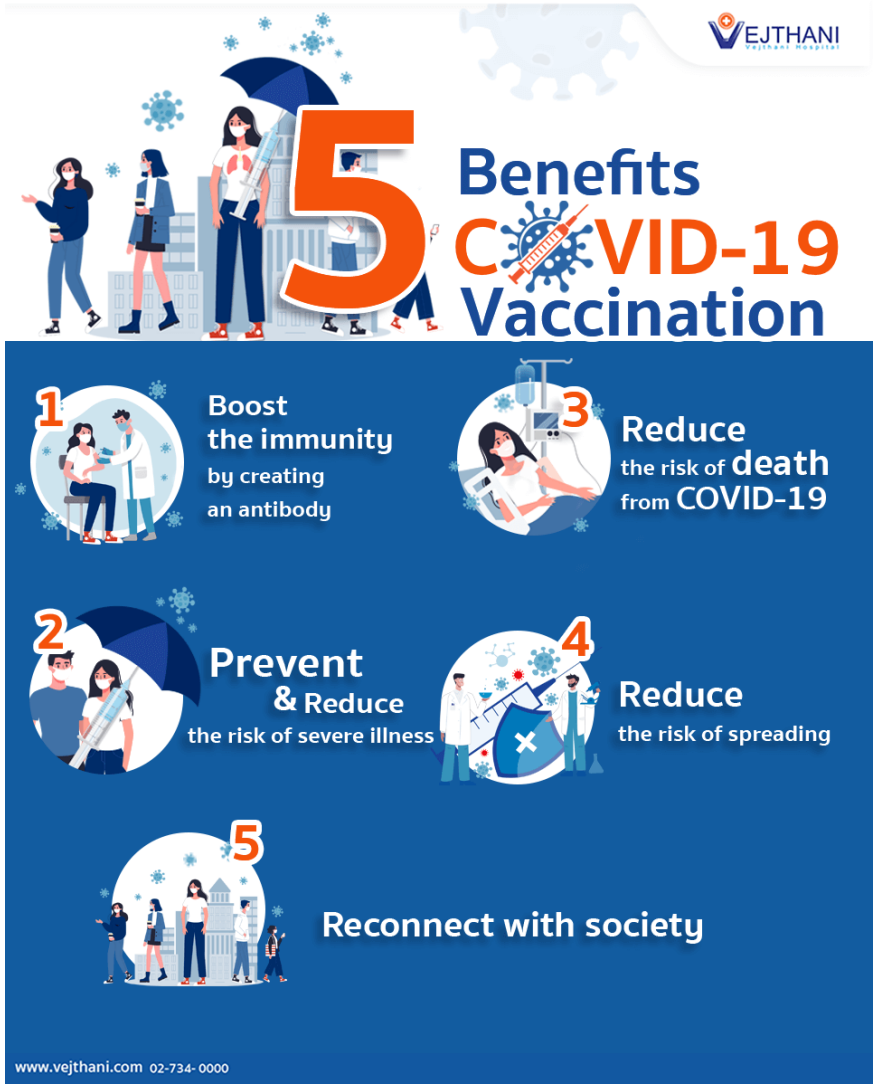
¿Debemos cambiar la estrategia de vacunación en pediatría?

Jesús Ruiz Contreras

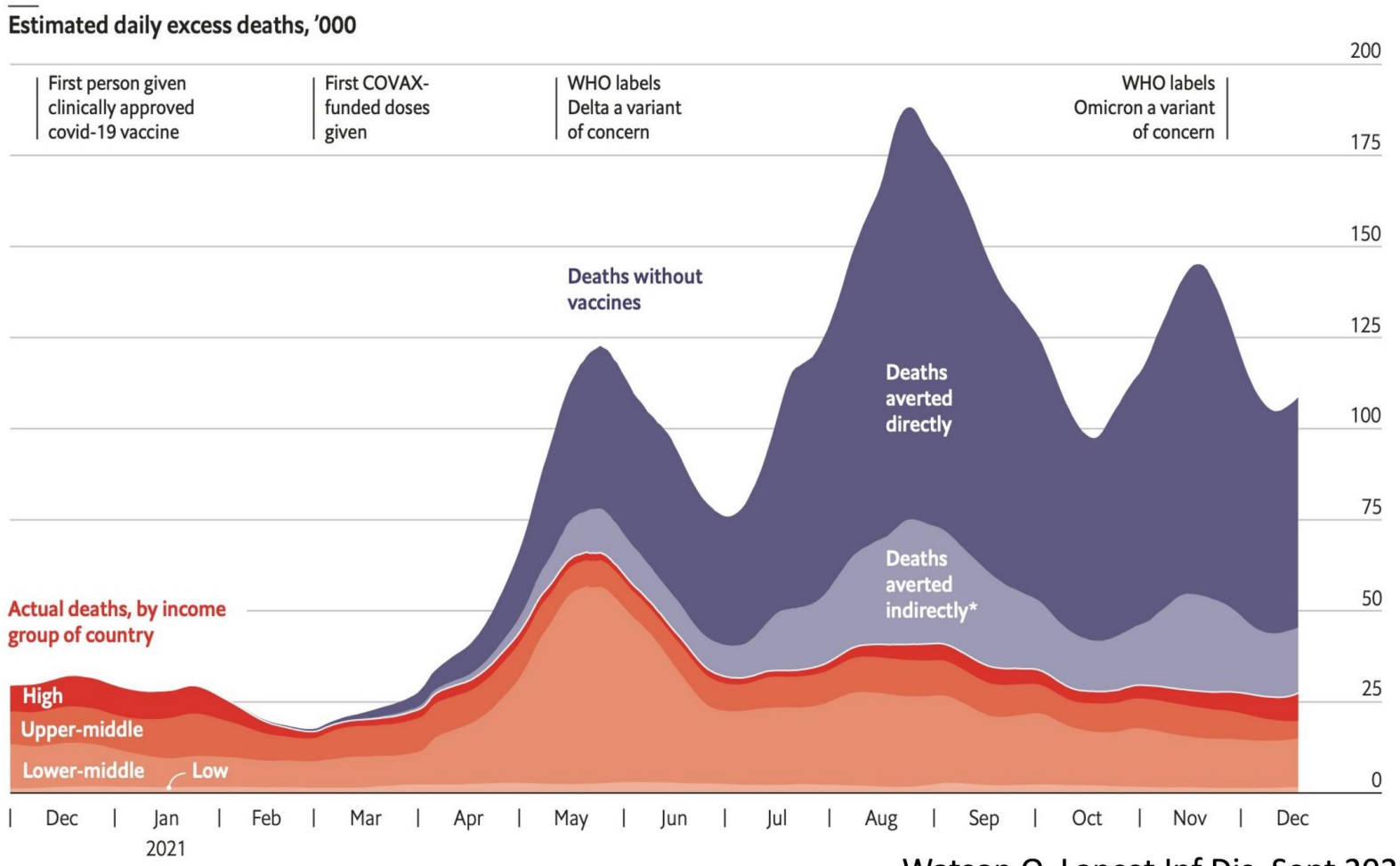
Razones para cambiar la estrategia (no vacunación sistemática a partir de los 5 años)

- Enfermedad menos grave en la era ómicron ¿o en los inmunes por infección o vacunación?
- El virus evolucionará hacia variantes menos virulentas
- El PIMS es menos frecuente en la era ómicron
- El long COVID en adultos y niños es menos frecuente en la era ómicron
- Pocos niños mueren por COVID
- Las vacunas frente a COVID tienen efectos secundarios importantes



https://www.vejthani.com/2021/05/5-benefits-of-covid-19-vaccination/

> 20 MILLION LIVES SAVED BY VACCINES in 1st YEAR



Watson O, Lancet Inf Dis, Sept 2022

Interpretaciones que enturbian la realidad

SARS-CoV-2, new and familiar.

3/29/2023

0 Comments

SARS-CoV-2, the coronavirus that is the cause of COVID-19, is new but also familiar. What we have seen in the past 3 years is virology and immunology in real time unfolding.

SARS-CoV-2 has behaved much as we expected it to behave. The route of infection, the cells its infects, its transmission, replication, in large part its evolutionary path, its selection criteria, the epidemiology, the way the immune system detects it and responds, the antibodies that bind it and wane, the T cell response that stays, the reinfections, how to detect it, and how to target it with a vaccine, did not hold much mystery. We knew much, expected most, but certainly not everything was and is understood!

Let´s start with some statements to avoid confusion:

1. Pathogens, such as viruses, parasites, fungi or bacteria, can cause disease and kill people
2. Getting infected with a pathogen is never "good"
3. Infections can result in damage, including to organs and immunity
4. There are many poorly understood ways infections can cause problems
5. The result of an infection is person-dependent and can range from totally asymptomatic to severe illness and death
6. Endemic does not mean mild or "nothing to worry about"
7. Seasonal also does not mean mild, not does it exclude transmission at other times.

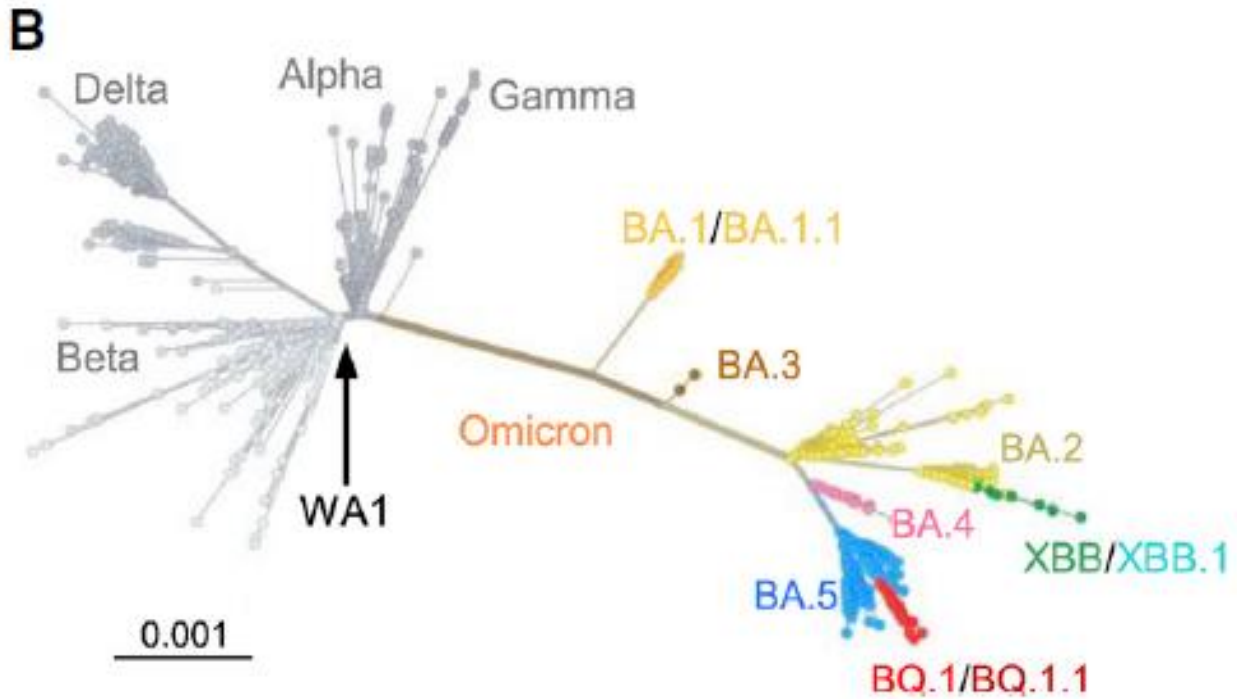
Professor Marc Veldhoen is an immunology expert and leads the MVeldhoen lab at the Instituto de Medicina Molecular (iMM) in Lisbon, Portugal.

Twitter: @marc_veld

Google Scholar profile

Contact Prof. Marc Veldhoen

Árbol genético de las variantes y subvariantes de SARS-CoV-2



Wang Q, et al. Cell 2022;

https://doi.org/10.1016/j.cell.2022.12.018

World view

By Aris Katzourakis

COVID-19: endemic doesn't mean harmless

In other words, a disease can be endemic and both widespread and deadly. Malaria killed more than 600,000 people in 2020. Ten million fell ill with tuberculosis that same year and 1.5 million died. Endemic

variants. Third, we must use – globally – the formidable weapons available: effective vaccines, antiviral medications, diagnostic tests and a better understanding of how to stop an airborne virus through mask wearing, distancing, and air ventilation and filtration. Fourth, we must invest in vaccines that protect against a broader range of variants.

There is a widespread, rosy misconception that viruses evolve over time to become more benign. This is not the case: there is no predestined evolutionary outcome for a virus to become more benign, especially ones, such as SARS-CoV-2, in which most transmission happens before he virus causes severe disease. Consider that Alpha and)elta are more virulent than the strain first found in Wuhan, :hina. The second wave of the 1918 influenza pandemic vas far more deadly than the first.

Nature 2022; 601: 485

High Death Rate in Hong Kong Shows Importance of Vaccinating the Elderly

Covid has surged in a number of Asian countries that had once held the virus at bay. Vaccination levels have largely determined how deadly those waves would be.

2019冠狀病毒病死亡個案報告初步數據分析

(2021年12月31日至2023年1月29日00:00)

Provisional Data Analysis on COVID-19 Reported Death Cases

(from 31 Dec 2021 up till 29 Jan 2023 00:00)

資料來源：衞生署衞生防護中心 Source: Centre for Health Protection of the Department of Health
特別感謝醫院管理局提供進一步資料以協助分析 Special thanks to the Hospital Authority for provision of further information to facilitate analysis

版本日期:2023年2月1日
Version date: 1 Feb 2023

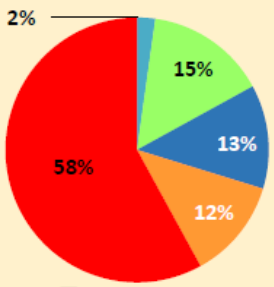
新冠疫苗能保護個人，預防2019冠狀病毒病的嚴重疾病和併發症。在本港，**接種兩或三劑新冠疫苗個案的死亡率遠低於未接種的個案。**
就此，政府強烈建議合資格人士（尤其是12歲以下及60歲以上人士）應盡快接種疫苗。

COVID-19 vaccines can protect individuals from severe illnesses and complications from COVID-19. Locally, **cases vaccinated with 2 or 3 doses have much lower fatality rate than the unvaccinated.** With that, the Government strongly recommended eligible persons (especially those aged under 12 as well as those aged 60 and above) to get vaccinated as soon as possible.

第5波死者個案 Deceased in the 5th Wave@

累計數目 Cumulative number	13,115
年齡範圍 Age range	0 - 112
年齡中位數 Median	86
男性與女性比例 Male to female ratio	1.37

疫苗接種史*
Vaccination History

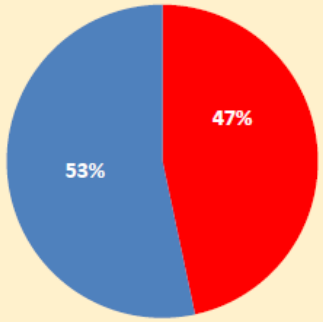


約六成沒有接種疫苗#
About 60% were unvaccinated#

包括已接種一劑但未滿14天的人士 Including those that have received 1 dose but not yet reached 14 days

- 已接種四劑(滿14天)Received 4 doses (reached 14 days)
- 已接種三劑(滿14天)Received 3 doses (reached 14 days)
- 已接種兩劑(滿14天)Received 2 doses (reached 14 days)
- 已接種一劑(滿14天)Received 1 dose (reached 14 days)
- 沒有接種疫苗# Unvaccinated#

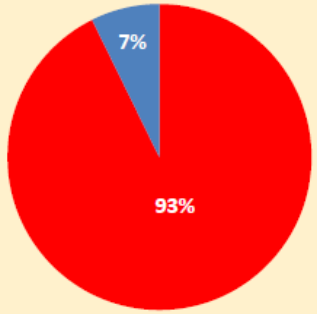
居住院舍情況*
Residential Care Home (RCH) Status



- 院舍人士 RCH Residents
- 非院舍人士 Non-RCH Residents

超過四成為居於院舍人士
More than 40% were RCH residents

長期病患歷史情況*
History of Known Chronic Diseases



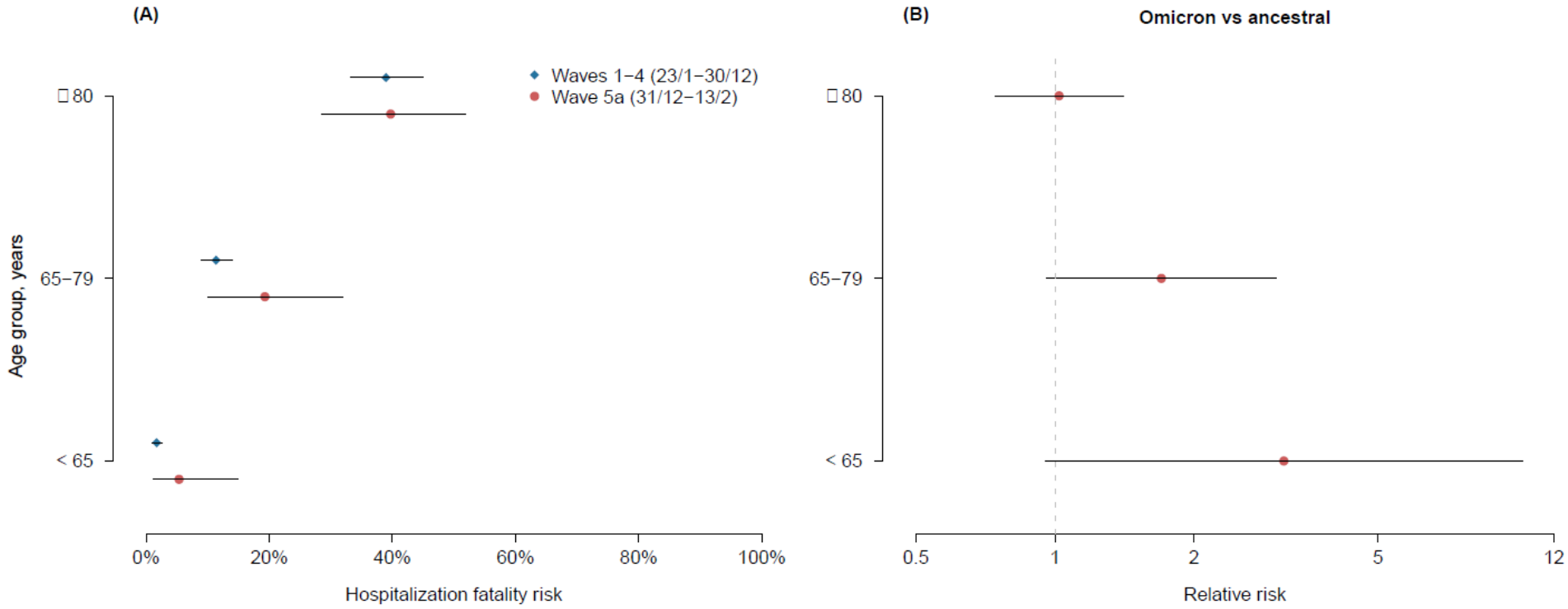
- 已知有長期病患 With known chronic diseases
- 沒有長期病患歷史 No history of chronic diseases

超過九成有已知長期病患情況
More than 90% were with known chronic diseases

@ 不包括輸入個案 Excluding imported cases * 不包括待定個案 Excluding pending cases

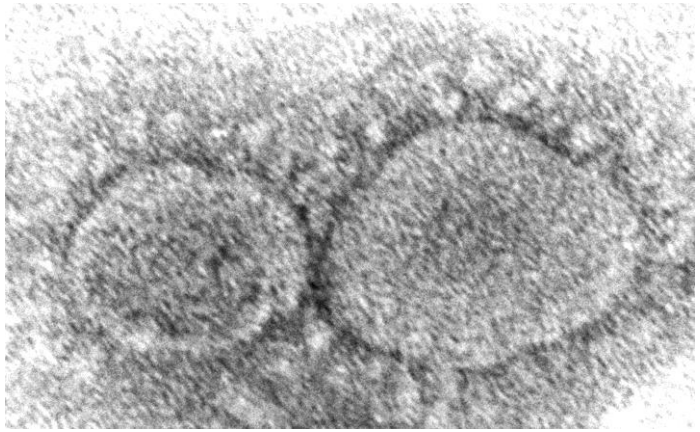
https://www.coronavirus.gov.hk/pdf/death_analysis/death_analysis_20230129.pdf

Letalidad intrínseca de ómicron vs ancestral en pacientes ingresados en Hong Kong no vacunados



Wong JY, et al.

medRxiv preprint doi: https://doi.org/10.1101/2023.02.13.23285848



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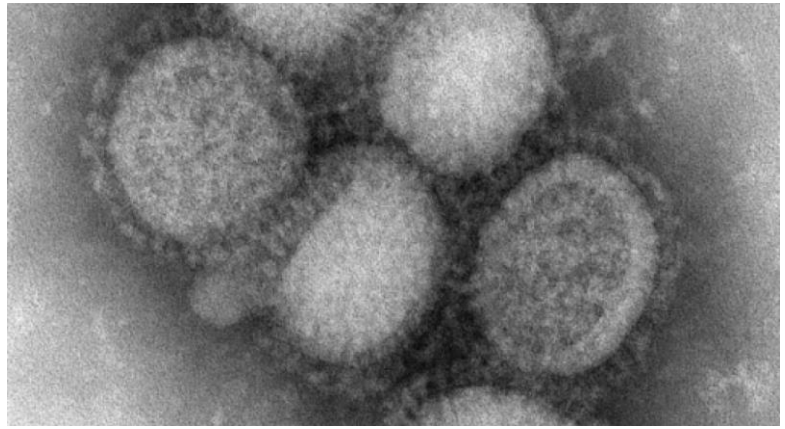


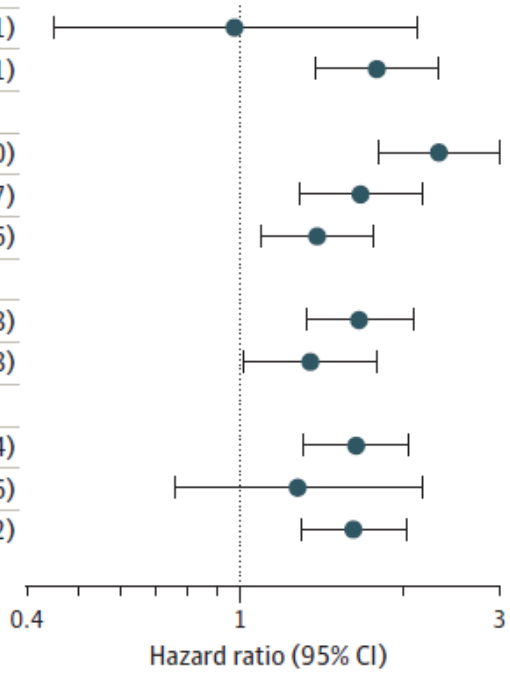
SARS-CoV-2

Gripe

Letalidad de la COVID 19 comparada con la gripe

Figure. Hazard Ratio, Death Rates, and Percentage of Excess Deaths in COVID-19 Compared With Seasonal Influenza

	Death rate at 30 d, % (95% CI)		Excess deaths at 30 d, % (95% CI)	Hazard ratio (95% CI)	*P* value for interaction
	COVID-19	Influenza			
Age, y					
≤65	1.29 (0.77-1.82)	1.33 (0.46-2.20)	-0.04 (-1.06 to 0.98)	0.97 (0.45-2.11)	Reference
>65	6.42 (5.85-6.98)	3.66 (2.77-4.54)	2.76 (1.71 to 3.81)	1.78 (1.37-2.31)	.10
COVID-19 vaccination status					
Unvaccinated	8.75 (7.46-10.01)	3.86 (3.09-4.63)	4.88 (3.39 to 6.37)	2.32 (1.80-3.00)	Reference
1 or 2 doses of vaccine	6.23 (5.22-7.23)	3.79 (3.03-4.56)	2.44 (1.17 to 3.70)	1.66 (1.28-2.17)	.009
Boosted	5.18 (4.55-5.79)	3.77 (3.00-4.53)	1.41 (0.43 to 2.39)	1.38 (1.09-1.76)	<.001
SARS-CoV-2 infection					
Primary infection	6.14 (5.58-6.69)	3.76 (2.99-4.51)	2.38 (1.44 to 3.32)	1.65 (1.32-2.08)	Reference
Reinfection	5.11 (4.11-6.09)	3.85 (3.08-4.62)	1.26 (0.00 to 2.52)	1.34 (1.01-1.78)	.15
Outpatient COVID-19 antiviral treatment					
No	6.03 (5.53-6.53)	3.75 (2.99-4.51)	2.28 (1.37 to 3.19)	1.63 (1.30-2.04)	Reference
Yes	4.81 (2.49-7.07)	3.81 (3.04-4.57)	1.01 (-1.41 to 3.42)	1.27 (0.75-2.16)	.42
Overall	5.97 (5.48-6.46)	3.75 (2.98-4.50)	2.23 (1.32 to 3.13)	1.61 (1.29-2.02)	



Xie Y et al.
JAMA
April 6, 2023. doi:10.1001/jama.2023.5348

XIV JORNADAS DE
AEP
15 DE ABRIL DE 2023

Original Investigation | Infectious Diseases

Hospital Outcomes of Community-Acquired SARS-CoV-2 Omicron Variant Infection Compared With Influenza Infection in Switzerland

Lea Portmann, BSc; Marlieke E. A. de Kraker, PhD; Georg Fröhlich, MD; Amaury Thiabaud, PhD; Maroussia Roelens, PhD; Peter W. Schreiber, MD; Nicolas Troillet, MD, MSc; Anne Iten, MD; Andreas Widmer, MD, MSc; Stephan Harbarth, MD, MSc; Rami Sommerstein, MD; for the CH-SUR study group

[59-83] years; $P < .001$). Overall, 214 patients with the SARS-CoV-2 Omicron variant (7.0%) died during hospitalization vs 95 patients with influenza (4.4%; $P < .001$). The final adjusted subdistribution hazard ratio (sdHR) for in-hospital death for SARS-CoV-2 Omicron variant vs influenza was 1.54 (95% CI, 1.18-2.01; $P = .002$). Overall, 250 patients with the SARS-CoV-2 Omicron

Portmann L, et *JAMA Network Open*. 2023;6(2):e2255599. doi:10.1001/jamanetworkopen.2022.55599

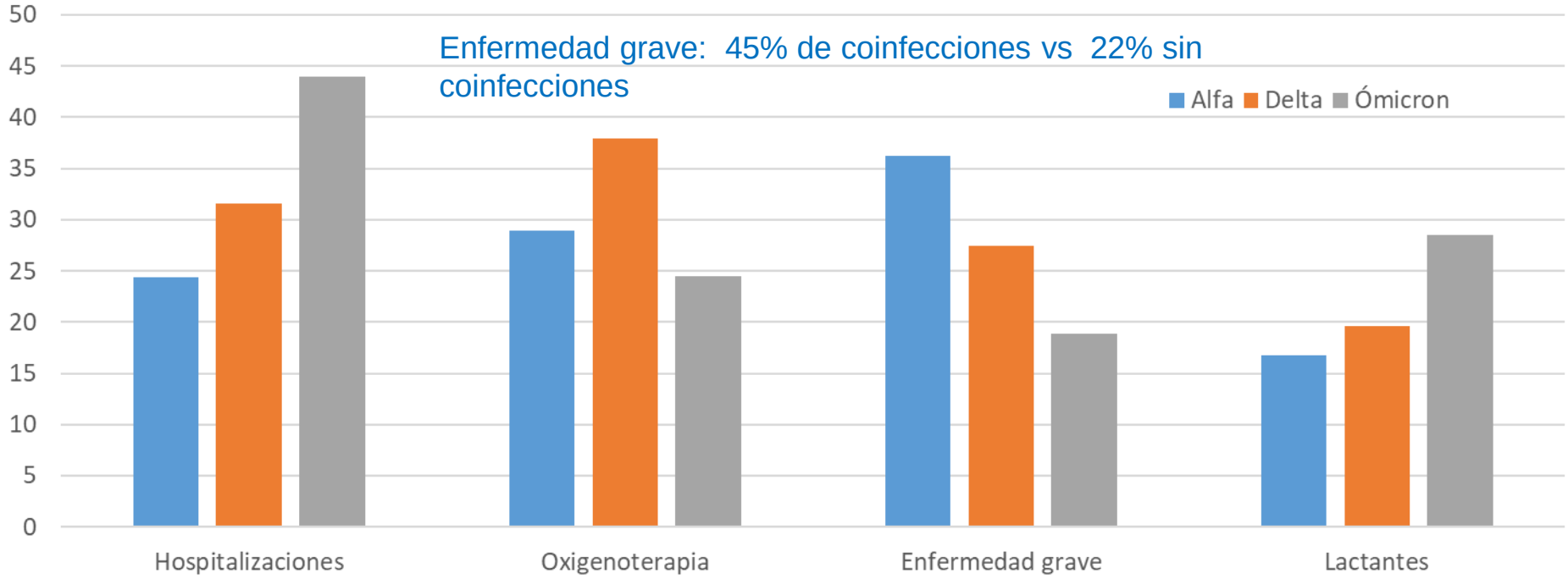
ROUELLE UMALI/XINHUA/EYEVINE

A girl receives a COVID-19 vaccination at a mall in the Philippines in February, on the first day of eligibility for children aged 5–11.

KIDS AND COVID VACCINES: WHAT THE DATA SAY

Mallapaty S, et al. Nature 2022; 610: 647-48

Gravedad de la COVID en niños en las diferentes ondas epidémicas



Bahl, A et al. Lancet Regional Health Americas 2023; 18: 100 - 405

	Hospitalizados[1]		UCI[1]		Defunciones[1]	
	Desde el inicio*	Desde el 28/03/2022	Desde el inicio*	Desde el 28/03/2022	Desde el inicio*	Desde el 28/03/2022
Grupo de edad						
<5	8380	3731	353	123	15	2
5-9	1951	652	100	23	12	1
10-19	6348	1346	382	68	34	7

Tabla 4. Número promedio por temporada de casos de gripe confirmada estimados por grupo de edad y nivel de gravedad. Temporadas 2013/14 a 2019/20.

Sistema de vigilancia	ScVGE	Chosp	CGHCG		
Grupo edad	Atención Primaria	Hospitalizados	Hospitalizados graves	Ingreso en UCI	Defunción
0-4 años	58.640	4.239	822	249	8
5-14 años	126.390	2.028	268	90	4

	Hospitalizaciones anuales	Ingreso en UCIP	Muertes
Gripe	6267	339	12
COVID 19	3336	281	20

EDITORIAL

COVID-19 Vaccines in Young Children—Reassuring Evidence for Parents

Paul A. Offit, MD

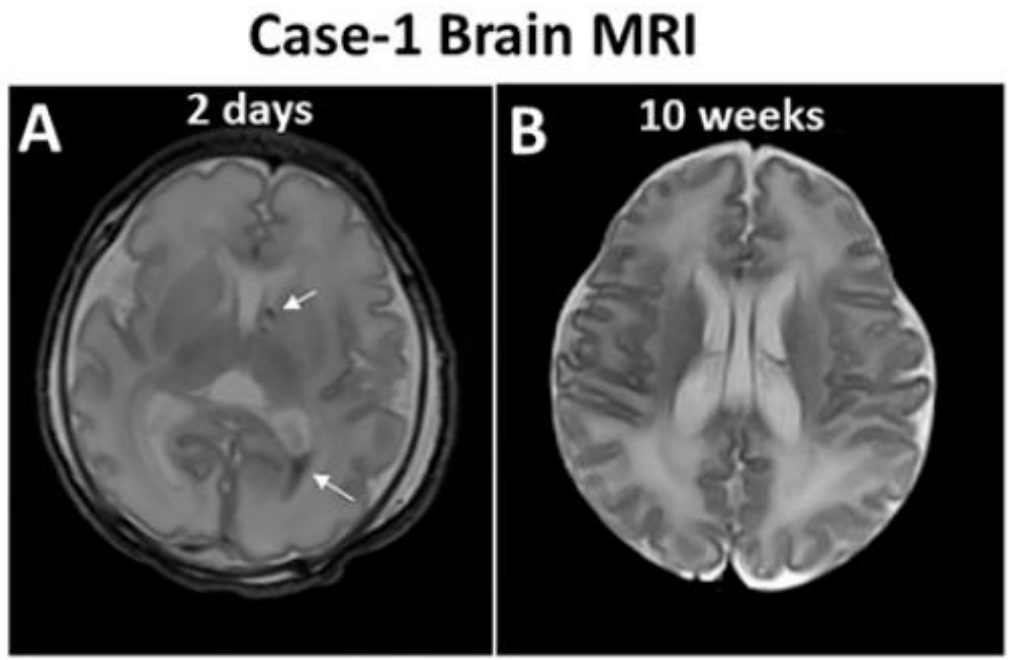
were licensed within the past 30 years.[9] Every year, prior to the availability of a vaccine, 3 children died of hepatitis A virus,[10] 8 children died of meningococcus,[9] 16 children died of varicella,[11] 17 people of all ages died of rubella,[12] and 20 children died of rotavirus.[13] Between October 2020 and October 2021, 66 children aged 5 to 11 years died of SARS-CoV-2 infection.[9] Now, we had a vaccine that would likely prevent those COVID-19 deaths.

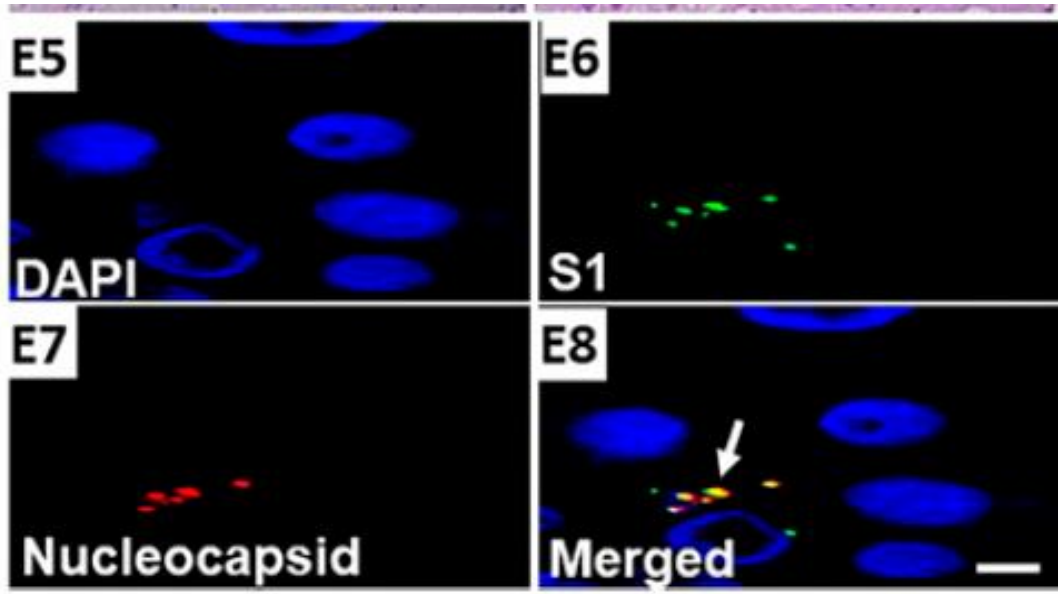
JAMA Pediatrics Published online January 23, 2023


¿Conocemos todo acerca de la covid en los niños?

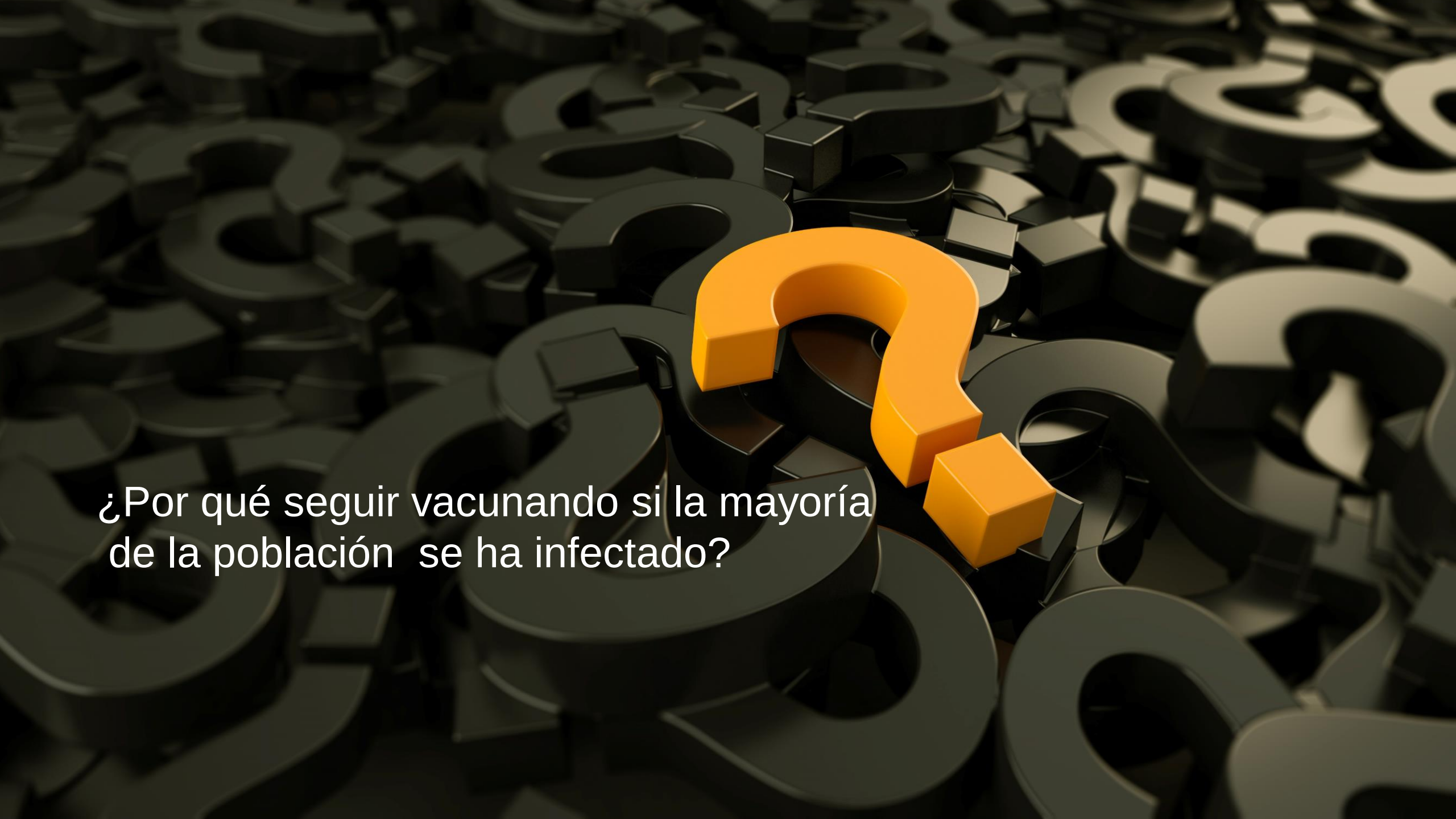
Maternal SARS-CoV-2, Placental Changes and Brain Injury in 2 Neonates

Merline Benny, MD,[a] Emmalee S. Bandstra, MD,[a] Ali G. Saad, MD,[b] Roberto Lopez-Alberola, MD,[c] Gaurav Saigal, MD,[d] Michael J. Paidas, MD,[e] Arumugam R. Jayakumar, PhD,[e] Shahnaz Duara, MD[a]

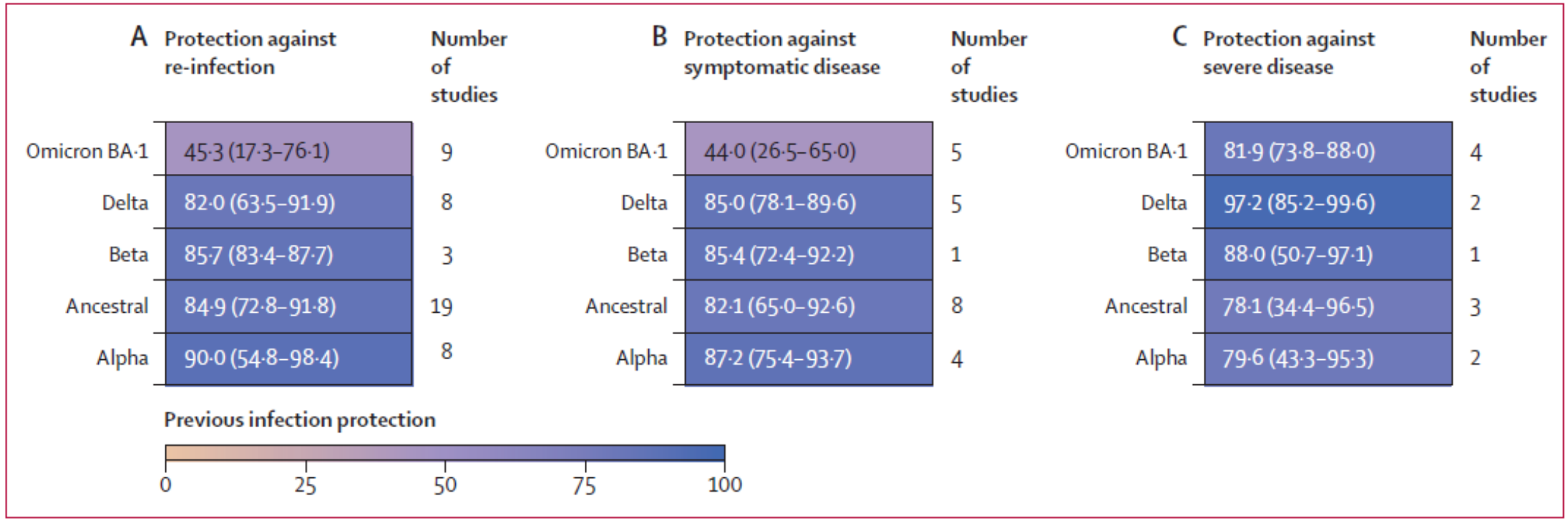




Benny M, et al. Pediatrics 2023


¿Por qué seguir vacunando si la mayoría
de la población se ha infectado?

Eficacia de la infección previa frente a la re-infección por cepas diferentes

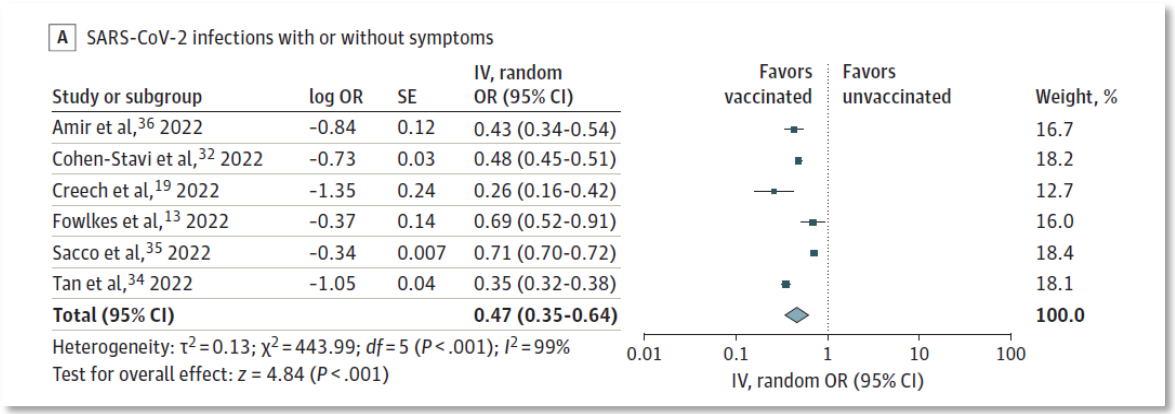


COVID-19 Forecasting Team. Lancet 2023; 401: 833-42

Efectividad de las vacunas frente a COVID-19 en niños de 5-11 años frente a infecciones de cualquier tipo e infecciones sintomáticas por SARS-CoV-2

Infecciones de cualquier tipo

EV: 53% (36-65%)



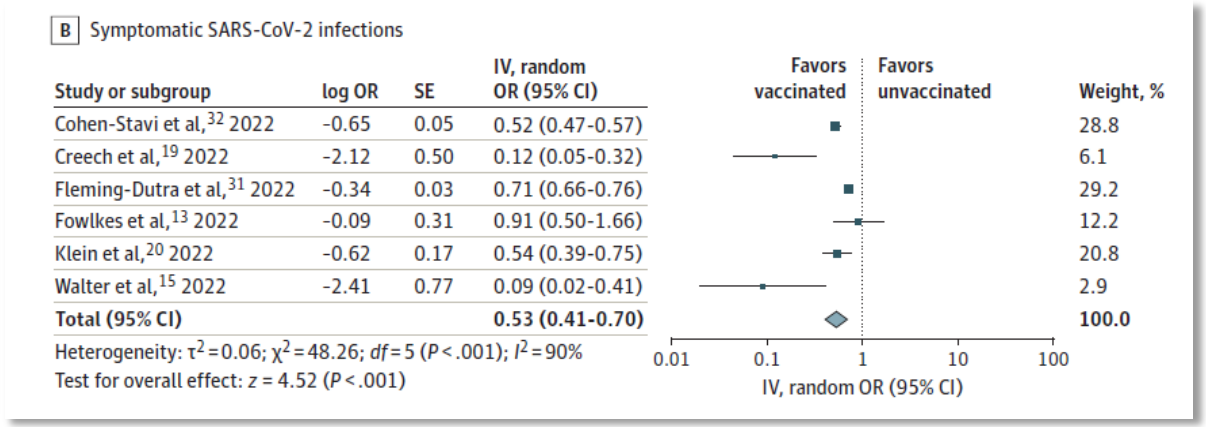
A SARS-CoV-2 infections with or without symptoms

Study or subgroup	log OR	SE	IV, random OR (95% CI)	Weight, %
Amir et al,[36] 2022	-0.84	0.12	0.43 (0.34-0.54)	16.7
Cohen-Stavi et al,[32] 2022	-0.73	0.03	0.48 (0.45-0.51)	18.2
Creech et al,[19] 2022	-1.35	0.24	0.26 (0.16-0.42)	12.7
Fowlkes et al,[13] 2022	-0.37	0.14	0.69 (0.52-0.91)	16.0
Sacco et al,[35] 2022	-0.34	0.007	0.71 (0.70-0.72)	18.4
Tan et al,[34] 2022	-1.05	0.04	0.35 (0.32-0.38)	18.1
Total (95% CI)			**0.47 (0.35-0.64)**	**100.0**

Heterogeneity: $\tau^2 = 0.13$; $\chi^2 = 443.99$; $df = 5$ ($P < .001$); $I^2 = 99\%$
Test for overall effect: $z = 4.84$ ($P < .001$)

Infecciones sintomáticas

EV: 47% (30-59 %)



B Symptomatic SARS-CoV-2 infections

Study or subgroup	log OR	SE	IV, random OR (95% CI)	Weight, %
Cohen-Stavi et al,[32] 2022	-0.65	0.05	0.52 (0.47-0.57)	28.8
Creech et al,[19] 2022	-2.12	0.50	0.12 (0.05-0.32)	6.1
Fleming-Dutra et al,[31] 2022	-0.34	0.03	0.71 (0.66-0.76)	29.2
Fowlkes et al,[13] 2022	-0.09	0.31	0.91 (0.50-1.66)	12.2
Klein et al,[20] 2022	-0.62	0.17	0.54 (0.39-0.75)	20.8
Walter et al,[15] 2022	-2.41	0.77	0.09 (0.02-0.41)	2.9
Total (95% CI)			**0.53 (0.41-0.70)**	**100.0**

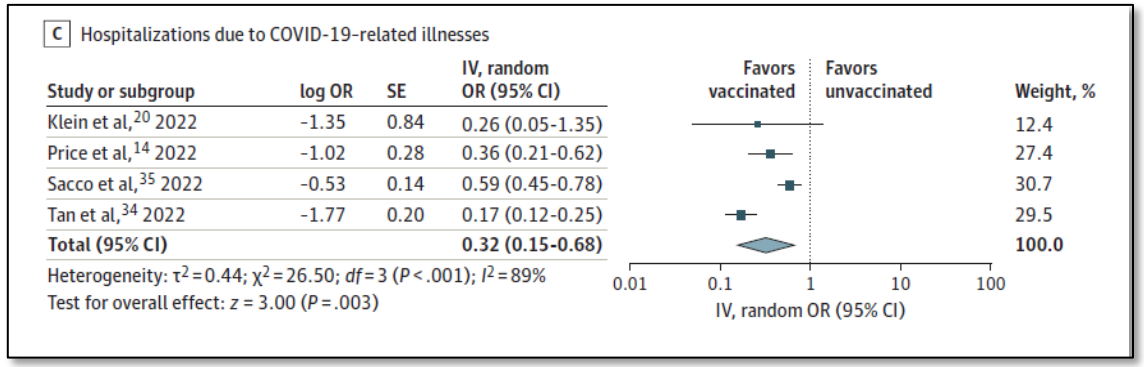
Heterogeneity: $\tau^2 = 0.06$; $\chi^2 = 48.26$; $df = 5$ ($P < .001$); $I^2 = 90\%$
Test for overall effect: $z = 4.52$ ($P < .001$)

Watanabe JAMA Pediatr. 2023 Jan 23:e226243. doi: 10.1001/jamapediatrics.2022.6243.

Efectividad de las vacunas frente a COVID-19 en niños de 5-11 años frente a hospitalizaciones por COVID y PIMS

Hospitalizaciones

EV: 68% (32-85%)



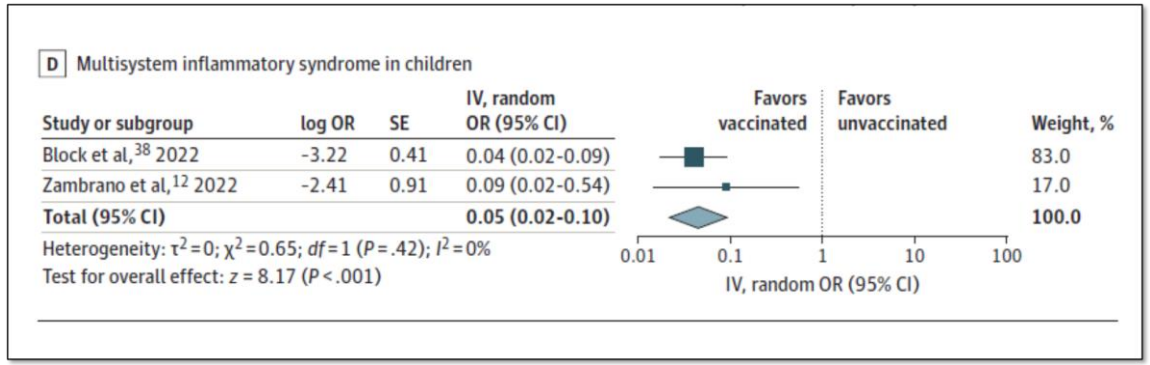
C Hospitalizations due to COVID-19-related illnesses

Study or subgroup	log OR	SE	IV, random OR (95% CI)	Weight, %
Klein et al,[20] 2022	-1.35	0.84	0.26 (0.05-1.35)	12.4
Price et al,[14] 2022	-1.02	0.28	0.36 (0.21-0.62)	27.4
Sacco et al,[35] 2022	-0.53	0.14	0.59 (0.45-0.78)	30.7
Tan et al,[34] 2022	-1.77	0.20	0.17 (0.12-0.25)	29.5
Total (95% CI)			**0.32 (0.15-0.68)**	**100.0**

Heterogeneity: $\tau^2 = 0.44$; $\chi^2 = 26.50$; $df = 3$ ($P < .001$); $I^2 = 89\%$
Test for overall effect: $z = 3.00$ ($P = .003$)

PIMS

EV: 95% (90-98%)



D Multisystem inflammatory syndrome in children

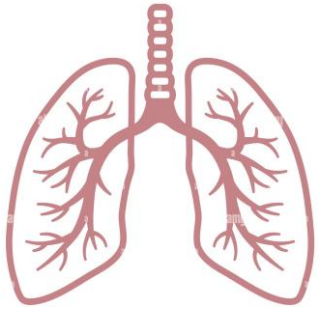
Study or subgroup	log OR	SE	IV, random OR (95% CI)	Weight, %
Block et al,[38] 2022	-3.22	0.41	0.04 (0.02-0.09)	83.0
Zambrano et al,[12] 2022	-2.41	0.91	0.09 (0.02-0.54)	17.0
Total (95% CI)			**0.05 (0.02-0.10)**	**100.0**

Heterogeneity: $\tau^2 = 0$; $\chi^2 = 0.65$; $df = 1$ ($P = .42$); $I^2 = 0\%$
Test for overall effect: $z = 8.17$ ($P < .001$)

Watanabe JAMA Pediatr. 2023 Jan 23:e226243. doi: 10.1001/jamapediatrics.2022.6243.

Inmunidad híbrida vs inmunidad vacunal

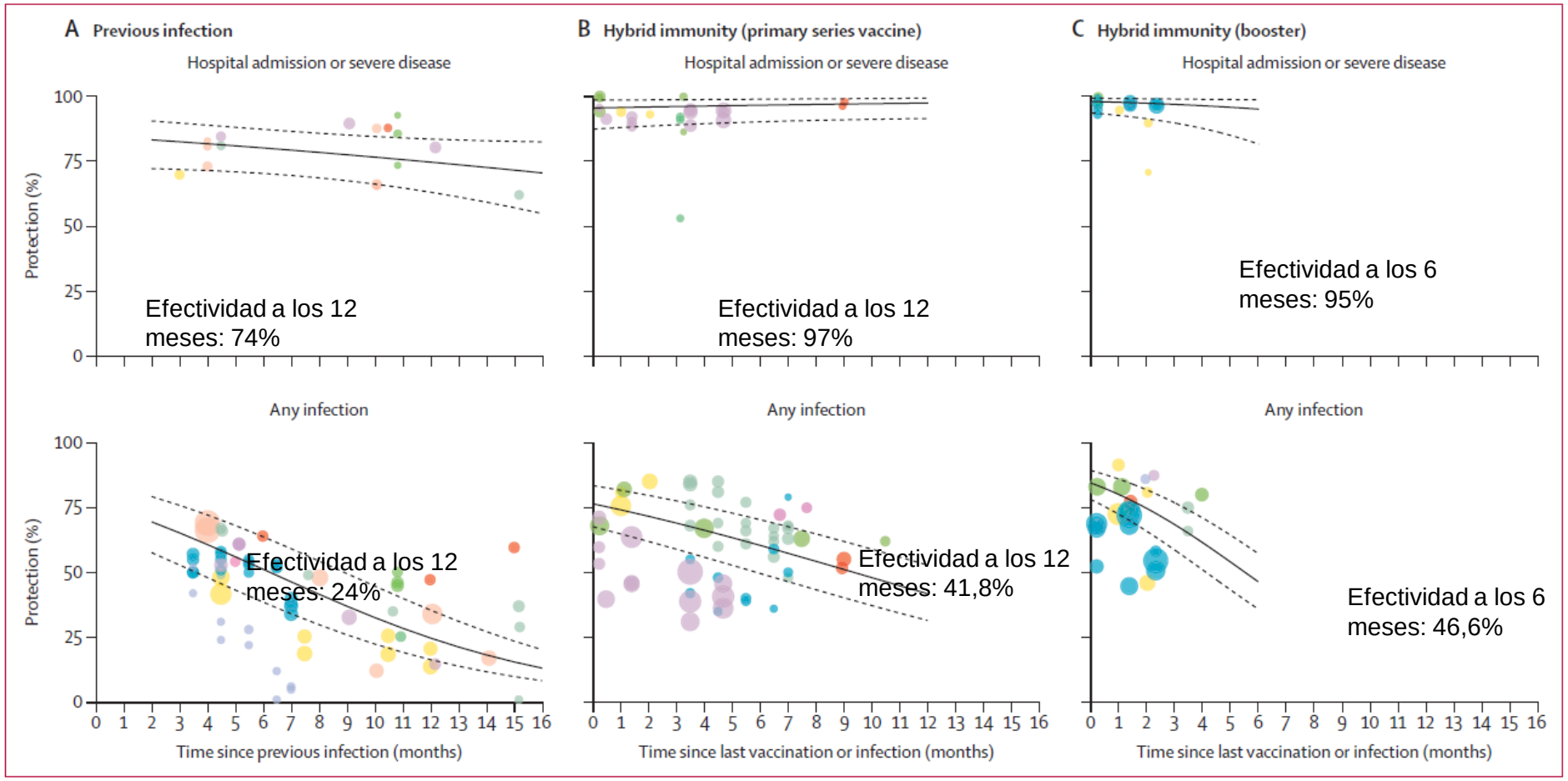
	Solo vacuna	Infección + vacuna
IgG anti-S	+++	++++ (significativo)
IgG-anti-RBD	+++	++++ (significativo)
CBM anti-S	++	++
CD4+ anti S	++	+++ (no significativo)
CD8+ anti-S	+	+++ (no significativo)



IgG anti-S	+++	++++ (significativo)
IgG-anti-RBD	+++	++++ (significativo)
IgA-anti-S	0	++ (significativo)
CBM anti-S	?	+++
CD4+ anti-S	+	+++ (significativo)
CD8+ anti-S	+	+++ (significativo)

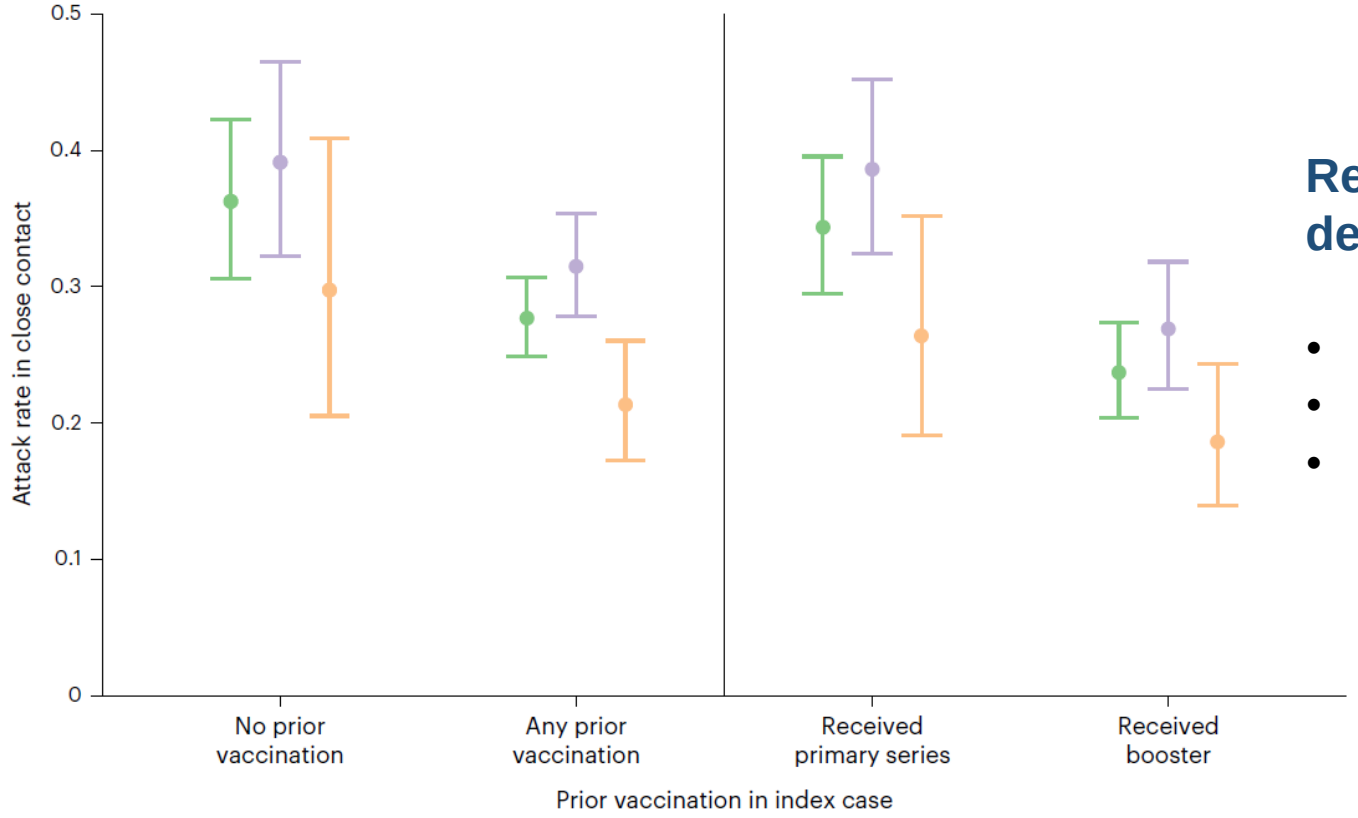
Mitsi E, et al. bioRxiv preprint doi: https://doi.org/10.1101/2023.01.25.525485

Efectividad de la Inmunidad híbrida



Bobrovitz N, et al. Lancet Infect Dis 2023; https://doi.org/10.1016/S1473-3099(22)00801-5

Transmisibilidad de la infección de brecha en vacunados e infectados a contactos estrechos



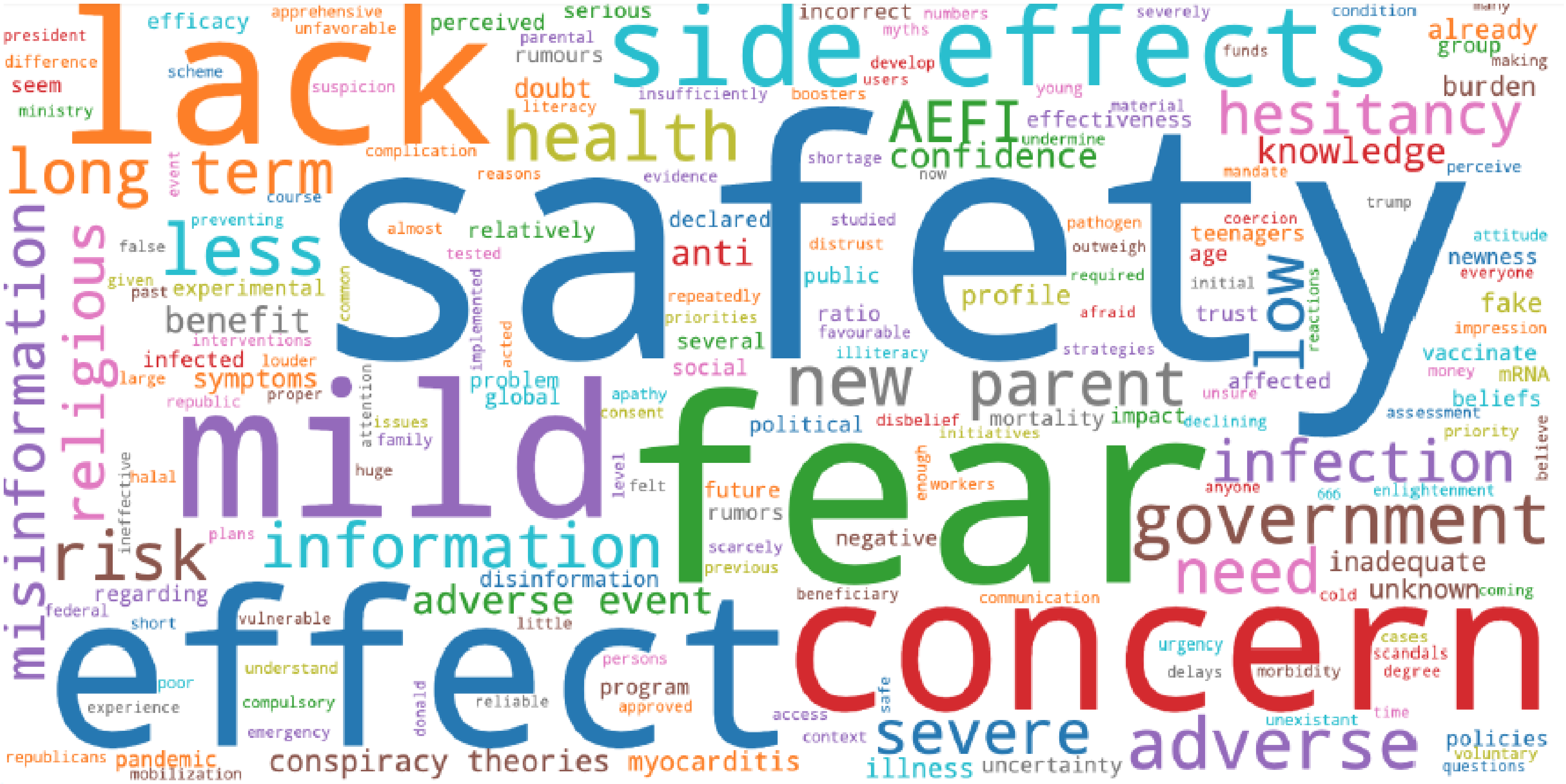
Reducción del riesgo de transmisión desde el caso índice

- Cualquier vacunación: 22% (6-36%)
- Infección previa: 23% (3-39%)
- Infección previa y vacunación: 40% (20-55%)

Tan ST, et al. Nat Med 20

https://doi.org/10.1038/s41591-022-02138-x

¿Por qué no seguir vacunando?


safety
fear
effect
concern
mild
lack
side effects
misinformation
religious
long term
health
AEFI
confidence
hesitancy
knowledge
government
infection
need
new parent
information
risk
adverse event
adverse
severe
less
low
anti
conspiracy theories
myocarditis
efficacy
apprehensive
unfavorable
perceived
serious
incorrect
numbers
severely
condition
many
president
difference
seem
ministry
scheme
suspicion
parental
rumours
doubt
literacy
insufficiently
boosters
myths
develop
users
young
material
effectiveness
undermine
funds
already
group
making
burden
complication
reasons
evidence
shortage
now
mandate
perceive
event
course
preventing
almost
tested
relatively
declared
studied
distrust
pathogen
outweigh
required
coercion
teenagers
age
initial
trump
attitude
newness
everyone
false
given
past
experimental
common
benefit
interventions
implemented
public
repeatedly
priorities
profile
ratio
favourable
afraid
trust
reactions
fake
impression
infected
louder
acted
symptoms
large
republic
proper
problem
global
several
social
illiteracy
strategies
affected
unsure
vaccinate
money
mRNA
apathy
consent
attention
issues
family
political
disbelief
initiatives
mortality
impact
declining
assessment
beliefs
priority
believe
halal
huge
level
felt
future
rumors
enough
workers
anyone
666
enlightenment
ineffective
plans
negative
scarcely
previous
inadequate
unknown
coming
cold
regarding
disinformation
federal
short
vulnerable
little
beneficiary
communication
urgency
delays
morbidity
cases
scandals
degree
persons
poor
understand
experience
compulsory
donald
reliable
program
approved
safe
access
context
unexistant
time
emergency
republicans
pandemic
mobilization
illness
uncertainty
policies
voluntary
questions

A teen receives a dose of the new Omicron-specific COVID-19 booster in a Pennsylvania pharmacy last month. Data on boosters' benefits for young people are lacking.

COVID-19

Heart risks fuel debate over COVID-19 boosters

With benefits unclear, some scientists question new round of shots for young people

Moutinho S, et al. *Science*, 378 (6617), • DOI: 10.1126/science.adf3945

Miocarditis en niños tras la vacunación frente al SARS-CoV-2

Estudio	Vacuna	Edad (años)	Sexo	Frecuencia /100.000
Buchan, SA. JAMA Pediatr 2023	Comirnaty	12-17	V y M	4,6
Watanabe, JAMA Pediatrics	Cualquier Vacuna ARNm	5-11 años	V y M	0,18
Oster ME, JAMA 2022	Comirnaty	12-15 años 16-17 años	V V	1ª dosis: 0,7; 2ª dosis: 7 1ª dosis: 0,7; 2ª dosis: 10,5
Block JP, MMWR 2022	Comirnaty	5-11 años 12-17 años	V V	0 casos 2,2- 1º dosis; 22- 2ª dosis
Grinberg NEJM 2022	Comirnaty	12-15 años	V y M	4,8

Reporting rates of myocarditis (per 1 million doses administered) after Pfizer-BioNTech COVID-19 vaccination, 7-day risk interval*

	Males		Females	
Age group	**Dose 1**	**Dose 2**	**Dose 1**	**Dose 2**
5–11 years	0.0	4.3	Not calculated†	2.0
12–15 years	4.8	45.7	1.0	3.8
16–17 years (included for reference)	6.1	70.2	0.0	7.6

- **37,810,998** total doses 1 and 2 of vaccine administered‡
- Reporting rates exceed background incidence (peach shaded cells) §
  - Males: after dose 1 (ages 12–15 and 16–17 years) and after dose 2 (ages 5–11, 12–15, and 16–17 years)
  - Females: after dose 2 (ages 12–15 and 16–17 years)
  - Reporting rates among males substantially lower among ages 5–11 vs. 12–15 and 16–17 years

* Reports of myocarditis after doses 1 and 2 of Pfizer-BioNTech COVID-19 vaccine during a 7-day risk interval after vaccination (as of Dec 19, 2021); reports verified to meet case definition by healthcare provider interview and/or medical record review.

† Too few reports of females ages 5–11 years to calculate a stable rate.

‡ Children ages 5–11 years vaccinated Nov 3–Dec 19, 2021, children and adolescents ages 12–15 years vaccinated May 12–Dec 19, 2021.

§ An estimated 1–10 cases of myocarditis per 100,000 person years occurs among people in the United States, regardless of vaccination status; adjusted for the 7-day risk period, this estimated background is 0.2 to 1.9 per 1 million person 7-day risk period.

mRNA COVID-19 vaccine safety of primary series vaccination in children ages 6 months–5 years

U.S. reports to VAERS among children after primary series Pfizer-BioNTech (ages 6 months–4 years) or Moderna (ages 6 months–5 years) vaccination* (as of August 21, 2022)

Manufacturer	Doses admin†	Total reports	Median age	Male‡ n (%)	Female‡ n (%)	Non-serious n (%)	Serious§ n (%)	Myocarditis reports (n)
Pfizer-BioNTech	890,378	496	3 years	249 (50)	245 (49)	486 (98)	10 (2)	0
Moderna	664,484	521	2 years	272 (52)	240 (46)	512 (98)	9 (2)	0
Total	**1,554,862**	**1,017**	**3 years**	**521 (51)**	**485 (48)**	**998 (98)**	**19 (2)**	**0**

* Among children ages 6 months–4 years after Pfizer-BioNTech, and among children ages 6 months–5 years after Moderna, vaccinated during June 18–August 21, 2022; reports received and processed as of August 23, 2022

† Dose 1 and dose 2 administered among children described in previous footnote during June 16–August 18, 2022.

‡ 2 reports after Pfizer-BioNTech and 9 reports after Moderna did not have sex reported

§ Based on the Code of Federal Regulations if one of the following is reported: death, life-threatening illness, hospitalization or prolongation of hospitalization, permanent disability, congenital anomaly or birth defect

CDC + FDA

VAERS

Circulation

ORIGINAL RESEARCH ARTICLE

Circulating Spike Protein Detected in Post–COVID-19 mRNA Vaccine Myocarditis

Lael M. Yonker, MD*; Zoe Swank, PhD*; Yannic C. Bartsch, PhD*; Madeleine D. Burns, MS; Abigail Kane, MD;

RESULTS: Extensive antibody profiling and T-cell responses in the individuals who developed postvaccine myocarditis were essentially indistinguishable from those of vaccinated control subjects, despite a modest increase in cytokine production. A notable finding was that markedly elevated levels of full-length spike protein (33.9±22.4 pg/mL), unbound by antibodies, were detected in the plasma of individuals with postvaccine myocarditis, whereas no free spike was detected in asymptomatic vaccinated control subjects (unpaired *t* test; $P<0.0001$).

Yonker LM et al. Circulation 2023; 147: 867-876

Intervalos prolongados entre las dosis de primoinfección

- Aumento de inmunogenicidad
- Mayor título de Ac neutralizantes
- Respuestas específicas de células T más potentes
- Mayor efectividad
- Menor riesgo de miocarditis

nature communications

Article

https://doi.org/10.1038/s41467-023-37556-z

Effectiveness of BNT162b2 after extending the primary series dosing interval in children and adolescents aged 5–17

Received: 6 January 2023

Accepted: 21 March 2023

Francisco Tsz Tsun Lai[1,2,7], Min Fan[1,7], Caige Huang[1], Celine Sze Ling Chui[2,3,4], Eric Yuk Fai Wan[1,2,5], Xue Li[1,2,6], Carlos King Ho Wong[1,2,5], Ching-Lung Cheung[1], Ian Chi Kei Wong[1,8] ✉ & Esther Wai Yin Chan[1,2,8] ✉

August 15, 2022, 5396 Covid-19 cases and 202 Covid-19 related hospitalizations were identified and matched with 21,577 and 808 controls, respectively. For vaccine recipients with extended intervals [≥28 days, adjusted odds ratio 0.718, 95% Confidence Interval: 0.619, 0.833] there was a 29.2%-reduced risk of Covid-19 infection compared to those with regular intervals (21–27 days). If the threshold was set at eight weeks, the risk reduction was estimated at 43.5% (aOR 0.565, 95% CI: 0.456, 0.700). In conclusion, longer dosing intervals for children and adolescents should be considered.

XIV JORNADAS DE VACUNAS AEP

OURENSE, 14 Y 15 DE ABRIL DE 2023

nature medicine

Article

https://doi.org/10.1038/s41591-023-02270-2

Maternal third dose of BNT162b2 mRNA vaccine and risk of infant COVID-19 hospitalization

according to maternal vaccination status at delivery. Among 48,868 live-born infants included in the analysis, rates of COVID-19 hospitalization were 0.4%, 0.6% and 0.7% in the third-dose, second-dose and unvaccinated groups, respectively. Compared to the second dose, the third dose was associated with reduced infant hospitalization with estimated effectiveness of 53% (95% CI: 36–65%). Greater protection was associated with a shorter interval between vaccination and delivery. A third maternal dose during

JAMA Network Open

Original Investigation | Psychiatry

Sex-Specific Neurodevelopmental Outcomes Among Offspring of Mothers With SARS-CoV-2 Infection During Pregnancy

Andrea G. Edlow, MD, MSc; Victor M. Castro, MS; Lydia L. Shook, MD; Sebastien Haneuse, PhD; Anjali J. Kaimal, MD, MAS; Roy H. Perlis, MD, MSc

ethnicity, insurance status, hospital type (academic center vs community), maternal age, and preterm status, maternal SARS-CoV-2 positivity was associated with a statistically significant elevation in risk for neurodevelopmental diagnoses at 12 months among male offspring (adjusted OR, 1.94 [95% CI 1.12-3.17]; *P* = .01) but not female offspring (adjusted OR, 0.89 [95% CI, 0.39-1.76]; *P* = .77). Similar effects were identified using matched analyses in lieu of regression. At 18 months, more modest effects were observed in male offspring (adjusted OR, 1.42 [95% CI, 0.92-2.11]; *P* = .10).

nature microbiology

Article

https://doi.org/10.1038/s41564-023-01352-8

Live-attenuated vaccine sCPD9 elicits superior mucosal and systemic immunity to SARS-CoV-2 variants in hamsters

Nouailles G, et al. Nature Microbiology 2

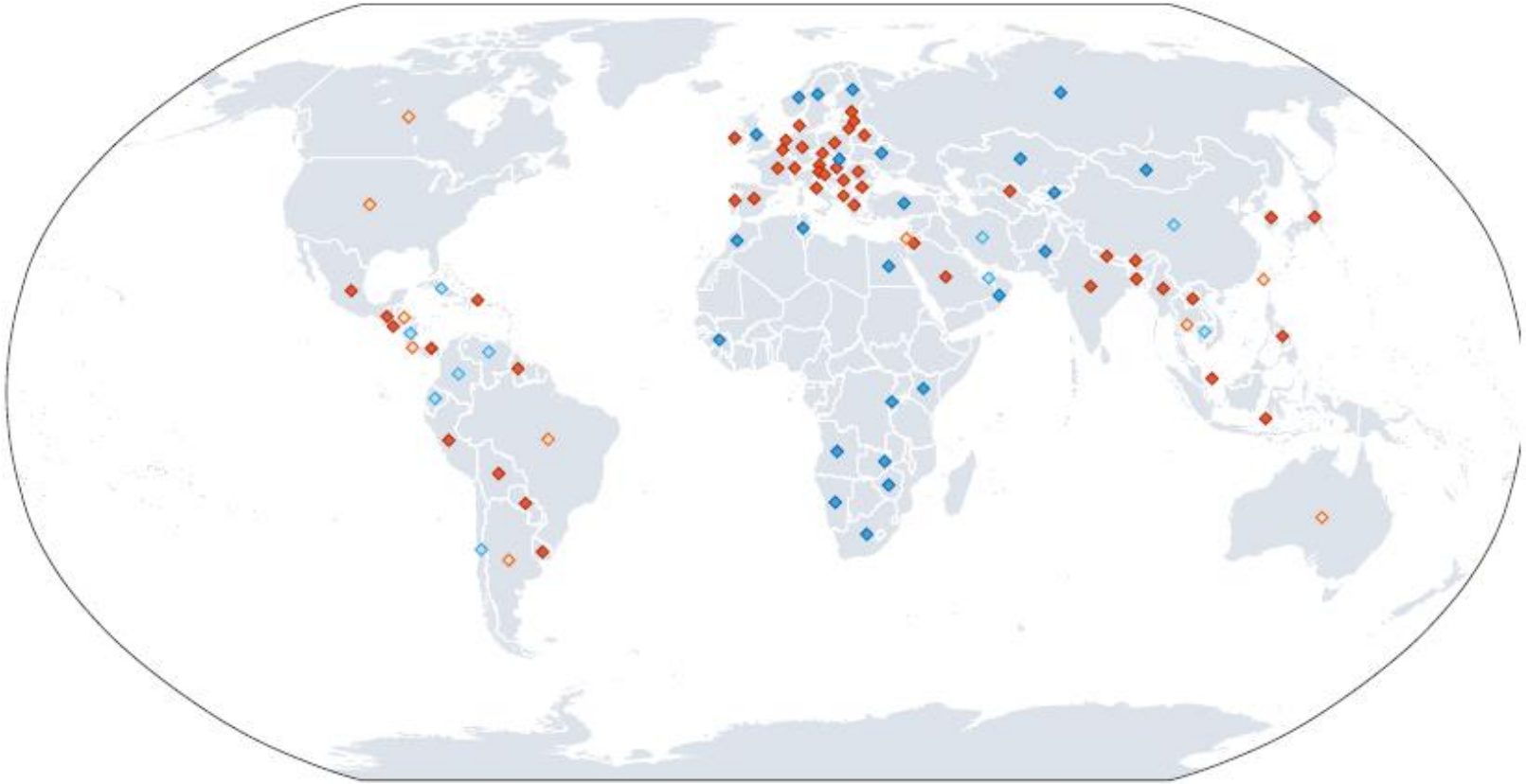
https://doi.org/10.1038/s41564-023-01352-8

OURENSE, 14 Y 15 DE ABRIL DE 2023

APPROVALS BY AGE

About 120 countries have approved COVID-19 vaccines for children, but at different ages. Some nations, such as the United States, Brazil, Costa Rica and Israel, offer an mRNA vaccine to children as young as six months.

Minimum age ◇ 6 months ◇ 2 or 3 ◆ 5 or 6 ◆ 12 or 15

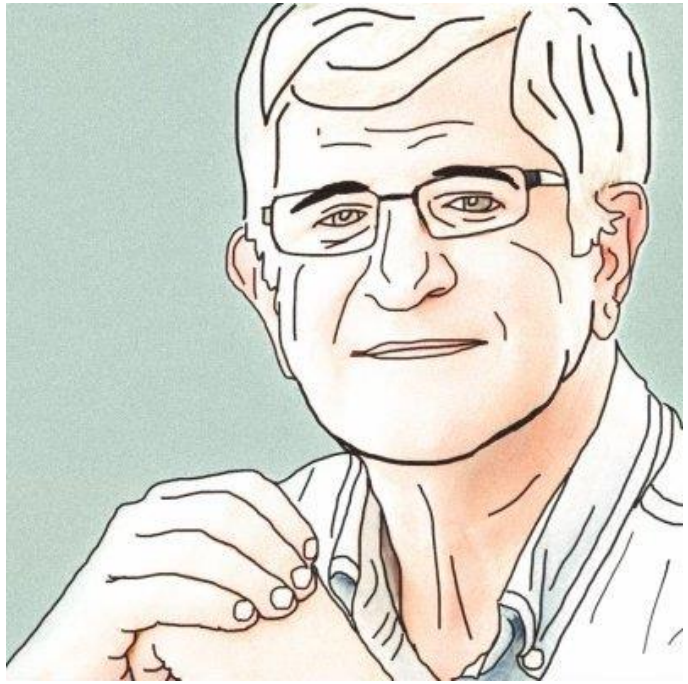


Mallapaty S. et al. Nature 2022; 610: 647-48

El SAGE actualiza la guía de vacunación contra la COVID-19

Organización Mundial de la Salud

El grupo de prioridad baja incluye a los niños y adolescentes sanos de entre 6 meses y 17 años. Las dosis primarias y de refuerzo son seguras y eficaces en los niños y adolescentes. Sin embargo, teniendo en cuenta la baja carga de morbilidad de este grupo de edad, el SAGE insta a los países que estén considerando su vacunación a que fundamenten sus decisiones en factores contextuales, entre ellos, la mencionada carga de morbilidad y la relación costoeficacia, así como otras prioridades sanitarias o programáticas y los costos de oportunidad.



Paul Offit

En espera de nuevas vacunas, mantener las indicaciones vacunales actuales es la opción más adecuada, haciendo hincapié en la vacunación de las personas de alto riesgo

Es primordial seguir las indicaciones del Ministerio de Sanidad

Recomendación de vacunación frente a la covid en España

		Inmunocompetentes		Inmunodeprimidos	
Dosis	*Edad*	*Serie primaria*	*Refuerzo*	*Serie primaria*	*Refuerzo*
3 µg	6 – 4 años	3 dosis (3-8 semanas entre dosis 1ª y 2ª; ≥ 8 semanas entre dosis 2ª y 3ª	No aprobado	3 dosis (3 semanas entre dosis 1ª y 2ª; ≥ 8 semanas entre dosis 2ª y 3ª	No aprobado
10 µg	5-11 años	2 dosis (8 semanas entre dosis 1ª y 2ª)	No recomendado	3 dosis (3 semanas entre dosis 1ª y 2ª; ≥ 4 semanas entre dosis 2ª y 3ª	≥ 5 meses tras la serie primaria
30 µg	12-17 años	2 dosis (8 semanas entre dosis 1ª y 2ª)	No recomendado	3 dosis (3 semanas entre dosis 1ª y 2ª; ≥ 4 semanas entre dosis 2ª y 3ª	≥ 5 meses tras la serie primaria

Vacunación de 6 meses a 4 años

- Prematuros
- Inmunodeprimidos (grupo 7 del Ministerio de Sanidad)
- Cardiopatías complejas
- Anomalías de la vía aérea o enfermedad pulmonar crónica
- Enfermedades metabólicas o mitocondriales
- Enfermedades neurológicas o neuromusculares crónicas
- Síndrome de Down
- Obesidad
- Asma

Muchas gracias