



68° CONGRESSO NAZIONALE SIGG

Ritorno al futuro

FIRENZE, 13-16 DICEMBRE 2023  
PALAZZO DEI CONGRESSI



# Verso la vaccinazione stagionale anti-SARS-CoV-2

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# Calendario Nazionale Prevenzione Vaccinale (2023-2025)

	2 mesi	3 mesi	4 mesi	5 mesi	6 mesi	10 mesi	12 mesi	13/14 mesi	5 anni	6 anni	11 anni	12-18 anni	19-59 anni	50-64 anni	60 anni	65 anni	66 anni e più
Esavalente: Difterite, Tetano, Pertosse, Poliomielite, Epatite B, Haemophilus influenzae di tipo b (DTaP-IPV-HBV-Hib)	1		1			1											
Rotavirus (RV)	1																
Pneumococco coniugato (PCV)	1		1			1											2
Meningococco B (MenB)	3							1									
Morbillo, Parotite, Rosolia, Varicella (MMRV o MMR+V)							4		1								
Meningococco ACWY (MenACWY)							5					1					
Difterite, Tetano, Pertosse, Poliomielite (DTaP-IPV/dTap-IPV)									6			1					
Papillomavirus (HPV)											8						
Difterite, Tetano, Pertosse adulto (dTaP)													9				
Influenza (FLU)					10											11	
Herpes Zoster (HZV)																	12

Vaccinazione raccomandata per età



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# Agenda

- COVID malattia stagionale?
- Le varianti
- Risposta immunitaria negli anziani
- Efficacia dei vaccini
- Gli effetti collaterali
- La co-somministrazione



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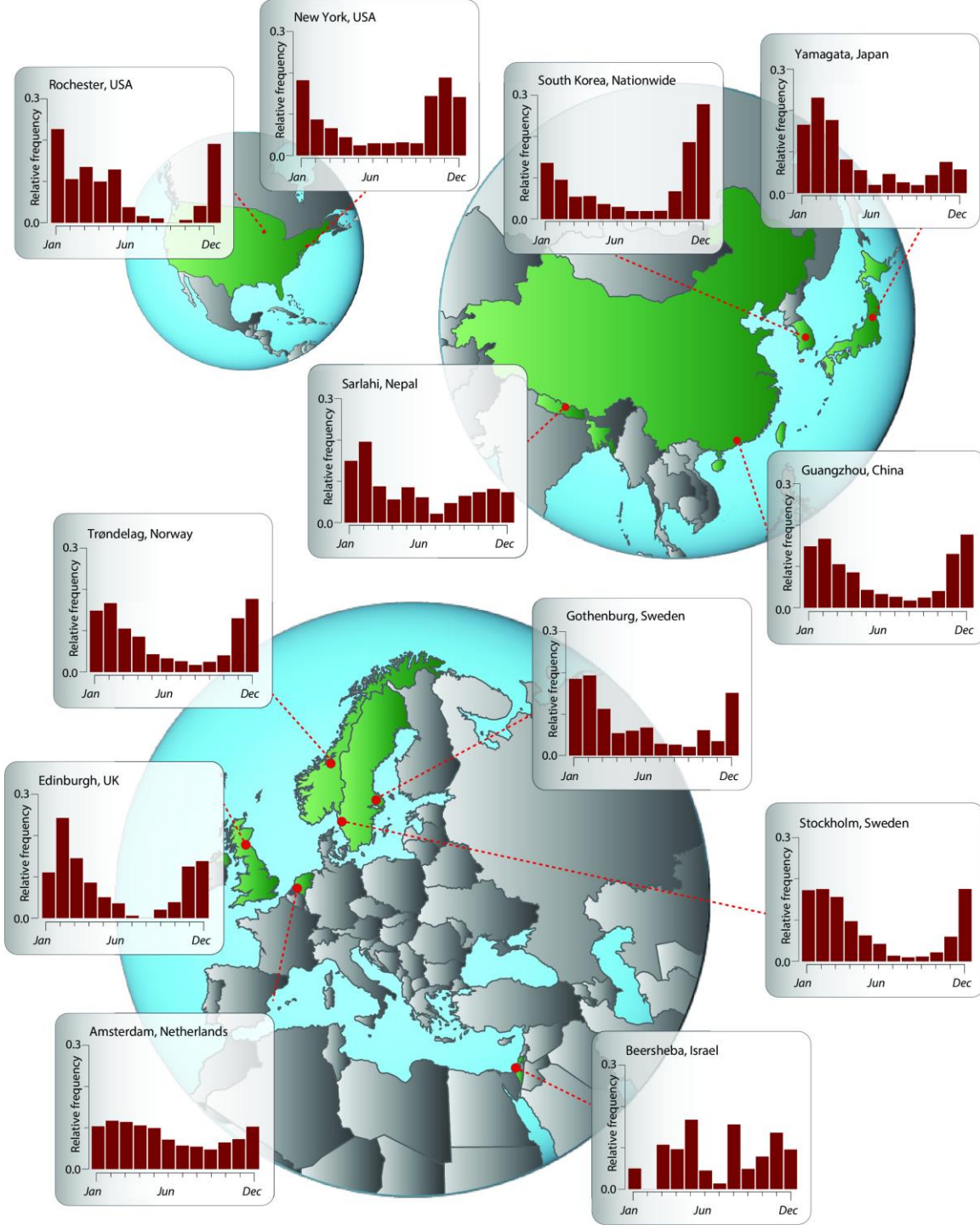
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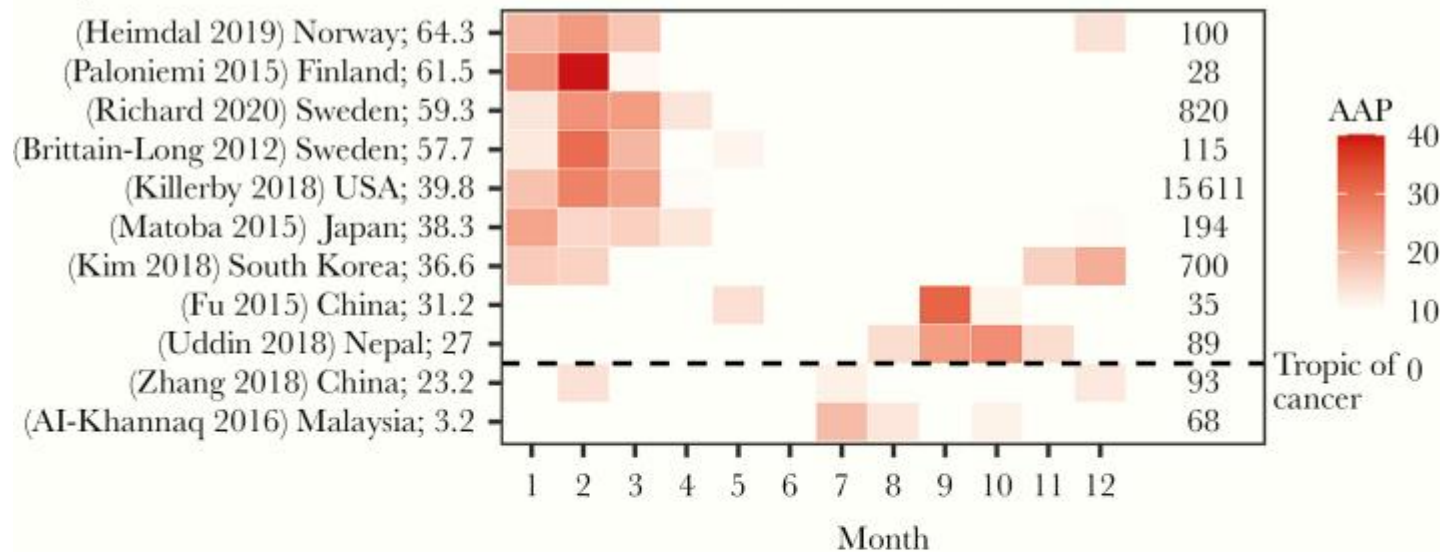
# Estimates of the relative monthly incidence of SARS-CoV-2 under endemic conditions

SARS-CoV-2 infections can be expected to transition to a **seasonal pattern of incidence** that is high in late fall and winter months relative to late spring and summer. Our projections also reveal geographic heterogeneity.

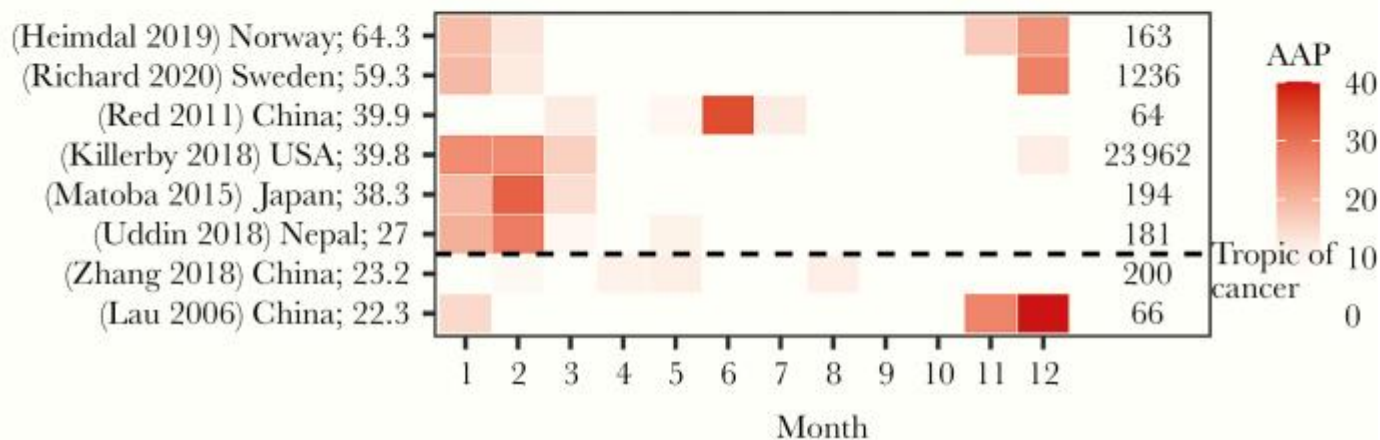


Latitudine

## 1. Alpha-sCoV



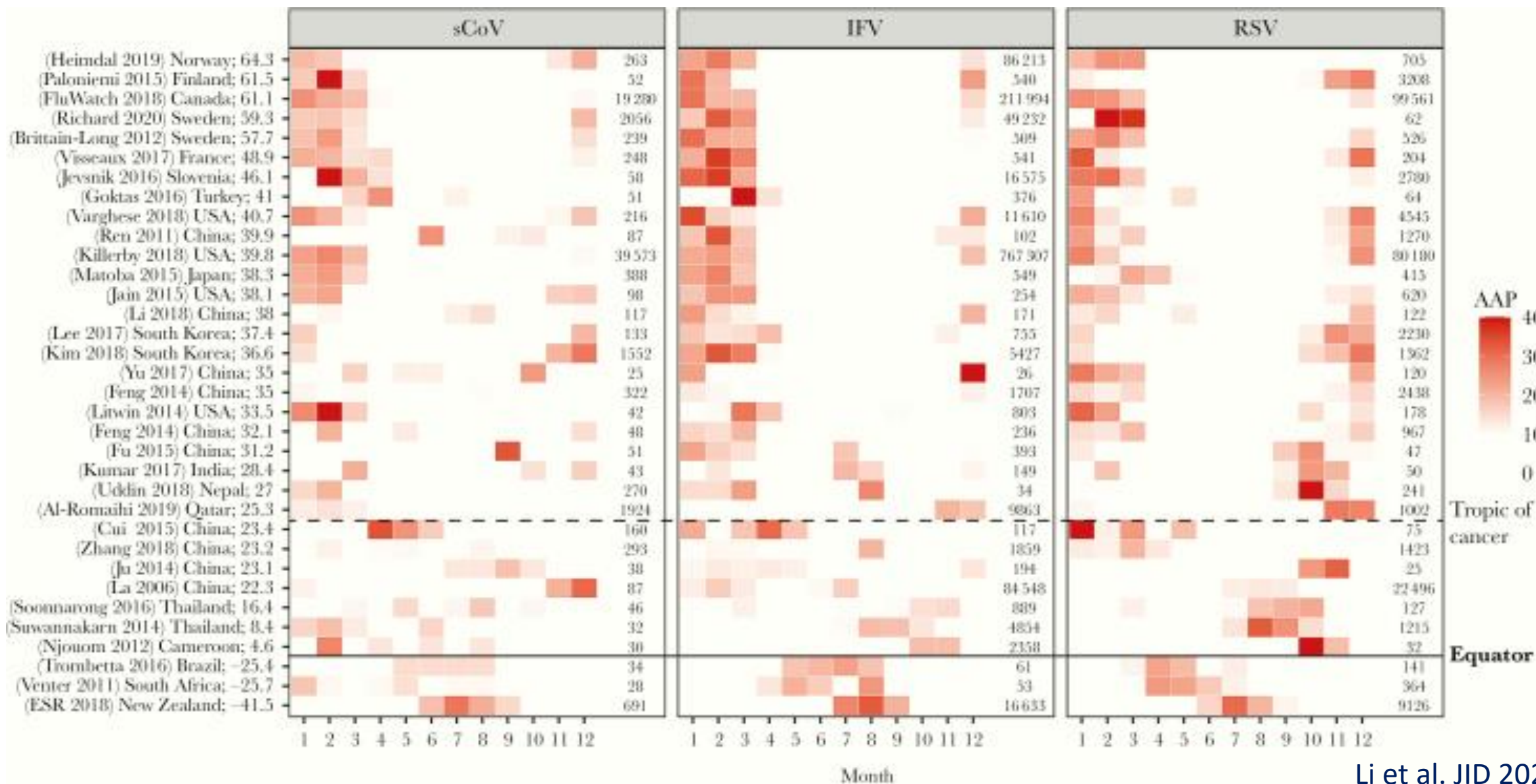
## 2. Beta-sCoV



Global monthly activity of alphacoronaviruses and betacoronaviruses



Latitudine





## Factors influencing seasonality

- SARS-CoV-2 persistence on surfaces or in the air is sensitive to temperature, humidity, and ultraviolet light;
- Other environmentally sensitive respiratory viruses are seasonal, and more common in winter;
- Social factors (schools)



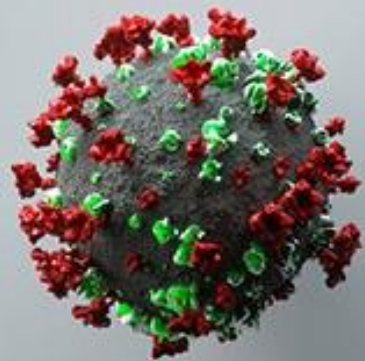


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- Quale vaccino?

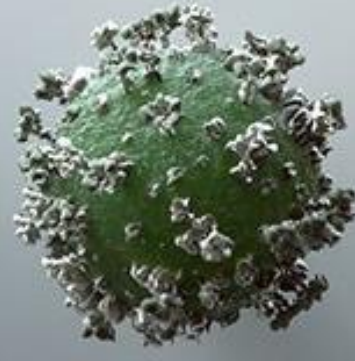


## Varianti Sars-CoV-2



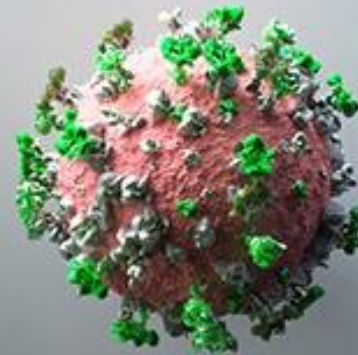
Alpha

B.1.1.7



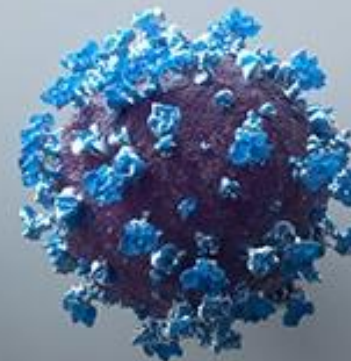
Beta

B.1351



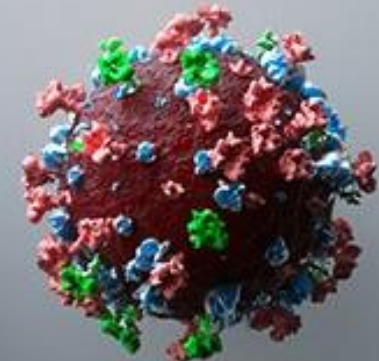
Gamma

P.1



Delta

B.1.617.2

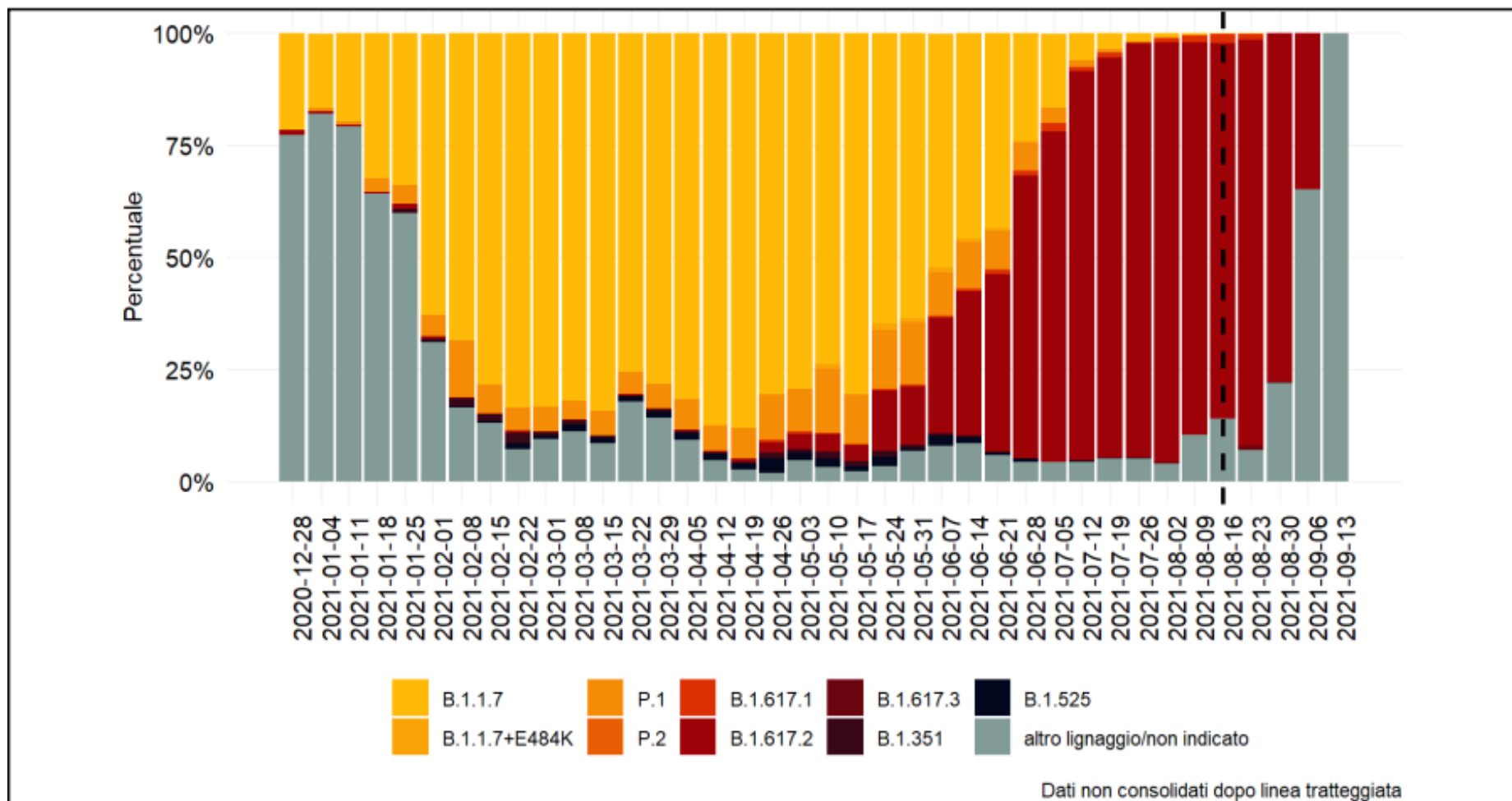


Omicron

B.1.1.529



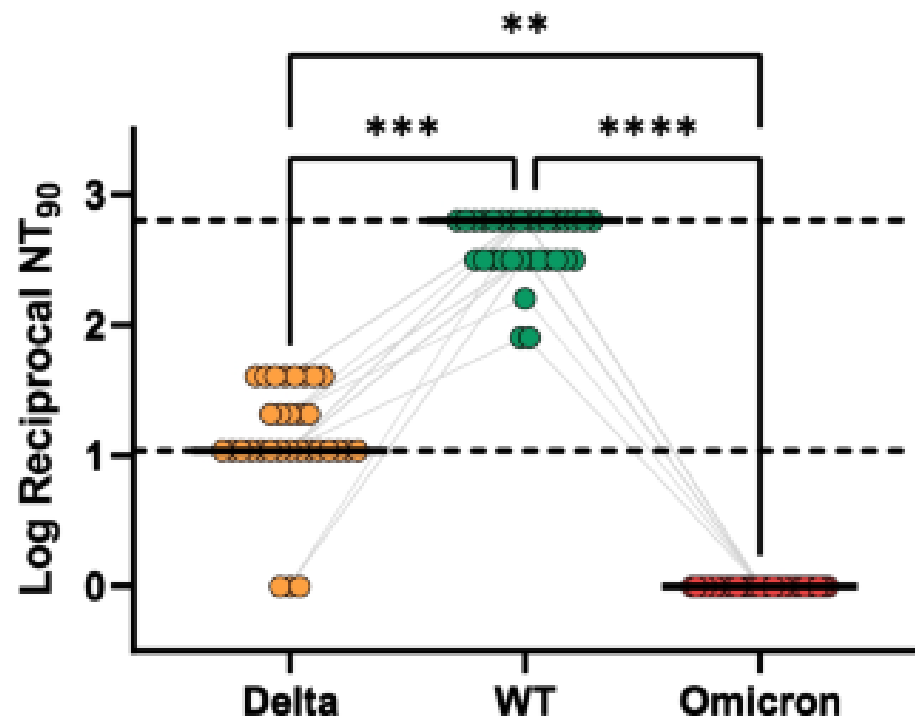
## Varianti Sars-CoV-2 – Bollettino ISS 2021



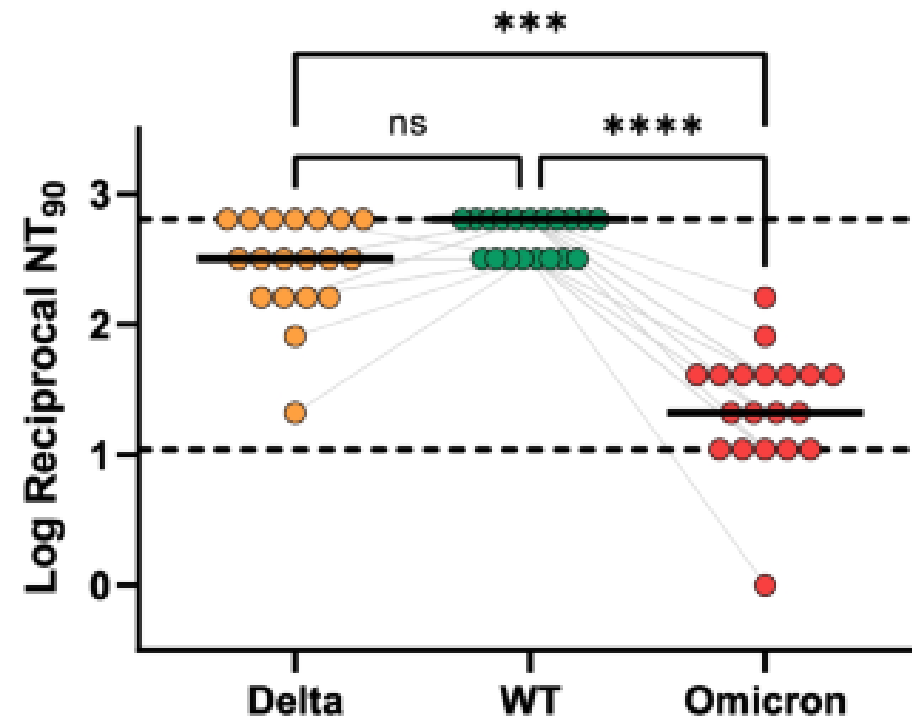


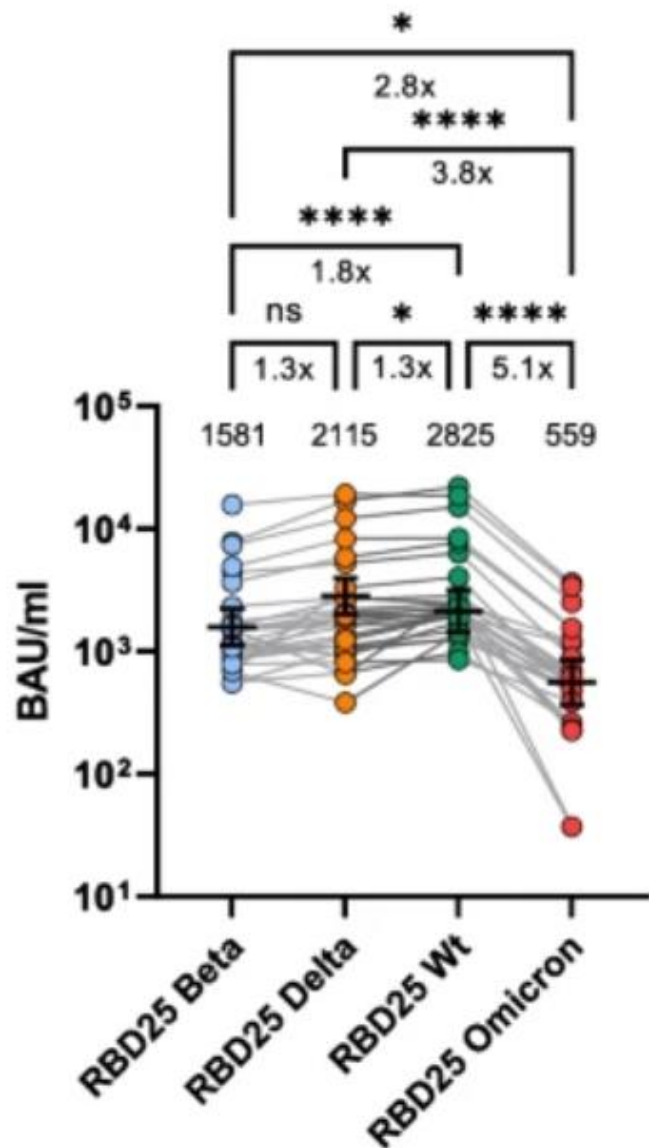
# Neutralization of SARS-CoV-2 WT, Delta, and Omicron using sera of BNT162b-vaccinated individuals.

**a** Two-dose vaccination series



**b** Three-dose vaccination series





Human serum binding to SARS-CoV-2 WT, Beta, Delta, and Omicron receptor-binding domain, using sera from hospitalized COVID-19 patients



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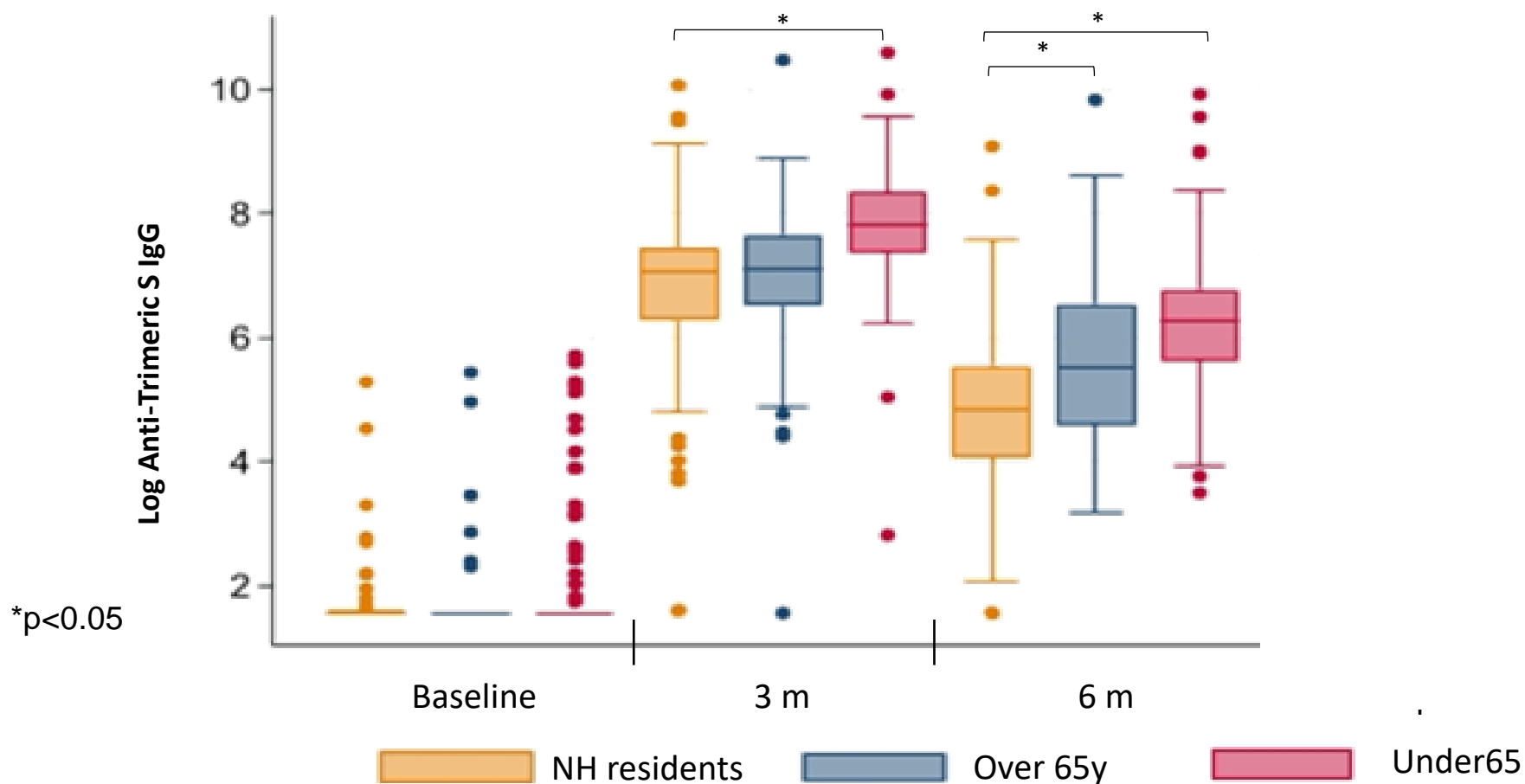


## Campione RSA – Studio Gerovax

		Whole sample (n=395)
<b>Age</b>	≥80 years	264 (67%)
<b>Sex</b>	Female	270 (68%)
<b>Type of vaccine</b>	BNT162b2	344 (87%)
	mRNA-1273	51 (13%)
<b>Chronic diseases</b>	Dementia	213 (54%)
	Ischemic Heart Disease	114 (29%)
	Diabetes	65 (16%)
	COPD	63 (16%)
	Atrial fibrillation	30 (7.5%)
	Stroke	43 (11%)
	Cardiac failure	29 (7%)
	Cancer	23 (6%)
<b>Disability</b>	Moves with wheelchair	175 (44%)
	Bedridden	55 (14%)



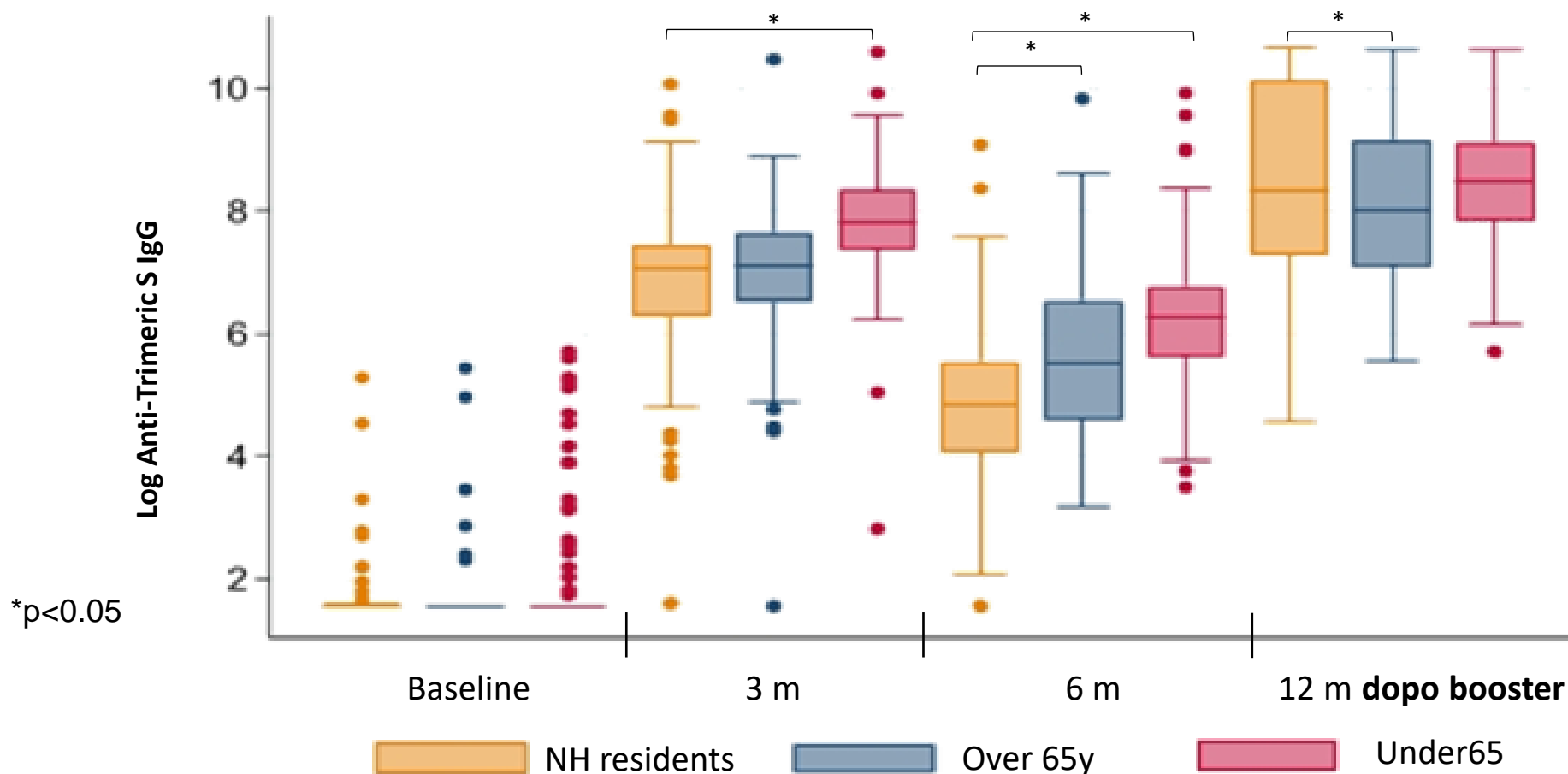
# Studio Gerovax – Risposta anticorpale vaccino







# Studio Gerovax – Risposta anticorpale vaccino





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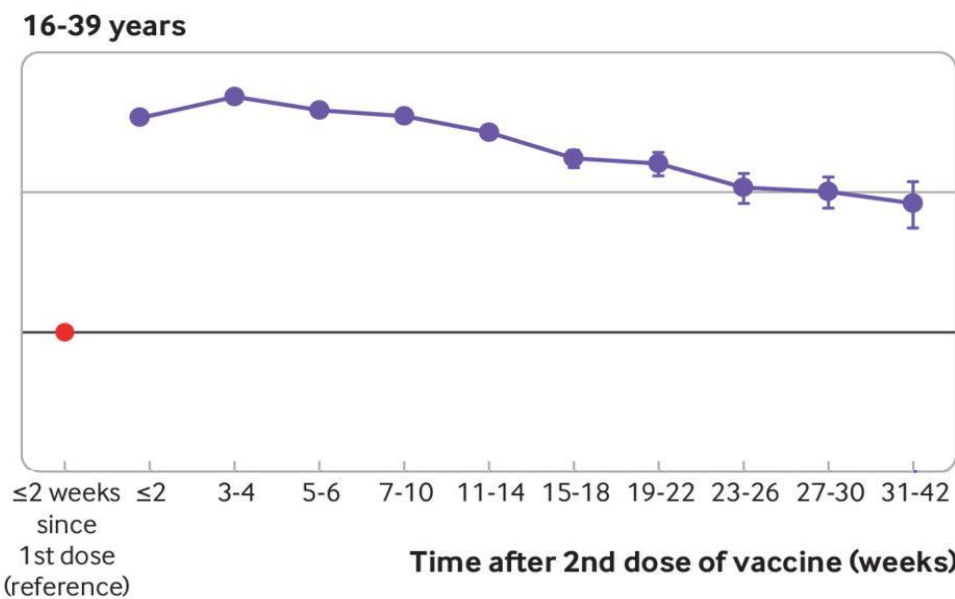
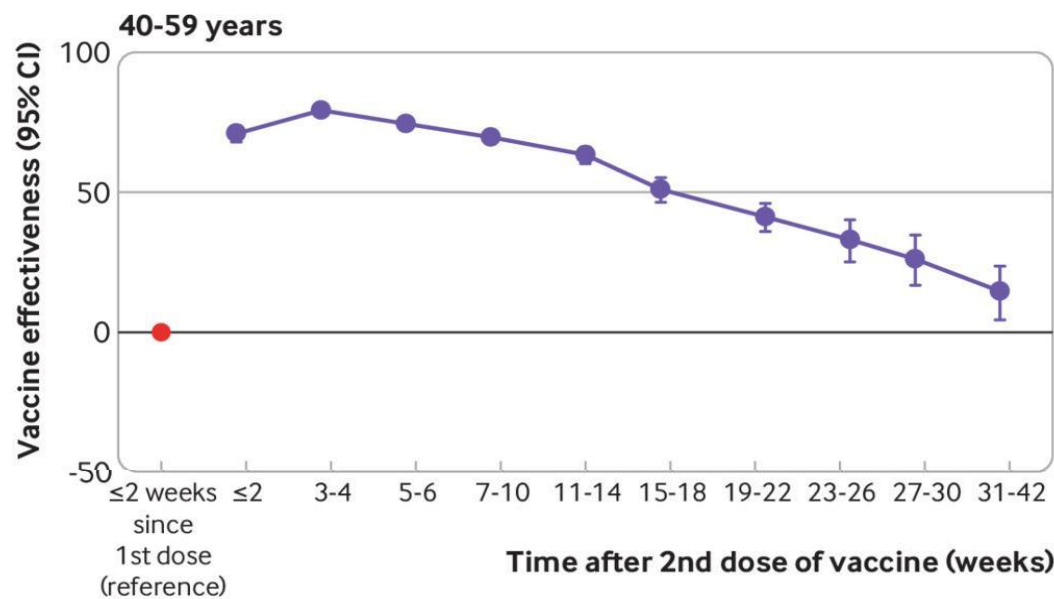
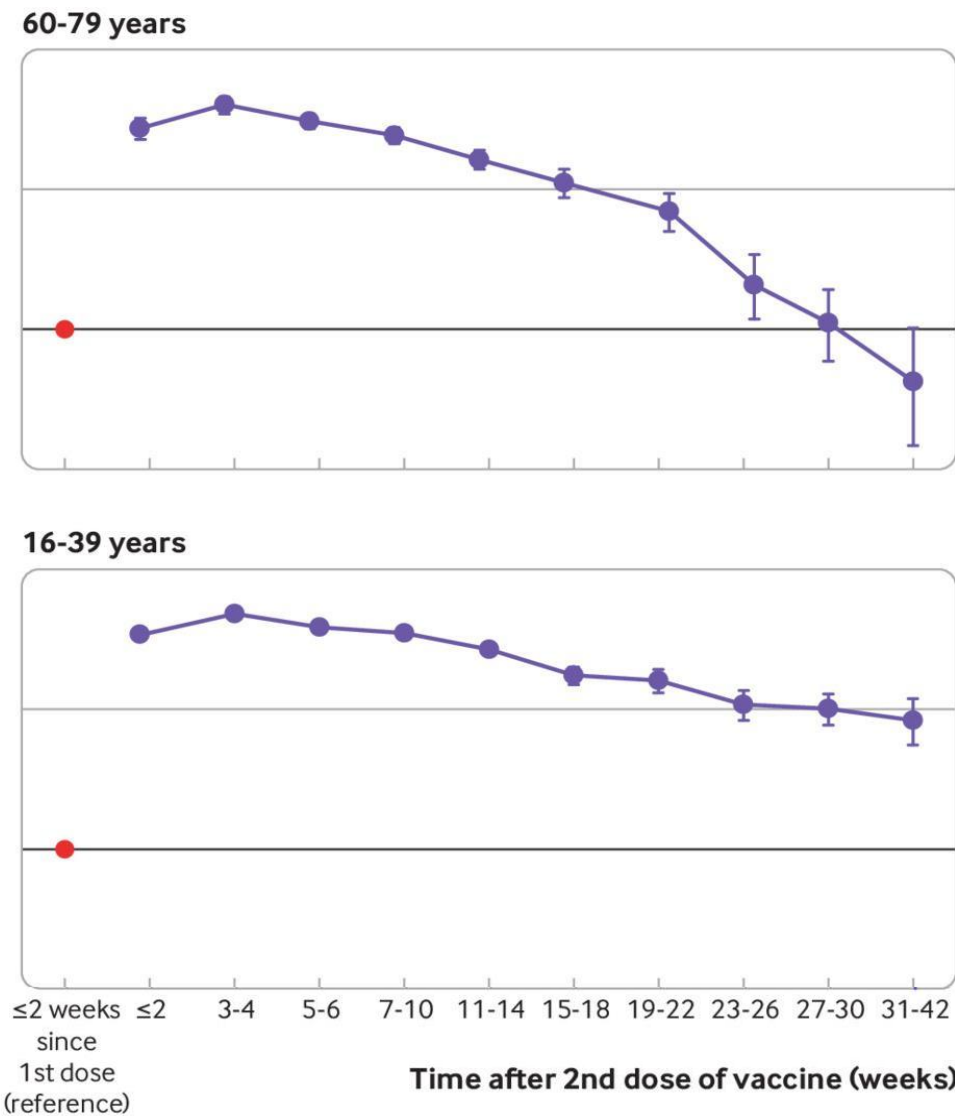
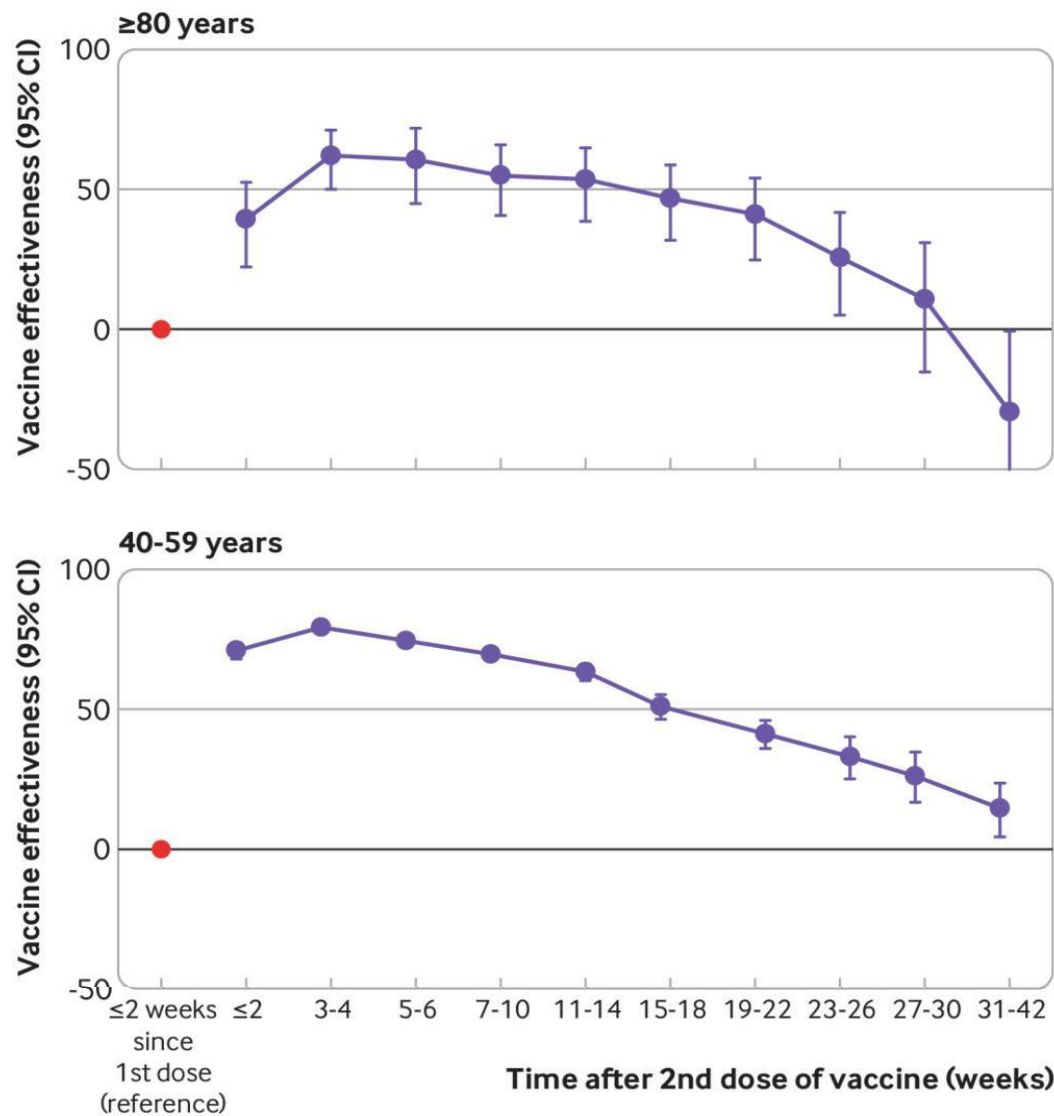
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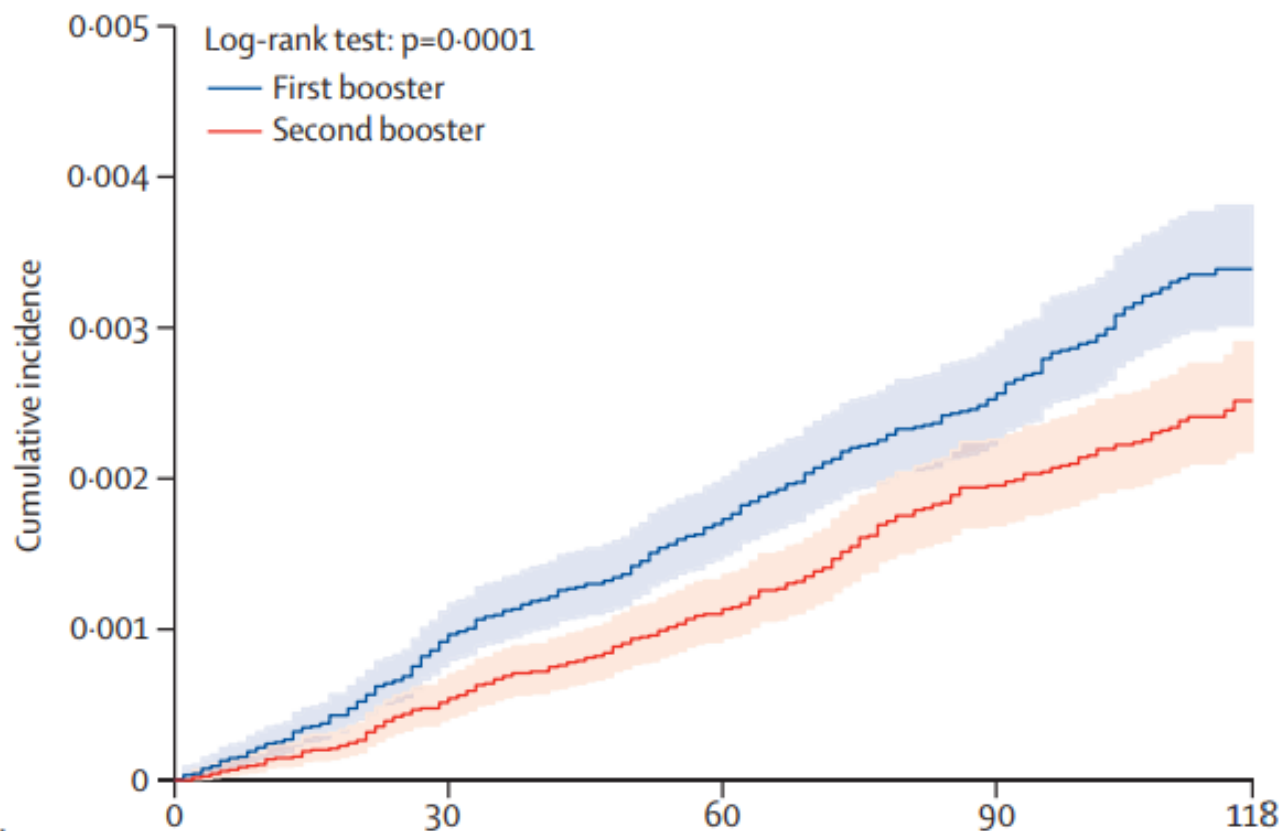
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# Effectiveness of mRNA vaccines against severe covid-19 during the delta phase





**A** Second booster dose—monovalent mRNA vaccine



Number at risk (number of severe COVID-19 cases)

First booster	116 822 (101)	102 748 (74)	87 537 (68)	74 836 (56)	4156
Second booster	116 822 (57)	104 179 (57)	89 850 (72)	77 569 (32)	4336

Cumulative incidence of severe COVID-19 by booster group in persons aged 60 or older



# Effectiveness against severe COVID-19 of a second booster dose of mRNA vaccine relative to a first booster dose

	First booster			Second booster			rVE (95% CI)
	Number of events	Person-days	Rate per 100 000 person-days	Number of events	Person-days	Rate per 100 000 person-days	
<b>60-79 years of age (n=907 326 matched pairs)</b>							
Overall (14-118 days)*	644	36 686 991	1.76	302	37 020 456	0.82	53.6% (46.8 to 59.5)
14-30 days	217	13 307 762	1.63	72	13 341 810	0.54	66.9% (56.8 to 74.7)
30-60 days	313	16 704 779	1.87	156	16 768 159	0.93	50.4% (39.8 to 59.0)
60-118 days	112	6 410 754	1.75	67	6 419 257	1.04	40.3% (19.2 to 55.9)
<b>≥80 years of age (n=283 430 matched pairs)</b>							
Overall (14-118 days)*	829	11 166 711	7.42	432	11 250 241	3.84	48.3% (41.9 to 54.0)
14-30 days	311	4 129 319	7.53	136	4 138 064	3.29	56.3% (46.6 to 64.3)
30-60 days	396	5 124 504	7.73	210	5 141 728	4.08	47.2% (37.5 to 55.3)
60-118 days	116	1 811 577	6.40	82	1 812 303	4.52	29.4% (6.3 to 46.8)

rVE=relative vaccine effectiveness. \*The analysis by time interval includes only matched pairs still at risk at the start of each of them.



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# Frequency of adverse events after vaccination in NH

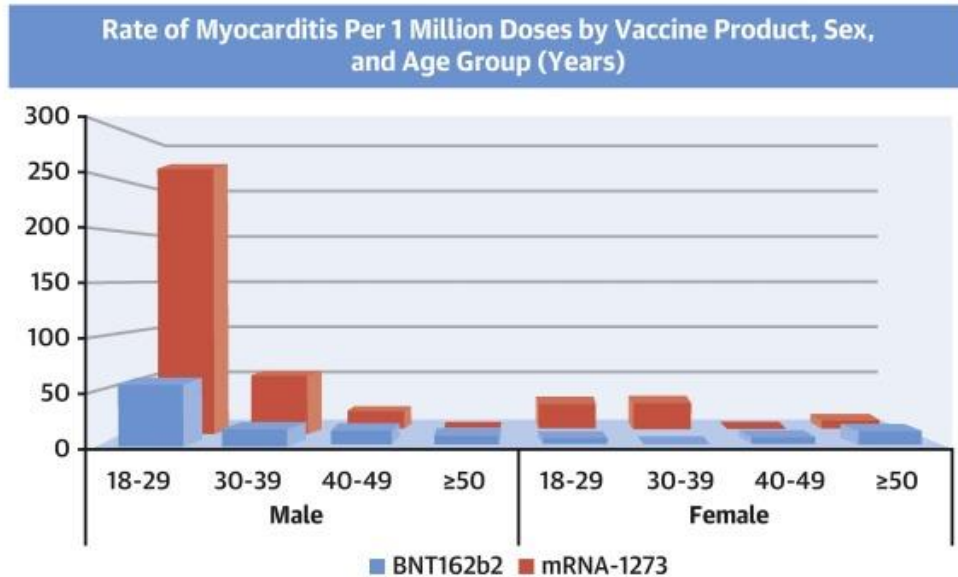
	First dose	Second dose	Third dose
Fever (%)	2.9	2.7	2.4
Muscle weakness (%)	2.0	1.2	0.9
Muscle joints pain (%)	3.9	3.0	1.9
Pain swelling at the injection site (%)	9.9	7.7	3.1
Headache (%)	0.8	1.2	0.8
Swollen lymph nodes (%)	0.3	0.0	0.3
Chills (%)	0.5	0.6	0.1
Difficulty breathing (%)	0.7	0.3	0.3
Insomnia (%)	1.5	1.3	0.5
Sneezing (%)	0.1	0.0	0.2
Fast Heartbeat (%)	0.1	0.3	0.1
Cough (%)	0.6	0.4	0.6
Anorexia (%)	1.0	1.1	0.5
Raynaud's effect (%)	0.0	0.0	0
Nausea or vomiting (%)	0.8	1.2	0.6
Delirium (%)	1.6	0.7	1.2
Diarrhea (%)	1.8	1.1	1.3
Increased blood pressure (%)	0.4	0.2	0.3
Weakness (%)	2.8	2.8	1.9
Cutaneous rash (%)	0.2	0.1	0.2
Confusion (%)	1.4	0.8	0.4
Acute peripheral Bell palsy (%)	0.0	0.0	0
Dizziness (%)	0.3	0.4	0.1
Myelitis transversa (%)	0.0	0.0	0
Guillain Barrè syndrome (%)	0.0	0.0	0
Anaphylaxis (%)	0.0	0.0	0

# Frequency of adverse events after vaccination in NH

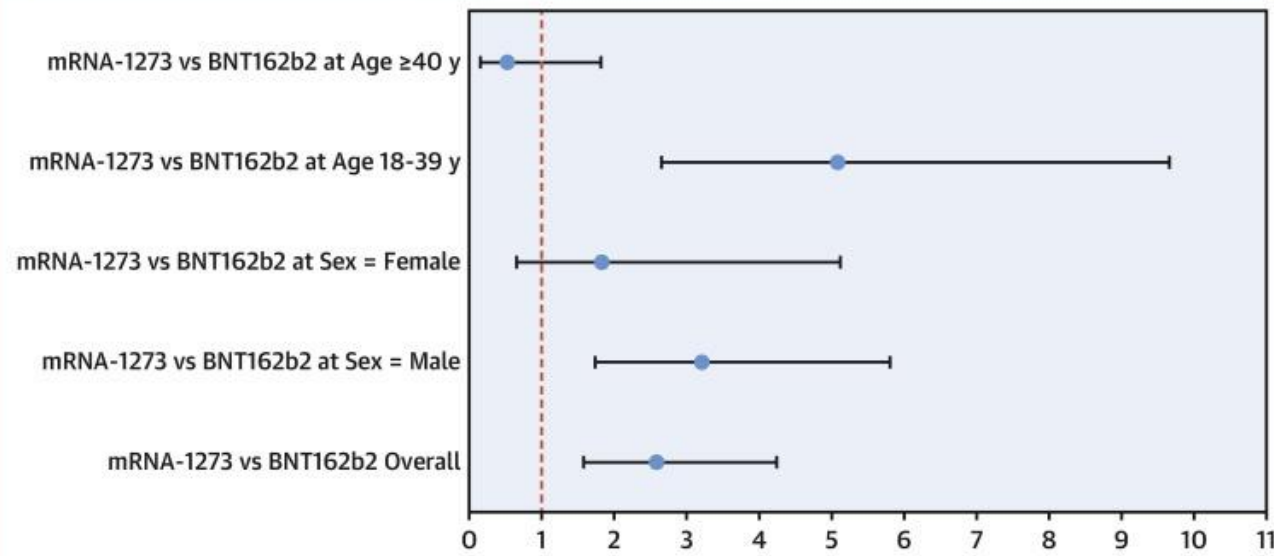
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Dizziness (%)	0.3	0.4	0.1
<b>Myelitis transversa (%)</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>
<b>Guillain Barrè syndrome (%)</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>
<b>Anaphylaxis (%)</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>



**CENTRAL ILLUSTRATION: Association Between COVID-19 Vaccine Product (mRNA-1273 and BNT162b2) and Myocarditis**



**Overall and Stratified Logistic Regression Results (Adjusted Odds Ratios With 95% CIs)**



The risk of hospital admission or death from myocarditis is greater after SARS-CoV-2 infection than COVID-19 vaccination ..., the risk of myocarditis after vaccination is higher in younger men, particularly after a second dose of the mRNA-1273 vaccine



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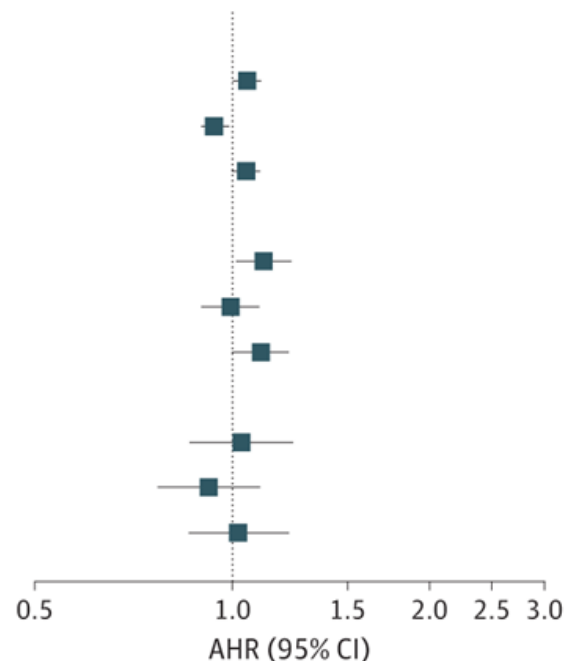
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# Estimated Effectiveness of Coadministration of the BNT162b2 COVID-19 Vaccine With Influenza Vaccine

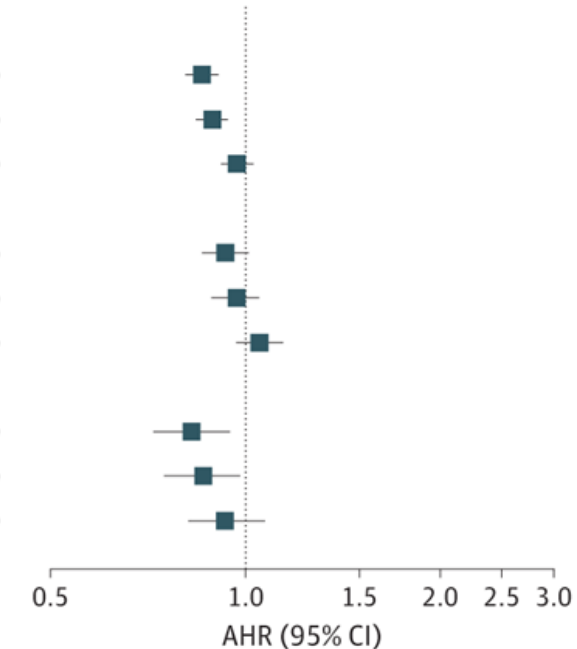
**A** Aged ≥65 y

Outcome	AHR (95% CI)
<b>COVID-19 outpatient visit</b>	
Main results	1.06 (1.01-1.11)
Calibrated with unintentional injury	0.94 (0.90-0.99)
Calibrated with UTI	1.05 (1.00-1.10)
<b>COVID-19 ED/UC encounter</b>	
Main results	1.12 (1.02-1.23)
Calibrated with unintentional injury	1.00 (0.90-1.10)
Calibrated with UTI	1.11 (1.00-1.22)
<b>COVID-19 hospitalization</b>	
Main results	1.04 (0.87-1.24)
Calibrated with unintentional injury	0.92 (0.77-1.10)
Calibrated with UTI	1.02 (0.86-1.22)



**A** Aged ≥65 y

Outcome	AHR (95% CI)
<b>Influenza outpatient visit</b>	
Main results	0.86 (0.81-0.91)
Calibrated with unintentional injury	0.89 (0.84-0.94)
Calibrated with UTI	0.97 (0.92-1.03)
<b>Influenza ED/UC encounter</b>	
Main results	0.93 (0.86-1.01)
Calibrated with unintentional injury	0.97 (0.89-1.05)
Calibrated with UTI	1.05 (0.97-1.14)
<b>Influenza hospitalization</b>	
Main results	0.83 (0.72-0.95)
Calibrated with unintentional injury	0.86 (0.75-0.98)
Calibrated with UTI	0.93 (0.82-1.07)






## Flu & COVID-19 Vaccines

### Can flu vaccines and COVID-19 vaccines be given at the same time?

Yes, getting a flu vaccine and COVID-19 vaccine at the same visit is recommended if you are eligible and the timing for each vaccine is right.

### Is it safe to get a flu vaccine and a COVID-19 vaccine at the same time?

Studies conducted throughout the COVID-19 pandemic supported the safety of getting a flu vaccine and at the same visit. For example, one [CDC study](#)  showed that people who got a flu vaccine and COVID-19 monovalent vaccine at the same time were slightly more likely to have reactions including fatigue, headache, and muscle ache than people who only got a COVID-19 monovalent vaccine, but those reactions were mostly mild and went away quickly.

### Why should I get a flu vaccine and a COVID-19 vaccine at the same visit?

This might be more convenient than having two separate visits. Getting both vaccines at the same time if you are due for both is an option.

### If I decide to wait between getting my flu vaccine and a COVID-19 vaccine, is there a recommended waiting time between vaccines?

No, there's no recommended waiting time between getting a flu vaccine and a COVID-19 vaccine.



# Conclusioni

- COVID-19 malattia stagionale
- Diverse varianti virali
- Immunità vaccinale declina nel tempo
- Vaccini efficaci
- Effetti collaterali limitati
- Co-somministrazione possibile