

Supplemental Table 3. The prevalence and incidence of diabetes in the multiple sclerosis population as compared to controls

Study (year)	MS, n	Controls, n (matched)	Source of controls	Diabetes in MS	Diabetes in controls	Comparison
<i>Prevalence</i>						
Allen ⁷ (2008)	9,949	19,898 (yes: sex, age, race/ethnicity, insurance)	Hospitalization from SPARCS database of non-MS patients	1,054/9,949 = 10.6%	3780/19,898 = 19.0%	p<0.05
Christiansen ⁵ (2010)	13,963	66,407 (yes: sex, age)	DNRP general population	178/13,963 = 1.3%	488/66,407 = 0.7%	NR
Dallmeijer ¹⁷ (2009)	146	198 (no)	Patients with a first-ever supratentorial stroke, who had been admitted for inpatient rehabilitation	6/146 = 4.1%	23/198 = 12%	NR
Edwards ²¹ (2004)	658	252,538 (no)	England Midlands or general UK information from other studies	6/658 = 0.91%	128/252,538 = 0.05%	OR 18.14 (7.97-41.30)
Fleming ¹¹ (1994)	5384	5384 (yes: sex, age)	Medicare Population without history of MS	Diabetes Uncomplicated Type II 3.08/100 Diabetes Uncomplicated Type I 1.94/100 Diabetes with complications Type I NOS 0.86/100	Diabetes Uncomplicated Type II 6/100 Diabetes Uncomplicated Type I 4.91/100 Diabetes with complications Type I NOS 2.16/100	Statistically significant difference using X ² (P < 0.05)
Fromont ²³ (2013)	567	6,560,000 (no)	Population covered by the CNAMTS	23.9% (men) 18.5% (women)	9.2% (men) 8.6% (women)	P<0.01
Hoppenbrouwers ²⁵ (2007)	48	361 (no)	First degree relatives General Dutch Population	0/48 = 0%	First degree relatives: 2/361 = 0.55%	NR

					General Dutch Population 0.4%	
Jadidi ²⁸ (2013)	7,664	66,215 (yes: sex, age)	Total Population Register of Sweden	105/7,664 = 1.37%	689/66,214 = 1.04%	NR
Kang ⁸ (2010)	898	4490 (yes: sex, age, monthly income, level of urbanization in community)	Randomly matched patients from the NHIRD	Type I 0.3% Type II 8.6%	Type I 0.0% Type II 6.1%	OR Type I: N/A OR Type 2: 1.5 (1.1-1.2)
Khan ⁹ (2007)	62	62 (no)	Caregivers of MS participants	2/62 = 3.23%	4/62 = 6.45%	NR
Langer-Gould ³⁰ (2010)	5,296	26,478 (yes: sex, age, KPNC facility, and duration and timing of KPNC membership)	KPNC electronic database	45/5,296 = 0.85%	240/ 26,478 = 0.9%	OR: 0.9 (0.7-1.3)
Laroni ³¹ (2006)	245	245 (yes: sex, age)	General population controls from northeast Italy	9/245 = 3.7%	1/245 = 0.4%	P= 0.02
LaVela ¹⁰ (2012)	1,142	31,500 (no)	General Veteran U.S. Population with no history of MS	181/1,142 = 15.9%	4284/31,500 = 13.6%	P= 0.02
Lindgard ³² (1985)	351	159,200 (yes: sex, age)	General Hospital in-patient hospitalization within the city of Gothenburg, Sweden	Young males 2.9% Older males 6.9% Young females 1.4% Older females 6.4%	NR	Young males NA Older males NA Young females MS patients 4 times more likely than controls (p<0.001) Older females

						MS patients 11 times more likely than controls (p<0.001)
Lu ³³ (2013)	432	2,975 (yes: frequency-matched sample of births matched by maternal age, local health authority, and delivery year)	Female patients from the BCPDR	17/ 432 = 4%	222/2,975 = 8%	P=0.01 X ² test
Marrie ³⁴ (2012)	430	20,940 (yes: sex, age, region)	Manitoba Health Population Registry	7.62% (6.63–8.61%)	8.31% (7.84–8.78%)	Lower in the MS population in 1985 (PR 0.61; 0.44–0.86) but not in 2005 (PR 0.91; 0.81–1.03)
Marrosu ³⁶ (2002)	1,090	2,180 parent of MS patients 3,300 siblings of MS patients 35,906 General Population of Oristano (yes)	Relatives of MS patients (MS Clinic in Cagliari, Italy)	20/1,090 = 3.0%	Parents: 17/2,180 = 1.0% Siblings 13/ 3,300 = 1.0% General Population: 92/35,906 = 0.5%	P <0.0001 compared to general population of Oristano
Midgard ³⁸ (1996)	155	200 (yes: sex, age, place of residence)	Hospital-based controls without a history of MS	0/155 = 0.0%	0/200= 0.0%	–
Ramagopalan ⁴² (2007)	5,031	2,707 spouses(yes) 30,259 First degree relatives (yes)	Spouses and first degree relatives of MS patients	19/5,031 = 0.4%	Spouses 14/2,707= 0.5% First Degree Relatives 112/ 30,259 = 0.4%	χ ² = 1.4, 2 degrees of freedom, p=0.49
Seyfert ⁴³	101	97 (yes: sex, age)	Clinic Personnel	0/101 = 0%	0/97 = 0%	--

(1990)						
Sheu ⁴⁴ (2013)	326	1580 (yes: sex, age, index year)	LHID 2000 Database of Taiwan	36/316= 11.4%	140/1580= 8.9%	P=0.157
Tremlett ⁴⁵ (2002)	320	320 (yes: sex, age, GP surgery and, where possible, smoking)	GPMD database	0/320 = 0.0%	0/320= 0.0%	–
Wertman ⁴⁶ (1992)	334	NR	General Population of Israel in 1950	8.98/1,000 = 0.90%	0.095/1,000 = 0.95%	94.5 times greater than general population (one tail, p<0.001)
<i>Incidence</i>						
Christiansen ⁵ (2010)	13,963	66,407 (yes: sex, age)	DNRP general population	At 1year 178/13,963 = 1.3% At 2-30 years 319/13,963 = 2.3%	At 1year 488/66,407 = 0.7% At 2-30years 2,064/66,407 = 2.3%	NR
Wynn ⁴⁷ (1990)	191	Expected values calculated for Rochester-based incidence rates between 1930-1984	General population of Rochester	Diabetes 9/ 2,874 person years = 0.001%	Diabetes Expected: 6.2/ 2,874 person years = 0.22%	RR 1.46 (0.67-2.78)

NR: Not Reported, OR: Odds Ratio, RR: Relative Risk, SPARCS: New York Department of Health Statewide Planning and Research Cooperate System, CNAMTS: Caisse Nationale d'Assurance Maladie des Travailleurs Salarie's, NHIRD: National Health Insurance Research Database, BCPDR: British Columbia Perinatal Database Registry, GPMD: General Practice Morbidity Database, DNRP: Danish National Registry of Patients, LHID 2000 Database: Taiwan Longitudinal Health Insurance Database.