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# 1 Epidemiological Characteristics of Neurological Diseases

## 1.1 Prevalence of Neurological Diseases

Prevalence (per 1,000) of neurological disorders, by cause, WHO region and mortality stratum, projections for 2005, 2015, and 2030

	2005		2015		2030	
	Population	Number per 1,000	Population	Number per 1,000	Population	Number per 1,000
Population	6,441,919,466		7,105,297,899		7,917,115,397	
Epilepsy	39,891,898	6.19	44,568,780	6.27	50,503,933	6.38
Alzheimer's disease	24,446,651	3.79	31,318,923	4.41	44,016,718	5.56
Parkinson's disease	5,223,897	0.81	5,967,673	0.84	7,236,712	0.91
Multiple sclerosis	2,492,385	0.39	2,823,092	0.40	3,279,190	0.41
Migraine	326,196,121	50.64	364,432,879	51.30	412,894,420	52.15
Cerebrovascular disease	61,537,499	9.55	67,212,050	0.46	76,826,240	9.70
Neuroinfection	18,169,479	2.82	15,714,399	2.21	13,290,180	1.68
Nutritional/neuropathies	352,494,535	54.72	321,738,424	45.29	285,369,403	36.04
Neurological injuries	170,382,211	26.45	197,627,526	27.82	242,728,912	30.60

Source: Neurological disorders: public health challenges, WHO 2006.

## 1.2 Epidemiology of Worldwide Neurological Disorders

In order to improve the understanding of the global burden of neurologic conditions, the Public Health Agency of Canada launched the National Population Health Study of Neurological Conditions in 2009. One of its many aims was to examine the epidemiology, including the incidence and prevalence, of 15 common neurologic conditions. This effort involved the review of 65,529 abstracts and 4,650 full-text articles, with 1,242 research studies. In the following tables, the overall worldwide pooled prevalence or incidence data from the systemic reviews of neurologic conditions are presented. The table shows differences that exist. For example, in the Canadian systematic review of the epidemiology of epilepsy, the incidence was highest in Africa at 215.00 per 100,000 person-years, followed by South America at 162.45 per 100,000 person-years. The incidence of epilepsy in North America was 23.29 per 100,000 person-years and it was 42.63 per 100,000 person-years in Europe. These differences in incidence between continents are most likely attributable to the geographic differences in risk factors for epilepsy such as the high prevalence of central nervous system (CNS) infections (i.e., neurocysticercosis) in many developing countries compared to the developed countries. For many conditions, data on the prevalence or incidence of neurologic conditions in Africa and South America were scarce or unavailable, limiting the possibility of drawing firm conclusions in these areas.