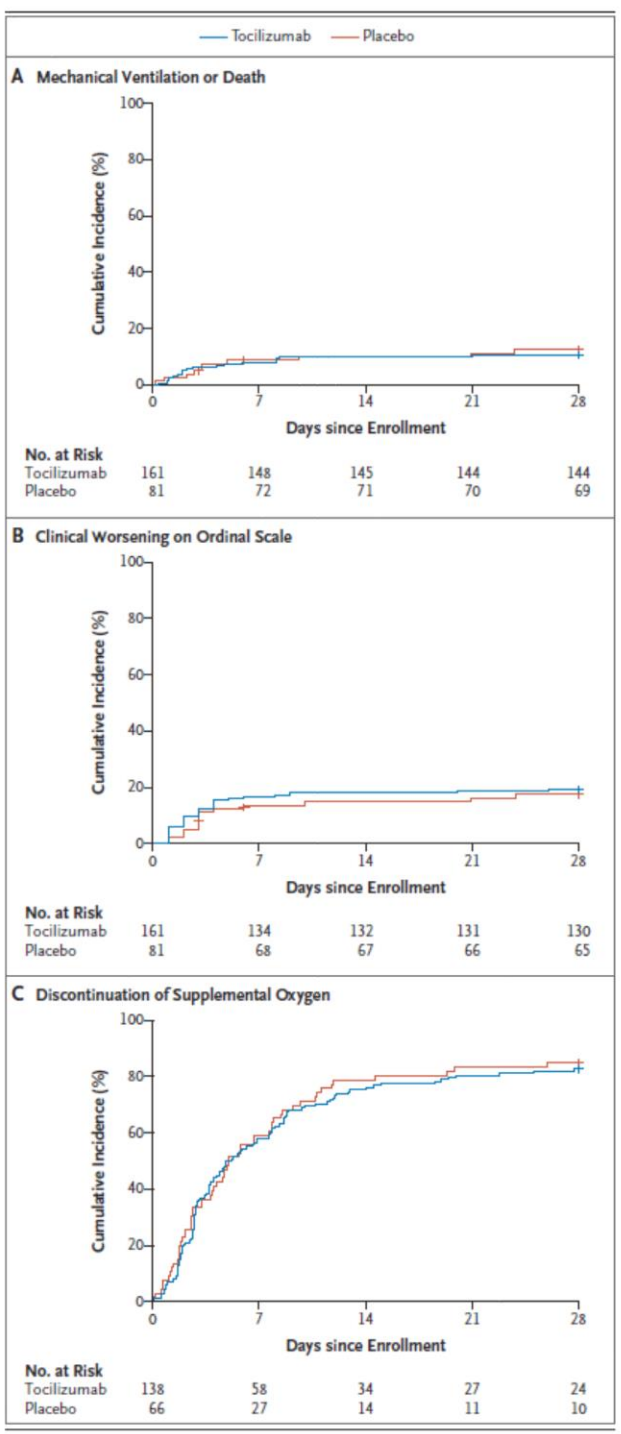
Monoklonale antistoffer

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

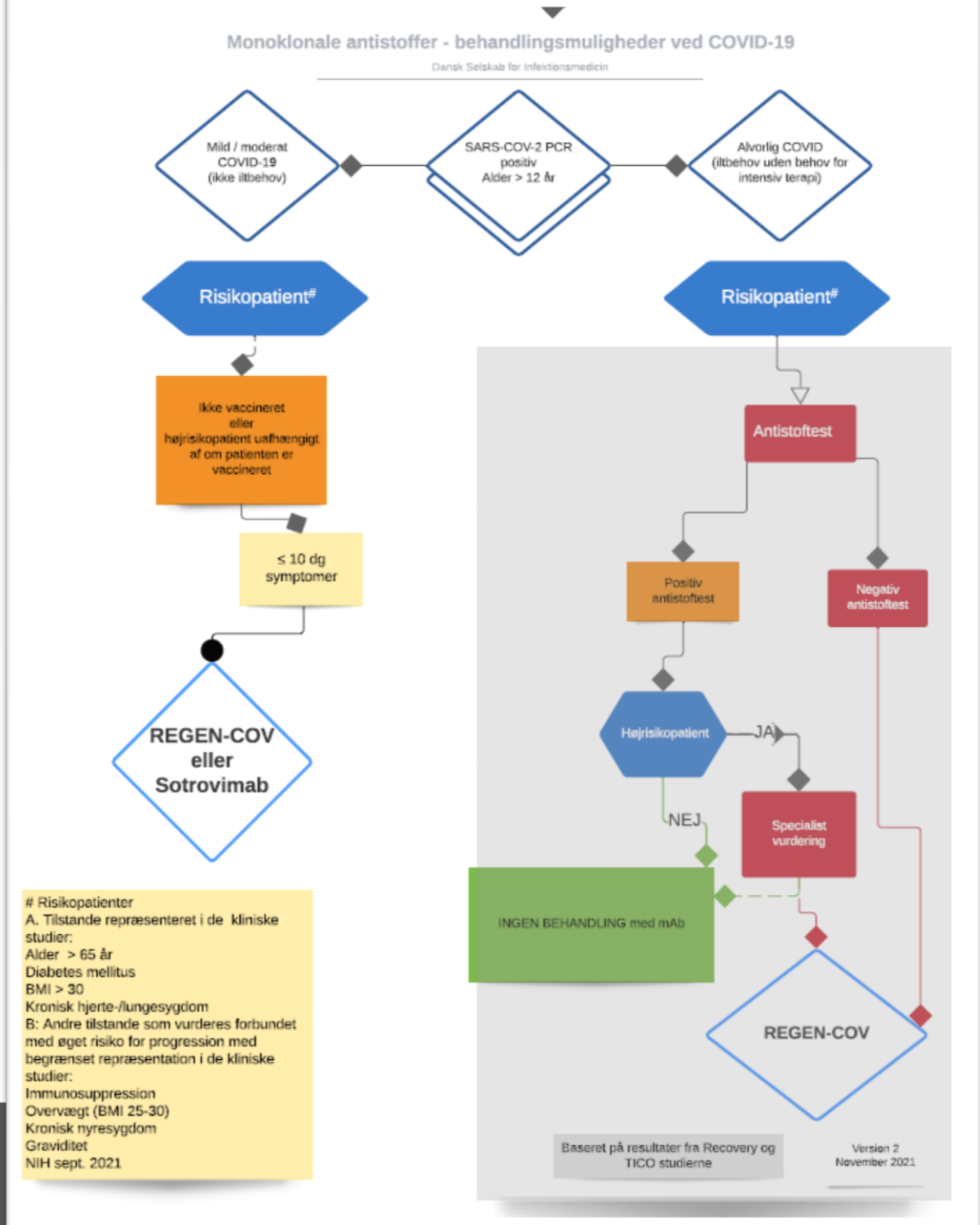
Efficacy of Tocilizumab in Patients Hospitalized with Covid-19

J.H. Stone, M.J. Frigault, N.J. Serling-Boyd, A.D. Fernandes, L. Harvey, A.S. Foulkes, N.K. Horick, B.C. Healy, R. Shah, A.M. Bensaci, A.E. Woolley, S. Nikiforow, N. Lin, M. Sagar, H. Schrager, D.S. Huckins, M. Axelrod, M.D. Pincus, J. Fleisher, C.A. Sacks, M. Dougan, C.M. North, Y.-D. Halvorsen, T.K. Thurber, Z. Dagher, A. Scherer, R.S. Wallwork, A.Y. Kim, S. Schoenfeld, P. Sen, T.G. Neilan, C.A. Perugino, S.H. Unizony, D.S. Collier, M.A. Matza, J.M. Yinh, K.A. Bowman, E. Meyerowitz, A. Zafar, Z.D. Drobni, M.B. Bolster, M. Kohler, K.M. D'Silva, J. Dau, M.M. Lockwood, C. Cubbison, B.N. Weber, and M.K. Mansour, for the BACC Bay Tocilizumab Trial Investigators*



Change from baseline to day 22 vs placebo, % (95% CI)	9.4 (-2.6 to 21.5)	1.0 (-11.2 to 13.2)
P value	.15	.90

Abbreviations: COVID-19, coronavirus disease 2019; SARS-CoV-2, severe acute respiratory syndrome


Monoklonale antistoffer - behandlingsmuligheder ved COVID-19
Dansk Selskab for Infektionsmedicin
Mild / moderat COVID-19 (ikke iltbehov)
SARS-COV-2 PCR positiv Alder > 12 år
Alvorlig COVID (iltbehov uden behov for intensiv terapi)
Risikopatient#
Ikke vaccineret eller højrisikopatient uafhængigt af om patienten er vaccineret
≤ 10 dg symptomer
REGEN-COV eller Sotrovimab
Risikopatienter
A. Tilstande repræsenteret i de kliniske studier:
Alder > 65 år
Diabetes mellitus
BMI > 30
Kronisk hjerte-/lungesygdom
B: Andre tilstande som vurderes forbundet med øget risiko for progression med begrænset repræsentation i de kliniske studier:
Immunosuppression
Overvægt (BMI 25-30)
Kronisk nyresygdom
Graviditet
NIH sept. 2021
Risikopatient#
Antistoftest
Positiv antistoftest
Negativ antistoftest
Højrisikopatient
JA
NEJ
Specialist vurdering
INGEN BEHANDLING med mAb
REGEN-COV
Baseret på resultater fra Recovery og TICO studierne
Version 2
November 2021

The end