Supplementary Online Content

Langer-Gould A, Qian L, Tartof SY, et al. Vaccines and the risk of multiple sclerosis and other central nervous system demyelinating diseases. *JAMA Neurol*. Published online October 20, 2014. doi:10.1001/jamaneurol.2014.2633.

eTable. The Unadjusted Odds Ratios and 95% Confidence Intervals of Cases With Acquired CNS Demyelinating Syndromes and Their Matched Controls by Timing of Exposure to Vaccines

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eTable. The unadjusted odds ratios and 95% confidence intervals of cases with acquired CNS demyelinating syndromes and their matched controls by timing of exposure to vaccines

Type of condition[1]	Subjects	Single antigen HepB vaccine		Any HepB-containing vaccines		HPV vaccine		Any vaccine			
		All subjects				Females aged 9-26 years		Aged <50 years		Aged ≥ 50 years	
	Exposure within	Case (N=780)/ Control(N=3885)	OR[2] (95% CI)	Case (N=780)/ Control(N=3885)	OR[2] (95% CI)	Case(N=92)/ Control(N=459)	OR[2] (95% CI)	Case(N=588)/ Control(N=2927)	OR[2] (95% CI)	Case(N=192)/ Control(N=958)	OR[2] (95% CI)
All CNS ADS		n(%)/n(%)		n(%)/n(%)		n (%)/n (%)		n(%)/n(%)		n(%)/n(%)	
	2 weeks	0(0.0)/0(0.0)	NA	0(0.0)/0(0.0)	NA	2(2.2)/5(1.1)	2.1(0.4,11.8)	14(2.4)/29(1.0)	2.4(1.3, 4.6)	4(2.1)/20(2.1)	1.0(0.3,3.0)
	30 days	0(0.00)/1(0.0)	NA	0(0.0)/9(0.2)	NA	2(2.2)/13(2.8)	0.8(0.2,3.4)	24(4.1)/74(2.5)	1.7(1.03,2.6)	9(4.7)/43(4.5)	1.1(0.5,2.3)
	42 days	0(0.0)/1(0.0)	NA	1(0.1)/12(0.3)	0.4(0.1,3.2)	4(4.3)/17(3.7)	1.2(0.4,3.6)	30(5.1)/116(4.0)	1.3(0.9,2.0)	11(5.7)/58(6.1)	0.9(0.5,1.9)
	90 days	1(0.1)/2(0.1)	2.5(0.2,27.6)	2(0.3)/17(0.4)	0.6(0.1,2.5)	7(7.6)/30(6.5)	1.2(0.5,2.7)	65(11.1)/257(8.8)	1.3(1.0,1.8)	22(11.5)/118(12.3)	0.9(0.5,1.5)
	180 days	2(0.3)/4(0.1)	2.5(0.5,13.7)	3(0.4)/28(0.7)	0.5(0.2,1.8)	11(12.0)/60(13.1)	0.9(0.5,1.8)	113(19.2)/467(16.0)	1.3(1.0,1.6)	49(25.5)/234(24.4)	1.1(0.7,1.6)
	1 year	2(0.3)/13(0.3)	0.8(0.2,3.5)	6(0.8)/56(1.4)	0.5(0.2,1.2)	19(20.7)/97(21.1)	1.0(0.6,1.7)	195(33.2)/854(29.2)	1.2(1.00,1.5)	86(44.8)/404(42.2)	1.1(0.8,1.5)
	3 years	8(1.0)/46(1.2)	0.8(0.4,2.0)	31(4.0)/127(3.3)	1.2(0.8,1.9)	36(39.1)/175(38.1)	1.1(0.7,1.7)	301(51.2)/1362(46.5)	1.2(1.0,1.5)	119(62.0)/565(59.0)	1.1(0.8,1.6)
MS		Case(N=427)/ Control(N=2125)		Case (N=427)/ Control(N=2125)		Case (N=48)/ Control(N=240)		Case(N=329)/ Control(N=1636)		Case(N=98)/ Control(N=489)	
	2 weeks	0(0.0)/0(0.0)	NA	0(0.0)/0(0.0)	NA	2(4.2)/1(0.4)	10.0(0.9,110)	7(2.1)/15(0.9)	2.3(1.0,5.7)	2(2.0)/10(2.0)	1.0(0.2,4.7)
	30 days	0(0.0)/0(0.0)	NA	0(0.0)/7(0.3)	NA	2(4.2)/5(2.1)	2.0(0.4,10.3)	11(3.3)/40(2.4)	1.4(0.7,2.8)	3(3.1)/20(4.1)	0.7(0.2,2.6)
	42 days	0(0.0)/0(0.0)	NA	0(0.0)/9(0.4)	NA	4(8.3)/8(3.3)	2.5(0.8,8.3)	15(4.6)/66(4.0)	1.1(0.6,2.0)	4(4.1)/25(5.1)	0.8(0.3,2.4)
	90 days	1(0.2)/0(0.0)	NA	1(0.2)/11(0.5)	0.5(0.1,3.5)	6(12.5)/15(6.3)	2.0(0.8,5.3)	30(9.1)/149(9.1)	1.0(0.7,1.5)	8(8.2)/56(11.5)	0.7(0.3,1.5)

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	180 days	1(0.2)/2(0.1)	2.5(0.2,27.6)	1(0.2)/17(0.8)	0.3(0.1,2.2)	8(16.7)/30(12.5)	1.4(0.6,3.2)	55(16.7)/250(15.3)	1.1(0.8,1.6)	20(20.4)/111(22.7)	0.9(0.5,1.5)
	1 year	1(0.2)/7(0.3)	0.7(0.1,6.4)	4(0.9)/31(1.5)	0.6(0.2,1.8)	13(27.1)/50(20.8)	1.4(0.7,2.9)	105(31.9)/437(26.7)	1.3(1.0,1.7)	43(43.9)/195(39.9)	1.2(0.8,1.9)
	3 year	2(0.5)/22(1.0)	0.4(0.1,1.9)	18(4.2)/66(3.1)	1.4(0.8,2.4)	21(43.8)/83(34.6)	1.5(0.8,2.9)	165(50.2)/702(42.9)	1.4(1.1,1.8)	57(58.2)/277(56.6)	1.1(0.7,1.7)
CIS		**Case(N=332)/ Control(N=1658)**		**Case (N=332)/ Control(N=1658)**		**Case (N=41)/ Control(N=204)**		**Case(N=240)/ Control(N=1199)**		**Case(N=92)/ Control(N=459)**	
	2 weeks	0(0.0)/0(0.0)	NA	0(0.0)/0(0.0)	NA	0(0.0)/4(2.0)	NA	6(2.5)/12(1.0)	2.6(1.0,7.0)	2(2.2)/10(2.2)	1.0(0.2,4.7)
	30 days	0(0.0)/0(0.0)	NA	0(0.0)/1(0.1)	NA	0(0.0)/7(3.4)	NA	12(5.0)/30(2.5)	2.1(1.0,4.1)	6(6.5)/23(5.0)	1.4(0.5,3.6)
	42 days	0(0.0)/0(0.0)	NA	1(0.3)/2(0.1)	2.5(0.2,27.6)	0(0.0)/8(3.9)	NA	13(5.4)/46(3.8)	1.4(0.8,2.7)	7(7.6)/33(7.2)	1.1(0.4,2.6)
	90 days	0(0.0)/1(0.1)	NA	1(0.3)/5(0.3)	1.0(0.1,8.6)	1(2.4)/14(6.9)	0.3(0.04,2.6)	32(13.3)/91(7.6)	1.9(1.2,3.0)	13(14.1)/62(13.5)	1.1(0.5,2.1)
	180 days	1(0.3)/1(0.1)	5.0(0.3,80.0)	2(0.6)/10(0.6)	1.0(0.2,4.6)	2(4.9)/26(12.7)	0.3(0.1,1.5)	51(21.3)/192(16.0)	1.5(1.0,2.1)	27(29.3)/121(26.4)	1.2(0.7,2.0)
	1 year	1(0.3)/5(0.3)	1.0(0.1,8.6)	2(0.6)/24(1.4)	0.4(0.1,1.8)	5(12.2)/41(20.1)	0.5(0.2,1.5)	78(32.5)/377(31.4)	1.1(0.8,1.4)	41(44.6)/204(44.4)	1.0(0.6,1.6)
	3 year	4(1.2)/16(1.0)	1.3(0.4,4.2)	11(3.3)/49(3.0)	1.1(0.6,2.3)	12(29.3)/79(38.7)	0.6(0.3,1.4)	120(50.0)/590(49.2)	1.0(0.8,1.4)	60(65.2)/281(61.2)	1.2(0.7,1.9)
ADEM		**Case (N=21)/ Control (N=102)**		**Case (N=21)/ Control N=102)**		**Case (N=3)/ Control (N=15)**		**Case (N=19)/ Control (N=92)**		**Case (N=2)/ Control (N=10)**	
	2 weeks	0(0.0)/0(0.0)	NA	0(0.0)/0(0.0)	NA	0(0.0)/0(0.00)	NA	1(5.3)/2(2.2)	2.5(0.2,27.6)	0(0.0)/0(0.0)	NA
	30 days	0(0.0)/1(1.0)	NA	0(0.0)/1(1.0)	NA	0(0.00)/1(6.7)	NA	1(5.3)/4(4.3)	1.3(0.1,11.2)	0(0.0)/0(0.0)	NA
	42 days	0(0.0)/1(1.0)	NA	0(0.0)/1(1.0)	NA	0(0.00)/1(6.7)	NA	2(10.5)/4(4.3)	2.5(0.5,13.7)	0(0.0)/0.0(0.0)	NA
	90 days	0(0.0)/1(1.0)	NA	0(0.0)/1(1.0)	NA	0(0.00)/1(6.7)	NA	3(15.8)/17(18.5)	0.8(0.2,3.7)	1(50.0)/0(0.0)	NA
	180 days	0(0.0)/1(1.0)	NA	0(0.0)/1(1.0)	NA	1(33.3)/4(26.7)	1.3(0.1,15.1)	7(36.8)/25(27.2)	1.6(0.6,5.0)	2(100.0)/2(20.0)	NA
	1 year	0(0.0)/1(1.0)	NA	0(0.0)/1(1.0)	NA	1(33.3)/6(40.0)	0.8(0.1,8.9)	12(63.2)/40(43.5)	2.5(0.8,7.2)	2(100.0)/5(50.0)	NA
	3 year	2(9.5)/8(7.8)	1.5(0.2,12.1)	2(9.5)/12(11.8)	0.7(0.1,4.2)	3(100.0)/13(86.7)	NA	16(84.2)/70(76.1)	1.7(0.4,6.9)	2(100.0)/7(70.0)	NA

1. CNS: Central Nervous System, ADS: Acquired Demyelinating Syndromes, MS: Multiple sclerosis, CIS: Clinical isolated syndromes, ADEM: Acute disseminated encephalomyelitis; NA: not applicable

2. Unadjusted matched odds ratio (OR) and 95% confidence intervals (95% CI)

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