

3.26 Central nervous system

Table 3.26.1
Overview of key epidemiological parameters for Germany, ICD-10 C70–C72

Incidence	2017		2018		Prediction for 2022	
	Women	Men	Women	Men	Women	Men
Incident cases	3,110	3,950	3,130	4,100	3,500	4,300
Crude incidence rate ¹	7.4	9.7	7.5	10.0	8.3	10.5
Age-standardised incidence rate ^{1, 2}	5.3	7.4	5.4	7.8	5.8	8.0
Median age at diagnosis	66	63	65	63		
Mortality	2017		2018		2019	
	Women	Men	Women	Men	Women	Men
Deaths	2,721	3,385	2,615	3,441	2,583	3,430
Crude mortality rate ¹	6.5	8.3	6.2	8.4	6.1	8.4
Age-standardised mortality rate ^{1, 2}	4.0	5.9	3.9	5.9	3.8	5.9
Median age at death	70	66	69	67	70	67
Prevalence and survival rates	5 years		10 years		25 years	
	Women	Men	Women	Men	Women	Men
Prevalence	6,000	7,700	9,600	11,700	16,200	19,600
Absolute survival rate (2017–2018) ³	23 (18–30)	19 (16–29)	16 (13–25)	13 (12–20)		
Relative survival rate (2017–2018) ³	24 (19–32)	21 (18–31)	18 (14–27)	15 (13–23)		

¹ per 100,000 persons ² age-standardised (old European Standard) ³ in percent (lowest and highest value of the included German federal states)

Epidemiology

Cancers of the central nervous system (CNS) affect 95% of the brain, with the remaining 5% distributed among the meninges, cranial nerves and spinal cord.

CNS tumours can occur at any age. Histologically, gliomas originating from the supporting tissue of the nerve cells are predominantly found in adults, of which a bit more than two thirds are glioblastomas (astrocytoma grade IV) with an unfavourable prognosis. In infants and young children, on the other hand, embryonic tumours predominate.

In 2018, about 3,130 women and 4,100 men were diagnosed with malignant tumours of the CNS in Germany. No significant changes in the incidence and mortality rates have been observed since 1999. The relative 5-year survival rates for malignant CNS tumours are 24% for women and 21% for men. These figures do not include histologically benign CNS tumours or those of uncertain or unknown behaviour, which, depending on their location, can also lead to complications or even death. For these diagnoses together, about 6,000 new cases per year are to be expected, of which almost two thirds originate from the meninges. Women are affected significantly more often.

Risk factors

The triggers of the various brain tumours are still largely unclear. Some very rare hereditary tumour syndromes are associated with a significantly increased risk of brain tumours. After therapeutic head irradiation, the risk of developing a brain tumour is slightly increased after a long latency period. This applies in particular to irradiation in childhood and adolescence. Diagnostic computed tomography in childhood can probably also slightly increase the risk of a brain tumour.

A clear connection between mobile phone use and brain tumours has not been proven so far. However, an increased risk cannot be ruled out beyond doubt either. This is especially true for people who use mobile phones particularly long and frequently.

A slightly increased brain tumour risk is discussed for people with occupational contact with pesticides in agriculture. According to current knowledge, viruses or lifestyle factors such as smoking or alcohol do not contribute to an increase in risk.

Brain tumours occur more frequently in some families. If close relatives of a person suffer from a brain tumour, statistically his or her own risk of contracting the disease is increased, but remains very low in absolute terms.

Figure 3.26.1a
 Age-standardised incidence and mortality rates by sex, ICD-10 C70–C72, Germany 1999–2018/2019, projection (incidence) through 2022 per 100,000 (old European Standard)

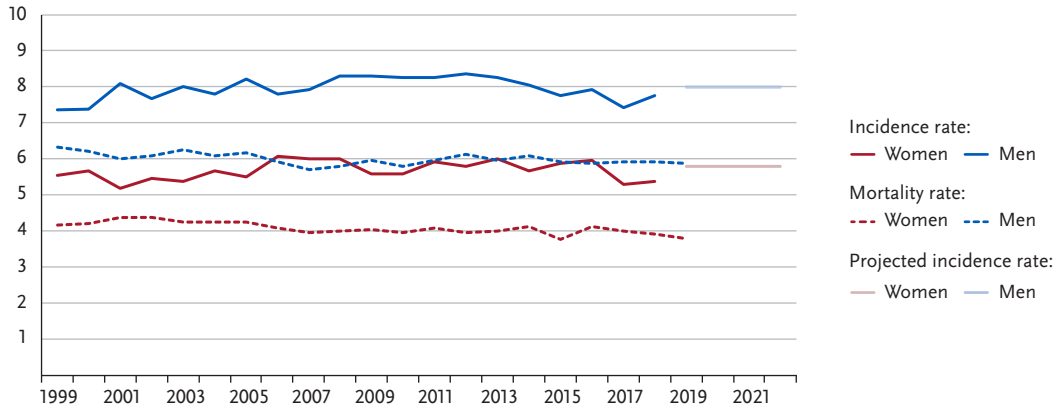


Figure 3.26.1b
 Absolute numbers of incident cases and deaths by sex, ICD-10 C70–C72, Germany 1999–2018/2019, projection (incidence) through 2022

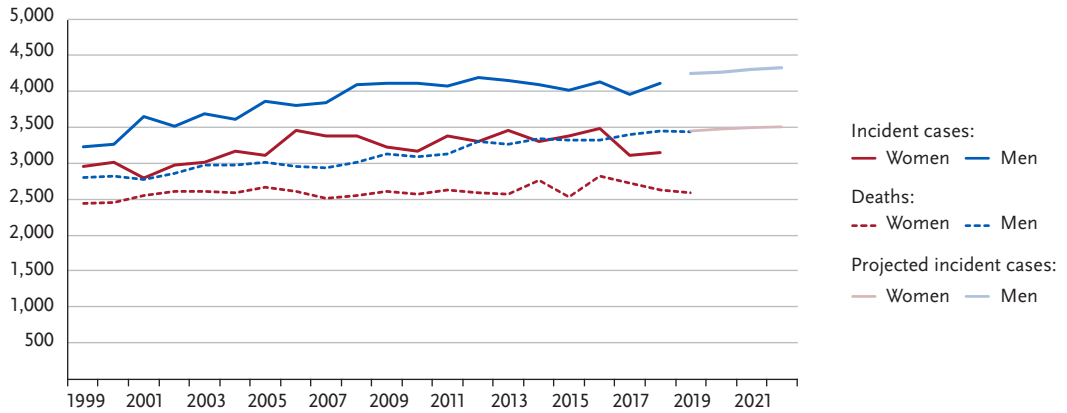


Figure 3.26.2
 Age-specific incidence rates by sex, ICD-10 C70–C72, Germany 2017–2018 per 100,000

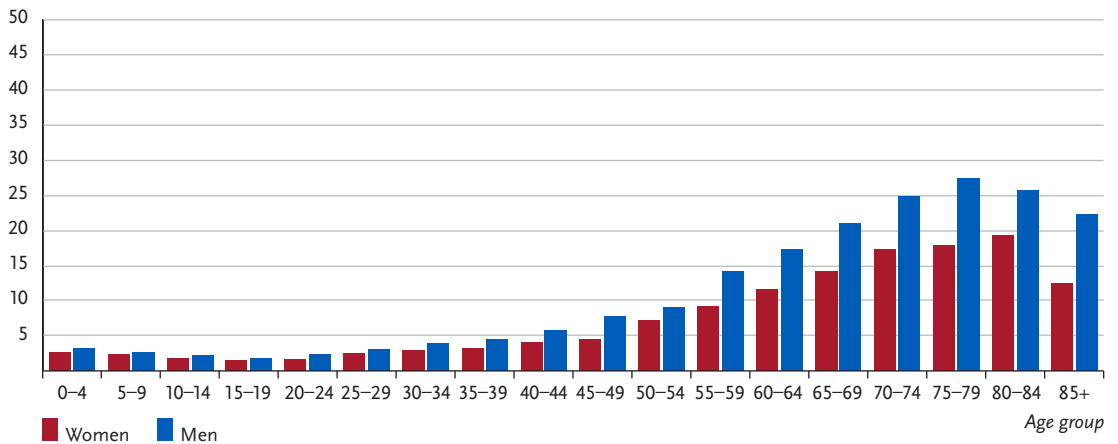
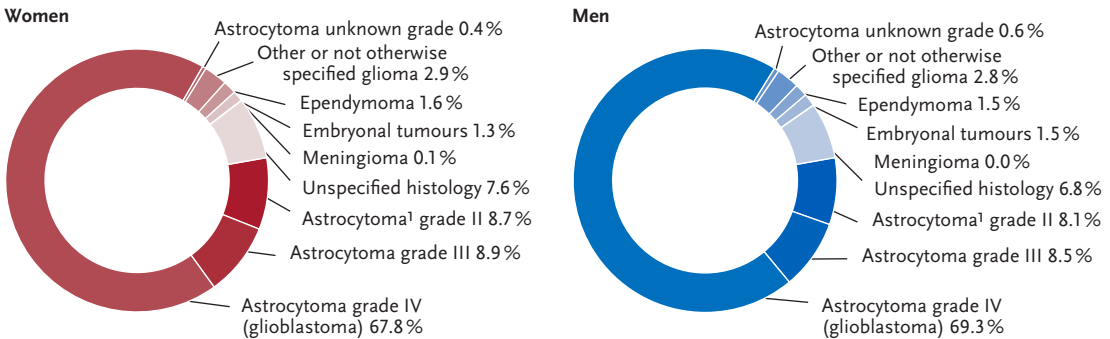


Table 3.26.2
Cancer incidence and mortality risks in Germany by age and sex, ICD-10 C70–C72, database 2018

Women aged	Risk of developing cancer		Mortality risk	
	in the next 10 years	ever	in the next 10 years	ever
35 years	< 0.1 % (1 in 2,700)	0.5 % (1 in 200)	< 0.1 % (1 in 5,100)	0.5 % (1 in 220)
45 years	0.1 % (1 in 1,600)	0.5 % (1 in 210)	< 0.1 % (1 in 2,300)	0.4 % (1 in 230)
55 years	0.1 % (1 in 970)	0.4 % (1 in 240)	0.1 % (1 in 1,100)	0.4 % (1 in 250)
65 years	0.2 % (1 in 670)	0.3 % (1 in 300)	0.1 % (1 in 740)	0.3 % (1 in 310)
75 years	0.1 % (1 in 680)	0.2 % (1 in 490)	0.2 % (1 in 660)	0.2 % (1 in 450)
Lifetime risk		0.6 % (1 in 170)		0.5 % (1 in 210)
Men aged	in the next 10 years	ever	in the next 10 years	ever
35 years	0.1 % (1 in 1,900)	0.7 % (1 in 150)	< 0.1 % (1 in 3,300)	0.6 % (1 in 170)
45 years	0.1 % (1 in 1,200)	0.6 % (1 in 160)	0.1 % (1 in 1,400)	0.6 % (1 in 170)
55 years	0.2 % (1 in 670)	0.5 % (1 in 180)	0.1 % (1 in 760)	0.5 % (1 in 190)
65 years	0.2 % (1 in 480)	0.4 % (1 in 230)	0.2 % (1 in 500)	0.4 % (1 in 230)
75 years	0.2 % (1 in 480)	0.3 % (1 in 350)	0.2 % (1 in 470)	0.3 % (1 in 340)
Lifetime risk		0.7 % (1 in 130)		0.6 % (1 in 160)

Figure 3.26.3
Distribution of histological types of malignant brain tumours (C71) according to WHO-classification (2016), by sex, (DCO cases excluded), Germany 2017–2018



¹ including Oligodendrogliomas. Grade I astrocytomas are histologically benign tumours and are therefore not included.

Figure 3.26.4
Absolute and relative survival rates up to 10 years after diagnosis by sex, ICD-10 C70–C72, Germany 2017–2018

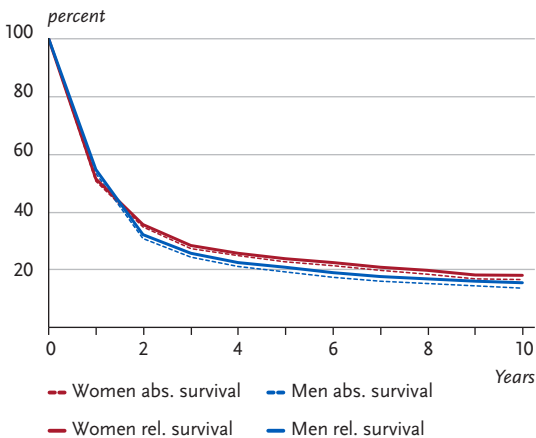


Figure 3.26.5
Relative 5-year survival by histology and sex, ICD-10 C71, Germany 2017–2018

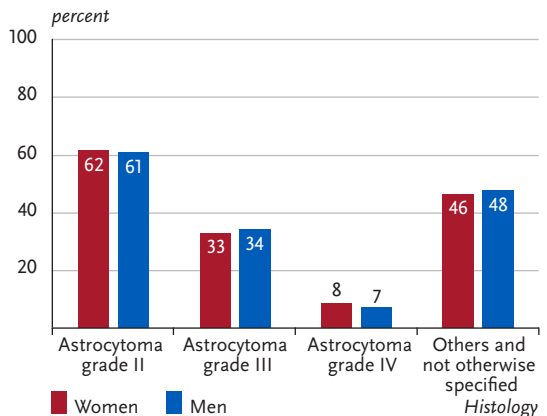


Figure 3.26.6
 Age-standardised incidence and mortality rates in German federal states by sex, ICD-10 C70–C72, 2017–2018
 per 100,000 (old European Standard)

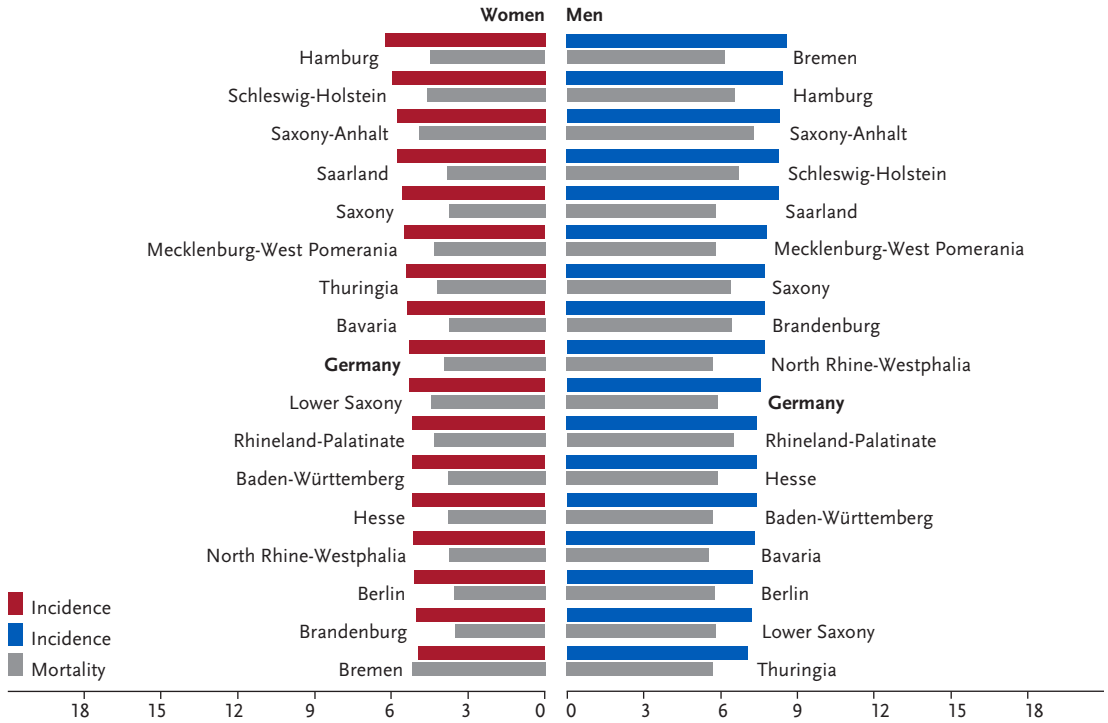
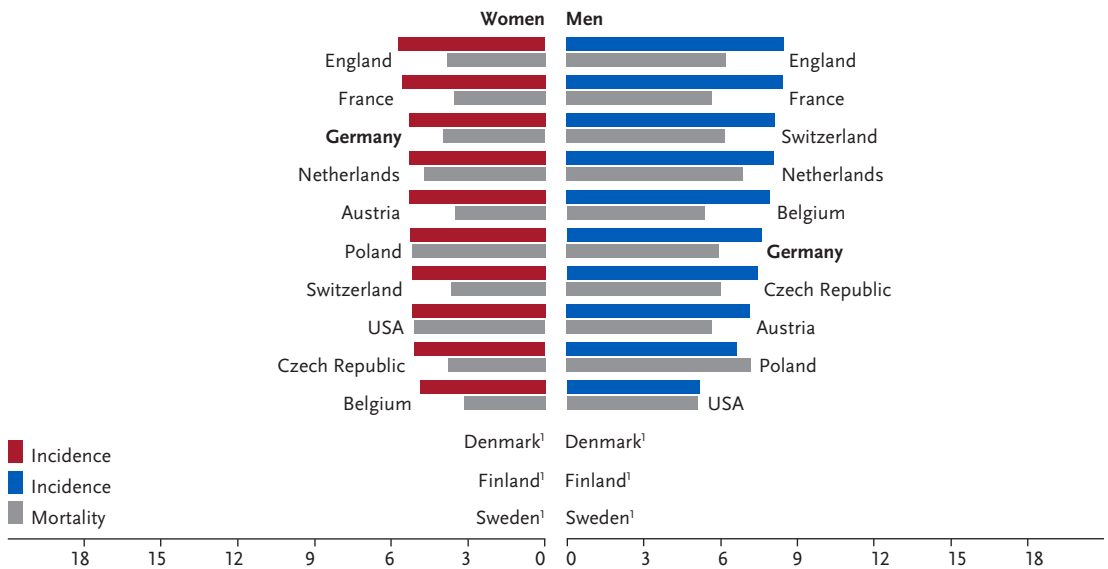


Figure 3.26.7
 International comparison of age-standardised incidence and mortality rates by sex,
 ICD-10 C70–C72, 2017–2018 or latest available year (details and sources, see appendix)
 per 100,000 (old European Standard)



¹ No comparable data available