

Supplemental Table 22. Studies reporting the prevalence of cerebrovascular disease in multiple sclerosis

Study (Year)	Region/ Sub-Region	Source/ Population	Prevalence Day/Period	Diagnostic Criteria: MS/ Established By	Diagnostic Criteria: Cerebrovascular Disease / Established By	Crude Overall Prevalence (95%CI)	Age-Standardized Overall Prevalence (95%CI)	Crude Prevalence (95%CI)		Standardized Prevalence (95%CI)		Quality Score
								Males	Females	Males	Females	
Allen ⁷ (2008)	United States/ New York	SPARCS/ 95% of New York State acute care hospitalizations	1988-2002	ICD-9-CM 340.0 as secondary discharge diagnosis	Ischemic stroke ICD-9-CM 434 and 436 Hemorrhagic stroke ICD-9-CM 430-432/ as primary discharge diagnosis	Ischemic stroke 140/9,949 = 1.41% Hemorrhagic stroke 38/9,949 = 0.38%	NR	NR	NR	NR	NR	4/8
Fleming ¹¹ (1994)	United States	Hospitalized Medicare MS population, age ≥ 65 years	1989	ICD-9-CM code 340 as a primary or secondary discharge diagnosis	Administrative data code (code NR)	Cerebrovascular disorders except TIA (DRG 14) 1.86%	NR	NR	NR	NR	NR	4/8
Finlayson ²² (2013)	United States/ Illinois	Community-dwelling recruited	NR	Self-report	Self-report	Stroke 1/178 = 0.56%	NR	NR	NR	NR	NR	2/9

		from advertisements										
Kang ⁸ (2010)	Taiwan	NHIRD population, age ≥ 15 years	2007	NHRID ICD-9-CM code 340	ICD-9-CM 430- 437 at least one hospitalization or two ambulatory claims	56/898 = 6.2%	NR	NR	NR	NR	NR	4/8
Khan ⁹ (2007)	Australia/ Melbourne	MS database Royal Melbourne Hospital	Jan 2005-Feb 2005	Neurologist diagnosed: Poser and Paty	Self-report	Stroke 1/62 = 1.61%	NR	NR	NR	NR	NR	3/9
Krokki ⁵⁸ (2006)	Finland/ Northern Ostrobothnia	Outpatient Department of Neurology at OUH, all new cases	1990-2010	ICD-9 3400A (1990-1995) ICD-10 G35 (1996-2010) Neurologist established (Poser, McDonald 2001, McDonald 2005)	Medical records review: ischemic stroke diagnosed by brain imaging in 2010-2012	6/401 = 1.2%	NR	0/151 = 0.0%	6/340 = 1.8%	NR	NR	6/8
LaVela ¹⁰ (2012)	United States	National cohort of Veterans with MS, members of	2003, 2004	Veterans Benefits Department confirmed	Telephone and mailed survey (Multiple Sclerosis- Health Care Questionnaire	NR	NR	80/1142 = 7.0%	NR	NR	NR	4/8

		veteran service organization			using questions similar to BRFSS)							
Nuyen ³⁹ (2006)	Netherlands	DNSGP	2001	ICPC code N86	Consultation with GP during (1-year period). Stroke ICPC K90 TIA ICPC K89	Stroke 1/241 = 0.4% TIA 0/241 = 0.0%	NR	NR	NR	NR	NR	5/8

NR: Not Reported, SPARCS: New York Department of Health Statewide Planning and Research Cooperative System, NHIRD- National Health Insurance Research Database, OUH: Oulu University Hospital, BRFSS: Behavioral Risk Factor Surveillance System, DNSGP: Dutch National Survey of General Practice, GP: General Practitioner.