JNI 24es Journées Nationales d'Infectiologie
Grenoble
et la région Auvergne-Rhône-Alpes
ALPEXPO
du mercredi 7 au vendredi 9 juin 2023

Best-of Vaccins 2023

Dr Amandine Gagneux-Brunon
@BrunonGagneux

Déclaration de liens d'intérêt avec les industries de santé en rapport avec le thème de la présentation (loi du 04/03/2002) :

Intervenant : Gagneux-Brunon Amandine

Titre : Best of Vaccins

- L'orateur ne souhaite pas répondre ☐

Consultant ou membre d'un conseil scientifique	☐ OUI	☑ NON
Conférencier ou auteur/rédacteur rémunéré d'articles ou documents	☑ OUI	☐ NON
Prise en charge de frais de voyage, d'hébergement ou d'inscription à des congrès ou autres manifestations	☑ OUI	☐ NON
Investigateur principal d'une recherche ou d'une étude clinique	☑ OUI	☐ NON

J’ai demandé à Chat GPT…quels articles retenir en 2022-2023 ?

- En tant que modèle linguistique développé par OpenAI, je n'ai pas directement accès à Internet ou aux mises à jour en temps réel. Mon entraînement s'est terminé en septembre 2021, donc je ne suis pas au courant des articles scientifiques publiés après cette date.
- Cependant, en 2022-2023, de nombreux progrès ont été réalisés dans le domaine de la vaccinologie. Malheureusement, je ne peux pas vous recommander un article scientifique spécifique publié pendant cette période, car je ne suis pas capable de faire une recherche en temps réel.
- Cependant, je peux vous donner un aperçu général des développements récents en vaccinologie. Au cours de ces dernières années, la recherche sur les vaccins a été très active, en particulier en raison de la pandémie de COVID-19. Les vaccins contre le COVID-19 ont été développés et déployés à un rythme sans précédent.

https://chat.openai.com/

UN BEST-OF VACCINS SANS COVID-19? NON PAS POUR 2023…

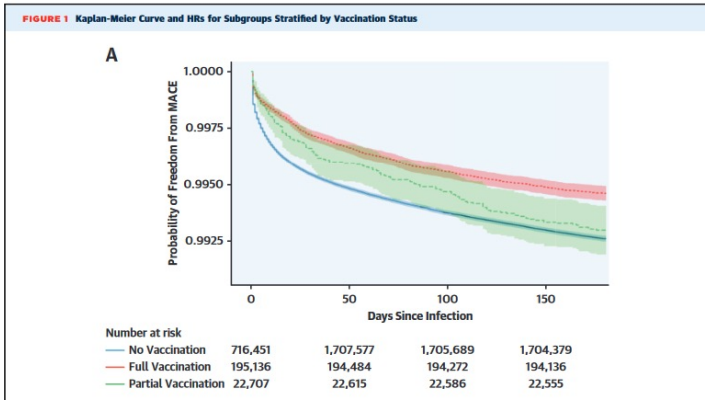
Vaccination COVID-19 et grossesse

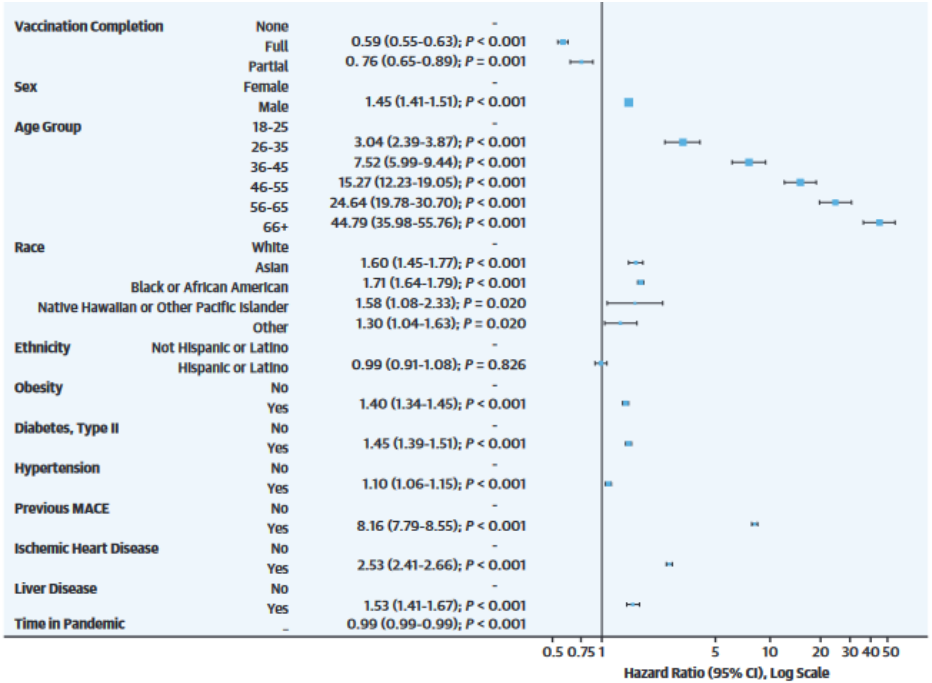
	All women: effectiveness against laboratory-confirmed COVID-19		All women: effectiveness against moderate COVID-19 symptoms*		All women: effectiveness against severe COVID-19 symptoms, referral for higher care, ICU admission, or death†		Women diagnosed with COVID-19: effectiveness against severe symptoms, referral for higher care, ICU admission, or death†	
	N	VE (95% CI)	N	VE (95% CI)	N	VE (95% CI)	N	VE (95% CI)
All vaccines combined								
Unvaccinated	632	0 (ref)	213	0 (ref)	85	0 (ref)	65	0 (ref)
Partially vaccinated	145	5% (0–18)	41	26% (0–46)	13	35% (0–64)	9	33% (0–67)
Completely vaccinated	535	9% (0–18)	171	20% (1–34)‡	36	48% (22–65)‡	10	74% (48–87)‡
Booster vaccination	233	30% (19–39)‡	71	48% (32–61)‡	7	76% (47–89)‡	2	91% (65–98)‡
mRNA vaccine								
Partially vaccinated	84	0 (0–17)	18	32% (0–57)	6	35% (0–72)	5	29% (0–71)
Completely vaccinated	352	11% (0–21)‡	75	41% (22–55)‡	18	56% (27–74)‡	6	79% (49–91)‡
Booster vaccination	152	32% (20–42)†	35	54% (34–68)†	4	81% (47–93)†	1	94% (56–99)†

4 618 Femmes enceintes au Royaume-Uni
Entre le 27/11/2021 et le 30/06/2022
Infection par le variant omicron:
Augmentation du risque de complications maternelles et néonatales
Efficacité de la vaccination sur les complications maternelles, notamment en cas de rappel et de vaccination par un vaccin ARNm

Villar J, et al. Pregnancy outcomes and vaccine effectiveness during the period of omicron as the variant of concern, INTERCOVID-2022: a multinational, observational study. The Lancet. 2023 Feb 11;401(10375):447–57.

Vaccination contre le COVID et prévention cardiovasculaire





Patients infectés par le SARS-CoV-2 entre mars 2020 et février 2022
1,934,294 patients
Critère de jugement survenue d'un évènement cardiovasculaire
Suivi 180 jours après l'infection

Jiang J, et al. N3C Consortium. Impact of Vaccination on Major Adverse Cardiovascular Events in Patients With COVID-19 Infection. J Am Coll Cardiol. 2023 Jan 27;81(9):928–30.

Vaccination COVID et réduction du risque de diabète post-infection

Etude de cohorte américaine

23 709 patients

Comparaison de la fréquence du diabète, HTA, et dyslipidémie avant après COVID

Analyse d'autres pathologies pour écarter un impact sur la PEC entre Mars 2020 et Juin 2022 pour exclure l'effet confinement

Réduction du risque de 40 % de diabète

Figure. New Diagnoses Before and After COVID-19 Infection

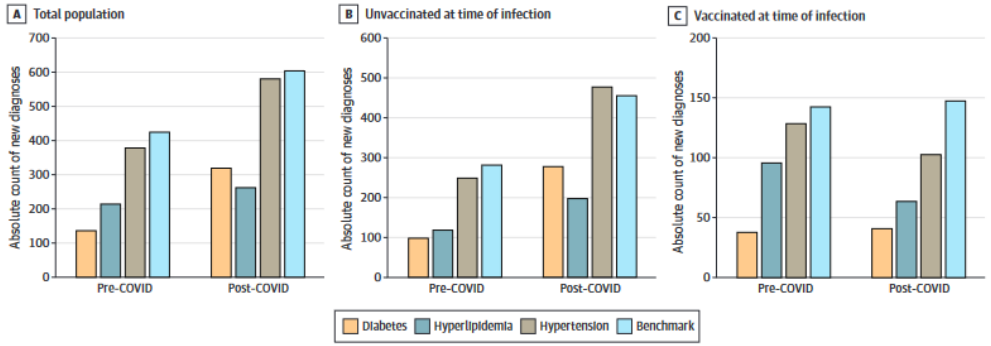
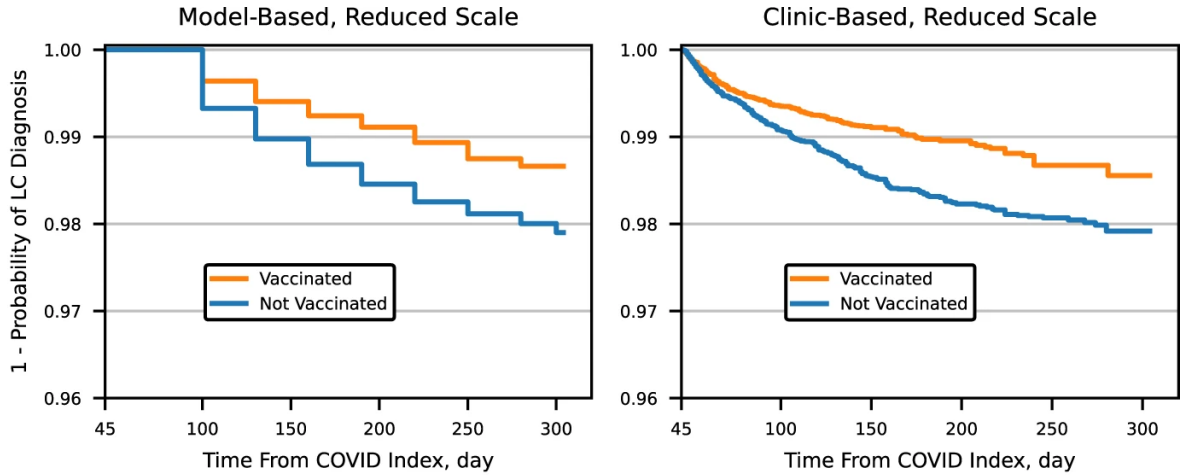


Table. Multivariable-Adjusted Risk for New Cardiometabolic Diagnosis After COVID-19 Infection[a]

	New diagnosis post-COVID-19 infection vs pre-COVID-19 infection					
	Diabetes[b]		Hypertension[b]		Hyperlipidemia[b]	
Model covariates	OR (95% CI)	*P* value	OR (95% CI)	*P* value	OR (95% CI)	*P* value
Age, y	1.00 (0.99-1.01)	.91	1.00 (0.99-1.01)	.77	1.00 (0.99-1.01)	.56
Male sex	0.91 (0.73-1.13)	.39	0.94 (0.78-1.14)	.52	0.83 (0.67-1.03)	.09
Timing of index infection (after vs before emergence of Omicron variant)	0.85 (0.64-1.12)	.24	0.96 (0.76-1.23)	.76	0.99 (0.75-1.30)	.93
Vaccinated vs unvaccinated status before infection	0.63 (0.47-0.85)	.002	0.54 (0.42-0.69)	<.001	0.55 (0.41-0.73)	<.001
New diagnosis of cardiometabolic vs benchmark condition[b]	1.58 (1.24-2.02)	<.001	1.06 (0.88-1.28)	.52	0.91 (0.73-1.15)	.43

Kwan AC, Ebinger JE, Botting P, Navarrette J, Claggett B, Cheng S. Association of COVID-19 Vaccination With Risk for Incident Diabetes After COVID-19 Infection. JAMA Network Open. 2023 Feb 14;6(2):e2255965.

Efficacité vaccinale sur le COVID-long

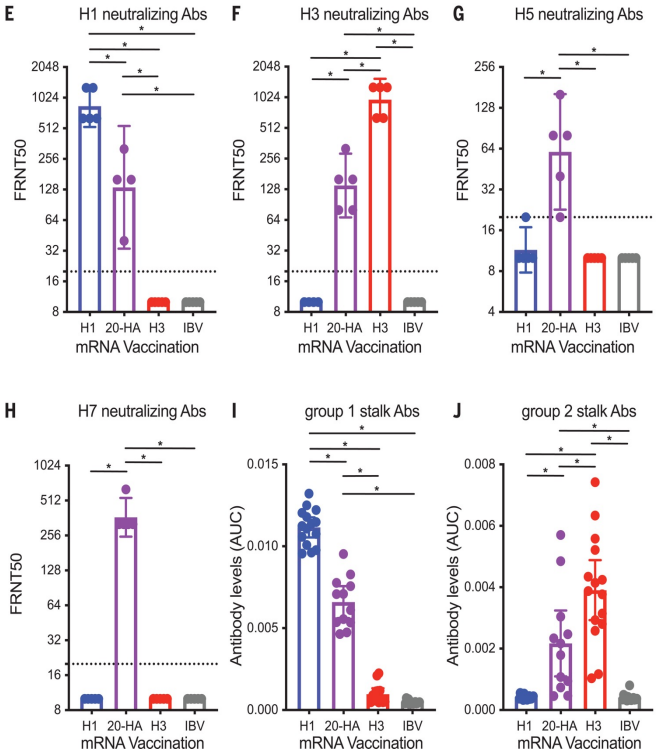


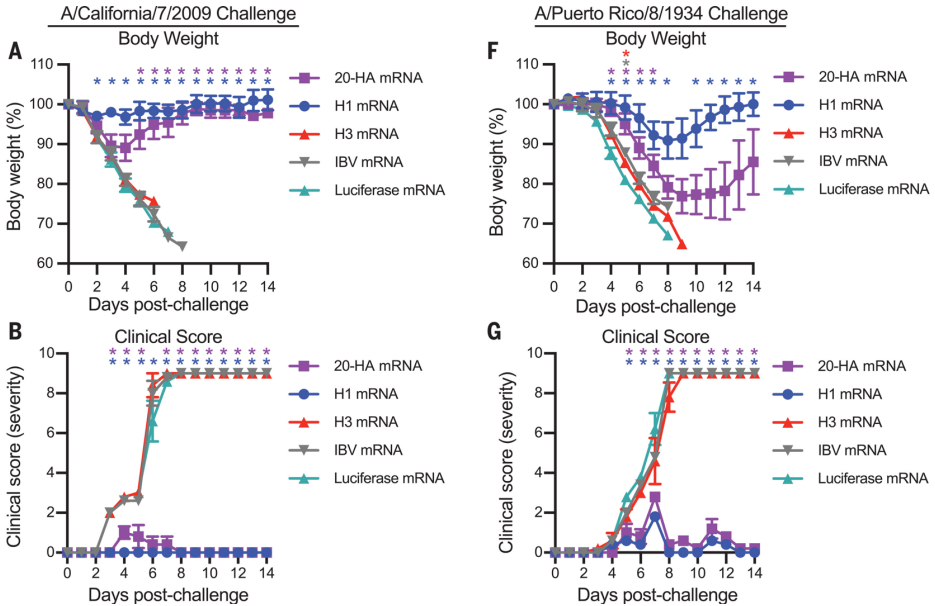
Épisodes de COVID-19 de Août 2021 à Janvier 2022
Cohortes de plus de 47 000 patients et une autre de plus de 198 000 patients

Brannock MD, et al. Long COVID risk and pre-COVID vaccination in an EHR-based cohort study from the RECOVER program. Nat Commun. 2023 May 22;14(1):2914.

ET LA GRIPPE?

Un vaccin universel à ARNm?

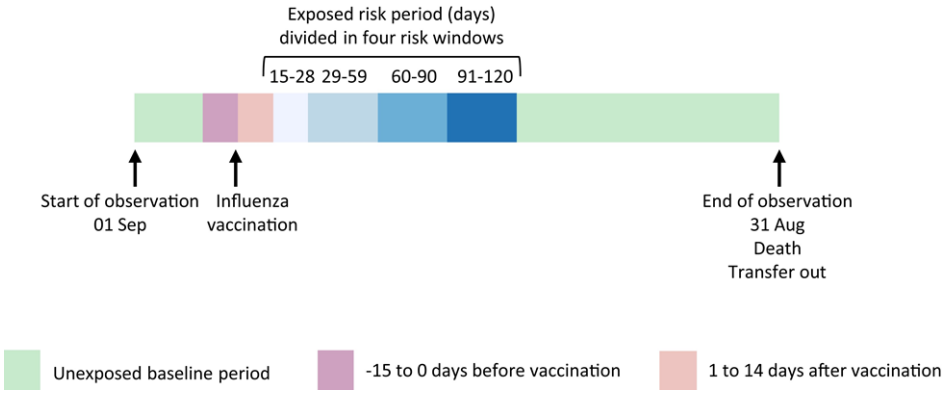


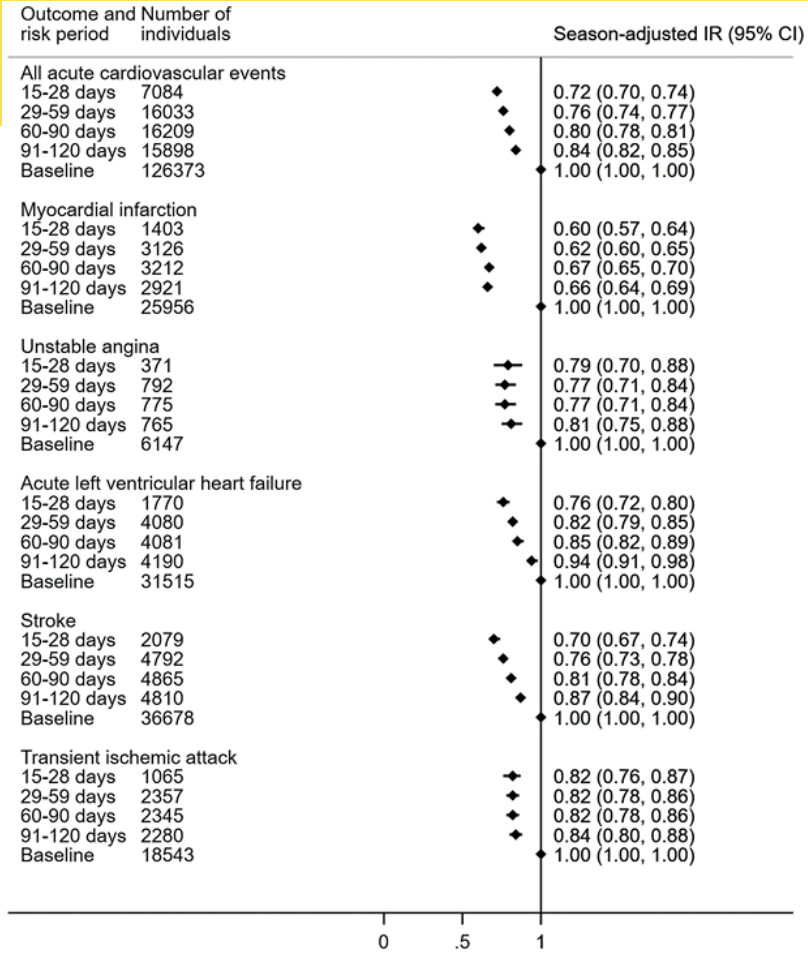


Evaluation sur un modèle murin d'un vaccin ARNm encodant pour 20 antigènes hémagglutinine

Arevalo CP, al. A multivalent nucleoside-modified mRNA vaccine against all known influenza virus subtypes. Science. 2022 Nov 25;378(6622):899–904.

Vaccin contre la grippe et prévention primaire cardiovasculaire





Davidson JA, Banerjee A, Douglas I, Leyrat C, Pebody R, McDonald HI, et al. Primary prevention of acute cardiovascular events by influenza vaccination: an observational study. European Heart Journal. 2023 Feb 14;44(7):610–20.

Vaccin contre la grippe et prévention primaire cardiovasculaire

ESC European Society of Cardiology
European Heart Journal (2023) **44**, 621–623
https://doi.org/10.1093/eurheartj/ehac826
EDITORIAL

The ideal vaccine to prevent cardiovascular disease

Ole Fröbert [1–4]*, Sara Cajander [5], and Jacob A. Udell [6]

"The effect sizes reported by Davidson et al. and the available randomized trials for acute cardiovascular event risk are on a par with those seen in guideline-directed medical therapy for cardiovascular disease such as aspirin, angiotensin-converting enzyme inhibitors, beta-blockers, statins, and dual antiplatelet therapy."

"However, with the totality of observational and prospective data consistently showing large and clinically important reductions in cardiovascular events and no signs of harm, it is our opinion that (i) ***health authorities should take note and endorse annual influenza vaccination as a cardiovascular preventive measure; (ii) cardiac societies should upgrade guideline recommendations of influenza vaccination for patients with cardiovascular disease from Class I, Level of Evidence B to IA; guidelines should also include recommendation of vaccination before discharge following a cardiovascular event, with cardiologists being the responsible party; and (iii) seasonal influenza vaccination should be targeted as a care performance measure among hospitalized cardiac patients during the influenza season"***

Augmenter la couverture vaccinale contre la grippe saisonnière

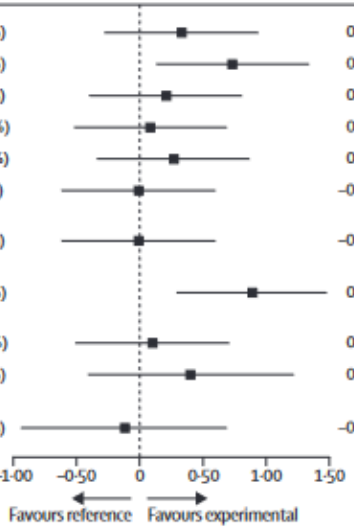
Etude menée pour la saison 2022/2023
Tous les danois de plus de 65 ans sont éligibles sauf si vivant en EHPAD, sauf si non éligible à l'envoi de courrier électronique

Un message portant sur la prévention CDV est associé à plus de vaccination

Standard electronic letter	Standard informational electronic letter (appendix p 3)	--	--
Repeated electronic letter	Standard electronic letter sent at randomisation and again 14 days later	Priming and hot state activation	--
Depersonalised electronic letter	Standard electronic letter without recipient name	Depersonalisation	--
Gain-framing electronic letter	Text added to standard electronic letter	Gain framing	"Vaccinations help end pandemics, like COVID-19 and the flu. Protect yourself and your loved ones."
Loss-framing electronic letter	Text added to standard electronic letter	Loss framing	"When too few people get vaccinated, pandemics from diseases like COVID-19 and the flu can spread and place you and your loved ones at risk."
Collective-goal framing electronic letter	Text added to standard electronic letter	Collective goal	"78% of all Danes aged 65 years and above were vaccinated against influenza last year. Help us achieve an even higher goal this year!"
Intention-prompt electronic letter	Text added to standard electronic letter	Active choice and implementation-intention prompt	"Many people find it helpful to make a plan for getting their flu vaccine. We encourage you to record your appointment time here: [blank space]"
Cardiovascular gain-framing electronic letter	Text added to standard electronic letter	Gain framing (cardiovascular)	"In addition to its protection against influenza infection, influenza vaccination also seems to protect against cardiovascular disease such as heart attacks and heart failure."
Expert-authority statement electronic letter	Text added to standard electronic letter	Expert authority and credibility of sender	"'I recommend everyone over the age of 65 years to get vaccinated against influenza'—Tyra Grove Krause, Executive Vice President, Statens Serum Institut."

Johansen ND, Vaduganathan M, Bhatt AS, Lee SG, Modin D, Claggett BL, et al. Electronic nudges to increase influenza vaccination uptake in Denmark: a nationwide, pragmatic, registry-based, randomised implementation trial. The Lancet [Internet]. 2023 Mar 5 [cited 2023 Mar 22]; Available from: https://www.sciencedirect.com/science/article/pii/S0140673623003495

	n/N (%)		Difference (99·55% CI)	Relative risk (99·55% CI)	p value
	Reference group	Experimental group			
Standard electronic letter vs usual care	277 470/346 327 (80·12%)	30 716/38 182 (80·45%)	0·33 (−0·28 to 0·94)	1·004 (0·997 to 1·012)	0·13
Repeated electronic letter vs usual care	277 470/346 327 (80·12%)	30 910/38 231 (80·85%)	0·73 (0·13 to 1·34)	1·009 (1·002 to 1·017)	0·0006
Depersonalised electronic letter vs usual care	277 470/346 327 (80·12%)	30 813/38 361 (80·32%)	0·21 (−0·40 to 0·81)	1·003 (0·995 to 1·010)	0·34
Gain-framing electronic letter vs usual care	277 470/346 327 (80·12%)	30 994/38 645 (80·20%)	0·08 (−0·52 to 0·69)	1·001 (0·993 to 1·009)	0·70
Loss-framing electronic letter vs usual care	277 470/346 327 (80·12%)	30 887/38 426 (80·38%)	0·27 (−0·34 to 0·87)	1·003 (0·996 to 1·011)	0·22
Collective-goal framing electronic letter vs usual care	277 470/346 327 (80·12%)	30 743/38 375 (80·11%)	−0·01 (−0·62 to 0·60)	1·000 (0·993 to 1·008)	0·98
Intention-prompt electronic letter vs usual care	277 470/346 327 (80·12%)	30 847/38 507 (80·11%)	−0·01 (−0·62 to 0·60)	1·000 (0·992 to 1·008)	0·96
Cardiovascular gain-framing electronic letter vs usual care	277 470/346 327 (80·12%)	31 256/38 586 (81·00%)	0·89 (0·29 to 1·48)	1·011 (1·004 to 1·019)	<0·0001
Expert authority statement vs usual care	277 470/346 327 (80·12%)	30 628/38 180 (80·22%)	0·10 (−0·51 to 0·71)	1·001 (0·994 to 1·009)	0·64
Repeated electronic letter vs standard electronic letter	30 716/38 182 (80·45%)	30 910/38 231 (80·85%)	0·40 (−0·41 to 1·22)	1·005 (0·995 to 1·015)	0·16
Depersonalised electronic letter vs standard electronic letter	30 716/38 182 (80·45%)	30 813/38 361 (80·32%)	−0·12 (−0·94 to 0·69)	1·007 (0·974 to 1·041)	0·67



Taux de couverture vaccinale dans le bras contrôle 80 %

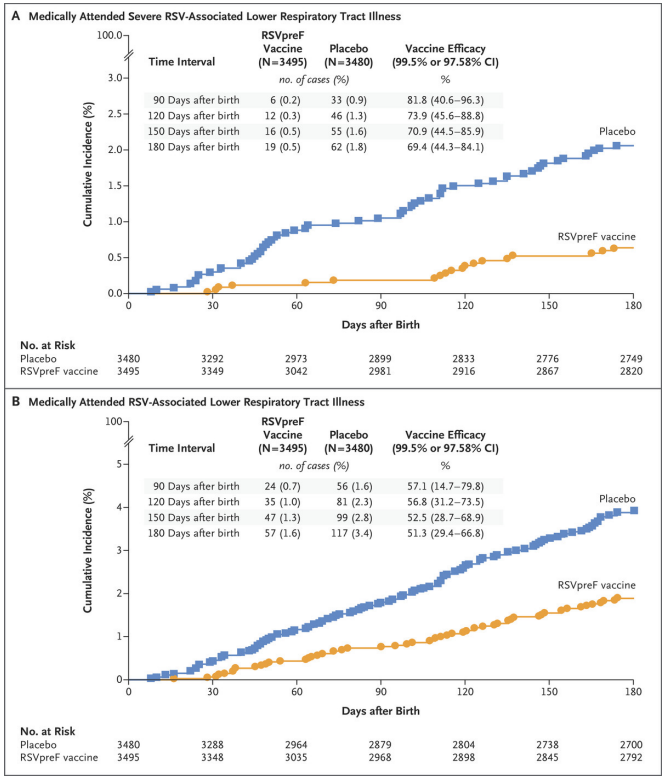
Il faut envoyer 117 messages sur le risque cardiovasculaire pour une vaccination supplémentaire

L'efficacité est la meilleure chez les sujets qui ne se sont jamais fait vacciner.

VRS (FEMMES ENCEINTES, NOURRISSONS)

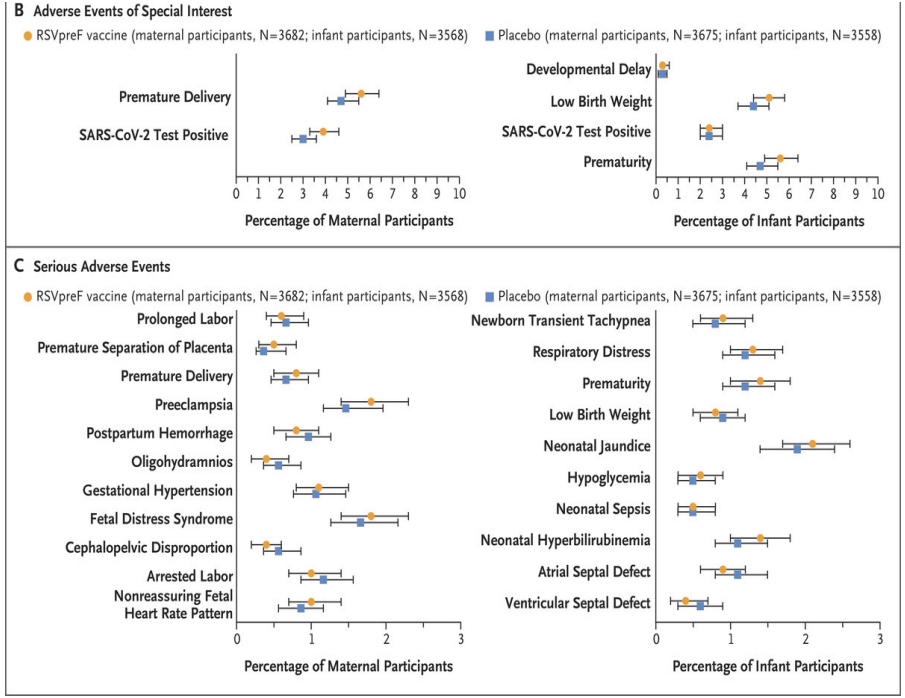
Vaccinations VRS (vaccine protéique) au cours de la grossesse

Essai Matisse
Vaccin Bivalent Prefusion F
Essai de phase III
7358 participantes
Efficacité supérieure à 80 % à M3 sur les infections sévères chez le nourrisson



B Kampmann et al. N Engl J Med 2023;388:1451-1464.

Vaccinations VRS (vaccine protéique) au cours de la grossesse

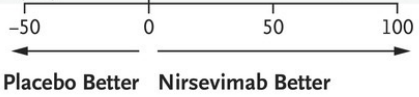


B Kampmann et al. N Engl J Med 2023;388:1451-1464.

RSV et anticorps monoclonaux

Effet du Nirsevimab sur les infections respiratoires basses à VRS hez les nourrissons entrant dans leur première saison épidémique de VRS

End Point	Placebo (N=1003)	Nirsevimab (N=2009)	Efficacy (95% CI)
	no. of participants with event (%)		
Medically attended RSV-associated LRTI	54 (5.4)	24 (1.2)	76.4 (62.3–85.2)
Hospitalization for RSV-associated LRTI	20 (2.0)	9 (0.4)	76.8 (49.4–89.4)
Very severe medically attended RSV-associated LRTI	17 (1.7)	7 (0.3)	78.6 (48.8–91.0)



WJ Muller et al. N Engl J Med 2023;388:1533-1534.

The NEW ENGLAND JOURNAL of MEDICINE

PNEUMOCOQUE

Vaccination anti-pneumococcique chez le sujet âgé

Figure. Incidence of Medicare Beneficiaries Hospitalized With Pneumonia and Adjusted Vaccine Effectiveness of 13-Valent Pneumococcal Conjugate Vaccine (PCV13)

Subgroup	Beneficiaries who received PCV13 only: Cases	Person-months of follow-up	Incidence per 100 000 person-months	Beneficiaries who did not receive any pneumococcal vaccine: Cases	Person-months of follow-up	Incidence per 100 000 person-months	Adjusted vaccine effectiveness, % (95% CI)
Hospitalized pneumonia							
Overall	162 579	123 687 910	131.4	755 467	554 062 976	136.4	6.7 (5.9 to 7.5)
By age group, y							
65-74	45 221	59 788 248	75.6	247 231	319 011 228	77.5	7.4 (6.2 to 8.5)
75-84	60 900	43 770 852	139.1	253 721	156 924 985	161.7	7.1 (6.0 to 8.1)
≥85	56 458	20 128 810	280.5	254 515	78 126 763	325.8	5.7 (4.6 to 6.8)
By risk group							
Low risk	4991	26 407 599	18.9	37 498	173 065 743	21.7	15.1 (12.2 to 18.1)
CMC	44 338	45 319 143	97.8	232 405	198 918 903	116.8	7.5 (6.4 to 8.7)
IC	4918	8801887	55.9	20 331	29 812 747	68.2	7.1 (3.9 to 10.3)
CMC and IC	108 332	43 159 281	251.0	465 233	152 265 583	305.5	5.8 (5.0 to 6.7)

Données chez 25 millions de bénéficiaires de Medicare

Taux de CV 20,5 %

Réduction de près de 10 % des hospitalisations pour pneumopathies aiguës communautaires

Table 2. Estimated Number of Hospitalized Pneumonia, Non-Health Care-Associated Pneumonia, and Lobar Pneumonia Cases Averted Among Medicare Beneficiaries Through Receipt of Any PCV13 Vaccination, September 2014 to December 2017

Population	Cases averted (95% CI): Hospitalized pneumonia (n = 300 531)	Non-health care-associated pneumonia (n = 241 279)	Lobar pneumonia (n = 16 810)
Overall by year	35 127 (33 011 to 37 270)	24 643 (22 761 to 26 552)	1294 (797 to 1819)
Overall by risk group and age group[a]			
IC + CMC			
65-74 y	6926 (6084 to 7793)	4346 (3622 to 5093)	355 (150 to 586)
75-84 y	10 170 (9124 to 11 241)	6938 (6027 to 7873)	257 (16 to 525)
≥85 y	6741 (5825 to 7681)	4547 (3745 to 5372)	−42 (−232 to 172)

Kobayashi M, et al. Association of Pneumococcal Conjugate Vaccine Use With Hospitalized Pneumonia in Medicare Beneficiaries 65 Years or Older With and Without Medical Conditions, 2014 to 2017. JAMA Intern Med. 2023 Jan 1;183(1):40–7.

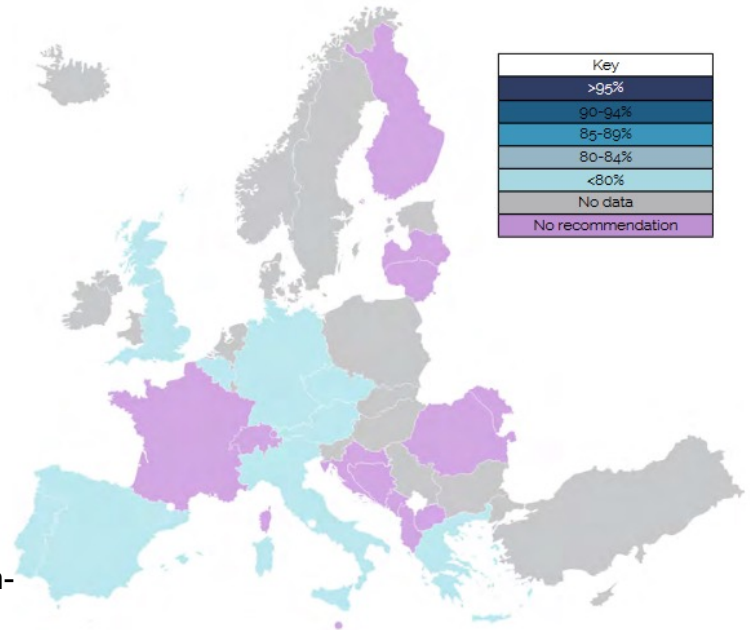
ilc...

LCI Coalition for Life Course Immunisation

European Pneumococcal Vaccination

A Progress Report

Figure 5: Pneumococcal vaccination coverage in older adults[b] across Europe



https://ilcuk.org.uk/wp-content/uploads/2023/01/ILC-European-Pneumococcal-Vaccination.pdf

VACCINATION ET L'ÉMERGENCE EN 2022

Vaccination Monkeypox

Emergence de Monkeypox en Mai 2022 en Europe

Recommandations au Royaume-Uni de vaccination par vaccin MVA (vaccin anti-variolique de 3 ème génération)

Période de surveillance 4 Juillet au 9 Octobre 2022

Comparaison du pourcentage de vaccinés chez les patients présentant une infection confirmée virologiquement à la couverture vaccinale dans les populations ciblées par la vaccination (essentiellement HSH)

Efficacité 78 %

Effectiveness of one dose of MVA–BN smallpox vaccine against mpox in England using the case-coverage method: an observational study

Marta Bertran, Nick Andrews, Chloe Davison, Bennet Dugbazah, Jacob Boateng, Rachel Lunt, Joanne Hardstaff, Melanie Green, Paula Blomquist, Charlie Turner, Hamish Mohammed, Rebecca Cordery, Sema Mandal, Colin Campbell, Shamez N Ladhani, Mary Ramsay, Gayatri Amirthalingam, Jamie Lopez Bernal

Lancet Infect Dis 2023
Published Online March 13, 2023
https://doi.org/10.1016/S1473-3099(23)00057-9
See Online/Comment

Summary

Background The UK experienced a national outbreak of mpox (formerly known as monkeypox) disease that started in May, 2022, as did many other countries worldwide, with case numbers rising rapidly, mainly among gay, bisexual, and other men who have sex with men (GBMSM). To control the outbreak, Modified Vaccinia Ankara–Bavaria Nordic (MVA–BN), an attenuated smallpox vaccine, was offered to at-risk GBMSM. We aimed to assess the effectiveness of a single MVA–BN dose against symptomatic mpox disease in at-risk GBMSM.

	Cases	Matched coverage*	Vaccine effectiveness (95% CI)
All ages, primary coverage			
Dose 1 interval, 0 to 13 days	32/362 (8·8%)	7·9%	–4% (–50 to 29)
Dose 1 interval, ≥14 days	8/362 (2·2%)	8·0%	78% (54 to 89)
Unvaccinated	322/362 (89·0%)	84·1%	..

Bertran M, Andrews N, Davison C, Dugbazah B, Boateng J, Lunt R, et al. Effectiveness of one dose of MVA–BN smallpox vaccine against mpox in England using the case-coverage method: an observational study. The Lancet Infectious Diseases [Internet]. 2023 Mar 13 [cited 2023 Mar 17]; Available from: https://www.sciencedirect.com/science/article/pii/S1473309923000579

Vaccination Monkeypox

Etude israélienne de cohorte de sujets éligibles à la vaccination (HSH avec ATCD récent d'IST, ou prepeurs, ou suivis pour une infection à VIH)
N=2054 sujets (1017 vaccinés, 1037 non vaccinés)
Une dose unique
Efficacité de 86 %

Table 2 | Association of participant characteristics and MPXV infection

Variables	Results of the univariable[a] models	Results of the multivariable[b] model
	HR (95% CI)	HR (95% CI)
Vaccination	0.30 (0.11, 0.83)	0.14 (0.05, 0.41)
Tel Aviv District	3.11 (1.05, 9.23)	3.98 (1.29, 12.33)
HIV-PrEP use[c]	0.97 (0.39, 2.41)	
Purchase of PDE5 inhibitors[c]	1.84 (0.67, 5.02)	2.14 (0.76, 5.99)
History of HIV/AIDS	0.87 (0.34, 2.24)	
Any syphilis infection	1.89 (0.76, 4.67)	1.11 (0.39, 3.18)
Chlamydia or NE gonorrhea in recent[c] rectal PCR	2.15 (0.72, 6.39)	
Chlamydia or NE gonorrhea in recent[c] urine PCR	3.38 (1.00, 11.48)	
Chlamydia or NE gonorrhea in recent[c] pharyngeal PCR	0.95 (0.22, 4.09)	
Chlamydia or NE gonorrhea in any recent[c] STI PCR	2.09 (0.84, 5.19)	2.53 (0.98, 6.52)
Recent[c] syphilis infection	3.58 (1.05, 12.15)	3.20 (0.78, 13.17)

Wolff Sagy Y, Zucker R, Hammerman A, Markovits H, Arieh NG, Abu Ahmad W, et al. Real-world effectiveness of a single dose of mpox vaccine in males. Nat Med. 2023 Jan 31;1–5.

Vaccination Monkeypox

Etude cas-témoin conduite aux Etats-Unis
Entre le 15 août 2022 et le 19 novembre 2022

Population contrôle: nouveau diagnostic de VIH et Prepeurs
Efficacité 35,8 % 1 dose, 66 % 2 doses

Table 2. Estimated Vaccine Effectiveness against Diagnosed Mpox among Persons Seeking Health Care, August 15 through November 19, 2022.*

Persons Seeking Health Care	Case Patients	Control Patients	Vaccine Effectiveness (95% CI)	
			Unadjusted	Adjusted†
	number		*percent*	
Unvaccinated, reference population	2022	6984		
Partially vaccinated, 1 dose	146	1000	52.0 (42.3–60.1)	35.8 (22.1–47.1)
Fully vaccinated, 2 doses	25	335	77.2 (65.0–85.1)	66.0 (47.4–78.1)

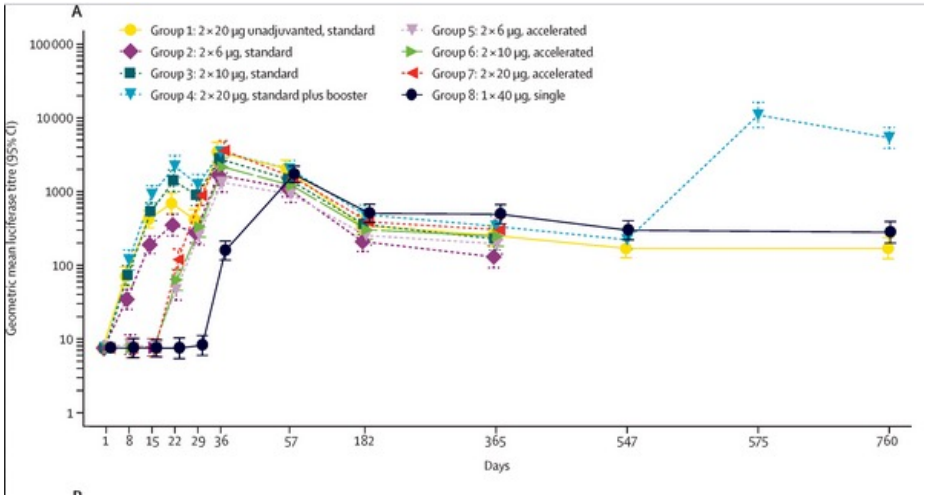
* CI denotes confidence interval.
† Adjustment was for age group (18 to 35, 36 to 49, and ≥50 years), race or ethnic group (non-Hispanic White, non-Hispanic Black, and other non-Hispanic), Social Vulnerability Index quartile (quartile 1 to 4, or unknown), and the presence or absence of an immunocompromising condition.

Deputy NP, et al. Vaccine Effectiveness of JYNNEOS against Mpox Disease in the United States. N Engl J Med [Internet]. 2023 May 18 [cited 2023 Jun 8]; Available from: https://www-nejm-org/doi/10.1056/NEJMoa2215201

AUTRES VACCINS

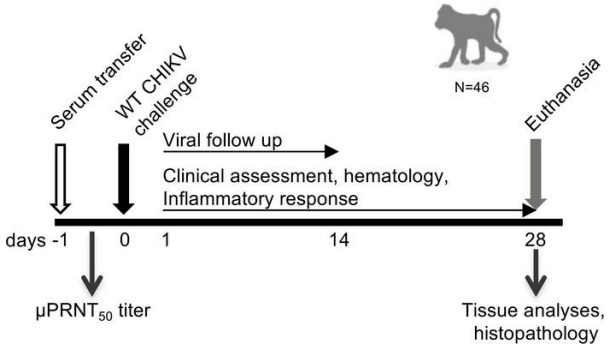
Chikungunya Phase I d'un vaccin VLP

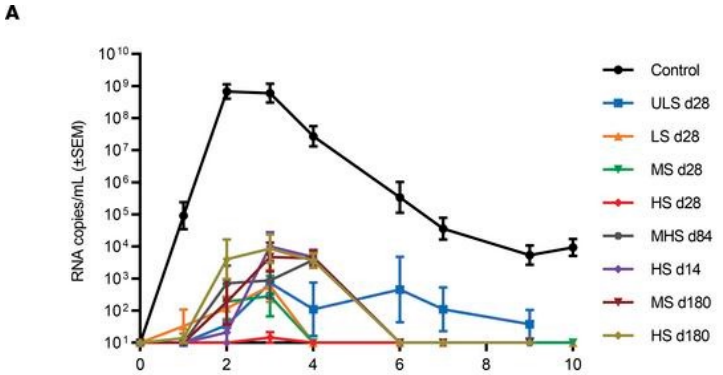
Vaccin adjuvanté VLP
8 schémas évalués
415 participants
Principales effets secondaires:
réaction au point d'injection 31 %



Bennett SR, et al. Safety and immunogenicity of PXVX0317, an aluminium hydroxide-adjuvanted chikungunya virus-like particle vaccine: a randomised, double-blind, parallel-group, phase 2 trial. Lancet Infect Dis. 2022 Sep;22(9):1343–55.

Chikungunya VLA1553





VLA1553 vaccin vivant atténué
Transfert passif de serum de volontaires vaccinés dans l'essai de phase I à des primates non-humains
Challenge viral

Roques P, Fritzer A, Dereuddre-Bosquet N, Wressnigg N, Hochreiter R, Bossevot L, et al. Effectiveness of CHIKV vaccine VLA1553 demonstrated by passive transfer of human sera. JCI Insight. 2022 Jul 22;7(14):e160173.

Méningocoque B

Table 2. Effectiveness of 4CMenB in Preventing Invasive Meningococcal Disease Cases Caused by Any Serogroup.

Vaccination Status	Case Patients		Controls		Matched Odds Ratio (95% CI)*		Vaccine Effectiveness (95% CI)
	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	Crude	Adjusted†	
	number						*percent*
Main analysis							
≥1 Vaccine dose	34	271	280	926	0.32 (0.21 to 0.50)	0.32 (0.21 to 0.50)	68 (50 to 79)
Partially vaccinated	18	271	106	926	0.47 (0.27 to 0.82)	0.46 (0.26 to 0.82)	54 (18 to 74)
Fully vaccinated	16	271	174	926	0.24 (0.13 to 0.43)	0.24 (0.13 to 0.43)	76 (57 to 87)
Sensitivity analysis‡							
≥1 Vaccine dose	31	221	244	705	0.31 (0.19 to 0.49)	0.31 (0.19 to 0.49)	69 (51 to 81)
Partially vaccinated	16	221	87	705	0.46 (0.25 to 0.83)	0.46 (0.26 to 0.83)	54 (17 to 74)
Fully vaccinated	15	221	157	705	0.22 (0.12 to 0.41)	0.22 (0.12 to 0.41)	78 (59 to 88)
Severe cases§							
≥1 Vaccine dose	27	180	186	635	0.43 (0.26 to 0.70)	0.41 (0.25 to 0.68)	59 (32 to 75)
Partially vaccinated	16	180	77	635	0.63 (0.34 to 1.17)	0.61 (0.32 to 1.14)	39 (−14 to 68)
Fully vaccinated	11	180	109	635	0.29 (0.15 to 0.58)	0.29 (0.14 to 0.57)	71 (43 to 86)

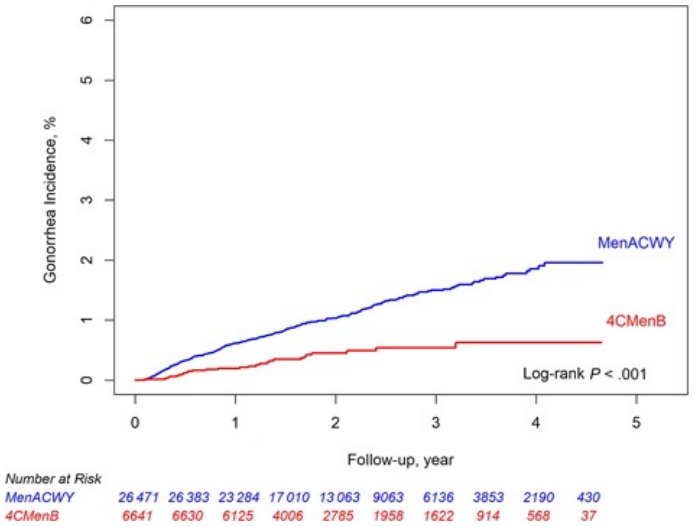
* Matched odds ratios were obtained by means of a conditional regression analysis. Children who had received the first dose of 4CMenB in the previous 14 days were also included in the model in a separate vaccination category. The results obtained from fitting the models are provided in the Supplementary Appendix.
† Matched odds ratio were adjusted for sex and high-risk conditions.
‡ The sensitivity analysis was limited to children 134 to 1825 days of age and those who were unvaccinated against serogroup C meningococcus or had high-risk conditions.
§ Severe cases included those causing death, admission to an intensive care unit, or sequelae.

Etude cas témoin 1 cas pour 4 témoins en Espagne

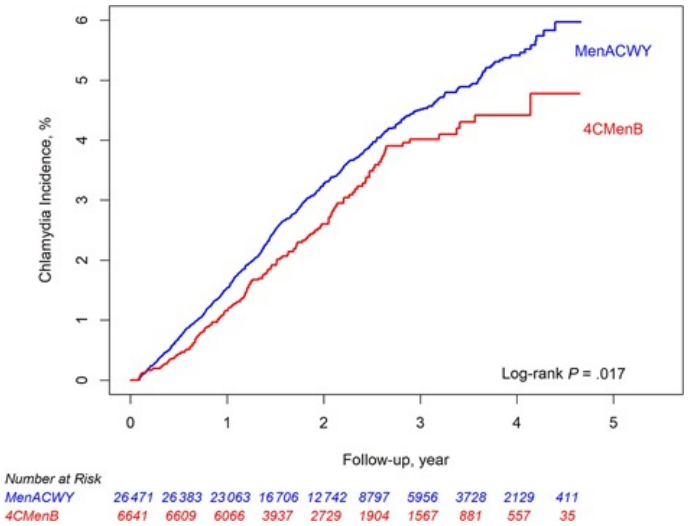
Efficacité du vaccin contre le Méningocoque B sur les méningites à méningocoque quelque soit le sérogroupe chez les enfants de moins de 60 mois

Castilla J, García Cenoz M, Abad R, Sánchez-Cambronero L, Lorusso N, Izquierdo C, et al. Effectiveness of a Meningococcal Group B Vaccine (4CMenB) in Children. New England Journal of Medicine. 2023 Feb 2;388(5):427–38.

Méningocoque B et Gonoccocie



Gonocoque



Chlamydia

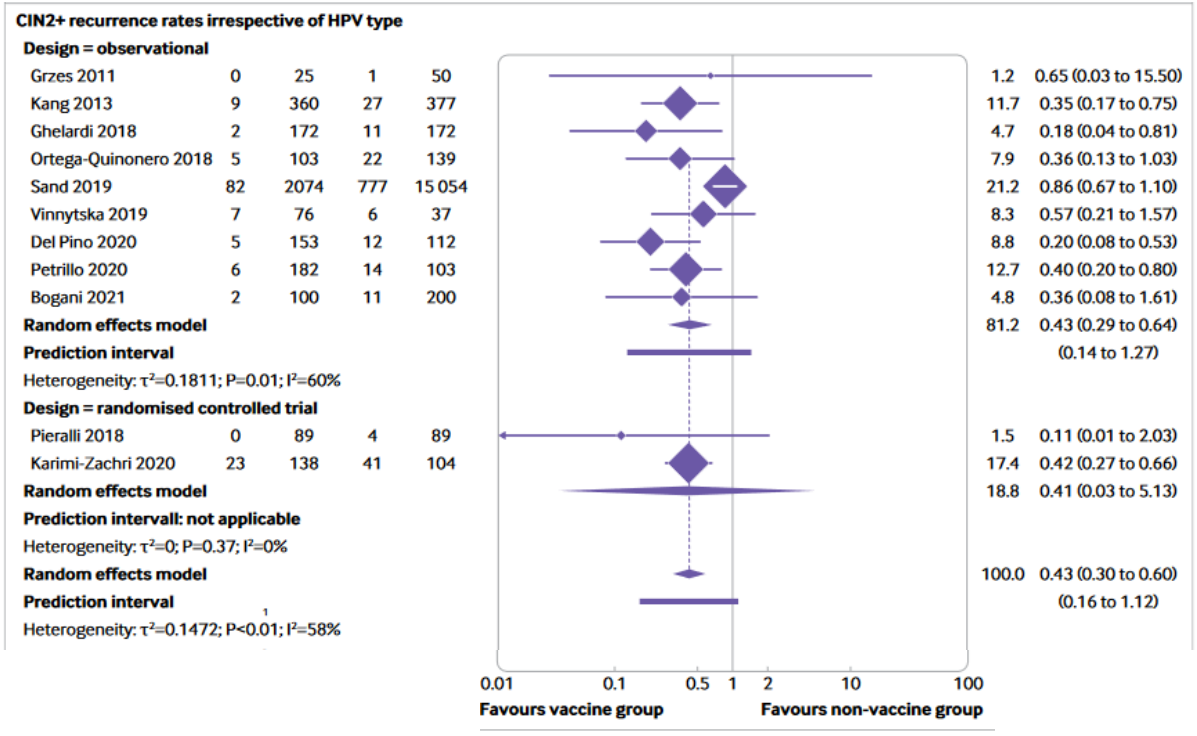
6641 vaccinés avec 4CMenB matched to 26 471 vaccines A,C,Y, W135
Age moyen à la vaccination 18 ans

Bruxvoort KJ, Lewnard JA, Chen LH, Tseng HF, Chang J, Veltman J, et al. Prevention of Neisseria gonorrhoeae With Meningococcal B Vaccine: A Matched Cohort Study in Southern California. Clinical Infectious Diseases. 2023 Feb 1;76(3):e1341–9.

Vaccination HPV après traitement de lésions CIN2 et plus

Méta-analyse de 18 études

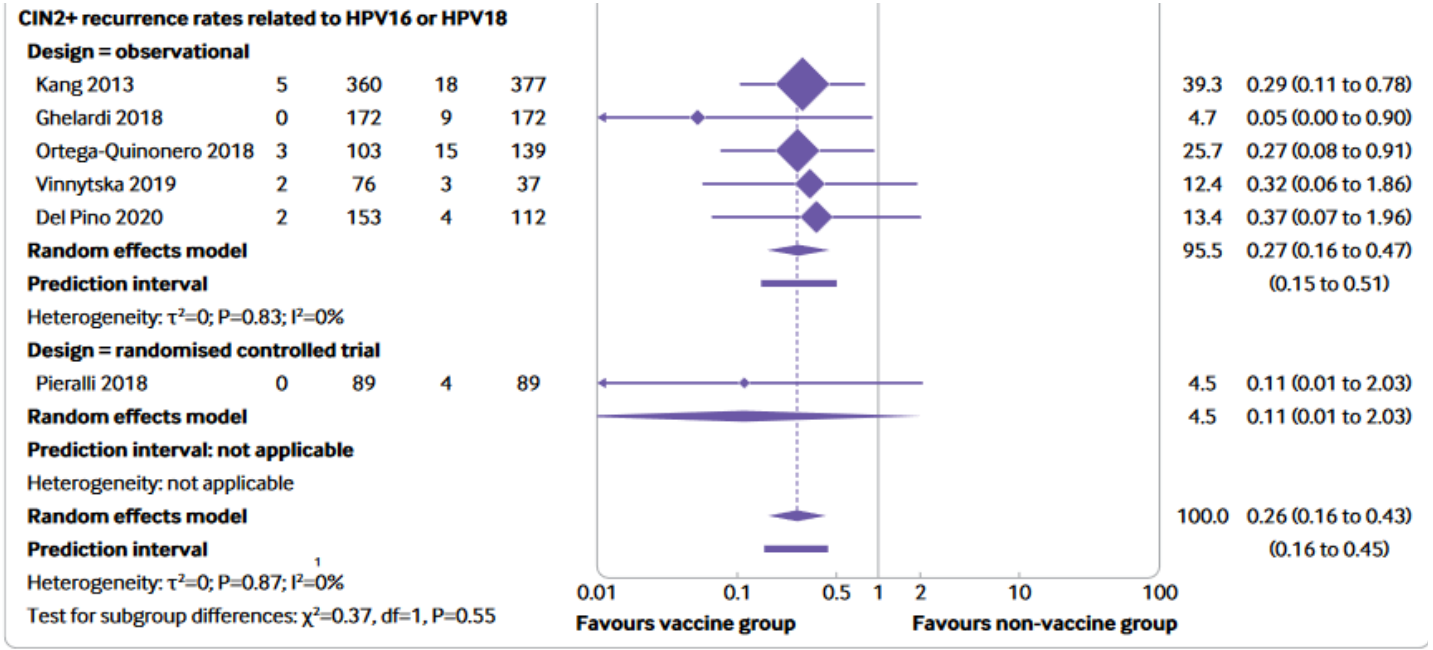
Tous génotypes



Kechagias et al. BMJ 2022

Vaccination HPV après traitement de lésions CIN2 et plus

Génotypes 16 et 18



Kechagias et al. BMJ 2022

HPV en milieu scolaire

Le président de la République, Emmanuel Macron, en déplacement à Jarnac (Charente) pour annoncer la généralisation de la vaccination contre le papillomavirus, le 28 février 2023. (STEPHANE MAHE / AFP)

HPV en milieu scolaire

Connaissances autour d'HPV en milieu scolaire en France

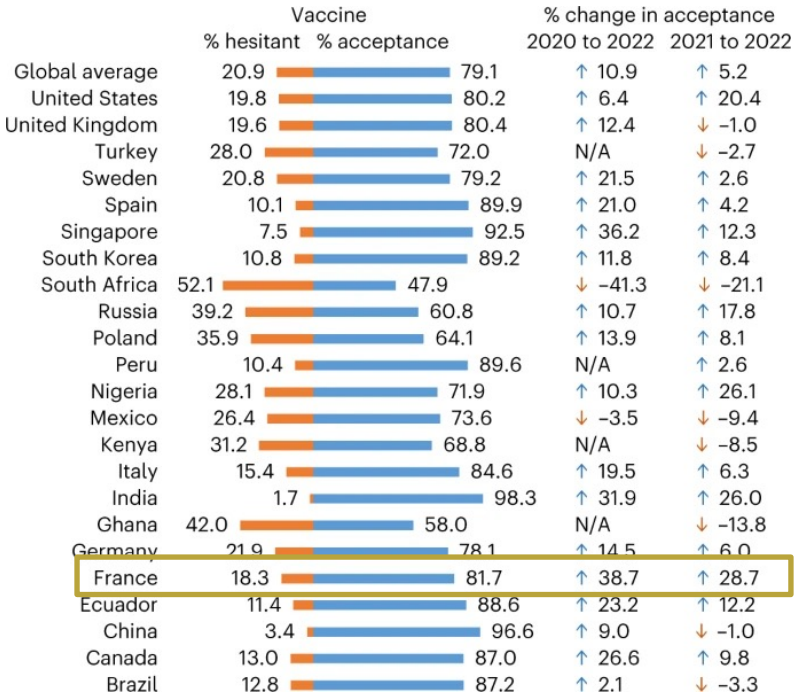
	All participants (%)			Nurses (%)	Teachers (%)	Support staff (%)	p^b
	Correct answer	Incorrect answer	Unsure	Correct answer	Correct answer	Correct answer	
There is a vaccine against HPV (T)	88	2	10	99	83	79	< .001
Getting vaccinated against HPV prone young girls to have sexual relationships (F)	88	1	11	97	83	85	< .001
Cervical screening remains recommended among vaccinated women (T)	87	1	12	97	83	77	< .001
HPV vaccine protects against virus which cause cancers (T)	76	5	19	93	72	58	< .001
HPV vaccine is effective to prevent precancerous lesions of the cervix (T)	63	4	33	79	55	54	< .001
After the first sexual intercourse, it's too late to get vaccinated against HPV (F)	57	19	24	67	49	58	0.019
HPV vaccine is recommended for heterosexual boys (T)	56	9	35	81	42	46	< .001
HPV vaccine is responsible for many side effects (F)	43	8	49	69	30	29	< .001
HPV vaccine is recommended for MSM or bisexual boys until 26 years old (T)	33	7	60	51	24	23	< .001
HPV vaccine can help eliminate an HPV infection that already exists (F)	32	13	55	49	21	29	< .001
HPV vaccine protects against genital warts (T)	27	16	57	38	24	15	0.008
Condom protects against HPV infections (F)	21	60	19	24	15	29	0.061

Bocquier et al. Promoting HPV vaccination at school: a mixed methods study exploring knowledge, beliefs and attitudes of French school staff BMC Public Health 2023

HÉSITATION VACCINALE

Acceptation de la vaccination COVID-19

1000 répondants par pays
Amélioration de la confiance envers les vaccins COVID-19 en France et dans le Monde entre 2020 et 2022

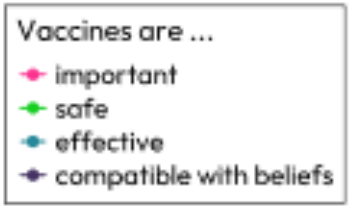


	Vaccine		% change in acceptance	
	% hesitant	% acceptance	2020 to 2022	2021 to 2022
Global average	20.9	79.1	↑ 10.9	↑ 5.2
United States	19.8	80.2	↑ 6.4	↑ 20.4
United Kingdom	19.6	80.4	↑ 12.4	↓ −1.0
Turkey	28.0	72.0	N/A	↓ −2.7
Sweden	20.8	79.2	↑ 21.5	↑ 2.6
Spain	10.1	89.9	↑ 21.0	↑ 4.2
Singapore	7.5	92.5	↑ 36.2	↑ 12.3
South Korea	10.8	89.2	↑ 11.8	↑ 8.4
South Africa	52.1	47.9	↓ −41.3	↓ −21.1
Russia	39.2	60.8	↑ 10.7	↑ 17.8
Poland	35.9	64.1	↑ 13.9	↑ 8.1
Peru	10.4	89.6	N/A	↑ 2.6
Nigeria	28.1	71.9	↑ 10.3	↑ 26.1
Mexico	26.4	73.6	↓ −3.5	↓ −9.4
Kenya	31.2	68.8	N/A	↓ −8.5
Italy	15.4	84.6	↑ 19.5	↑ 6.3
India	1.7	98.3	↑ 31.9	↑ 26.0
Ghana	42.0	58.0	N/A	↓ −13.8
Germany	21.9	78.1	↑ 14.5	↑ 6.0
France	18.3	81.7	↑ 38.7	↑ 28.7
Ecuador	11.4	88.6	↑ 23.2	↑ 12.2
China	3.4	96.6	↑ 9.0	↓ −1.0
Canada	13.0	87.0	↑ 26.6	↑ 9.8
Brazil	12.8	87.2	↑ 2.1	↓ −3.3

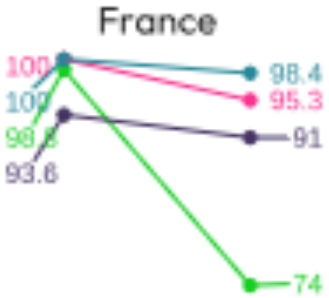
Lazarus JV, Wyka K, White TM, Picchio CA, Gostin LO, Larson HJ, et al. A survey of COVID-19 vaccine acceptance across 23 countries in 2022. Nat Med. 2023 Feb;29(2):366–75.

Etat de la confiance vaccinale en Europe

Population générale



Professionnels de santé



https://health.ec.europa.eu/publications/state-vaccine-confidence-eu-2022_en#files
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