

EAN Fact Sheet

Country profile of Switzerland

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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 Conti, 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)	(per 100 000 people)		Switzerland	WHO Europe
	2021	1990	2021		
All Neurological Disorders					
DALYs	361,785	3,158	2,403	-23.9%	-29.0%
Deaths	13,044	99	56	-43.5%	-43.2%
Prevalence	4,247,082	41,416	42,736	3.2%	0.3%
YLDs	188,941	1,449	1,491	2.9%	2.9%
YLLs	172,821	1,708	912	-46.6%	-44.4%
Alzheimer's disease and other dementias					
DALYs	99,781	450	426	-5.4%	-2.5%
Deaths	6,360	24.88	24.63	-1.0%	-2.8%
Prevalence	141,610	716	640	-10.6%	-2.1%
YLDs	29,548	148	132	-10.9%	-2.6%
YLLs	70,233	302	294	-2.6%	-2.5%
Chromosomal abnormalities					
DALYs	554	8.52	8.30	-2.6%	-12.3%
Prevalence	6,030	95	92	-3.0%	-12.8%
YLDs	554	8.52	8.30	-2.6%	-12.4%
Covid-19 (neurological)					
DALYs	1,432	-	14	-	-
Prevalence	13,829	-	133	-	-
YLDs	1,432	-	14	-	-
Diabetic neuropathy					
DALYs	42,720	142	269	89.9%	98.1%
Prevalence	339,042	1,120	2,121	89.5%	97.9%
YLDs	42,720	142	269	89.9%	98.1%
Down syndrome					
DALYs	382	5.62	5.33	-5.2%	-19.6%
Prevalence	4,120	62	59	-5.2%	-20.7%
YLDs	382	5.62	5.33	-5.1%	-19.8%

Encephalitis					
DALYs	1,010	1	8	488.1%	-30.1%
Deaths	47	0.01	0.26	2266.5%	-15.9%
Prevalence	1,044	10	9	-2.5%	-13.6%
YLDs	108	1.00	1.02	1.6%	-12.0%
YLLs	902	0.43	7.39	1635.1%	-31.0%
Epilepsy					
DALYs	11,704	135	115	-14.5%	-12.6%
Deaths	175	1.11	1.15	3.7%	3.9%
Prevalence	31,049	340	314	-7.8%	3.3%
YLDs	7,140	88	72	-17.9%	-11.3%
YLLs	4,564	46	42	-8.2%	-14.3%
Guillain-Barre Syndrome					
DALYs	60	0.52	0.52	0.4%	12.4%
Prevalence	203	1.76	1.77	0.4%	12.4%
YLDs	60	0.52	0.52	0.4%	12.4%
Idiopathic intellectual disability					
DALYs	823	13	10	-19.4%	-19.7%
Prevalence	17,643	268	221	-17.6%	-21.2%
YLDs	823	13	10	-19.4%	-19.7%
Klinefelter syndrome					
DALYs	4	0.03	0.03	9.2%	5.7%
Prevalence	306	4.09	4.40	7.7%	5.5%
YLDs	4	0.03	0.03	9.3%	5.5%

	Counts (thousands)	Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Switzerland	WHO Europe
Meningitis					
DALYs	1,510	109	20	-81.2%	-80.5%
Deaths	44	1.88	0.37	-80.5%	-75.4%
Prevalence	1,239	39	12	-68.0%	-66.7%
YLDs	104	3.32	1.12	-66.4%	-64.6%
YLLs	1,406	105	19	-81.7%	-81.3%
Migraine					
DALYs	54,637	585	590	1.0%	0.04%
Prevalence	1,444,817	15,680	15,818	0.9%	0.3%
YLDs	54,637	585	590	1.0%	0.04%
Motor neuron disease					
DALYs	5,416	45.91	37.26	-18.8%	37.5%
Deaths	233	1.48	1.35	-9.3%	54.1%
Prevalence	1,396	9.39	10.04	7.0%	19.8%
YLDs	295	1.99	2.13	6.7%	19.5%
YLLs	5,121	43.92	35.13	-20.0%	38.5%
Multiple sclerosis					
DALYs	6,543	56	50	-11.2%	-5.0%
Deaths	137	1.08	0.87	-20.0%	-12.5%
Prevalence	11,707	86	95	9.8%	26.4%
YLDs	2,925	22	24	9.8%	25.5%
YLLs	3,618	34	26	-24.7%	-22.2%
Nervous system cancer					
DALYs	15,876	113	130	14.4%	-3.3%
Deaths	582	2.81	3.80	35.5%	10.8%
Prevalence	4,425	28	41	46.4%	35.9%
YLDs	478	2.71	3.94	45.2%	25.3%
YLLs	15,398	111	126	13.7%	-3.7%

Neurosyphilis					
DALYs	4	0.03	0.03	-6.8%	-43.6%
Prevalence	43	0.40	0.36	-9.9%	-11.7%
YLDs	4	0.03	0.03	-6.6%	-43.4%
Other neurological disorders					
DALYs	8,842	97	80	-17.4%	25.8%
Deaths	290	2.05	1.77	-13.6%	45.0%
YLDs	2,195	14	22	57.2%	62.9%
YLLs	6,624	82	58	-30.0%	14.2%
Parkinson's disease					
DALYs	16,734	79	79	0.9%	5.6%
Deaths	966	4.36	4.22	-3.3%	4.0%
Prevalence	29,802	113	149	32.2%	21.9%
YLDs	4,147	16	21	31.8%	21.4%
YLLs	12,588	63	58	-7.0%	2.0%
Spinal cord injury					
DALYs	11,834	142	103	-27.3%	-26.9%
Prevalence	43,213	511	370	-27.7%	-21.9%
YLDs	11,834	142	103	-27.3%	-26.9%
Stroke					
DALYs	67,293	1,027	333	-67.5%	-52.6%
Deaths	4,209	59	17	-70.6%	-55.6%
Prevalence	102,749	774	623	-19.5%	-19.2%
YLDs	14,925	106	87	-17.7%	-18.9%
YLLs	52,367	921	246	-73.3%	-55.3%

	Counts (thousands)		Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Switzerland	WHO Europe	
Tension-type headache						
DALYs	6,877	65	66	2.6%	-1.6%	
Prevalence	2,884,249	28,528	29,829	4.6%	-0.8%	
YLDs	6,877	65	66	2.6%	-1.6%	
Traumatic Brain Injury						
DALYs	7,750	87	58	-32.9%	-28.2%	
Prevalence	59,285	658	440	-33.1%	-28.0%	
YLDs	7,750	87	58	-32.9%	-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.

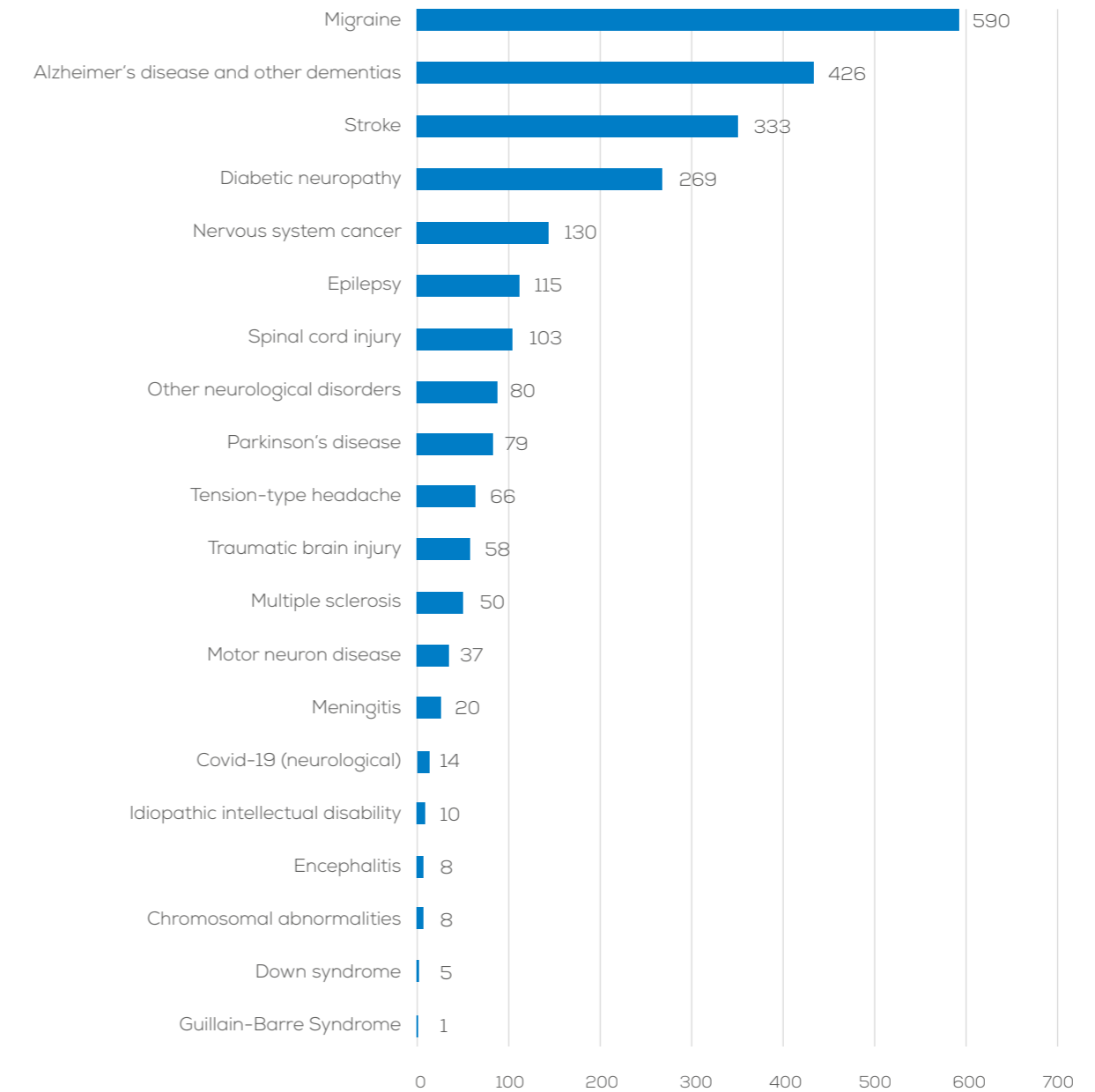


Figure 1: National age-standardised DALYs per 100 000 population by neurological disorder in 2021.

DALYs per 100 000 population

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

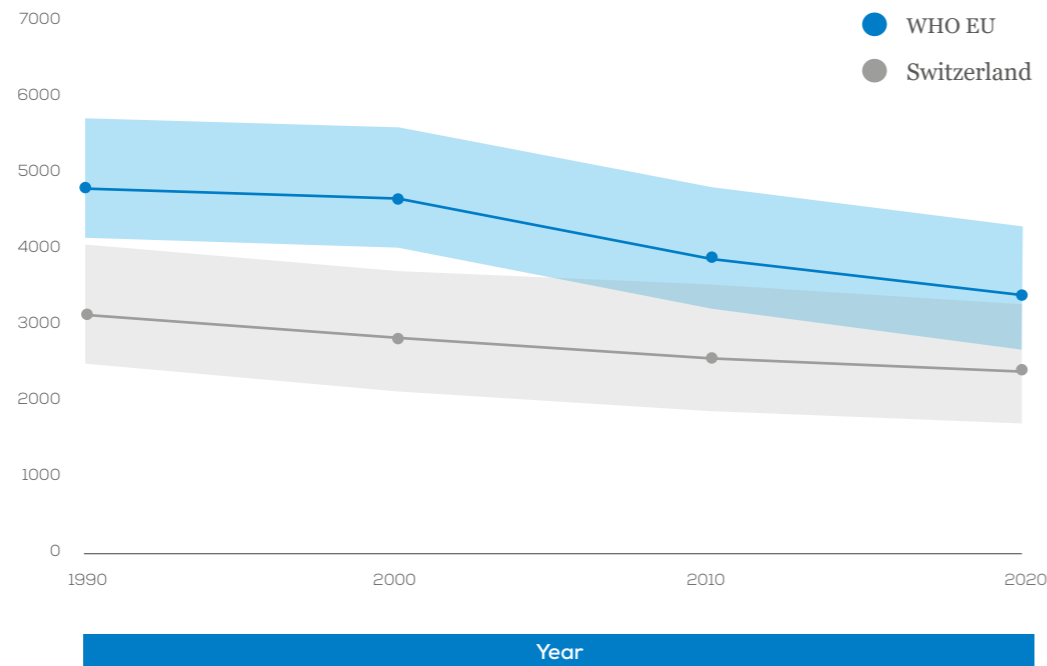


Figure 2: Age-Standardized DALYs per 100 000 population over the last 3 decades.

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

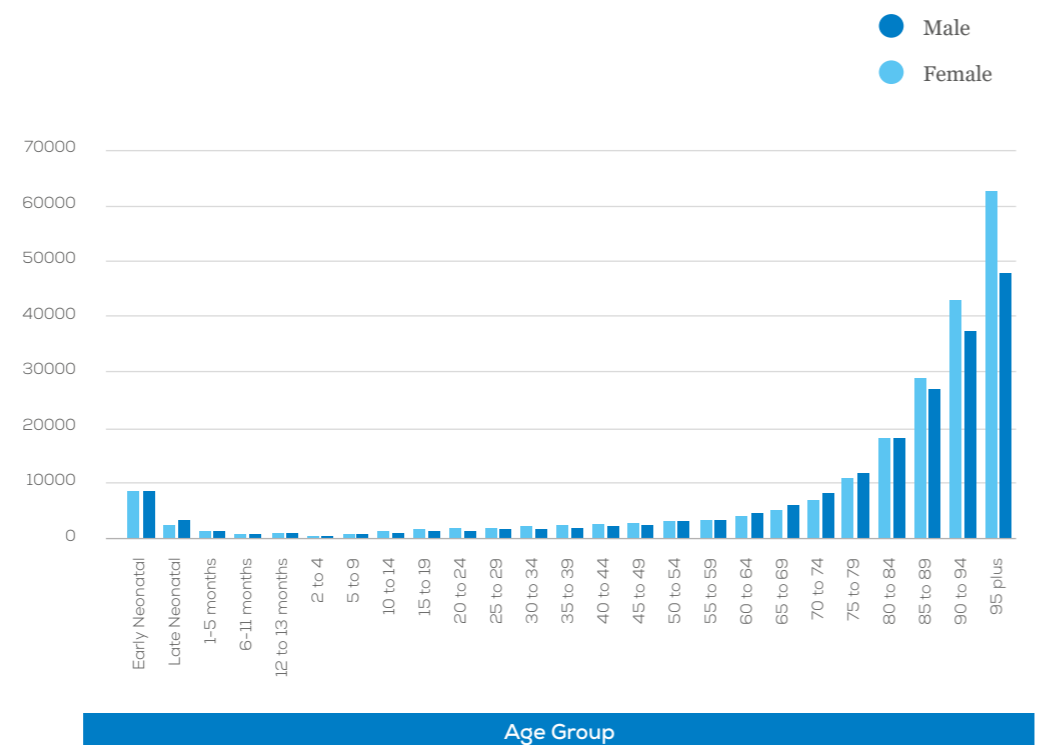


Figure 3: National DALYs per 100 000 population by age group and sex in 2021.

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 **Switzerland** 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
Headache disorders	17,730.6	8,781.7	1,637.9	7,311.0
Sleep disorders	16,281.6	5,371.3	-	10,910.3
Alzheimer's disease and other dementias	5,052.1	2,814.3	2,236.7	1.0
Polyneuropathies	1,354.5	448.0	-	906.5
Traumatic brain injury	1,324.3	402.8	243.5	678.0
Stroke	925.1	624.8	98.6	201.7
Idiopathic epilepsy	392.9	203.0	-	189.9
Multiple sclerosis	312.7	197.8	28.9	86.0
Parkinson's disease	290.3	186.7	75.0	28.6
Motor neuron disease	21.3	11.1	6.0	4.3
Brain and central nervous system cancer	18.9	11.5	7.5	-
Meningitis	3.5	3.5	-	-
Total Costs:	43,707.9	19,056.5	4,334.0	20,317.3

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.

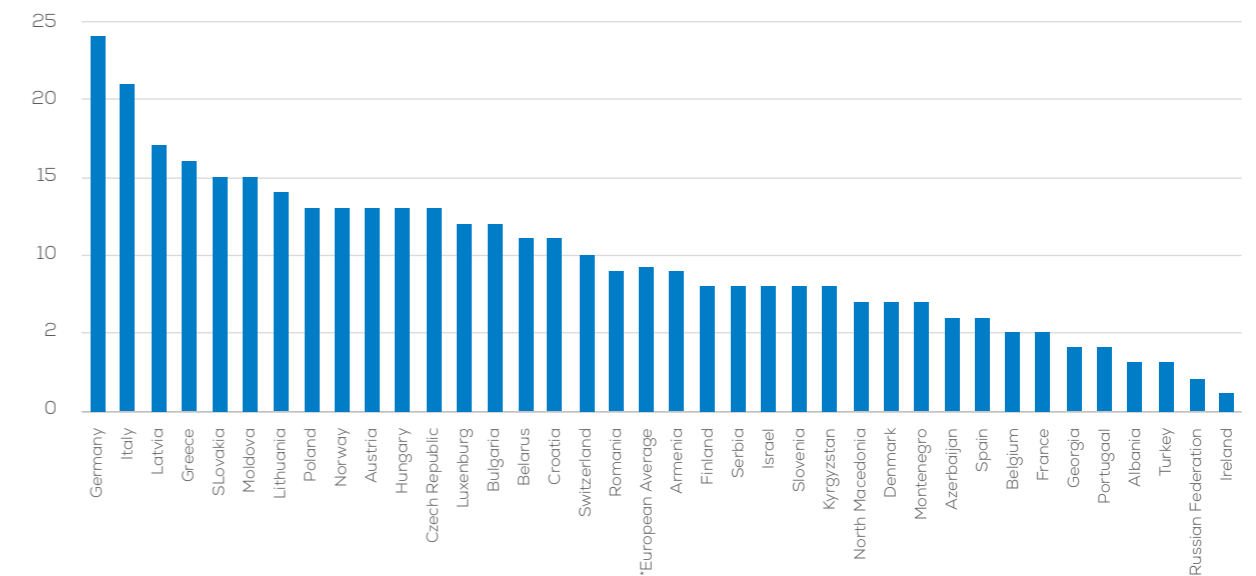


Figure 4: Number of neurologists (fully specialised and in training) per 100 000 population.

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

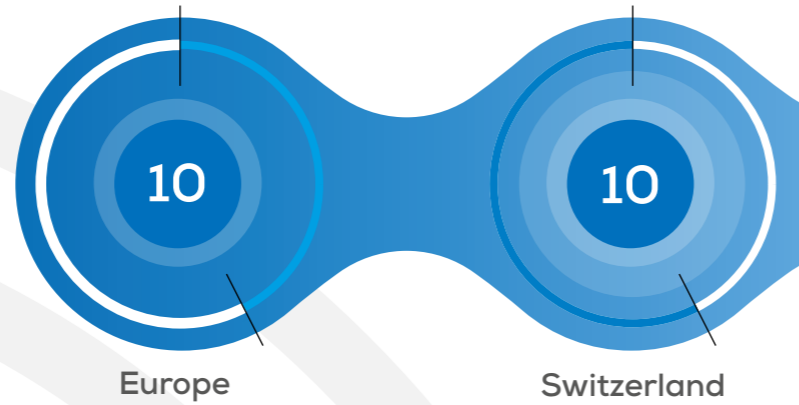


Figure 5: Number of patients per neurologist (fully specialised and in training).

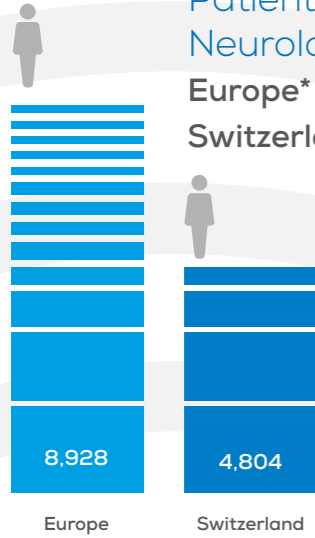
Neurological Diseases in Europe and Switzerland:

Key Data and Trends from 2021

Neurologists per 100,000 population in Europe* and Switzerland:

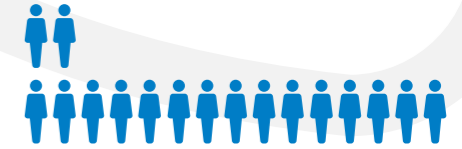


Patients per Neurologist in Europe* and Switzerland



Switzerland 4,247,082

WHO Europe 449,278,770



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

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

	WHO Europe	vs	Switzerland
DALYs	-28.98%		-23.91%
Deaths	-43.19%		-43.52%
Prevalence	0.34%		3.19%

Most prevalent neurological diseases in Switzerland in

2021

- 1 Tension-type headache
- 2 Migraine
- 3 Diabetic neuropathy
- 4 Alzheimer's disease and other dementias
- 5 Stroke

	Male	Female
WHO Europe	3,513	3,351
Switzerland	2,293	2,509

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

WHO Europe

1,693,730.0 million

Switzerland**

43,707.9 million

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

Leading neurological diseases in Switzerland by total deaths in 2021:

1. Alzheimer's disease and other dementias
2. Stroke
3. Parkinson's disease
4. Nervous system cancer
5. Motor neuron disease

*Based on data from 37 countries of the WHO European region

**Cost estimates are derived from country-specific data available for specific diseases.

