

# EAN Fact Sheet

Country profile of Malta

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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 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)	(per 100 000 people)		Malta	WHO Europe
	2021	1990	2021		
<b>All Neurological Disorders</b>					
DALYs	19,379	3,552	2,603	-26.7%	-29.0%
Deaths	685	125	62	-50.6%	-43.2%
Prevalence	222,453	45,252	45,564	0.7%	0.3%
YLDs	9,565	1,411	1,530	8.5%	2.9%
YLLs	9,813	2,141	1,072	-49.9%	-44.4%
<b>Alzheimer's disease and other dementias</b>					
DALYs	4,906	442	422	-4.6%	-2.5%
Deaths	291	24.71	24.00	-2.9%	-2.8%
Prevalence	7,302	695	642	-7.7%	-2.1%
YLDs	1,538	146	134	-7.9%	-2.6%
YLLs	3,369	296	288	-2.9%	-2.5%
<b>Chromosomal abnormalities</b>					
DALYs	34	11.01	10.63	-3.5%	-12.3%
Prevalence	375	123	119	-2.9%	-12.8%
YLDs	34	11.01	10.63	-3.5%	-12.4%
<b>Covid-19 (neurological)</b>					
DALYs	66	-	25	-	-
Prevalence	597	-	118	-	-
YLDs	66	-	25	-	-
<b>Diabetic neuropathy</b>					
DALYs	2,307	107	272	154.7%	98.1%
Prevalence	18,159	838	2,133	154.6%	97.9%
YLDs	2,307	107	272	154.7%	98.1%

<b>Down syndrome</b>					
DALYs	26	7.87	7.53	-4.3%	-19.6%
Prevalence	281	87	84	-4.1%	-20.7%
YLDs	26	7.87	7.53	-4.4%	-19.8%
<b>Encephalitis</b>					
DALYs	4	5	1	-81.6%	-30.1%
Prevalence	18	4.01	3.31	-17.5%	-13.6%
YLDs	2	0.43	0.36	-16.5%	-12.0%
YLLs	2	4	1	-87.9%	-31.0%
<b>Epilepsy</b>					
DALYs	479	90	101	11.4%	-12.6%
Deaths	6	0.54	0.81	50.2%	3.9%
Prevalence	1,360	249	290	16.6%	3.3%
YLDs	315	67	68	0.2%	-11.3%
YLLs	164	23	33	44.1%	-14.3%
<b>Guillain-Barre Syndrome</b>					
DALYs	3	0.52	0.52	0.6%	12.4%
Prevalence	10	1.76	1.77	0.7%	12.4%
YLDs	3	0.52	0.52	0.7%	12.4%
<b>Idiopathic intellectual disability</b>					
DALYs	51	22	13	-41.2%	-19.7%
Prevalence	1,120	464	285	-38.6%	-21.2%
YLDs	51	22	13	-41.2%	-19.7%
<b>Klinefelter syndrome</b>					
Prevalence	15	4.27	4.49	5.2%	5.5%

	Counts (thousands)	Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Malta	WHO Europe
<b>Meningitis</b>					
DALYs	51	47	15	-68.6%	-80.5%
Deaths	1	0.76	0.25	-67.0%	-75.4%
Prevalence	29	22	6	-71.9%	-66.7%
YLDs	2	1.99	0.56	-71.9%	-64.6%
YLLs	49	45	14	-68.5%	-81.3%
<b>Migraine</b>					
DALYs	2,921	658	650	-1.1%	0.04%
Prevalence	77,439	17,607	17,449	-0.9%	0.3%
YLDs	2,921	658	650	-1.1%	0.04%
<b>Motor neuron disease</b>					
DALYs	266	28.83	36.35	26.1%	37.5%
Deaths	11	0.96	1.21	26.1%	54.1%
Prevalence	55	6.24	7.80	25.0%	19.8%
YLDs	12	1.33	1.66	25.0%	19.5%
YLLs	255	27.50	34.69	26.1%	38.5%
<b>Multiple sclerosis</b>					
DALYs	112	14	17	26.6%	-5.0%
Deaths	2	0.27	0.32	16.7%	-12.5%
Prevalence	162	19	27	40.1%	26.4%
YLDs	43	5	7	37.0%	25.5%
YLLs	69	8	10	20.2%	-22.2%
<b>Nervous system cancer</b>					
DALYs	931	142	165	16.3%	-3.3%
Deaths	32	3.81	4.29	12.5%	10.8%
Prevalence	203	24	43	77.6%	35.9%
YLDs	23	2.63	4.14	57.8%	25.3%
YLLs	908	139	161	15.5%	-3.7%

<b>Other neurological disorders</b>					
DALYs	580	90	112	25.4%	25.8%
Deaths	19	2.08	2.44	17.5%	45.0%
YLDs	95	11	19	77.2%	62.9%
YLLs	484	79	93	18.4%	14.2%
<b>Parkinson's disease</b>					
DALYs	992	92	89	-3.3%	5.6%
Deaths	56	5.21	4.81	-7.8%	4.0%
Prevalence	1,609	107	149	39.0%	21.9%
YLDs	228	15	21	38.6%	21.4%
YLLs	764	76	67	-11.7%	2.0%
<b>Spinal cord injury</b>					
DALYs	525	102	94	-8.0%	-26.9%
Prevalence	1,906	351	335	-4.3%	-21.9%
YLDs	525	102	94	-8.0%	-26.9%
<b>Stroke</b>					
DALYs	4,446	1,567	452	-71.1%	-52.6%
Deaths	267	87	24	-72.8%	-55.6%
Prevalence	4,906	913	597	-34.6%	-19.2%
YLDs	697	126	82	-34.9%	-18.9%
YLLs	3,749	1,441	370	-74.3%	-55.3%

	Counts (thousands)		Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Malta	WHO Europe	
<b>Tension-type headache</b>						
DALYs	353	70	69	-0.7%	-1.6%	
Prevalence	154,171	32,415	32,377	-0.1%	-0.8%	
YLDs	353	70	69	-0.7%	-1.6%	
<b>Traumatic Brain Injury</b>						
DALYs	323	56	50	-10.0%	-28.2%	
Prevalence	2,450	421	378	-10.1%	-28.0%	
YLDs	323	56	50	-10.0%	-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.

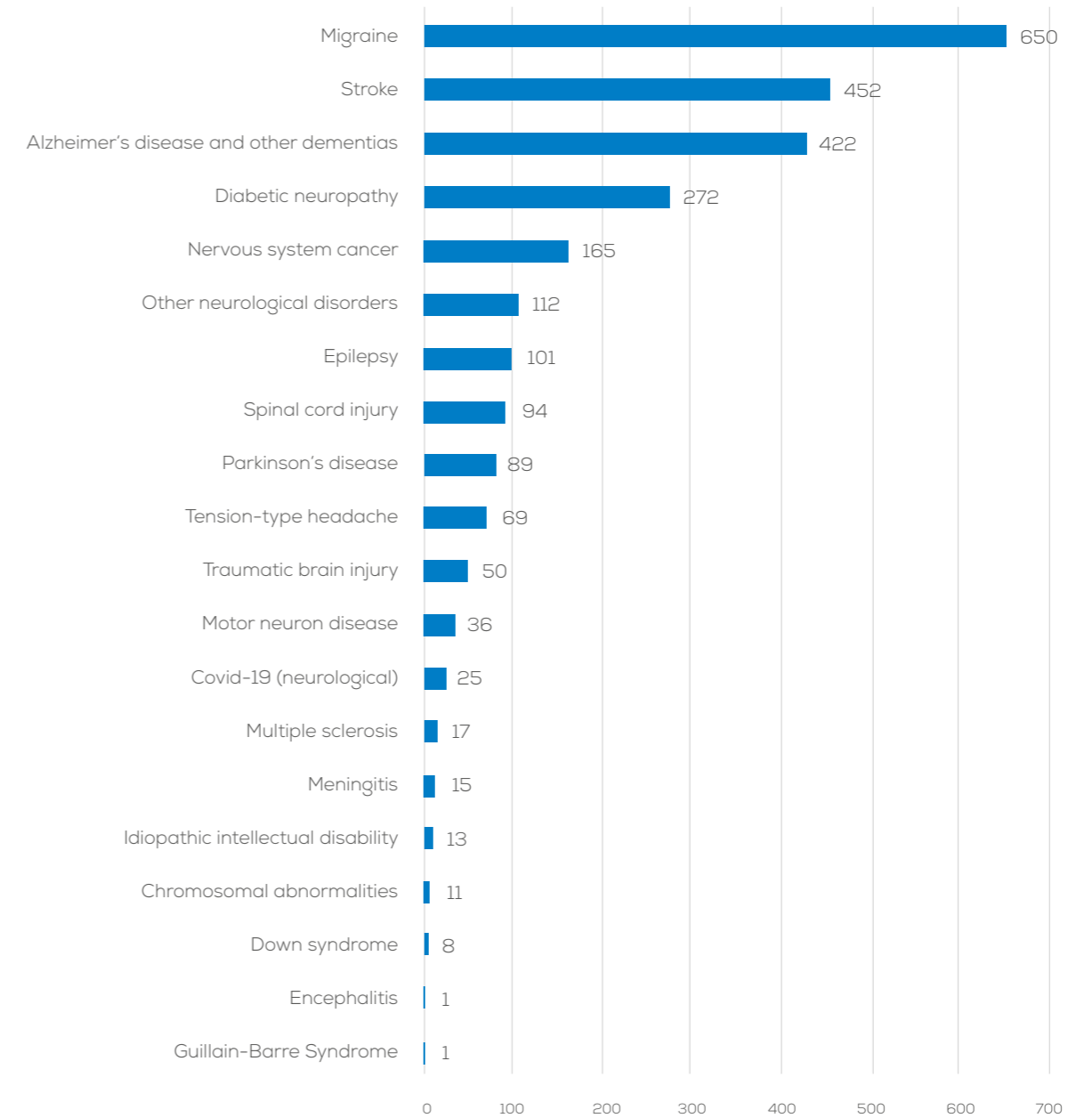


Figure 1: National age-standardised DALYs per 100 000 population by neurological disorder in 2021.

## DALYs per 100 000 population

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

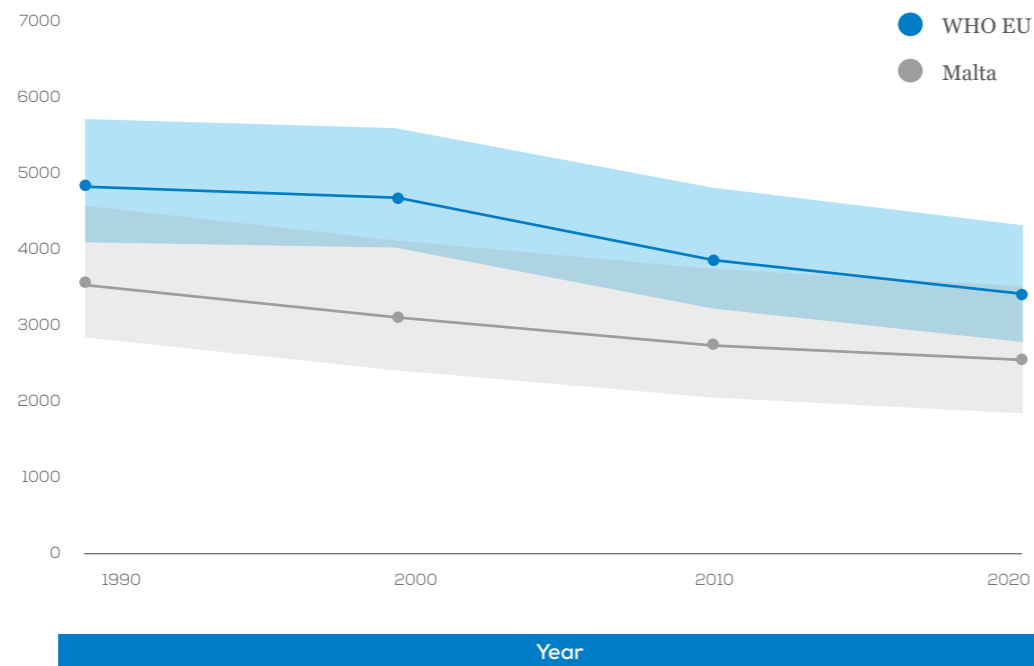


Figure 2: Age-Standardized DALYs per 100 000 population over the last 3 decades.

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

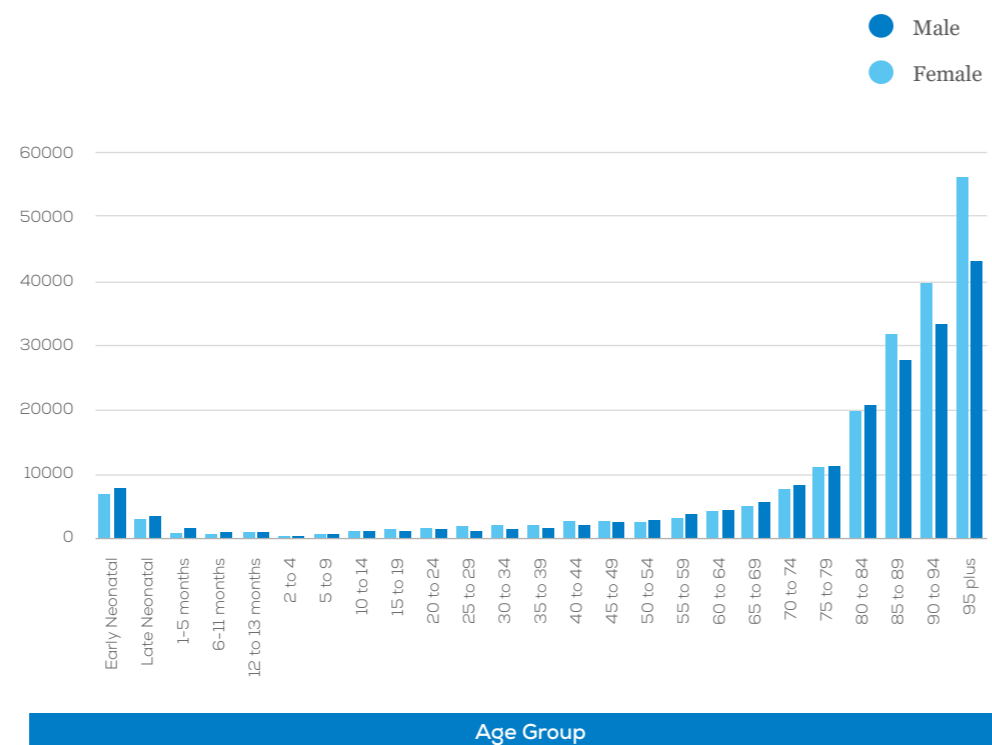


Figure 3: National DALYs per 100 000 population by age group and sex in 2021.

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.

Unfortunately for **Malta**, the literature review did not identify any relevant studies, and the GNI category in which Malta is included also lacked data that could be used for imputation. In the table below, the costs for the 47 EAN European countries have been calculated, 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	814,559.6	256,143.1	93,330.3	465,086.2
Sleep disorders	422,900.9	204,308.2	-	218,592.6
Alzheimer's disease and other dementias	221,391.2	93,210.9	128,121.0	59.4
Stroke	82,938.9	42,643.7	23,441.1	16,854.0
Traumatic brain injury	53,112.5	24,095.1	11,454.6	17,562.8
Polyneuropathies	38,718.6	19,958.8	-	18,759.8
Parkinson's disease	22,786.5	17,308.5	4,442.8	1,035.2
Multiple sclerosis	18,832.2	11,852.7	2,632.0	4,347.5
Idiopathic epilepsy	16,325.9	7,917.2	-	8,408.7
Motor neuron disease	1,101.1	661.6	309.8	129.8
Brain and central nervous system cancer	913.7	557.3	356.4	-
Meningitis	148.9	148.9	-	-
<b>Total Costs:</b>	<b>1,693,730.0</b>	<b>678,806.1</b>	<b>264,088.0</b>	<b>750,835.9</b>

Table 2: Total, direct, informal care and indirect costs per neurological disorder among the 47 European countries.

# 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.

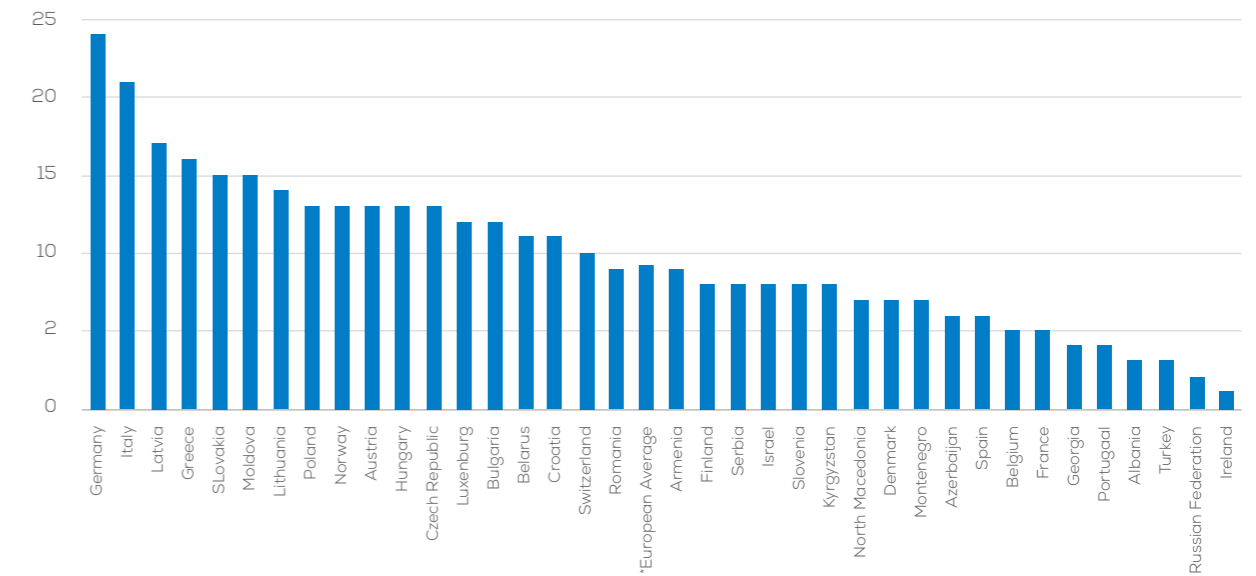


Figure 4: Number of neurologists (fully specialised and in training) per 100 000 population.

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

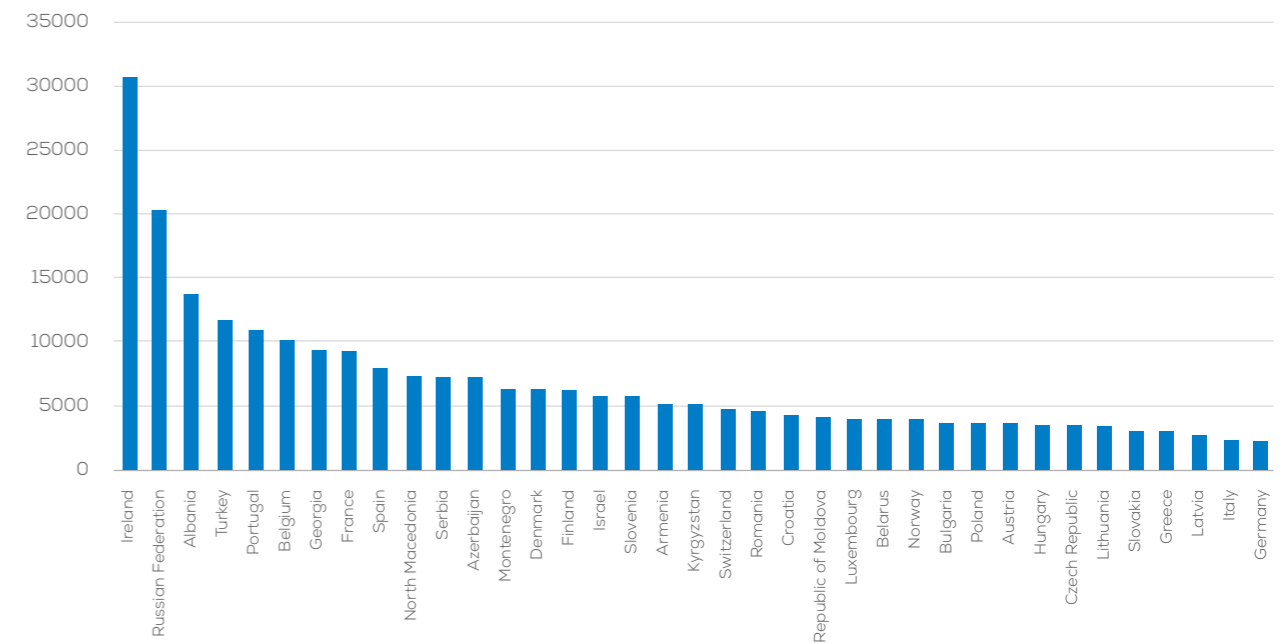
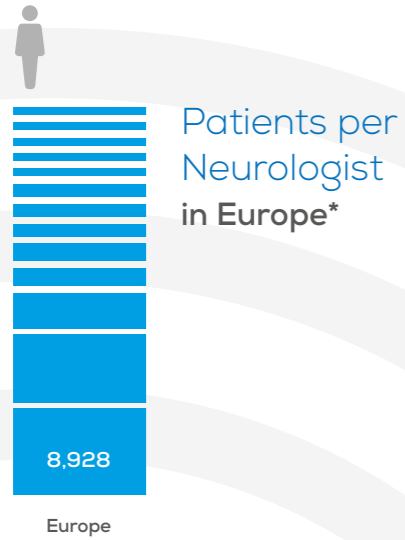
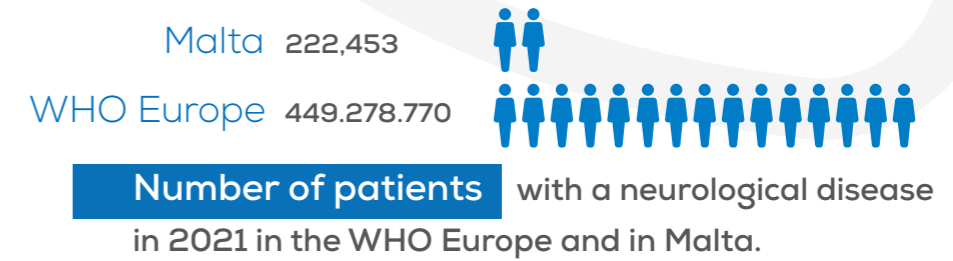
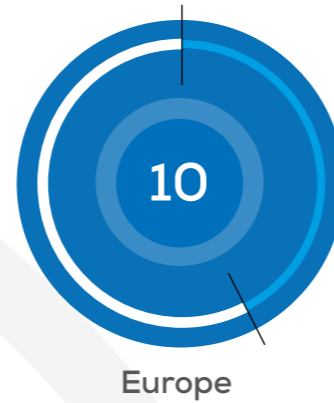


Figure 5: Number of patients per neurologist (fully specialised and in training).

# Neurological Diseases in Europe and Malta:

Key Data and Trends from 2021

Neurologists per 100,000 population in Europe\*



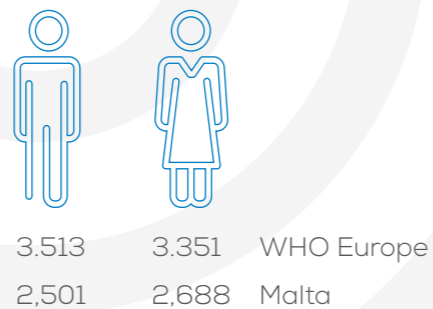
Percentage change of age-standardised DALYs, Deaths and prevalence from 1990 to 2021:

	WHO Europe	vs	Malta
DALYs	-28.98%		-26.73%
Deaths	-43.19%		-50.64%
Prevalence	0.34%		0.69%

Most prevalent neurological diseases in Malta in

# 2021

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

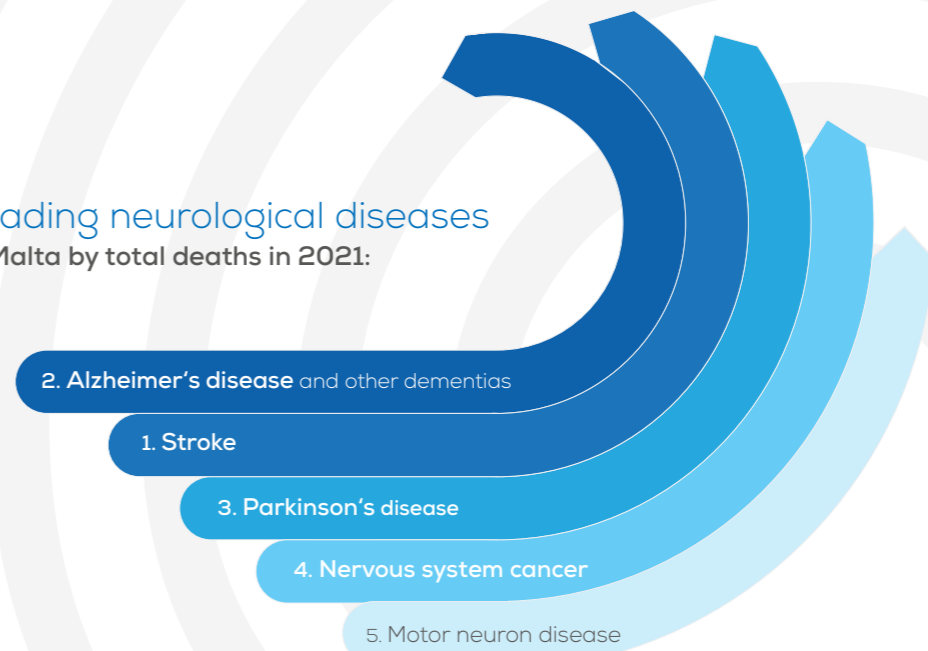


Age-standardised DALYs rate per 100,000 population in 2021 by sex



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

Leading neurological diseases in Malta 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.

