

EAN Fact Sheet

Country profile of Russian Federation

EAN Fact Sheet

Country profile of Russian Federation

The EAN is pleased to present this fact sheet to each and every national neurological society, offering key insights into the latest epidemiological, economic, and demographic trends. This data aims to support informed decision-making and enhance understanding of neurological conditions on both national and European level with information provided by three EAN projects: the [“Burden of Neurological Disease in Europe”](#) study, the EAN [“COst of Illness in Neurology in EUrope \(COIN-EU\)”](#) project, the EAN NNS 2021-2022 survey.

Burden of Disease in Europe – Collaboration with IHME

Neurological disorders are the second most common cause of disability and premature death in the European Region and their prevalence and burden will likely increase with the progressive ageing of the European population. Greater attention to neurological diseases must be paid by health authorities for prevention and care. For this reason, the European Academy of Neurology is conducting research on gaining and analysing reliable data on the number of patients with neurological diseases.

These data are obtained from the currently most developed data base, the [Global Burden of Disease \(GBD\)](#) study of the Institute for Health Metrics and Evaluation (IHME), University of Washington, Seattle. The burden of neurological disorders in Europe was calculated for the year 2021 as prevalence, mortality, disability-adjusted life-years (DALYs), years of life lost (YLLs), and years lived with disability (YLDs) for the countries in the EU and the WHO European region for a total of 26 neurological disorders.

The study in Europe is run by the EAN and led by Prof. Dr. Günther Deuschl, Dr. Maurizio Leone and Maria Konti, M.Sc., in close collaboration with the leading scientists of the IHME Institute.

In the table below, you will find the national total counts for DALYs, YLDs, YLLs, prevalence, and deaths, the age-standardised rates by neurological disorder category for the years 1990 and 2021, and the percentage change for both of your country and the WHO Europe.

Diseases with counts less than one have been excluded and the number of decimal points has been adjusted individually for each disease.

	Counts	Age-standardized rate		Percentage change, 1990-2021	
	(thousands)	1990	2021	Russian Federation	WHO Europe
All Neurological Disorders					
DALYs	10,125,970	6,398	4,718	-26.3%	-29.0%
Deaths	394,956	265	166	-37.4%	-43.2%
Prevalence	69,442,365	42,889	43,404	1.2%	0.3%
YLDs	3,217,173	1,645	1,686	2.5%	2.9%
YLLs	6,908,459	4,753	3,031	-36.2%	-44.4%
Alzheimer's disease and other dementias					
DALYs	971,902	406	398	-2.0%	-2.5%
Deaths	50,932	21.62	21.05	-2.6%	-2.8%
Prevalence	1,605,863	670	661	-1.3%	-2.1%
YLDs	331,789	139	136	-2.2%	-2.6%
YLLs	640,114	267	262	-1.9%	-2.5%
Chromosomal abnormalities					
DALYs	5,710	8	6	-28.4%	-12.3%
Prevalence	63,558	91	65	-28.8%	-12.8%
YLDs	5,710	8	6	-28.3%	-12.4%
Covid-19 (neurological)					
DALYs	102,454	-	59	-	-
Prevalence	1,011,289	-	592	-	-
YLDs	102,454	-	59	-	-
Cystic echinococcosis					
DALYs	97	0.08	0.05	-37.2%	-18.3%
Prevalence	372	0.27	0.20	-26.8%	-9.0%
YLDs	97	0.08	0.05	-37.2%	-18.4%
Diabetic neuropathy					
DALYs	593,538	126	254	102.2%	98.1%
Prevalence	4,726,418	1,000	2,023	102.3%	97.9%
YLDs	593,538	126	254	102.2%	98.1%

Down syndrome					
DALYs	2,418	4.55	2.50	-45.1%	-19.6%
Prevalence	26,902	51	28	-45.8%	-20.7%
YLDs	2,418	4.55	2.50	-45.1%	-19.8%
Encephalitis					
DALYs	57,133	63	40	-36.6%	-30.1%
Deaths	1,504	1.03	0.84	-18.5%	-15.9%
Prevalence	32,234	25	19	-25.2%	-13.6%
YLDs	2,939	2.47	1.85	-25.1%	-12.0%
YLLs	54,194	61	38	-37.1%	-31.0%
Epilepsy					
DALYs	115,600	120	76	-36.5%	-12.6%
Deaths	838	0.79	0.46	-41.6%	3.9%
Prevalence	320,859	249	211	-15.2%	3.3%
YLDs	86,714	79	57	-27.5%	-11.3%
YLLs	28,886	41	19	-53.7%	-14.3%
Guillain-Barre Syndrome					
DALYs	887	0.55	0.55	0.5%	12.4%
Prevalence	2,996	1.85	1.86	0.4%	12.4%
YLDs	887	0.55	0.55	0.4%	12.4%
Idiopathic intellectual disability					
DALYs	17,307	15	14	-10.4%	-19.7%
Prevalence	399,754	365	319	-12.6%	-21.2%
YLDs	17,307	15	14	-10.4%	-19.7%
Klinefelter syndrome					
DALYs	66	0.04	0.04	0.6%	5.7%
Prevalence	5,035	4.60	4.68	1.7%	5.5%
YLDs	66	0.04	0.04	0.5%	5.5%

	Counts (thousands)		Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Russian Federation	WHO Europe	
Meningitis						
DALYs	55,171	134	40	-69.9%	-80.5%	
Deaths	1,411	1.77	0.80	-54.7%	-75.4%	
Prevalence	55,243	126	35	-72.4%	-66.7%	
YLDs	4,118	10	3	-70.8%	-64.6%	
YLLs	51,052	125	38	-69.9%	-81.3%	
Migraine						
DALYs	955,154	591	589	-0.3%	0.04%	
Prevalence	22,799,068	14,421	14,379	-0.3%	0.3%	
YLDs	955,154	591	589	-0.3%	0.04%	
Motor neuron disease						
DALYs	52,302	3.06	24.41	697.7%	37.5%	
Deaths	1,798	0.06	0.77	1149.0%	54.1%	
Prevalence	5,491	3.49	3.67	5.3%	19.8%	
YLDs	1,167	0.74	0.78	5.3%	19.5%	
YLLs	51,135	2.32	23.63	919.1%	38.5%	
Multiple sclerosis						
DALYs	37,459	27	20	-26.6%	-5.0%	
Deaths	660	0.50	0.32	-36.5%	-12.5%	
Prevalence	52,944	24	29	19.6%	26.4%	
YLDs	13,891	6	8	18.4%	25.5%	
YLLs	23,567	21	12	-40.8%	-22.2%	
Nervous system cancer						
DALYs	293,697	153	158	3.7%	-3.3%	
Deaths	9,251	3.26	4.36	33.8%	10.8%	
Prevalence	14,951	8	9	20.2%	35.9%	
YLDs	2,938	1.17	1.53	30.5%	25.3%	
YLLs	290,759	151	157	3.5%	-3.7%	

Neurocysticercosis						
DALYs	27,164	21.74	12.39	-43.0%	-42.5%	
Prevalence	119,402	81.21	54.07	-33.4%	-32.8%	
YLDs	27,115	21.68	12.36	-43.0%	-42.5%	
YLLs	49	0.06	0.03	-52.9%	-70.7%	
Neurosyphilis						
DALYs	255	0.20	0.12	-39.1%	-43.6%	
Prevalence	2,137	1.51	1.17	-22.2%	-11.7%	
YLDs	255	0.20	0.12	-39.1%	-43.4%	
Other neurological disorders						
DALYs	193,750	38	115	200.9%	25.8%	
Deaths	6,681	0.44	3.12	607.6%	45.0%	
YLDs	27,503	12	17	44.1%	62.9%	
YLLs	165,908	26	98	273.5%	14.2%	
Parkinson's disease						
DALYs	184,954	71	76	7.9%	5.6%	
Deaths	10,427	3.87	4.30	10.9%	4.0%	
Prevalence	220,450	87	90	3.5%	21.9%	
YLDs	30,979	12	13	3.1%	21.4%	
YLLs	153,975	58	63	9.0%	2.0%	
Rabies						
DALYs	93	0.36	0.07	-81.7%	-59.7%	
Prevalence	2	0.01	0.00	-79.7%	-57.2%	
YLDs	93	0.36	0.07	-81.7%	-59.7%	
Spinal cord injury						
DALYs	141,311	116	80	-31.4%	-26.9%	
Prevalence	531,502	377	295	-21.8%	-21.9%	
YLDs	141,311	116	80	-31.4%	-26.9%	

	Counts	Age-standardized rate		Percentage change, 1990-2021	
	(thousands)	(per 100 000 people)		Russian Federation	WHO Europe
	2021	1990	2021		
Stroke					
DALYs	5,892,125	4,219	2,520	-40.3%	-52.6%
Deaths	311,447	232	130	-43.9%	-55.6%
Prevalence	2,453,769	1,218	1,102	-9.5%	-19.2%
YLDs	443,432	219	199	-9.5%	-18.9%
YLLs	5,448,692	3,999	2,321	-42.0%	-55.3%
Tension-type headache					
DALYs	171,991	100	100	0.0%	-1.6%
Prevalence	48,225,991	30,968	31,147	0.6%	-0.8%
YLDs	171,991	100	100	0.0%	-1.6%
Tetanus					
DALYs	34.51	0.81	0.02	-97.9%	-97.3%
Prevalence	1.22	0.026	0.001	-97.9%	-95.8%
YLDs	2.90	0.009	0.002	-79.0%	-32.0%
YLLs	34.38	0.81	0.02	-97.9%	-97.5%
Traumatic Brain Injury					
DALYs	253,399	179	132	-26.3%	-28.2%
Prevalence	1,745,451	1,216	899	-26.1%	-28.0%
YLDs	253,399	179	132	-26.3%	-28.2%

Table 1: National total counts for DALYs, YLDs, YLLs, prevalence, and deaths, age-standardised rates by neurological disorder category for 1990 and 2021, and percentage change of 1990-2021. Diseases with counts less than one have been excluded and the number of decimal points has been adjusted individually for each disease.

Neurological conditions

In figure 1 below, the top 20 neurological disorders are ranked based on the national age-standardised rate of DALYs per 100 000 population in 2021 for all age groups.

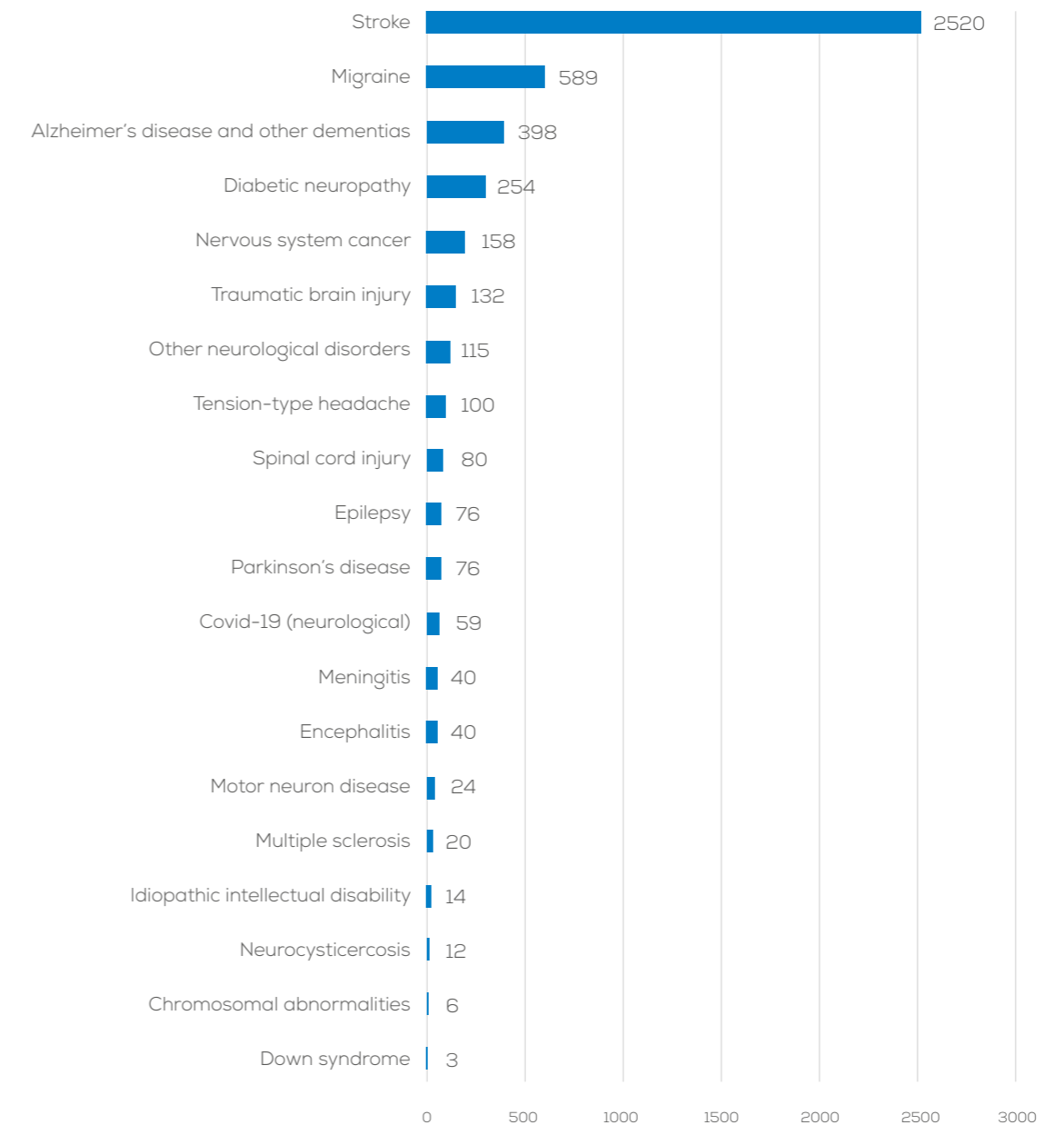


Figure 1: National age-standardised DALYs per 100 000 population by neurological disorder in 2021.

DALYs per 100 000 population

In order to show how the diseases are evolving both in **Russian Federation** and the European Region, we present the temporal pattern of DALYs per 100 000 population over the last three decades in the figure below:

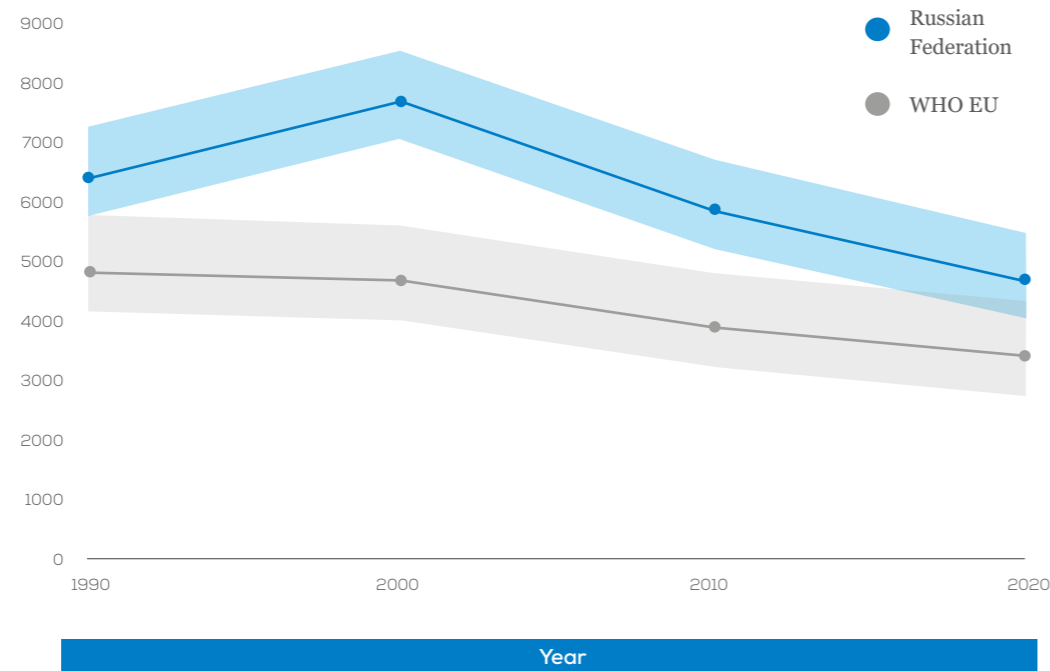


Figure 2: Age-Standardized DALYs per 100 000 population over the last 3 decades.

In figure 3 we show the distribution of DALYs rate per 100 000 population by age group divided in female and male:

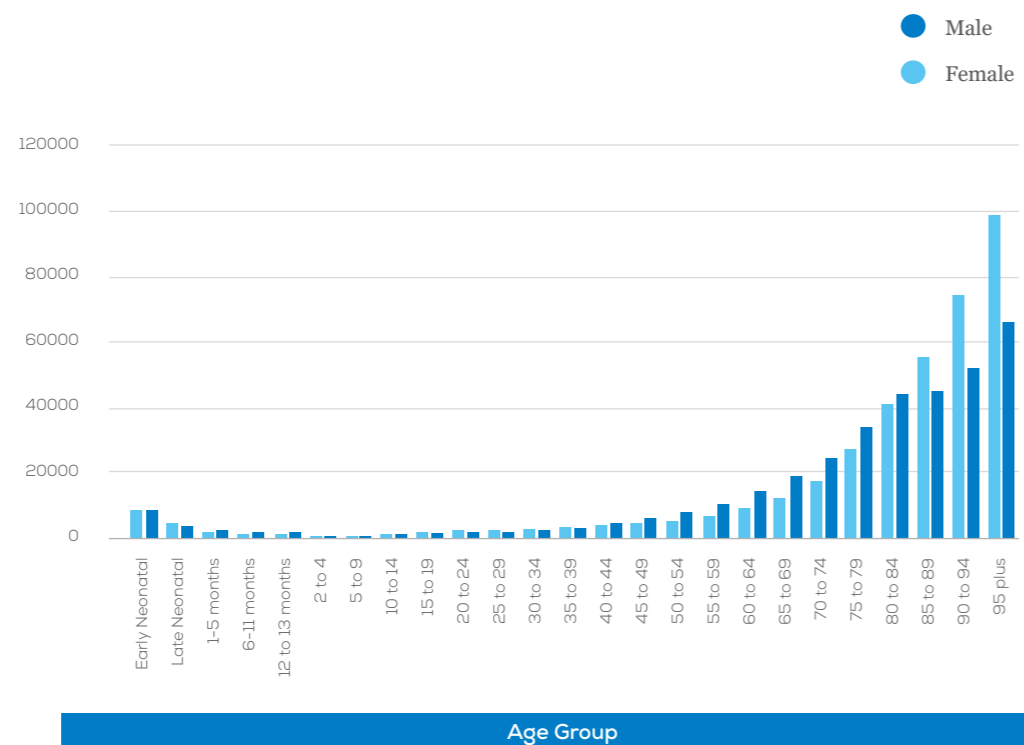


Figure 3: National DALYs per 100 000 population by age group and sex in 2021.

Extensive data and analyses are provided in the published paper and it will be communicated to the National Neurological societies.

COIN-EU (Cost of Illness in Neurology in Europe)

The Cost of Illness in Neurology in Europe (COIN-EU) project, which was launched in 2021, is run by EAN and led by Prof. Richard Dodel, Prof. Uwe Siebert and Prof. Günther Deuschl. This project is overseen at the EAN by Prof. Paul Boon, Prof. Claudio Bassetti and Prof. Thomas Berger.

The aim of the study is to assess disease- and country-specific annual costs for 12 categories of neurological diseases in Europe with a focus on the prevalent adult patient population. Costs have been calculated in three main categories: a) direct health care costs (i.e., all goods and services related to the prevention, diagnosis and treatment of a disorder; e.g. physician visits, hospitalizations and pharmaceuticals), b) informal care costs (i.e. other goods and services related to the disorder; e.g. social services, special accommodation and informal care), and c) indirect costs (i.e., lost productivity due to work absence or early retirement).

As the literature review revealed many gaps in research for many diseases and many countries, the group has developed a method to provide estimations of the above cost categories for the cases where no data are available. Data are imputed for those countries which belong to the same GNI category with countries that do present data. In case none of the countries which belong to the same GNI category present data, then an imputation is not possible.

In the table below, costs for **Russian Federation** have been calculated for the diseases with available data, in three main categories where the numbers represent millions € PPP 2019.

million € PPP
2019

Informal Care

Neurological Disorder	Total Costs	Direct Costs	Informal Care Costs	Indirect Costs
Stroke	8,728.4	2,500.9	1,148.4	5,079.2
Traumatic brain injury	3,179.1	3,179.1	-	-
Multiple sclerosis	1,128.7	833.8	79.1	215.9
Parkinson's disease	876.2	510.4	277.6	88.2
Idiopathic epilepsy	486.8	423.1	-	63.7
Total Costs:	14,399.2	7,447.2	1,505.0	5,447.0

Table 2: Total, direct, informal care and indirect costs per neurological disorder. Number of diseases depends on the availability of original studies and imputation of data.

NNS Survey 2021

In December 2021, the EAN conducted a survey among the national neurological societies. By combining the data from the Burden of Disease in Europe study across all European Region countries, we can provide demographic data regarding the workforce of neurologists in Europe for the 37 countries who took part in the survey.

The figure below represents the number of neurologists, fully specialised and in training per 100 000 population.

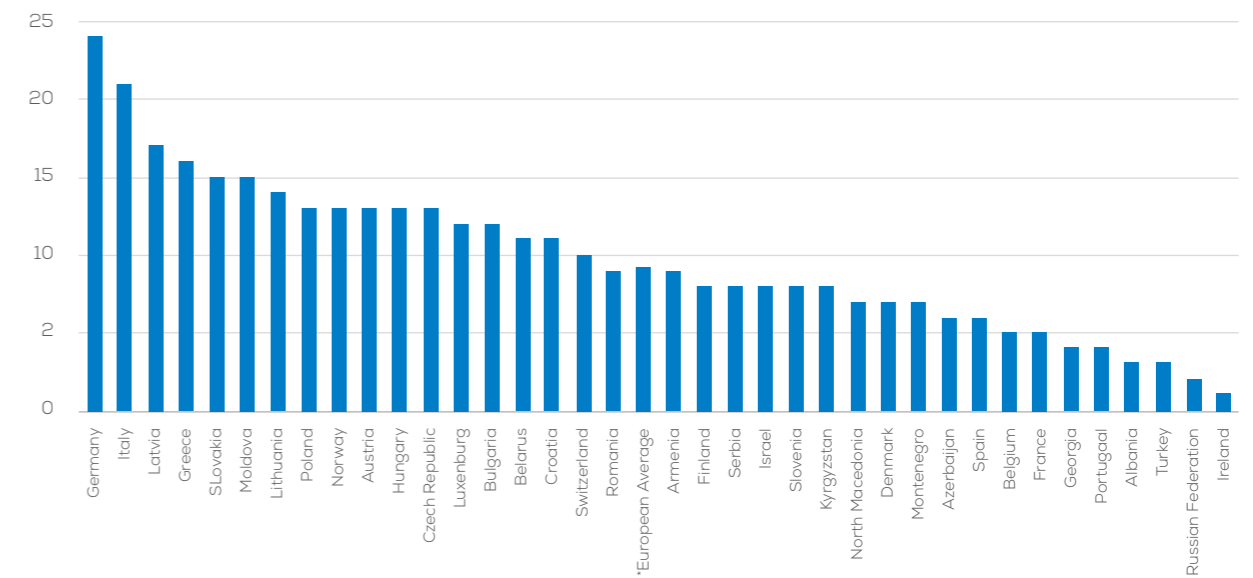


Figure 4: Number of neurologists (fully specialised and in training) per 100 000 population.

In the last figure the number of patients per neurologist is displayed:

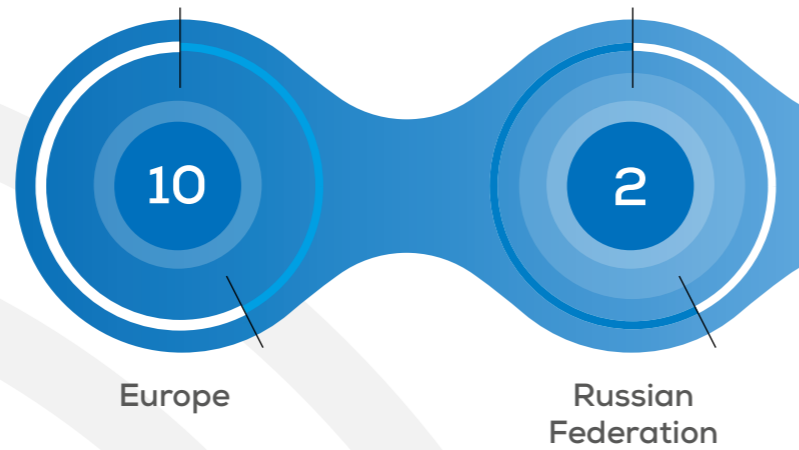


Figure 5: Number of patients per neurologist (fully specialised and in training).

Neurological Diseases in Europe and Russian Federation:

Key Data and Trends from 2021

Neurologists per 100,000 population in Europe* and Russian Federation:



Russian Federation 69,442,365



WHO Europe 449.278.770



Number of patients with a neurological disease in 2021 in the WHO Europe and in Russian Federation.



Patients per Neurologist in Europe* and Russian Federation

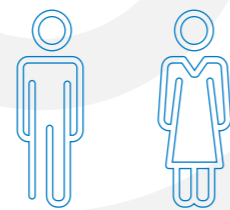
Percentage change of age-standardised DALYs, Deaths and prevalence from 1990 to 2021:

	WHO Europe	vs	Russian Federation
DALYs	-28.98%		-26.26%
Deaths	-43.19%		-37.41%
Prevalence	0.34%		1.20%

Most prevalent neurological diseases in Russian Federation in

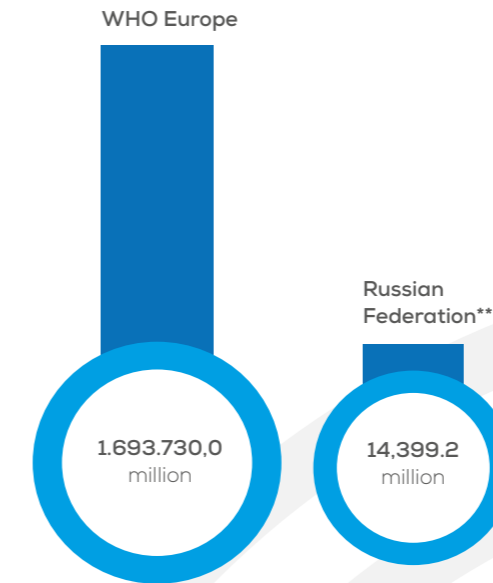
2021

- 1 Tension-type headache
- 2 Migraine
- 3 Diabetic neuropathy
- 4 Stroke
- 5 Traumatic brain injury



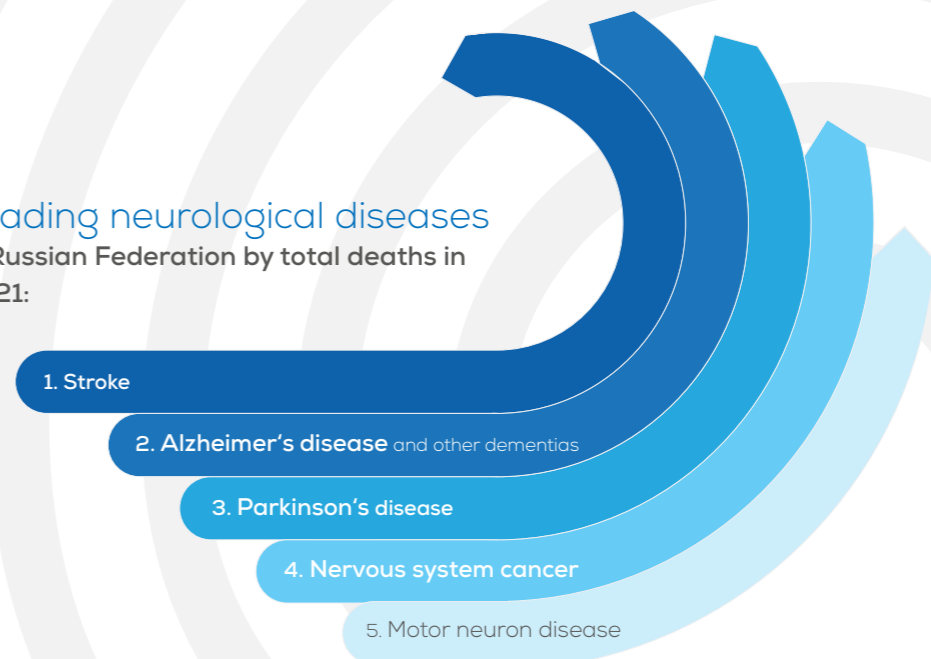
3,513 3,351 WHO Europe
5,244 4,323 Russian Federation

Age-standardised DALYs rate per 100,000 population in 2021 by sex



Annual total costs (in million € PPP 2019) for 12 major neurological diseases:

Leading neurological diseases in Russian Federation by total deaths in 2021:



*Based on data from 37 countries of the WHO European region
**Cost estimates are derived from country-specific data available for specific diseases.

