

## Supplementary Online Content

Han JJ, Beltran T, Song JW, Klaric J, Choi YS. Prevalence of genital human papillomavirus infection and human papillomavirus vaccination rates among US adult men: National Health and Nutrition Examination Survey (NHANES) 2013-2014. *JAMA Oncol*. Published online January 19, 2017. doi:10.1001/jamaoncol.2016.6192

**eTable 1.** Prevalence of HPV Infection by Demographic Characteristics

**eTable 2.** HPV Infection in US Adult Men: Prevalence in the Population and in Defined Risk Groups

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1.** Prevalence of HPV Infection by Demographic Characteristics<sup>a</sup>

Characteristic	Subgroup Total	All HPV infections			HR DNA test <sup>c</sup>		
		<i>n</i>	Prevalence: Weighted % (95% CP CI)	<i>P</i> Value	<i>n</i>	Prevalence: Weighted % (95% CP CI)	<i>P</i> Value
Men aged 18-59	1757 <sup>d</sup>	795	45.2 (41.3 – 49.3)		447	25.1 (23.0 – 27.3)	
<b>Age in years</b>							
18 - 22	262	75	28.9 (22.2 – 36.8)	<.001	51	17.7 (11.2 – 25.9)	.08
23 - 27	213	104	46.5 (38.4 - 54.7)		68	31.1 (22.5 – 40.7)	
28 - 32	218	114	50.8 (40.1 – 61.5)		64	27.9 (20.0 – 36.9)	
33 - 37	195	87	43.1 (35.8 – 50.8)		50	24.9 (18.9 – 31.9)	
38 - 42	198	82	41.8 (33.7 – 50.4)		41	19.2 (14.0 – 25.4)	
43 - 47	204	95	47.2 (39.9 – 54.7)		48	25.3 (18.7 – 32.8)	
48 - 52	195	100	50.0 (43.1 – 56.9)		51	22.5 (16.8 – 29.0)	
53 - 57	195	92	47.2 (38.2 – 56.4)		51	26.2 (17.9 – 35.9)	
58 - 59	77	46	59.7 (44.5 – 73.3)		23	37.5 (21.9 – 55.4)	
<b>Race/Ethnicity</b>							
Hispanic	402	175	44.4 (37.7 - 51.3)	<.001	84	21.9 (18.0 – 26.3)	<.001
Non-Hispanic White	714	314	43.7 (38.1 – 49.6)		185	24.7 (21.5 – 28.0)	
Non-Hispanic Black	362	230	65.0 (59.7 – 70.0)		143	40.2 (35.1 – 45.5)	
Non-Hispanic Asian	209	52	24.4 (18.4 – 31.5)		25	12.2 (7.2 – 18.8)	
Other Race - Including Multi-Racial	70	24	41.0 (24.7 – 59.4)		10	17.4 (8.04 – 30.8)	
<b>Marital Status<sup>b</sup></b>							
Married	821	321	39.1 (33.6 – 44.8)	<.001	144	18.2 (15.6 – 21.1)	<.001
Widowed, Divorced, Separated	184	117	63.6 (55.3 – 71.3)		75	42.0 (34.8 – 49.5)	
Never married	447	217	48.7 (42.4 – 55.1)		139	29.7 (23.8 – 36.1)	
Living with partner	170	113	62.5 (53.4 – 70.8)		70	39.2 (29.2 – 49.9)	
<b>Education<sup>b</sup></b>							
<High School	380	174	46.4 (39.2 – 53.7)	<.002	100	25.4 (19.9 – 31.6)	<.001
High School or GED	439	223	53.7 (47.1 – 60.2)		142	33.9 (29.5 – 38.5)	
>High School	936	397	41.4 (36.4 – 46.6)		204	21.4 (18.2 – 24.8)	
<b>Household Income<sup>b</sup></b>							
Below poverty level	388	189	52.9 (45.3 – 60.4)	.05	123	34.8 (28.1 – 41.9)	.01
At or above poverty level	1230	555	44.2 (39.3 – 49.3)		297	23.8 (21.1 – 26.5)	

Characteristic	Subgroup Total	All HPV infections			HR DNA testing <sup>c</sup>		
		<i>n</i>	Prevalence: Weighted % (95% CP CI)	<i>P</i> Value	<i>n</i>	Prevalence: Weighted % (95% CP CI)	<i>P</i> Value
<b>Smoking Status<sup>b</sup></b>							
Current Smoker	476	278	60.6 (52.3 - 68.3)	.05	154	32.0 (27.1 – 37.3)	.35
Non-Smoker	334	162	50.9 (45.0 - 56.7)		89	28.3 (23.5 – 33.4)	
<b>Circumcision<sup>b</sup></b>							
Circumcised	1068	520	47.5 (43.1 - 51.9)	.03	311	27.2 (24.1 – 30.5)	.01
Uncircumcised	452	196	43.2 (39.1 - 47.5)		91	20.6 (17.0 – 24.7)	
<b>Age when first had sex<sup>b</sup></b>							
<16 yrs old	540	294	52.1 (46.7 - 57.4)	<.001	169	29.2 (23.8 – 35.1)	.02
16-18 yrs old	390	171	43.1 (35.0 - 51.4)		88	22.8 (18.1 – 28.0)	
>18 yrs old	373	121	32.2 (25.7 - 39.4)		61	15.9 (10.1 – 23.3)	
<b>Lifetime number of sexual partners<sup>b</sup></b>							
0	4	0	ND	ND	0	ND	ND
1	1	1	ND		1	ND	
2-5	20	7	34.9 (14.0 - 64.0)		3	7.4 (0.5 – 28.3)	
6-10	16	12	77.0 (43.4 - 93.6)		5	34.1 (10.5 – 65.5)	
>10	45	32	58.4 (43.4 - 71.9)		19	39.6 (25.4 – 55.3)	

a. Statistical abbreviations: CI: Clopper-Pearson Confidence Interval; ND – Not Defined/Inestimable.

b. Does not sum to 1757 due to non-response or participant indicating “Don’t know”. This sample after application of sampling weights represents over 73 million men in the non-institutionalized US population. Data are unweighted frequencies; estimated prevalence and 95% confidence intervals are weighted.

c. Positive for at least one of the HPV genotypes in the HR HPV DNA test: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68.

d. The unweighted sample (n=1757) represents a weighted sample of 76.9 million US non-institutionalized men.

**eTable 2.** HPV Infection in US Men: Prevalence in the Population and in Defined Risk Groups

HPV Infection Status	Men 18-59		HPV Vaccine Eligible Men (Age 18-32)		HPV Vaccine Non-Eligible Men (Age 33-59)		P Value <sup>a</sup>
	<i>n</i>	Weighted % (95% CI)	<i>n</i>	Weighted % (95% CI)	<i>n</i>	Weighted % (95% CI)	
Positive	795	45.2 (41.3 – 49.3)	293	42.2 (36.4 – 48.2)	502	47.1 (42.4 – 51.8)	.11
Negative	962	54.8 (50.7 – 58.7)	400	57.8 (51.8 – 63.6)	562	52.9 (48.2 – 57.6)	
Total	1757		693		1064		
<b>Risk Groups</b>							
High Risk <sup>b</sup>	518	30.5 (28.1 – 33.0)	210	29.5 (25.0 – 34.3)	308	29.1 (26.4 – 33.0)	.88
Low Risk	277	16.0 (13.4 – 18.9)	83	12.7 (9.1 – 17.1)	194	18.0 (14.4 – 22.0)	.05
4vHPV <sup>c</sup>	152	8.5 (7.1 – 10.0)	56	7.1 (5.1 – 9.5)	96	9.3 (7.3 – 11.6)	.16
9vHPV <sup>d</sup>	271	15.1 (13.7 – 16.6)	107	15.4 (11.7 – 19.6)	155	14.6 (12.5 – 16.9)	.83

- a. *p* values from Rao-Scott chi square tests compare HPV-vaccine eligible and non-eligible males as defined in Methods.
- b. The High Risk category includes those co-infected with both High and Low Risk HPV genotypes.
- c. 4vHPV includes infection by one or more of the HPV types covered by the quadrivalent form of Gardasil (types 6,11,16, and 18).
- d. 9vHPV includes infection by one or more of the HPV types covered by the 9-valent form of Gardasil (types 6,11,16, 18, 31, 33, 45, 52, and 58).