3.27 Thyroid gland

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

Incidence	2015		2016		Prediction for 2020	
	Women	Men	Women	Men	Women	Men
Incident cases	5,070	2,070	5,280	2,500	6,200	2,600
Crude incidence rate[1]	12.2	5.2	12.7	6.2	14.9	6.5
Age-standardised incidence rate[1,2]	10.6	4.2	11.1	5.1	13.1	5.3
Median age at diagnosis	52	55	52	55		

Mortality	2015		2016		2017	
	Women	Men	Women	Men	Women	Men
Deaths	416	300	390	286	411	292
Crude mortality rate[1]	1.0	0.7	0.9	0.7	1.0	0.7
Age-standardised mortality rate[1,2]	0.4	0.5	0.4	0.4	0.4	0.4
Median age at death	79	73	79	75	78	74

Prevalence and survival rates	5 years		10 years	
	Women	Men	Women	Men
Prevalence	22,100	9,100	42,400	16,400
Absolute survival rate (2015–2016)[3]	90 (86–94)	82 (67–87)	83 (77–92)	73 (58–81)
Relative survival rate (2015–2016)[3]	94 (90–97)	88 (71–93)	91 (84–100)	86 (68–95)

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

▶ Additional information under www.krebsdaten.de/cancer-sites

Epidemiology

About 5,280 women and 2,500 men in Germany were diagnosed with thyroid cancer in 2016. The median age at diagnosis was 52 years for women and 55 years for men.

Between 1999 and 2016, mortality in Germany decreased among women and men, whereas the age-standardised incidence for both sexes rose. However, this applied exclusively to papillary carcinoma, with a particularly favourable prognosis. Most of these cancers were diagnosed among adults under 60 years old, and the detection of these cases can probably be attributed to the increased use of diagnostic imaging techniques and improved examination methods. Incidence in Germany is in the mid-range compared to other selected countries, with the highest rates identified in the US and France.

Most thyroid cancers are detected at an early stage (UICC I: 75 % in women, 58 % in men) and thus have a favourable prognosis with relative 5-year survival rates of 94 % in women and 88 % in men. However, anaplastic carcinomas are an exception with a 10 % 5-year relative survival rate.

Risk factors

Ionising radiation from the environment increases the risk of thyroid cancer. The thyroid is particularly sensitive to radiation during childhood. For example, the risk of thyroid cancer increases if the thyroid is placed within a radiation field during radiation therapy. Intake of radioactive iodine also increases the risk, as demonstrated by cases identified after the Chernobyl reactor accident in the affected Soviet republics. An association with other nutritional, lifestyle-related or environmental risk factors has yet to be demonstrated reliably. It is also unclear as to why women are affected more often than men. However, many patients have a history of iodine deficiency and benign thyroid disorders such as goitre and adenomas, which increase the risk of thyroid cancer. About one fifth of people who develop rare medullary thyroid carcinomas carry a genetic mutation inherited through autosomal dominance. Medullary thyroid carcinoma can also occur together with other endocrine tumours as part of what is known as multiple endocrine neoplasia type 2 (MEN 2). In papillary thyroid carcinomas, a genetic component is also suspected.

Figure 3.27.1a
Age-standardised incidence and mortality rates by sex, ICD-10 C73, Germany 1999–2016/2017, projection (incidence) through 2020
per 100,000 (old European Standard)

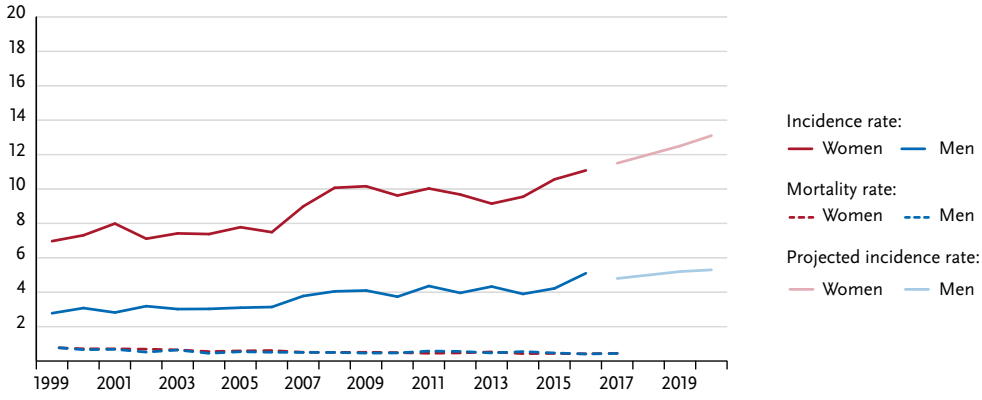

Figure 3.27.1b
Absolute numbers of incident cases and deaths by sex, ICD-10 C73, Germany 1999–2016/2017, projection (incidence) through 2020

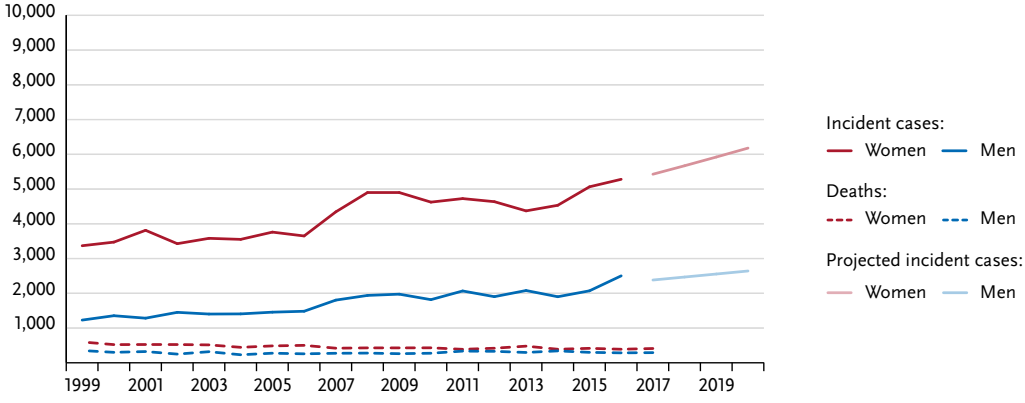

Figure 3.27.2
Age-specific incidence rates by sex, ICD-10 C73, Germany 2015–2016
per 100,000

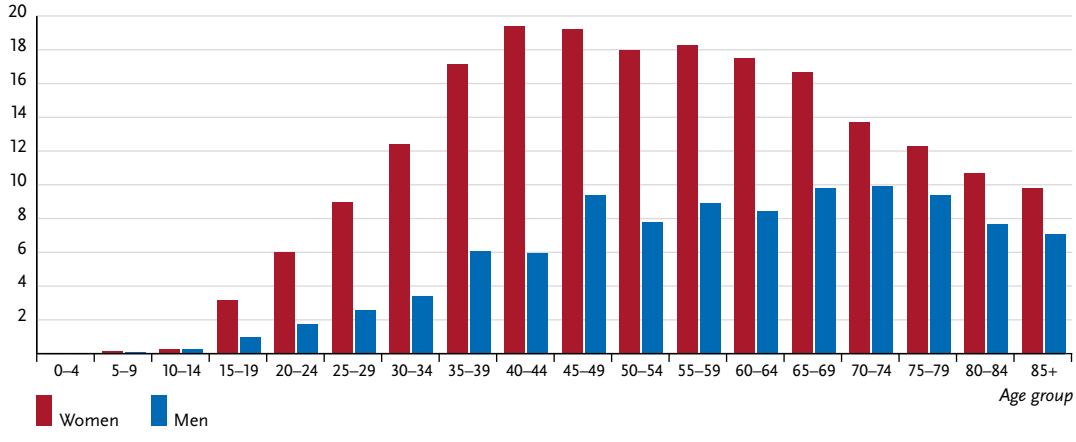

Table 3.27.2
Cancer incidence and mortality risks in Germany by age and sex, ICD-10 C73, database 2016

	Risk of developing cancer				Mortality risk			
Women aged	**in the next ten years**		**ever**		**in the next ten years**		**ever**	
25 years	0.1%	(1 in 890)	0.9%	(1 in 110)	< 0.1%	(1 in 284,400)	0.1%	(1 in 1,300)
35 years	0.2%	(1 in 520)	0.8%	(1 in 130)	< 0.1%	(1 in 203,800)	0.1%	(1 in 1,300)
45 years	0.2%	(1 in 550)	0.6%	(1 in 160)	< 0.1%	(1 in 35,900)	0.1%	(1 in 1,300)
55 years	0.2%	(1 in 560)	0.4%	(1 in 230)	< 0.1%	(1 in 12,600)	0.1%	(1 in 1,300)
65 years	0.1%	(1 in 680)	0.3%	(1 in 360)	< 0.1%	(1 in 6,900)	0.1%	(1 in 1,300)
75 years	0.1%	(1 in 990)	0.1%	(1 in 690)	< 0.1%	(1 in 2,900)	0.1%	(1 in 1,500)
Lifetime risk			1.0%	(1 in 110)			0.1%	(1 in 1,300)
Men aged	**in the next ten years**		**ever**		**in the next ten years**		**ever**	
25 years	< 0.1%	(1 in 3,000)	0.4%	(1 in 240)	< 0.1%	(1 in 3,821,000)	0.1%	(1 in 1,700)
35 years	0.1%	(1 in 1,500)	0.4%	(1 in 260)	< 0.1%	(1 in 230,000)	0.1%	(1 in 1,700)
45 years	0.1%	(1 in 1,100)	0.3%	(1 in 310)	< 0.1%	(1 in 57,300)	0.1%	(1 in 1,700)
55 years	0.1%	(1 in 1,100)	0.2%	(1 in 410)	< 0.1%	(1 in 13,400)	0.1%	(1 in 1,700)
65 years	0.1%	(1 in 1,100)	0.2%	(1 in 590)	< 0.1%	(1 in 5,700)	0.1%	(1 in 1,700)
75 years	0.1%	(1 in 1,400)	0.1%	(1 in 1,100)	< 0.1%	(1 in 2,800)	0.1%	(1 in 2,000)
Lifetime risk			0.4%	(1 in 230)			0.1%	(1 in 1,700)

Figure 3.27.3
Distribution of UICC-stages at first diagnosis by sex, ICD-10 C73, Germany 2015–2016
(top: all cases; bottom: only valid reports)

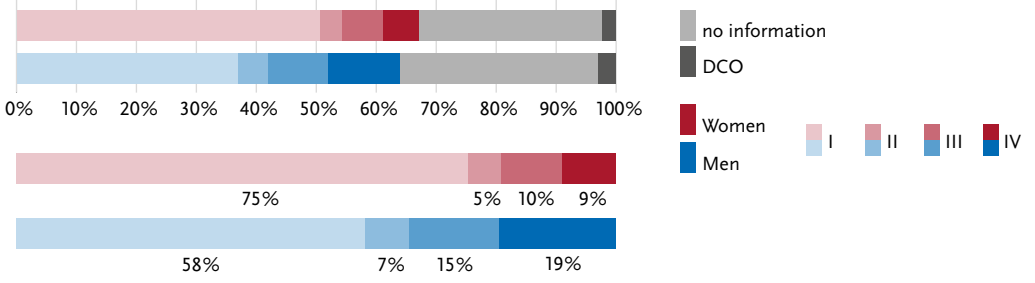

Figure 3.27.4
Absolute and relative survival rates up to 10 years after first diagnosis, by sex, ICD-10 C73, Germany 2015–2016

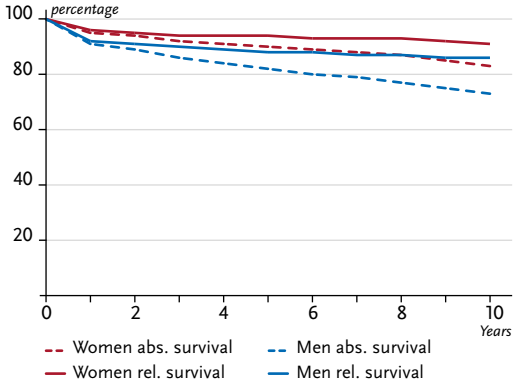

Figure 3.27.5
Relative 5-year survival by UICC-stage and sex, ICD-10 C73, Germany 2015–2016

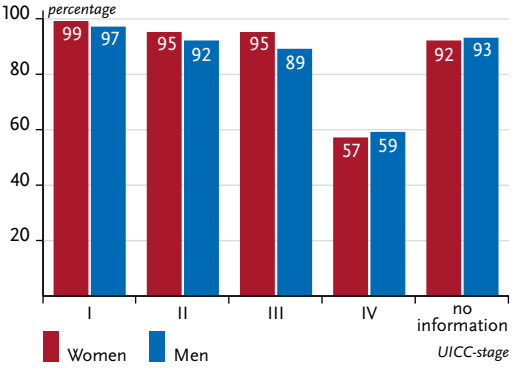

Figure 3.27.6
Age-standardised incidence and mortality rates in German federal states by sex, ICD-10 C73, 2015–2016 (Incidence in Bremen for 2014 and 2016, incidence in eastern Germany for 2014 to 2015)
per 100,000 (old European Standard)

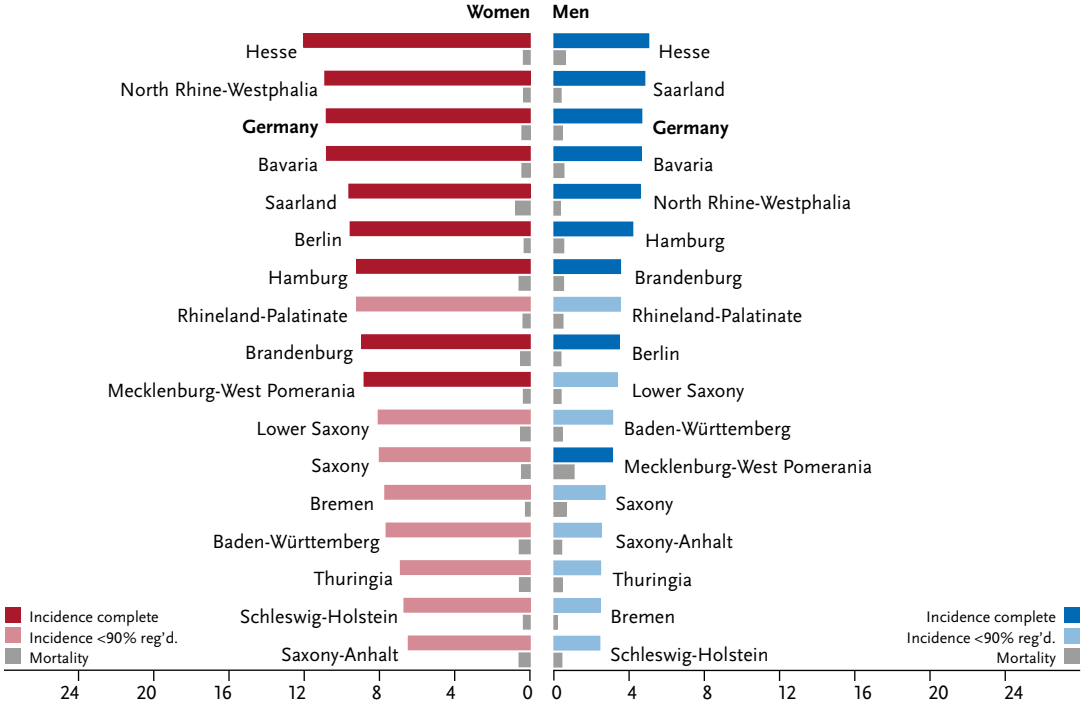

Figure 3.27.7
International comparison of age-standardised incidence and mortality rates by sex, ICD-10 C73, 2015–2016 or latest available year (details and sources, see appendix)
per 100,000 (old European Standard)