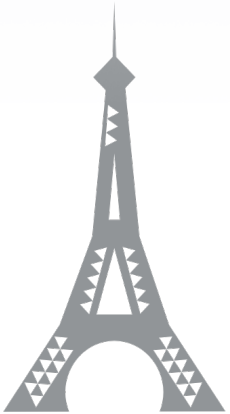
AP-HP. Centre Université de Paris

Quelles données et perspectives du vaccin contre les infections à HPV en prévention primaire ?

Marie LACHÂTRE

SMIT – Hôpital Necker et EMI – Hôpital Cochin

GHU APHP.Centre-Université de Paris Cité



28-29 mai 2024

Journées Thématiques Santé Sexuelle

SFLS · Santé publique France

Liens intérêts

Intérêts financiers dans une entreprise	Dirigeant Employé Organe décisionnel dans une entreprise	Etudes cliniques Investigateur Coordonnateur	Conférences	Participations à des Boards	Invitations congrès	Proche parent salarié
0	0	0	GSK Sanofi	AstraZeneca Moderna MSD Pfizer	AstraZeneca Sanofi ViiVHealthcare	0

☑Je déclare les liens d'intérêt potentiels suivants :

Disponibles sur https://www.transparence.sante.gouv.fr/

1. Épidémiologie des cancers HPV-induits et type de vaccin contre les infections à HPV

Cancer HPV-induits – *Épidémiologie*

Table 3. Relative contribution of HPV 16/18 or HPV6/11/16/18/31/33/45/52/58 to HPV-associated cancers by site and by sex; World, 2012

HPV-related cancer site (ICD-10 code)	Number attributable to HPV[1]	Relative contribution of HPV16/18[2]		Relative contribution of HPV6/11/16/18/31/33/45/52/58[2]	
		Percent	Number	Percent	Number
Cervix uteri (C53)	530,000	70.8	370,000	89.5	470,000
Anus (C21)	35,000	87.0	30,000	95.9	33,000
Vulva (C51)	8,500	72.6	6,200	87.1	7,400
Vagina (C52)	12,000	63.7	7,400	85.3	9,900
Penis (C60)	13,000	70.2	9,100	84.6	11,000
Head and neck (C01-06, C09-10, C32)	38,000	84.9	32,000	89.7	34,000
Total HPV-related sites in women	570,000	71.4	410,000	89.6	510,000
Total HPV-related sites in men	60,000	82.3	50,000	90.4	55,000
Total HPV-related sites	630,000	72.4	460,000	89.7	570,000

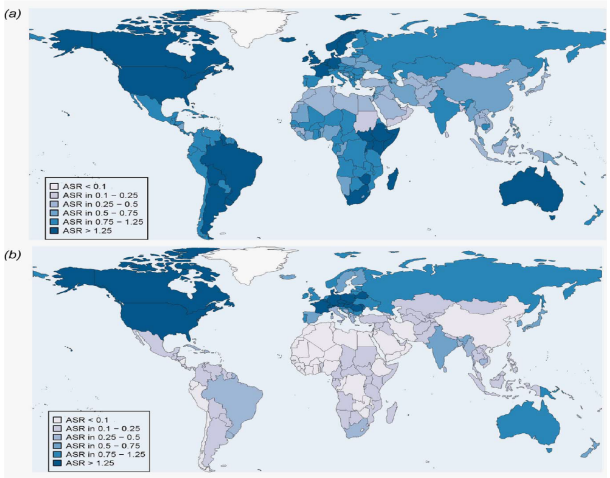


Figure 2. Age standardized (world) incidence rates (per 100,000) of cancer cases attributable to HPV in 2012, both sexes. Panel (*a*) Ano-genital cancer cases (vulvar, vaginal, anal and penile). Panel (*b*) Head and neck cancer cases (oropharynx, oral cavity and larynx).

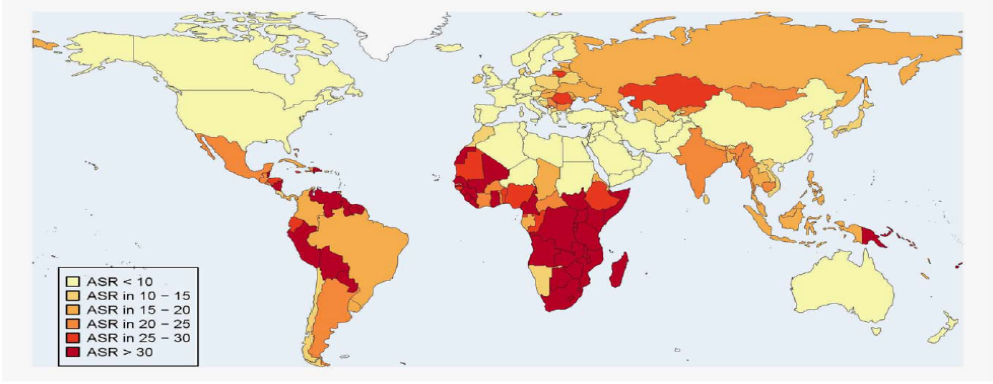
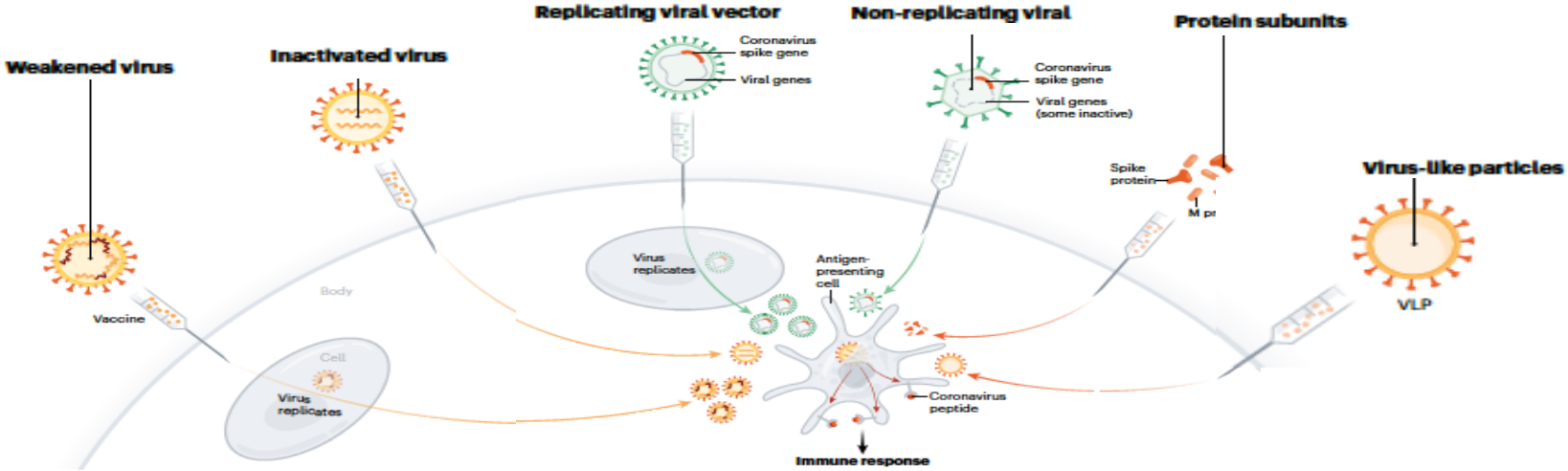
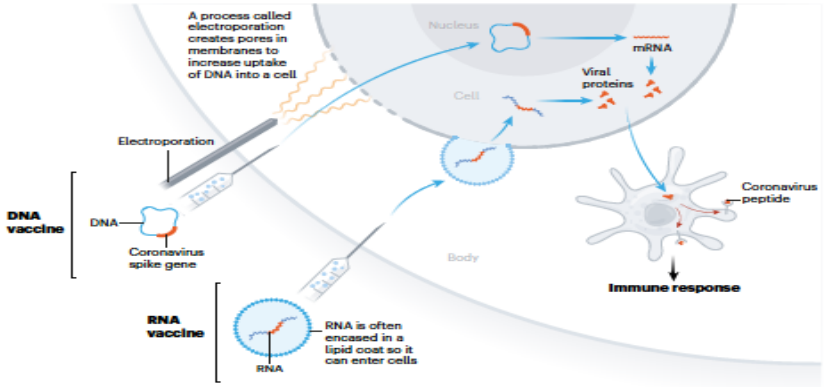


Figure 1. Age standardized (world) incidence rates (per 100,000) of cervical cancer cases attributable to HPV in 2012.

De Martel C et al, Int J Cancer. 2017

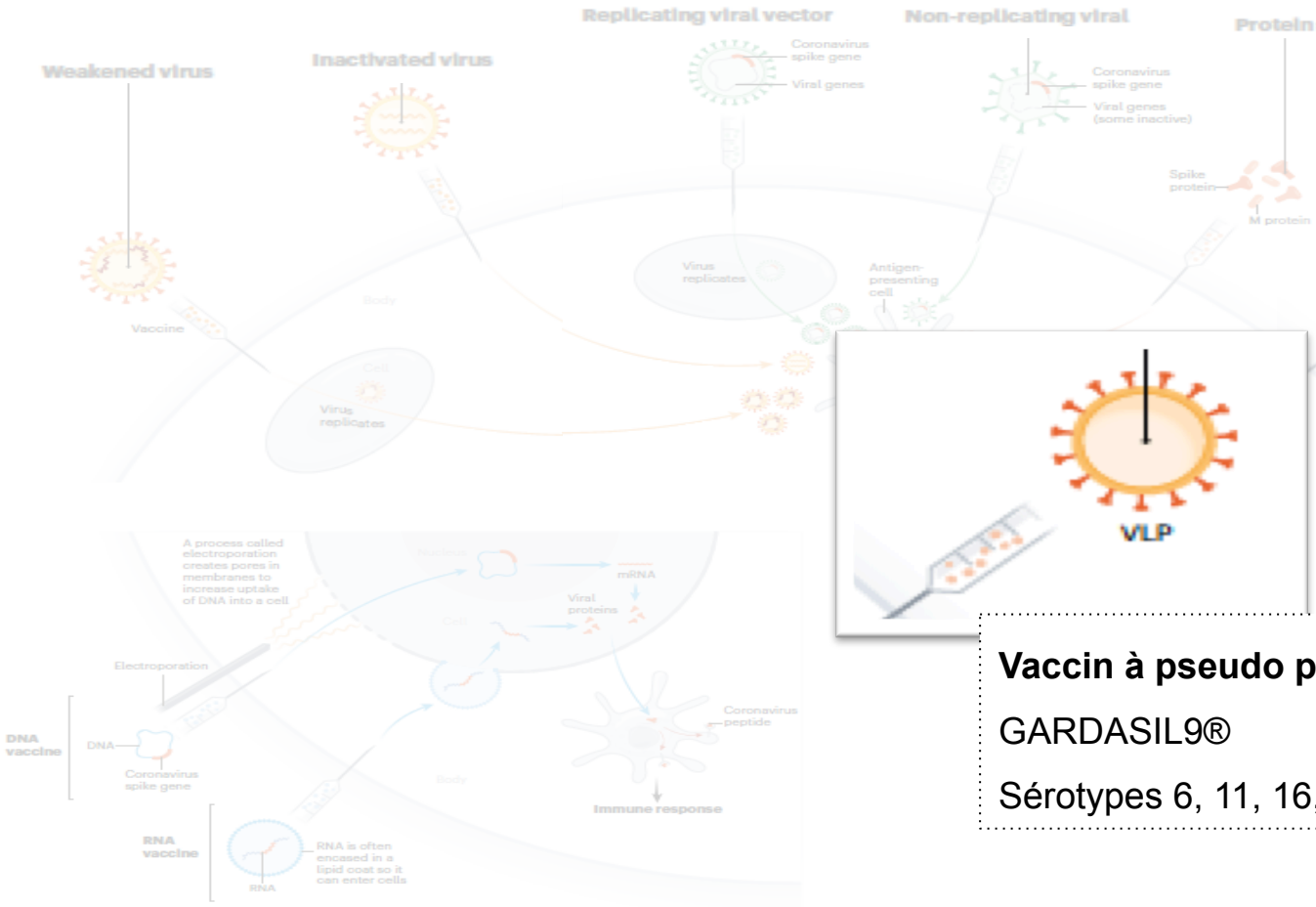
Vaccins – *Technologies vaccinales*





d'après Callaway E, Nature, 2020

Vaccin contre les infections à HPV – *Technologie vaccinale*



Vaccin à pseudo particules virales

GARDASIL9®

Sérotypes 6, 11, 16, 18, 31, 33, 45, 52 et 58

d'après Callaway E, Nature, 2020

2. Efficacité vaccinale en prévention des lésions HPV-induites **chez les femmes**

Efficacité – *Essais cliniques randomisés*

Cochrane Library
Trusted evidence.
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Cochrane Database of Systematic Reviews

[Intervention Review]

Prophylactic vaccination against human papillomaviruses to prevent cervical cancer and its precursors

Marc Arbyn[1a], Lan Xu[1b], Cindy Simoens[2], Pierre PL Martin-Hirsch[3]

[1]Unit of Cancer Epidemiology, Belgian Cancer Centre, Sciensano, Brussels, Belgium. [2]Laboratory of Cell Biology and Histology, University of Antwerp, Antwerp, Belgium. [3]Gynaecological Oncology Unit, Royal Preston Hospital, Lancashire Teaching Hospital NHS

- Revue systématique, 26 ECR, 73 428 participantes, 2002-2017
- Vaccins mono-, bi- ou quadrivalent vs placebo
- Au moins 1 dose vaccinale
- Suivi minimal de 5 mois à 7 ans

Objectif principal

- **Efficacité vaccinale dans la prévention des lésions cervicales chez les jeunes filles et femmes de 15 à 45 ans :**
  - **HPV –**
  - **HPV 16/18 –**
  - **Quel que soit le statut HPV**

Arbyn M. et al., Cochrane Library, 2020

Efficacité – *Essais cliniques randomisés*

✓ **Chez jeunes filles et femmes HPV-**

Summary of findings for the main comparison. HPV vaccine effects on cervical lesions in adolescent girls and women negative for hrHPV DNA at baseline

HPV vaccine effects on cervical lesions in adolescent girls and women who are hrHPV DNA negative at baseline

Patient or population: adolescent girls and women aged 15 to 26 years who are hrHPV negative before vaccination

Setting: Europe, Asia Pacific countries, South & North America
Intervention: HPV vaccines (at least one dose of bivalent or quadrivalent vaccines)

Comparison: Placebo

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with placebo	Risk with HPV vaccination[1]				
Cervical cancer - not measured	-	-	-	-	-	
CIN2+ associated with HPV16/18. Follow-up: 3 to 5 years	164 per 10,000	2 per 10,000 (0 to 8)	RR 0.01 (0.00 to 0.05)	23,676 (3 RCTs)	⊕⊕⊕⊕ HIGH	
CIN3+ associated with HPV16/18 Follow-up: 3 to 5 years	70 per 10,000	0 per 10,000 (0 to 7)	RR 0.01 (0.00 to 0.10)	20,214 (2 RCTs)	⊕⊕⊕⊕ HIGH	Continuity correction
AIS associated with HPV16/18 Follow-up: 3 to 5 years	9 per 10,000	0 per 10,000 (0 to 7)	RR 0.10 (0.01 to 0.82)	20,214 (2 RCTs)	⊕⊕⊕⊖ MODERATE [2]	Continuity correction

Arbyn M. et al., Cochrane Library, 2020

Efficacité – *Essais cliniques randomisés*

✓ **Chez jeunes filles et femmes HPV 16/18 -**

Summary of findings 2. HPV vaccine effects on cervical lesions in adolescent girls and women negative for HPV16/18 DNA at baseline

HPV vaccine effects on cervical lesions in adolescent girls and women negative for HPV16/18 DNA at baseline

Patient or population: adolescent girls and women aged 15 to 45 years who were HPV16/18 negative before vaccination
Setting: Europe, Asia Pacific countries, South & North America
Intervention: HPV vaccines (at least one dose of bivalent or quadrivalent vaccines)
Comparison: Placebo

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with placebo	Risk with HPV vaccination[1]				
Cervical cancer - not measured	-	-	-	-	-	
CIN2+ associated with HPV16/18 Follow-up (age 15 to 26 years): 1 to 8.5 years Follow-up (age 24 to 45 years): 4 to 6 years	15 to 26 years 113 per 10,000	6 per 10,000 (3 to 11)	RR 0.05 (0.03 to 0.10)	34,478 (6 RCTs)	⊕⊕⊕⊕ HIGH	
	24 to 45 years 45 per 10,000	14 per 10,000 (5 to 37)	RR 0.30 (0.11 to 0.81)	7552 (2 RCTs)	⊕⊕⊕⊖ MODERATE [2]	
CIN3+ associated with HPV16/18 (age 15 to 26 years) Follow-up: 3 years	57 per 10,000	3 per 10,000 (1 to 8)	RR 0.05 (0.02 to 0.14)	33,199 (3 studies)	⊕⊕⊕⊕ HIGH	
AIS associated with HPV16/18 or 6/11/16/18 (age 15 to 26 years) Follow-up: 3 years	12 per 10,000	0 per 10,000 (0 to 8)	RR 0.09 (0.01 to 0.72)	17,079 (2 RCTs)	⊕⊕⊕⊖ MODERATE [2]	Continuity correction

Arbyn M. et al., Cochrane Library, 2020

Efficacité – *Essais cliniques randomisés*

✓ **Chez jeunes filles et femmes quel que soit le statut HPV**

Summary of findings 3. HPV vaccine effects in adolescent girls and women regardless of HPV DNA status at baseline

HPV vaccine effects on cervical lesions in adolescent girls and women unselected for HPV DNA status at baseline

Patient or population: adolescent girls and women aged 15 to 45 years regardless of HPV DNA status at baseline
Setting: Europe, Asia Pacific countries, South & North America and Africa
Intervention: HPV vaccines (at least one dose of bivalent or quadrivalent vaccines)
Comparison: Placebo

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with placebo	Risk with HPV vaccination[1]				
Cervical cancer - not measured	-	-	-	-	-	
CIN2+ associated with HPV16/18 Follow-up (age 15 to 26 years): 3.5 to 8.5 years Follow-up (age 24 to 45 years): 3.5 years	15 to 26 years 341 per 10,000	157 per 10,000 (126 to 194)	RR 0.46 (0.37 to 0.57)	34,852 (3 RCTs)	⊕⊕⊕⊕ HIGH	
	24 to 45 years 145 per 10,000	107 per 10,000 (76 to 152)	RR 0.74 (0.52 to 1.05)	9200 (2 studies)	⊕⊕⊕⊖ MODERATE [2]	
CIN3+ associated with HPV16/18 Follow-up: 3.5 years	165 per 10,000	91 per 10,000 (74 to 127)	RR 0.55 (0.45 to 0.67)	34,562 (2 RCTs)	⊕⊕⊕⊕ HIGH	
Adeno carcinoma in situ (AIS) associated with HPV16/18 Follow-up: 3.5 years	14 per 10,000	5 per 10,000 (3 to 11)	RR 0.36 (0.17 to 0.78)	34,562 (2 RCTs)	⊕⊕⊕⊕ HIGH	

Arbyn M. et al., Cochrane Library, 2020

3. Efficacité vaccinale en prévention des lésions HPV-induites **chez les hommes**

Efficacité – *Essais cliniques randomisés*

Efficacy, immunogenicity, and safety of a quadrivalent HPV vaccine in men: results of an open-label, long-term extension of a randomised, placebo-controlled, phase 3 trial

Stephen E Goldstone, Anna R Giuliano, Joel M Palefsky, Eduardo Lazcano-Ponce, Mary E Penny, Robinson E Cabello, Edson D Moreira Jr, Ezio Baraldi, Heiko Jessen, Alex Ferenczy, Robert Kurman, Brigitte M Ronnett, Mark H Stoler, Oliver Bautista, Rituparna Das, Thomas Group, Alain Luxembourg, Hao Jin Zhou, Alfred Saah

- ECR, double aveugle, 71 centres, 18 pays, entre 2010-2017
- 4065 participants (2032 vaccinés)
- Vaccins quadrivalent vs placebo (3 doses)
- Suivi de 10 ans

Objectif principal

- **Efficacité vaccinale dans la prévention des lésions anales chez les jeunes hommes et hommes de 16 à 26 ans**

Goldstone SE. et al., Lancet Infect Dis, 2022

Efficacité – *Essais cliniques randomisés*

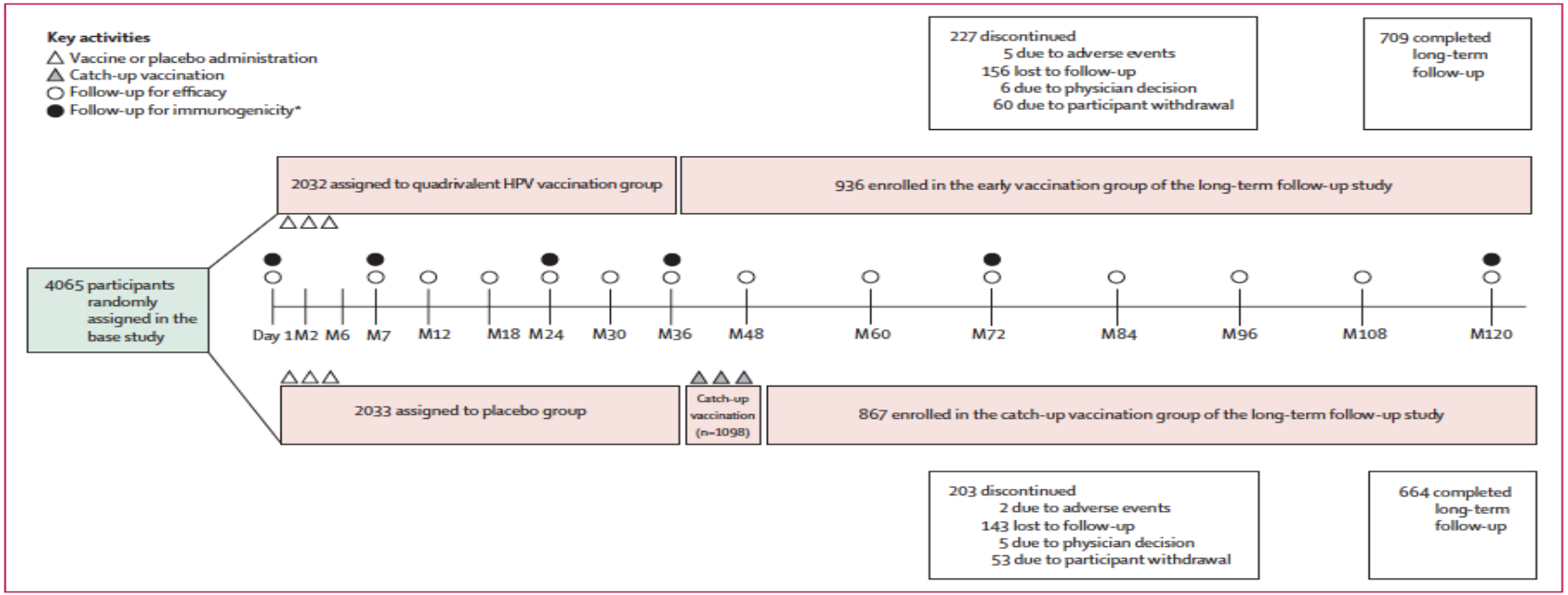


Figure 1: **Study design and participant flow**
HPV=human papillomavirus. *The first follow-up for immunogenicity in the long-term follow-up study occurred at any visit between months 48 and 84 (median follow-up was month 72).

Goldstone SE. et al., Lancet Infect Dis, 2022

Efficacité – *Essais cliniques randomisés*

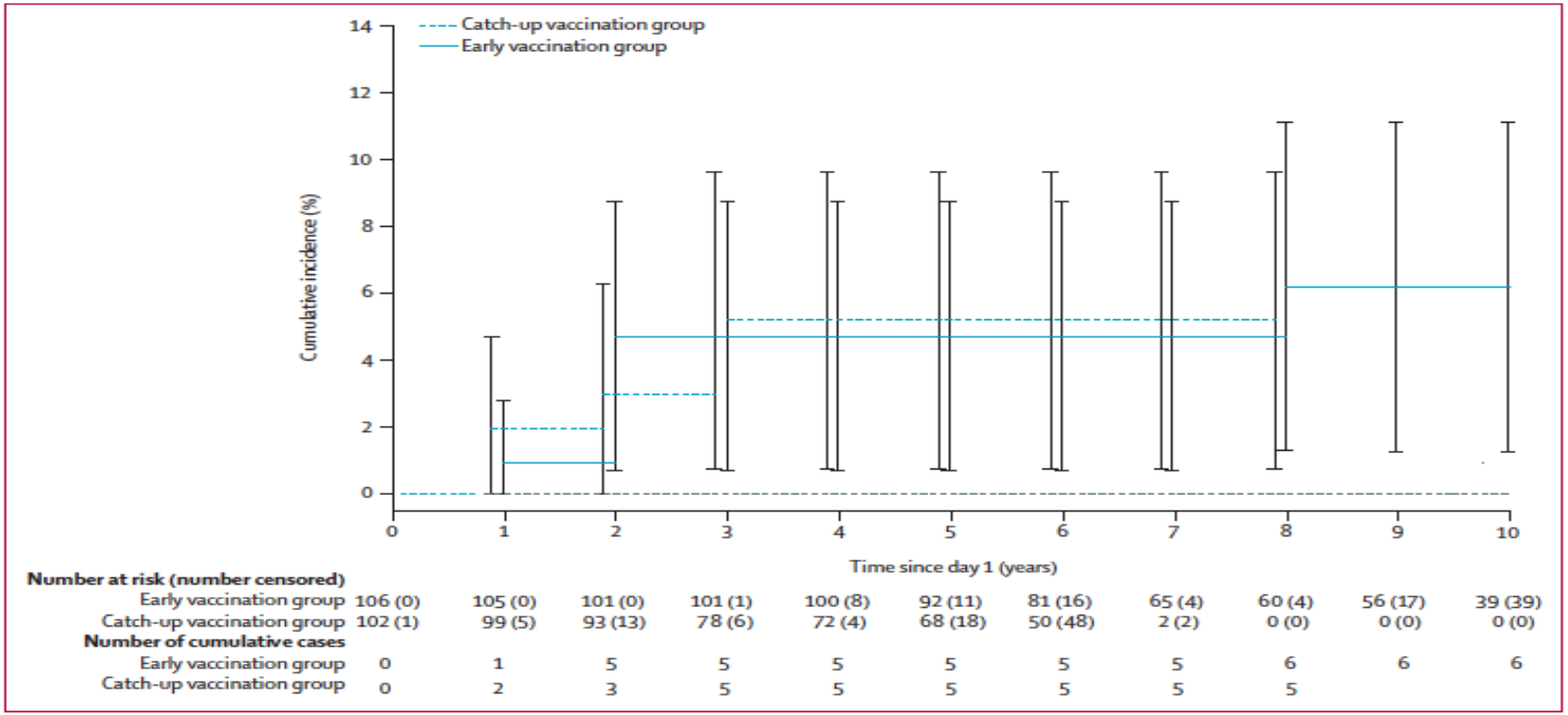
	Early vaccination group (n=936)			Catch-up vaccination group (n=867)			Early vaccination vs catch-up vaccination risk reduction estimate (95% CI)*
	Participants	Person-years follow-up	Incidence per 10 000 person-years (95% CI)	Participants	Person-years follow-up	Incidence per 10 000 person-years (95% CI)	
External genital warts related to HPV6 or 11							
Per-protocol population							
Base study	2/640	1518·9	13·2 (1·6–47·6)	20/623	1456·5	137·3 (83·9–212·1)	90·4% (62·3 to 98·4)
Long-term follow-up study	0/639	4225·4	0·0 (0·0–8·7)	..	..	..	..
mITT population							
Base study	6/763	2203·9	27·2 (10·0–59·3)	31/725	2072·2	149·6 (101·6–212·3)	81·8% (55·9 to 92·6)
Long-term follow-up study	0/763	5054·1	0·0 (0·0–7·3)	0/567	2737·2	0·0 (0·0–13·5)	..
External genital lesions† related to HPV6, 11, 16, or 18							
Per-protocol population							
Base study	2/731	1728·4	11·6 (1·4–41·8)	23/704	1638·1	140·4 (89·0–210·7)	91·8% (69·4 to 98·6)
Long-term follow-up study	0/730	4798·4	0·0 (0·0–7·7)	..	..	..	..
mITT population							
Base study	8/848	2444·5	32·7 (14·1–64·5)	35/791	2256·4	155·1 (108·0–215·7)	78·9% (53·9 to 91·2)
Long-term follow-up study	0/848	5603·0	0·0 (0·0–6·6)	0/740	3608·5	0·0 (0·0–10·2)	..
AIN and anal cancer related to HPV6, 11, 16, or 18 (MSM only)							
Per-protocol population							
Base study	4/88	176·6	226·5 (61·7–580·0)	20/109	220·7	906·2 (553·5–1399·5)	75·0% (27·7 to 92·2)
Long-term follow-up study	1/84‡	487·0	20·5 (0·5–114·4)	..	..	..	..
mITT population							
Base study	5/105	265·7	188·2 (61·1–439·2)	27/119	304·7	886·0 (583·9–1289·1)	78·8% (46·3 to 92·2)
Long-term follow-up study	1/101‡	579·7	17·2 (0·4–96·1)	5/96	493·7	101·3 (32·9–236·3)	83·0% (–26·8 to 99·3)

Unless otherwise indicated, data are n/N, where n is the number of endpoint cases and N is number of participants in the analysis population with follow-up in the indicated study period. AIN=anal intraepithelial neoplasia. HPV=human papillomavirus. mITT=modified intention to treat. MSM=men who have sex with men. *Refers to percentage reduction in incidence in the early vaccination group versus the catch-up vaccination group during the indicated period; during the long-term follow-up study, the comparison between these two groups represents a comparison between similarly quadrivalent HPV-vaccinated populations. †Includes external genital warts, penile, perianal, and perineal intraepithelial neoplasia, and penile, perianal, and perineal cancer. ‡There were no new cases of high-grade AIN related to HPV6, 11, 16, and 18 in per-protocol and mITT populations of the early vaccination group during long-term follow-up; one case of low-grade AIN was identified during long-term follow-up.

Table 2: **Reduction in the incidence of HPV-related external genital and anal disease in men vaccinated at age 16–26 years who participated in the long-term follow-up study**

Goldstone SE. et al., Lancet Infect Dis, 2022

Efficacité – *Essais cliniques randomisés*



Number at risk (number censored)											
Early vaccination group	106 (0)	105 (0)	101 (0)	101 (1)	100 (8)	92 (11)	81 (16)	65 (4)	60 (4)	56 (17)	39 (39)
Catch-up vaccination group	102 (1)	99 (5)	93 (13)	78 (6)	72 (4)	68 (18)	50 (48)	2 (2)	0 (0)	0 (0)	0 (0)
Number of cumulative cases											
Early vaccination group	0	1	5	5	5	5	5	5	6	6	6
Catch-up vaccination group	0	2	3	5	5	5	5	5	5		

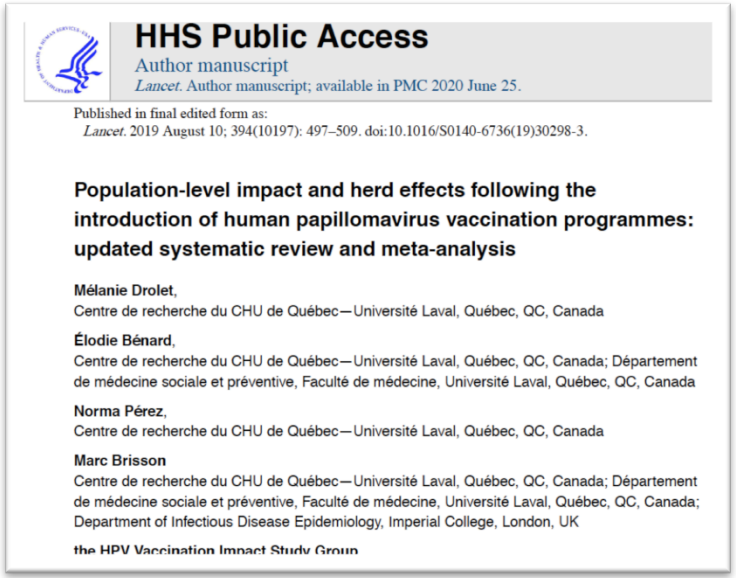
Figure 2: **Cumulative incidence of AIN and anal cancer related to HPV6, 11, 16, and 18 in MSM vaccinated with the quadrivalent HPV vaccine in the long-term follow-up study**

Error bars show 95% CIs. Data for the modified intention to treat populations of the early vaccination group and catch-up vaccination group are shown.
AIN=anal intraepithelial neoplasia. HPV=human papillomavirus. MSM=men who have sex with men.

Goldstone SE. et al., Lancet Infect Dis, 2022

4. Efficacité ***en vie réelle*** en prévention des lésions HPV-induites (femmes et hommes)

Efficacité en vie réelle



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Population-level impact and herd effects following the introduction of human papillomavirus vaccination programmes: updated systematic review and meta-analysis

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the HPV Vaccination Impact Study Group

- MA, 65 articles, 14 pays, 2014-2018
- 60 M participants
- 8 ans de suivi

Objectif principal

- **Efficacité vaccinale dans la prévention des infections génitales HPV, des condylomes ano-génitaux HPV-induits et des lésions CIN2+ (femmes et hommes, 13 à 29 ans)**

Drolet M. et al., Lancet, 2019

Efficacité en vie réelle

✓ **Prévention des infections HPV**

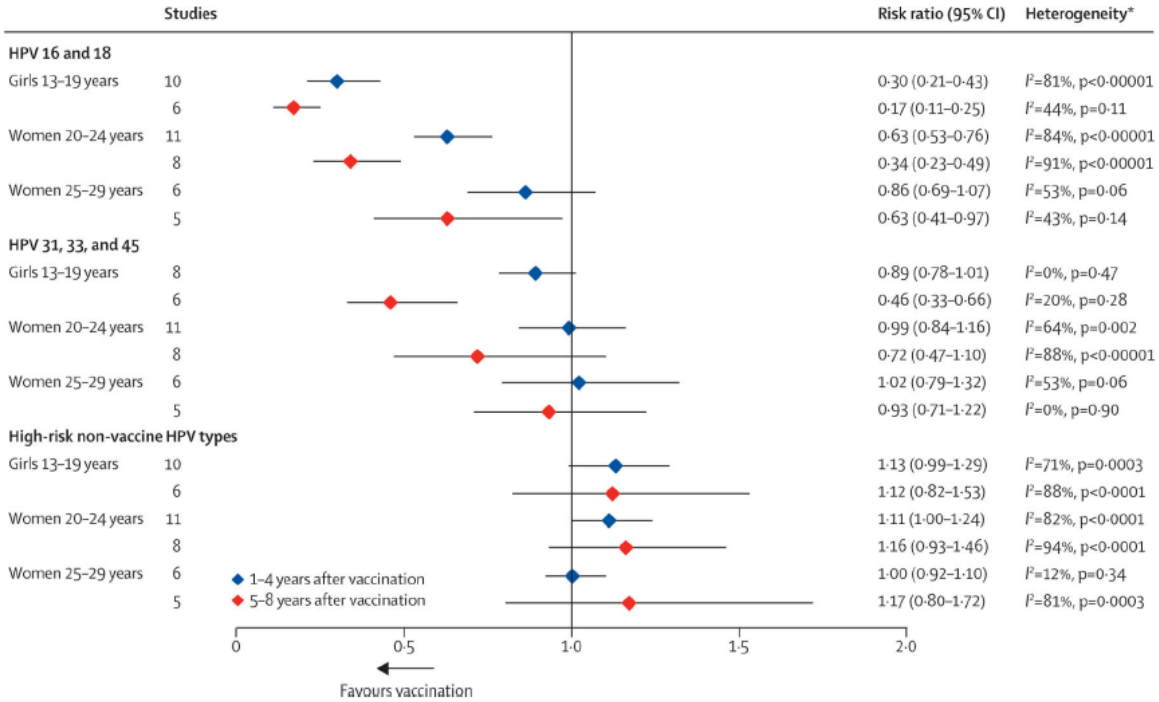

Figure 2: Changes in the prevalence of HPV infections between pre-vaccination and post-vaccination periods

HPV=human papillomavirus. *p values are associated with the χ^2 statistic.

Drolet M. et al., Lancet, 2019

Efficacité en vie réelle

✓ **Prévention des lésions ano-génitales HPV induites**

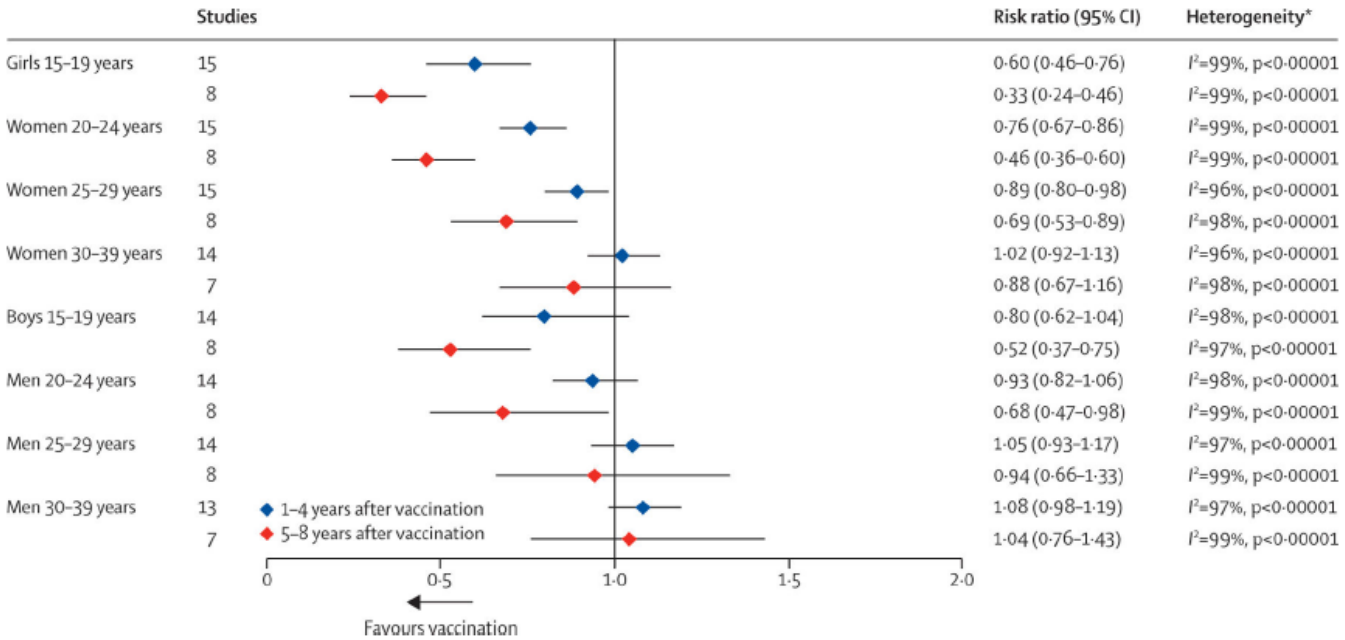

Figure 3: Changes in anogenital wart diagnoses between pre-vaccination and post-vaccination periods in countries using the quadrivalent vaccine

*p values are associated with the χ^2 statistic.

Drolet M. et al., Lancet, 2019

Efficacité en vie réelle

✓ **Prévention des lésions CIN2+ HPV induites**

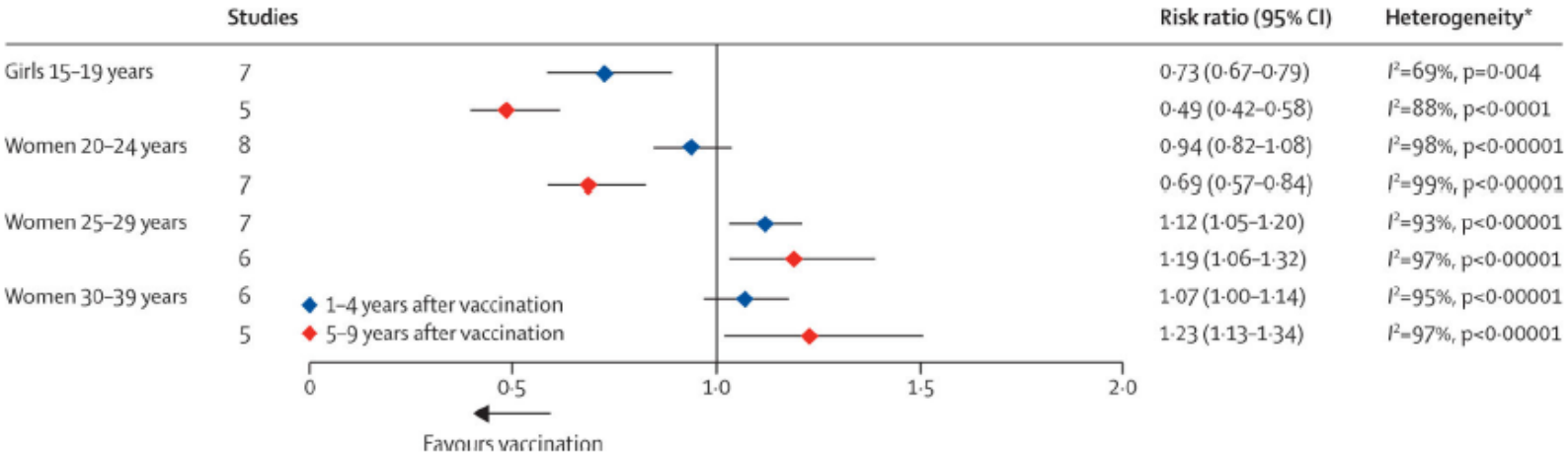

Figure 5: Changes in CIN2+ among screened girls and women between the pre-vaccination and post-vaccination periods

CIN2+=cervical intraepithelial neoplasia grade 2+. *p values are associated with the χ^2 statistic.

Drolet M. et al., Lancet, 2019

Efficacité en vie réelle

The Journal of Infectious Diseases

MAJOR ARTICLE

Impact of Human Papillomavirus Vaccine Against Anal Human Papillomavirus Infection, Anal Intraepithelial Neoplasia, and Recurrence of Anal Intraepithelial Neoplasia: A Systematic Review and Meta-analysis

Feixue Wei,[1] Catharina J. Alberts,[1,2,3] Andreia Albuquerque,[4,5] and Gary M. Clifford[1]

[1]Early Detection, Prevention and Infections Branch, International Agency for Research on Cancer (IARC/WHO), Lyon, France; [2]Department of Infectious Diseases, Public Health Service Amsterdam, Amsterdam, the Netherlands; [3]Department of Epidemiology and Data Science, Amsterdam University Medical Centre, Amsterdam, the Netherlands; [4]Gastroenterology Department, Fernando Pessoa Teaching Hospital, São Cosme, Portugal; and [5]Precancerous Lesions and Early Cancer Management Group, Research Center of IPO Porto (CI-IPOP)/RISE@CI-IPOP (Health Research Network), Portuguese Oncology Institute of Porto (IPO Porto), Porto, Portugal

- MA, 6 ECR, 8 essais « en vie réelle », 2006-2022
- Vaccins bi- ou quadrivalents
- 10 763 participants

Objectif principal

- **Efficacité/efficacité vaccinales en vie réelle dans la prévention des lésions infectieuses anales HPV-induites et néoplasies intra-épithéliales anales**

Wei F. et al., JID, 2023

Efficacité en vie réelle

Table 3. Summary of Human Papillomavirus (HPV) Vaccine Efficacy/Effectiveness Against Anal Intraepithelial Neoplasia and Anal Condyloma by Age Group and Analytic Population

Outcome	No. of Studies [References]	No. of Participants	No. With AIN or Anal Condyloma/Total No.		VE (95% CI)	I^2 Value, %[c]
			Vaccine Group	Nonvaccine Group		
AIN1+						
Age ≤26 y						
PPE in clinical trials[a]	2 [17, 25]	668	5/252	48/416	82 (39–94)	0
ITT in clinical trials[a]	1 [17]	551	38/275	77/276	50 (26–67)	…
Age >26 y						
ITT in clinical trials[a]	1 [24]	262	58/130	72/132	17 (−6 to 35)	…
AIN2+						
Age ≤26 y						
PPE in clinical trials[a]	1 [17]	402	3/194	13/208	75 (14–93)	…
ITT in clinical trials[a]	1 [17]	551	18/275	39/276	54 (21–73)	…
Age >26 y						
ITT in clinical trials[a]	2 [22, 24]	702	54/353	53/349	−1 (−42 to 28)	0
Anal condyloma						
Age ≤26 y						
PPE in clinical trials[a]	1 [17]	402	0/194	6/208	100 (8–100)	…
ITT in clinical trials[a]	1 [17]	551	13/275	31/276	57 (16–80)	…
Age >26 y						
Real-world studies[b]	1 [26]	313	10/116	37/197	55 (8–78)	…

Abbreviations: AIN, anal intraepithelial neoplasia; AIN1+, AIN grade 1 or higher; AIN2+, AIN grade 2 or higher; CI, confidence interval; ITT, intention-to-treat population; PPE, per-protocol efficacy population; VE, vaccine efficacy/effectiveness.

[a]Outcomes associated with vaccine-targeted human papillomavirus (HPV) types.

[b]Outcomes associated with any HPV type.

[c]I^2 was estimated and shown if ≥2 studies were included in each strata.

Wei F. et al., JID, 2023

Efficacité en vie réelle

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journal homepage: www.elsevier.com/locate/puhe

Review Paper

The efficacy of vaccination to prevent human papilloma viruses infection at anal and oral: a systematic review and meta-analysis

Jiye Zhang, Zhilin Qin, Chaoyong Lou, Jing Huang, Youfu Xiong*

Medical Laboratory, Liang Ping People's Hospital of Chongqing, Liangping, 405200, Chongqing City, China

- MA, 5 ECR, jusqu'en 2020
- Vaccins bi- ou quadrivalents
- 13 686 participants

Objectif principal

- **Efficacité vaccinale en vie réelle dans la prévention des infections HPV cervicales, anales et orales**

Zhang J. et al., Public health, 2021

Efficacité en vie réelle

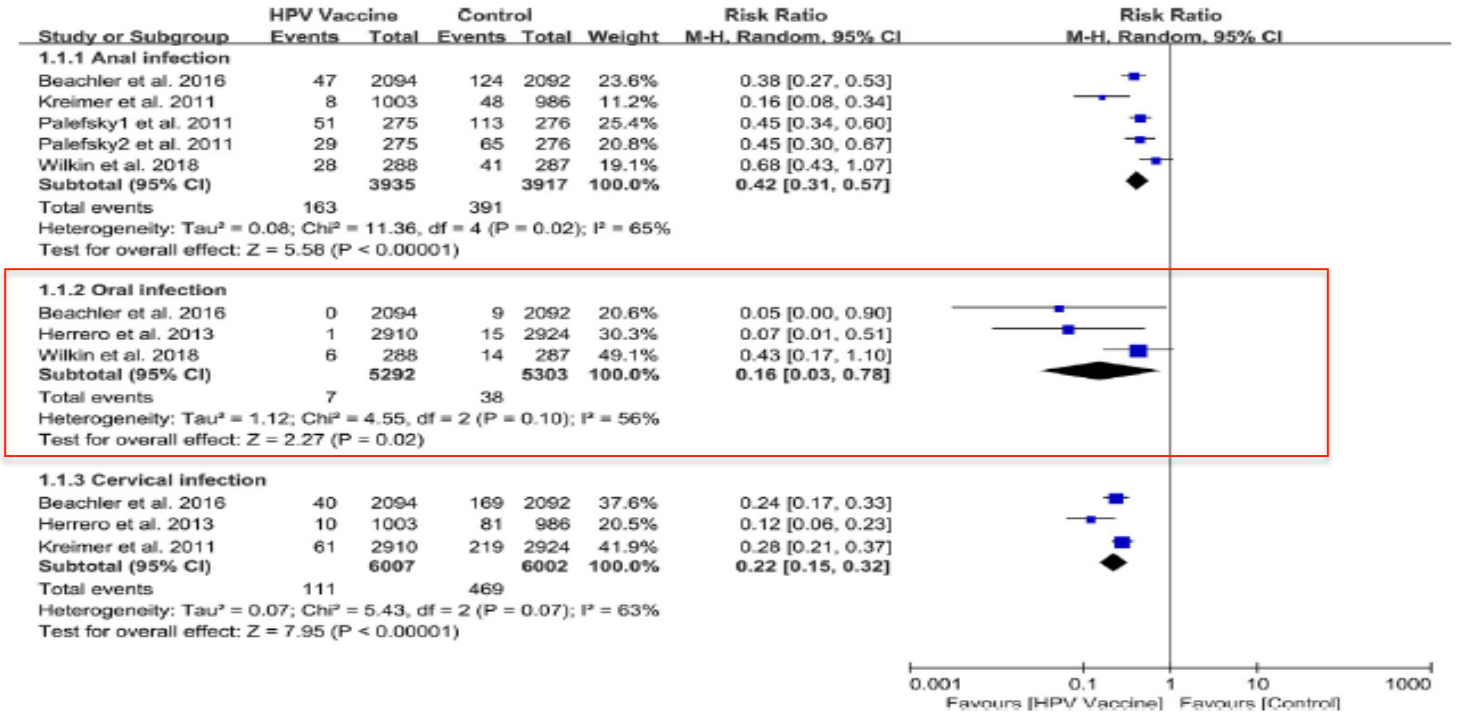

Fig. 3. The effectiveness of HPV vaccines in preventing anal, oral, and cervical infection. CI, confidence interval; HPV, human papilloma virus.

Zhang J. et al., Public health, 2021

5. Couvertures vaccinales HPV en France

Couvertures vaccinales HPV chez les collégien.nes

➢ Collégiennes

Tableau 8. Couvertures vaccinales (%) régionales contre HPV au moins 1 dose chez les filles de 12 ans, au 30/09/2023 (avant la campagne) et au 30/12/2023 (à l'issue de la campagne), France

Régions	Au moins 1 dose à 12 ans	
	30/09/2023 (%)	31/12/2023 (%)
Auvergne-Rhône-Alpes	38	54
Bourgogne-Franche-Comté	35	55
Bretagne	50	73
Centre-Val de Loire	40	61
Corse	20	34
Grand Est	41	58
Hauts-de-France	47	65
Île-de-France	30	46
Normandie	52	65
Nouvelle-Aquitaine	40	61
Occitanie	35	49
Pays de la Loire	41	53
Provence-Alpes-Côte d'Azur	37	56
Guadeloupe	18	26
Guyane	15	25
Martinique	11	18
Réunion	17	27
France entière	**38**	**55**

SPF, Bulletin vaccination, Avril 2024

Couvertures vaccinales HPV chez les collégien.nes

➢ Collégiennes

Tableau 8. Couvertures vaccinales (%) régionales contre HPV au moins 1 dose chez les filles de 12 ans, au 30/09/2023 (avant la campagne) et au 30/12/2023 (à l'issue de la campagne), France

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Corse	20	34
Grand Est		
Hauts-de-France		
Île-de-France		
Normandie		
Nouvelle-Aquitaine		
Occitanie		
Pays de la Loire		
Provence-Alpes-Côte d'Azur		
Guadeloupe		
Guyane		
Martinique		
Réunion		
France entière		

Figure 14. Evolution des couvertures vaccinales (%) contre les papillomavirus humains chez la jeune fille « 1 dose » à 15 ans, France, 2012-2023

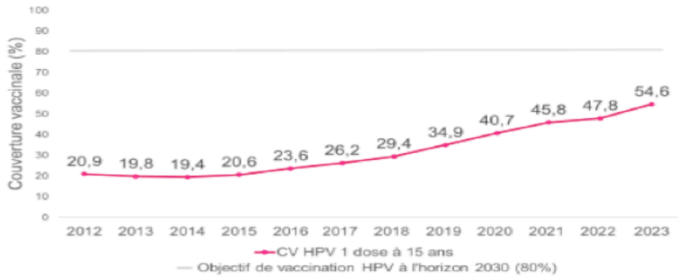
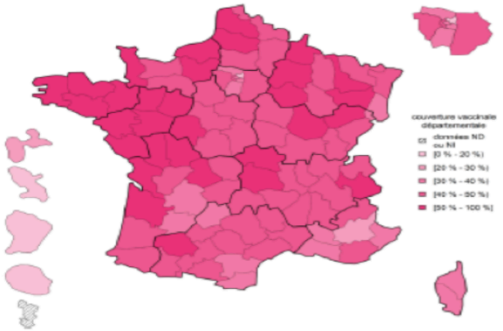


Figure 15. Couvertures vaccinales (%) départementales contre les papillomavirus humains chez la jeune fille « schéma complet à 2 doses » à 16 ans, France, 2023



Source : Données SNDS-DCIR, traitement Santé publique France, données mises à jour au 31/12/2023

SPF, Bulletin vaccination, Avril 2024

Couvertures vaccinales HPV chez les collégien.nes

➢ Collégiens

Tableau 10. Couvertures vaccinales (%) régionales contre HPV au moins 1 dose chez les garçons de 12 ans, au 30/09/2023 (avant la campagne) et au 30/12/2023 (à l'issue de la campagne), France

Régions	Au moins 1 dose à 12 ans	
	30/09/2023 (%)	31/12/2023 (%)
Auvergne-Rhône-Alpes	25	40
Bourgogne-Franche-Comté	24	43
Bretagne	34	59
Centre-Val de Loire	26	47
Corse	9	22
Grand Est	29	47
Hauts-de-France	32	49
Île-de-France	20	35
Normandie	38	48
Nouvelle-Aquitaine	26	48
Occitanie	23	35
Pays de la Loire	29	40
Provence-Alpes-Côte d'Azur	23	39
Guadeloupe	9	14
Guyane	8	18
Martinique	6	12
Réunion	9	16
France entière	**26**	**41**

SPF, Bulletin vaccination, Avril 2024

Couvertures vaccinales HPV chez les collégien.nes

➢ Collégiens

Tableau 10. Couvertures vaccinales (%) régionales contre HPV au moins 1 dose chez les garçons de 12 ans, au 30/09/2023 (avant la campagne) et au 30/12/2023 (à l'issue de la campagne), France

	Au moins 1 dose à 12 ans	
Régions	30/09/2023 (%)	31/12/2023 (%)
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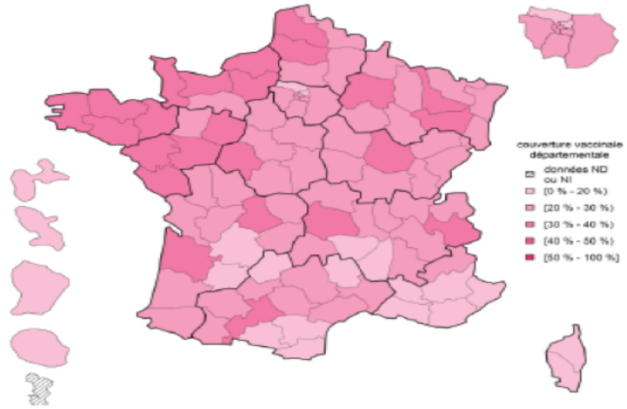
Bretagne	34	59
Centre-Val de Loire		
Corse		
Grand Est		
Hauts-de-France		
Île-de-France		
Normandie		
Nouvelle-Aquitaine		
Occitanie		
Pays de la Loire		
Provence-Alpes-Côte d'Azur		
Guadeloupe		
Guyane		
Martinique		
Réunion		
France entière		

Figure 16. Couvertures vaccinales (%) départementales contre les papillomavirus humains chez le jeune garçon 1 dose à 15 ans, France, 2023



Source : Données SNDS-DCIR, traitement Santé publique France, données mises à jour au 31/12/2023

SPF, Bulletin vaccination, Avril 2024

6. **Quelles perspectives** pour la vaccination contre les infections à HPV en prévention primaire ?

Recommandations vaccinales contre les infections à HPV – ÉTATS-UNIS

Morbidity and Mortality Weekly Report

Human Papillomavirus Vaccination for Adults: Updated Recommendations of the Advisory Committee on Immunization Practices

Elissa Meites, MD[1]; Peter G. Szilagyi, MD[2]; Harrell W. Chesson, PhD[3]; Elizabeth R. Unger, PhD, MD[4]; José R. Romero, MD[5]; Lauri E. Markowitz, MD[1]

2019

Recommendations

Children and adults aged 9 through 26 years. HPV vaccination is routinely recommended at age 11 or 12 years; vaccination can be given starting at age 9 years. Catch-up HPV vaccination is recommended for all persons through age 26 years who are not adequately vaccinated.†

Adults aged >26 years. Catch-up HPV vaccination is not recommended for all adults aged >26 years. Instead, shared clinical decision-making regarding HPV vaccination is recommended for some adults aged 27 through 45 years who are not adequately vaccinated. (Box). HPV vaccines are not licensed for use in adults aged >45 years.

Meites E. et al., MMWR, 2019

Recommandations vaccinales contre les infections à HPV – ÉTATS-UNIS

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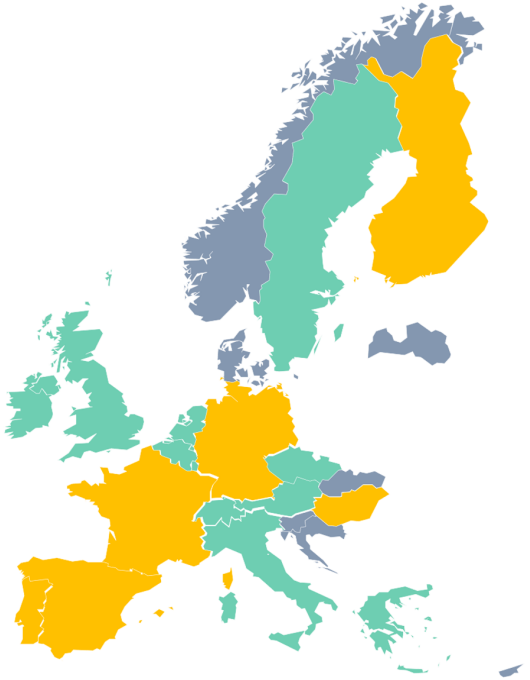
Children and adults aged 9 through 26 years. HPV vaccination is routinely recommended at age 11 or 12 years; vaccination can be given starting at age 9 years. Catch-up HPV vaccination is recommended for all persons through age 26 years who are not adequately vaccinated.†

Adults aged >26 years. Catch-up HPV vaccination is not recommended for all adults aged >26 years. Instead, shared clinical decision-making regarding HPV vaccination is recommended for some adults aged 27 through 45 years who are not adequately vaccinated. (Box). HPV vaccines are not licensed for use in adults aged >45 years.

2019

Meites E. et al., MMWR, 2019

Recommandations vaccinales contre les infections à HPV – EUROPE



11 pays en Europe recommandent déjà la vaccination HPV jusqu'à 26 ans en population générale

Recommandé jusqu'à 26 ans (25 ans Irlande et Royaume-Uni)

Non recommandé jusqu'à 26 ans en population générale

Recommandations vaccinales contre les infections à HPV – FRANCE

➢ GARDASIL9®

- *Population éligible*

➢ Jeunes filles et jeunes garçons jusqu'à 19 ans révolus

➢ HSH jusqu'à 26 ans révolus

- *Schéma vaccinal*

✓ Entre 11 et 14 ans révolus : 2 doses espacées de 6 à 13 mois

✓ Entre 15 ans et 19 ans révolus : 3 doses (M0, M2 et M6)

✓ HSH jusqu'à 26 ans révolus : 3 doses (M0, M2 et M6)

Vers une nouvelles stratégie vaccinale en France ?

Vaccination anti-HPV pour les femmes et les hommes de 20 à 26 ans quelle que soit l'orientation sexuelle	IMAGYN	Recommandation vaccinale	SESPEV

Efficacité 1 dose unique – *Données à 10 ans*

Vaccine efficacy against persistent human papillomavirus (HPV) 16/18 infection at 10 years after one, two, and three doses of quadrivalent HPV vaccine in girls in India: a multicentre, prospective, cohort study

Partha Basu, Sylla G Malvi, Smita Joshi, Neerja Bhatla, Richard Muwonge, Eric Lucas, Yogesh Verma, Pulikkottil O Esmy, Usha Rani Reddy Poli, Anand Shah, Eric Zomawia, Sharmila Pimple, Kasturi Jayant, Sanjay Hingmire, Aruna Chiwate, Uma Divate, Shachi Vashist, Gauravi Mishra, Radhika Jadhav, Maqsood Siddiqi, Subha Sankaran, Priya Ramesh Prabhu, Thiraviam Pillai Rameshwari Ammal Kannan, Rintu Varghese, Surendra S Shastri, Devasena Anantharaman, Tarik Gheit, Massimo Tommasino, Catherine Sauvaget, M Radhakrishna Pillai, Rengaswamy Sankaranarayanan*

- Cohorte multicentrique prospective, Inde, 2009-2010
- Vaccins quadrivalent > 1 (n=4949), 2 (n=4980) ou 3 (n=4348) doses
- Suivi à 10 ans

Objectif principal

- **Efficacité vaccinale à 10 ans de 1 dose vs 2 ou 3 doses contre les infections persistantes à HPV16/18**

Basu P. et al., Lancet Oncol, 2021

Efficacité 1 dose unique – *Données à 10 ans*

- **EV :**
  - **1 dose : 95,4% (95% CI, 85 – 99.9)**
  - **2 doses : 93.1% (95% CI, 77.3 – 99.8)**
  - **3 doses : 93,3% (95% CI, 77.5 – 99.7)**

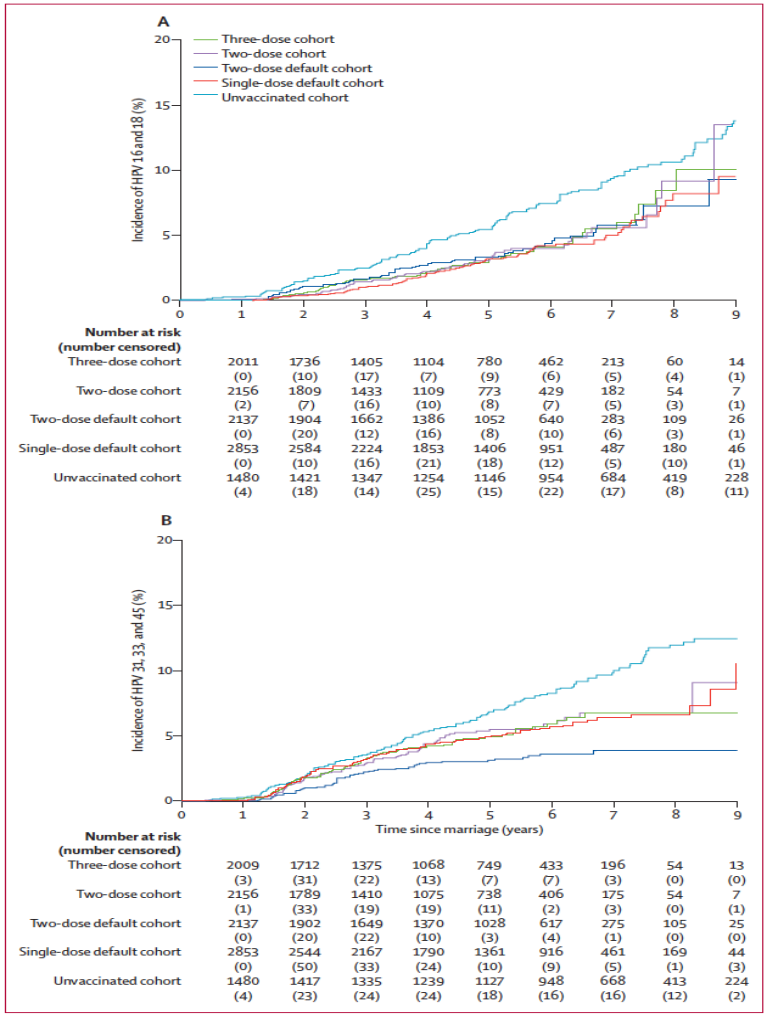


Figure 2: **Incidence of HPV 16 and 18 (A), and HPV 31, 33, and 45 (B)**
HPV=human papillomavirus.

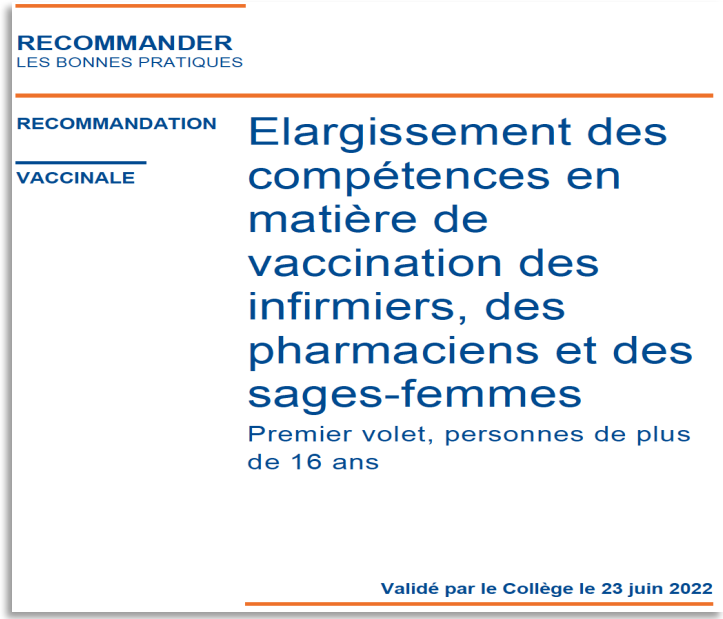
Basu P. et al., Lancet Oncol, 2021

Extension des compétences des PS

↗ ACTEURS EN VACCINATION

- **Acte de prescription/administration** étendu aux :
  - **IDE**
  - **Pharmaciens**
  - **Sages-femmes**

- **Arrêté du 08/08/2023 (JO)**
  - Pour enfants > 11 ans et adultes
  - Excepté pour les vaccins vivants chez ID



HAS, Elargissement des compétences en matière de vaccination des infirmiers, des pharmaciens et des sages-femmes, 2022
https://www.has-sante.fr/upload/docs/application/pdf/2022-06/recommandation_vaccinale__elargissement_des_competences_en_matiere_de_vaccination_des_infirmiers_des_2022-06-27_16-35-19_685.pdf
JO, Décret n° 2023-736 du 8 août 2023
https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000047948973

Conclusion : vaccination contre les infections à HPV en prévention primaire

- Efficacité vaccinale +++ y compris en vie réelle
- Amélioration des couvertures vaccinales
- Quelles stratégies pour optimiser la prévention des lésions HPV-induites ?
  - Elargissement aux > 26 ans
  - Schéma vaccinal 1 dose
  - Extension des compétences des PS
  - Circuit vaccinal court

Merci de votre attention

marie.lachatre@aphp.fr