3.27 Thyroid gland

Table 3.27.1
Overview of key epidemiological parameters for Germany, ICD-10 C73

Incidence		2017		2018	Prediction for 2022	
	Women	Men	Women	Men	Women	Men
Incident cases	4,970	2,100	4,270	1,930	5,000	2,200
Crude incidence rate [1]	11.9	5.1	10.2	4.7	11.7	5.4
Age-standardised incidence rate [1, 2]	10.5	4.3	9.1	3.9	10.8	4.5
Median age at diagnosis	52	55	51	56		
Mortality		**2017**		**2018**		**2019**
	Women	Men	Women	Men	Women	Men
Deaths	411	292	390	300	426	311
Crude mortality rate [1]	1.0	0.7	0.9	0.7	1.0	0.8
Age-standardised mortality rate [1, 2]	0.4	0.4	0.4	0.4	0.4	0.5
Median age at death	78	74	80	75	80	73
Prevalence and survival rates		**5 years**		**10 years**		**25 years**
	Women	Men	Women	Men	Women	Men
Prevalence	21,100	8,500	40,500	15,800	76,500	26,800
Absolute survival rate (2017–2018) [3]	92 (90–95)	85 (83–88)	87 (79–91)	76 (69–81)		
Relative survival rate (2017–2018) [3]	95 (94–98)	91 (89–93)	94 (87–98)	88 (82–94)		

[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

Approximately 4,270 women and 1,930 men were diagnosed with thyroid cancer in 2018. The median age at diagnosis was 51 years for women and 56 years for men, which was relatively low compared to other cancers.

In the period from 1999 to 2018, the age-standardised incidence rates in Germany initially increased, especially among women, but a plateau has since been reached. This increase is almost exclusively due to the prognostically very favourable papillary carcinomas. The reasons for the increase are not yet clearly understood. However, it is likely that more tumours are being detected due to increased use of imaging diagnostics with improved examination methods. Similar trends can be observed worldwide for thyroid carcinoma.

The mortality rates in Germany have decreased for both sexes. Overall, thyroid cancer has a favourable prognosis: Relative 5-year survival rates are 95% in women and 91% in men. Only the rarer anaplastic carcinomas have an unfavourable prognosis. Most thyroid carcinomas are detected at an early stage (UICC I) (88% in women, 75% in men).

Risk factors

Ionising radiation from the environment increases the risk of thyroid cancer. For example, the risk of thyroid cancer is increased if the thyroid gland is in the radiation field during radiotherapy. The intake of radioactive iodine also increases the risk, as was found after the Chernobyl reactor accident in the Soviet republics affected at the time. In childhood, the thyroid gland is particularly sensitive to radiation.

Other nutritional or lifestyle-related risk factors or environmental risks have not been proven with certainty at present. It is also unclear why women are affected more often than men. Many patients have a history of iodine deficiency and benign thyroid conditions, such as goitre and adenomas, which increase the risk of thyroid cancer. About one-fifth of those with the rare medullary thyroid carcinomas carry genetic variants that are inherited in an autosomal dominant manner. Medullary thyroid carcinoma can also occur together with other endocrine tumours – as part of a so-called multiple endocrine neoplasia type 2 (MEN 2). A genetic component is also suspected in papillary thyroid carcinomas.

▶ *Additional information: www.krebsdaten.de/thyroid*

Figure 3.27.1a
Age-standardised incidence and mortality rates by sex, ICD-10 C73, Germany 1999–2018/2019, projection (incidence) through 2022
per 100,000 (old European Standard)

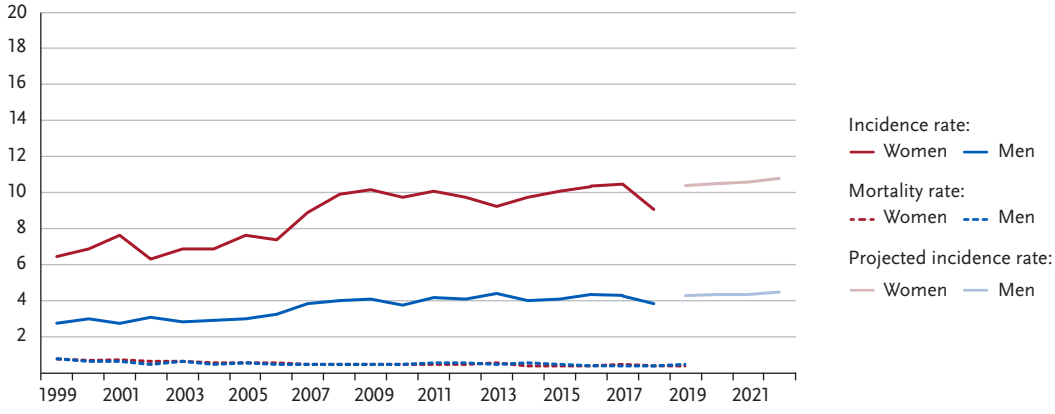

Figure 3.27.1b
Absolute numbers of incident cases and deaths by sex, ICD-10 C73, Germany 1999–2018/2019, projection (incidence) through 2022

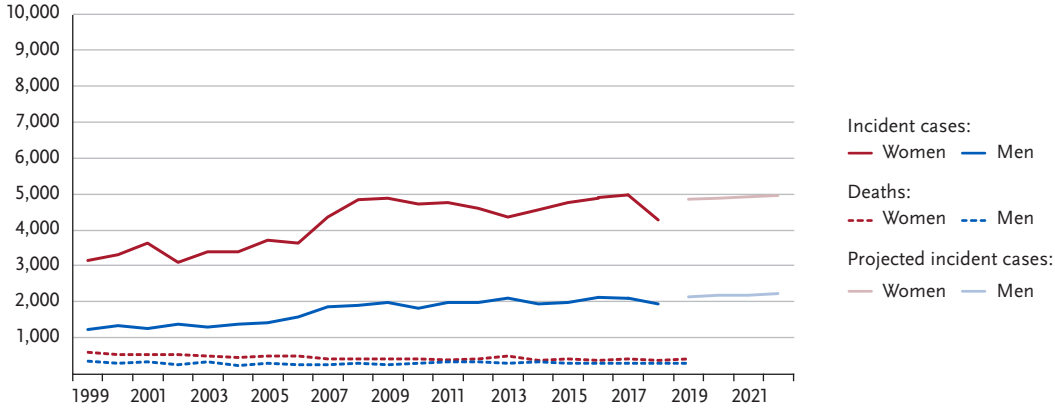

Figure 3.27.2
Age-specific incidence rates by sex, ICD-10 C73, Germany 2017–2018
per 100,000

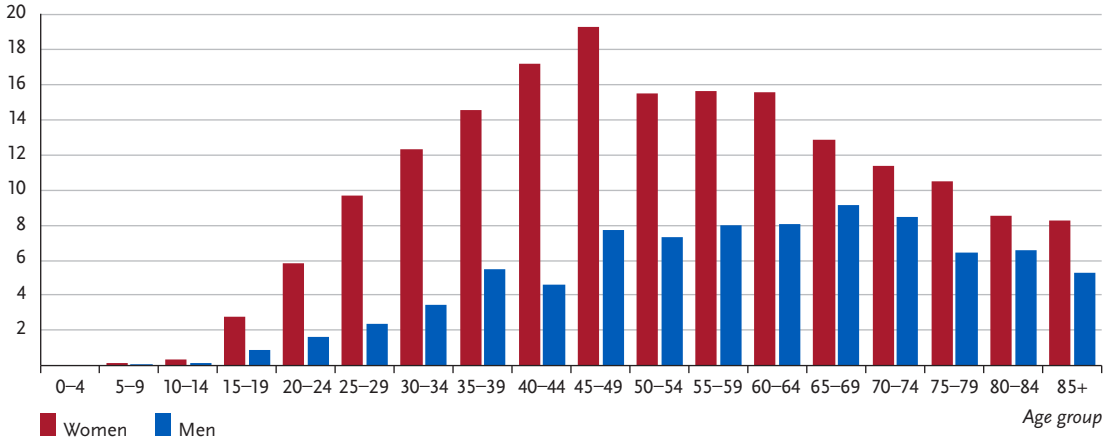

Table 3.27.2
Cancer incidence and mortality risks in Germany by age and sex, ICD-10 C73, database 2018

	Risk of developing cancer				Mortality risk			
Women aged	**in the next 10 years**		**ever**		**in the next 10 years**		**ever**	
25 years	0.1 %	(1 in 970)	0.7 %	(1 in 140)	< 0.1 %	(1 in 244,600)	0.1 %	(1 in 1,300)
35 years	0.1 %	(1 in 690)	0.6 %	(1 in 160)	< 0.1 %	(1 in 132,600)	0.1 %	(1 in 1,300)
45 years	0.2 %	(1 in 630)	0.5 %	(1 in 210)	< 0.1 %	(1 in 36,800)	0.1 %	(1 in 1,300)
55 years	0.1 %	(1 in 710)	0.3 %	(1 in 300)	< 0.1 %	(1 in 15,400)	0.1 %	(1 in 1,300)
65 years	0.1 %	(1 in 970)	0.2 %	(1 in 500)	< 0.1 %	(1 in 6,500)	0.1 %	(1 in 1,400)
75 years	0.1 %	(1 in 1,300)	0.1 %	(1 in 900)	< 0.1 %	(1 in 3,300)	0.1 %	(1 in 1,600)
Lifetime risk			0.8 %	(1 in 130)			0.1 %	(1 in 1,300)
Men aged	**in the next 10 years**		**ever**		**in the next 10 years**		**ever**	
25 years	< 0.1 %	(1 in 3,500)	0.3 %	(1 in 310)	< 0.1 %	(1 in 361,600)	0.1 %	(1 in 1,700)
35 years	< 0.1 %	(1 in 2,500)	0.3 %	(1 in 340)	< 0.1 %	(1 in 84,800)	0.1 %	(1 in 1,700)
45 years	0.1 %	(1 in 1,400)	0.3 %	(1 in 390)	< 0.1 %	(1 in 43,500)	0.1 %	(1 in 1,700)
55 years	0.1 %	(1 in 1,300)	0.2 %	(1 in 510)	< 0.1 %	(1 in 14,300)	0.1 %	(1 in 1,700)
65 years	0.1 %	(1 in 1,300)	0.1 %	(1 in 770)	< 0.1 %	(1 in 5,300)	0.1 %	(1 in 1,700)
75 years	0.1 %	(1 in 1,900)	0.1 %	(1 in 1,500)	< 0.1 %	(1 in 3,400)	< 0.1 %	(1 in 2,000)
Lifetime risk			0.3 %	(1 in 300)			0.1 %	(1 in 1,700)

Figure 3.27.3
Distribution of UICC stages at diagnosis by sex, ICD-10 C73, Germany 2017–2018
top: according to 7th edition TNM; bottom: according to 8th edition TNM.
The DCO proportion was 2%. For 29% of the remaining cases, no UICC stage could be assigned.

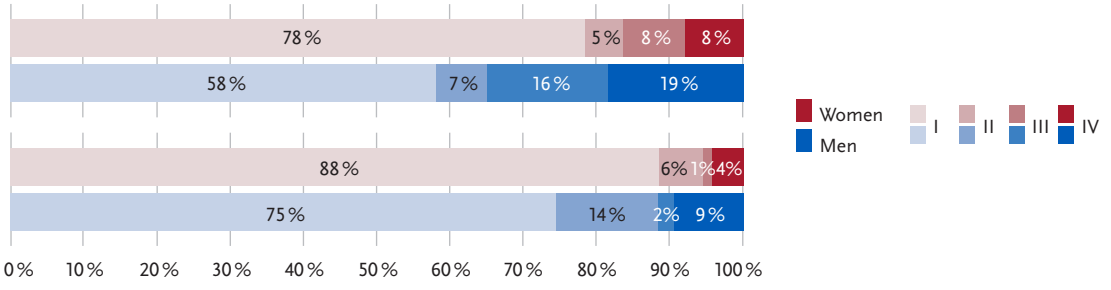

Figure 3.27.4
Absolute and relative survival rates up to 10 years after diagnosis by sex, ICD-10 C73, Germany 2017–2018

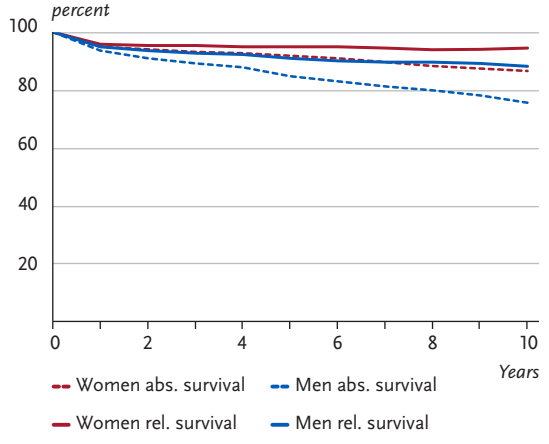

Figure 3.27.5
Relative 5-year survival by UICC stage (7th edition TNM) and sex, ICD-10 C73, Germany 2016–2018

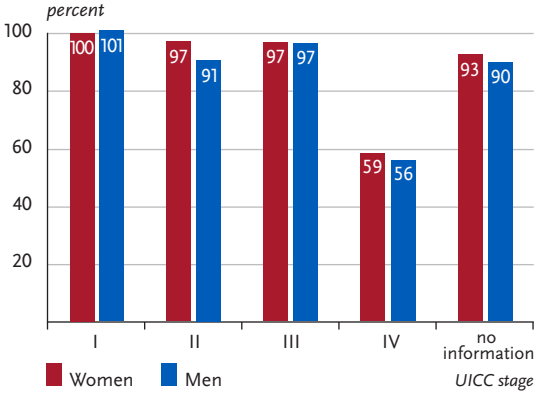

Figure 3.27.6
Age-standardised incidence and mortality rates in German federal states by sex, ICD-10 C73, 2017–2018
per 100,000 (old European Standard)

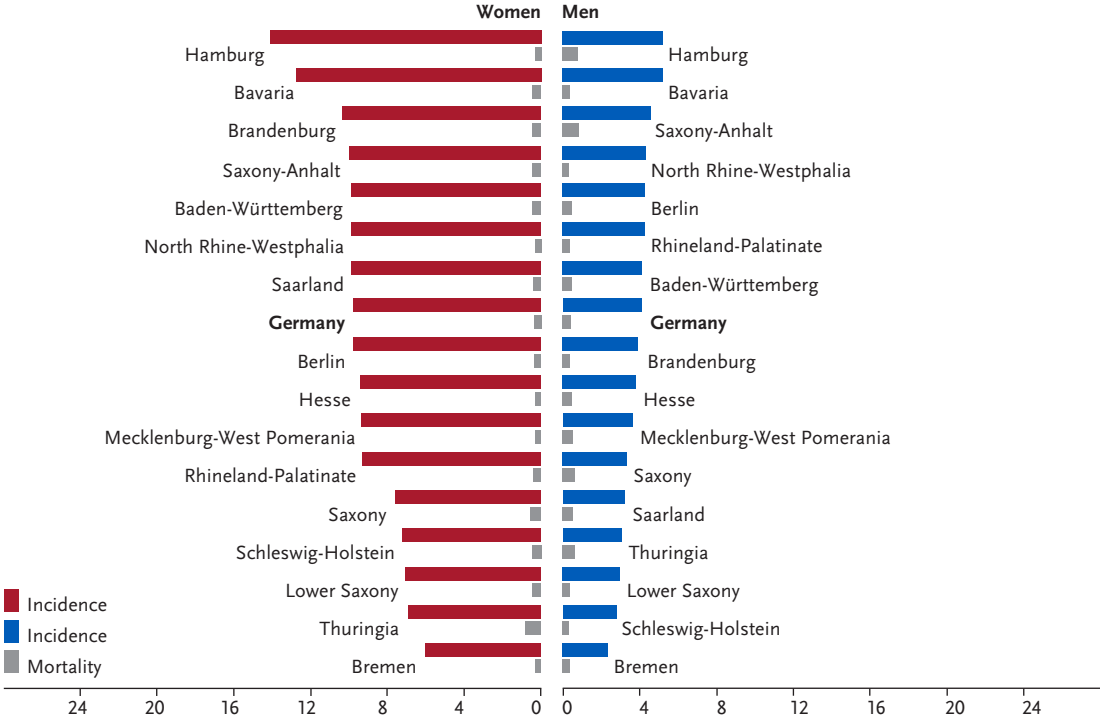

Figure 3.27.7
International comparison of age-standardised incidence and mortality rates by sex, ICD-10 C73, 2017–2018 or latest available year (details and sources, see appendix)
per 100,000 (old European Standard)