

## 3.12 Lung

Table 3.12.1  
Overview of key epidemiological parameters for Germany, ICD-10 C33–C34

Incidence	2017		2018		Prediction for 2022	
	Women	Men	Women	Men	Women	Men
Incident cases	21,870	36,740	21,930	35,290	25,000	34,700
Crude incidence rate <sup>1</sup>	52.2	90.1	52.2	86.3	59.0	84.1
Age-standardised incidence rate <sup>1, 2</sup>	31.7	58.2	31.5	55.3	34.4	52.1
Median age at diagnosis	69	70	69	70		
Mortality	2017		2018		2019	
	Women	Men	Women	Men	Women	Men
Deaths	16,382	28,692	16,514	28,365	16,999	27,882
Crude mortality rate <sup>1</sup>	39.1	70.4	39.3	69.3	40.4	68.0
Age-standardised mortality rate <sup>1, 2</sup>	22.1	43.9	22.0	42.8	22.2	41.1
Median age at death	71	72	71	72	72	72
Prevalence and survival rates	5 years		10 years		25 years	
	Women	Men	Women	Men	Women	Men
Prevalence	37,600	54,000	51,800	75,800	68,000	106,300
Absolute survival rate (2017–2018) <sup>3</sup>	20 (19–25)	15 (13–18)	13 (12–16)	9 (7–12)		
Relative survival rate (2017–2018) <sup>3</sup>	22 (21–27)	17 (16–21)	16 (14–20)	12 (10–18)		

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

### Epidemiology

In 2018, approximately 21,900 women and 35,300 men developed malignant tumours of the lung, and 16,514 women and 28,365 men died of this disease.

The age-standardised incidence and mortality rates progress in opposite directions for both sexes. Since the end of the 1990s, they have risen continuously for women, whereas the rates for men have declined over the same period and now have come very close to those of women. This different development can be attributed to the change in smoking habits that already occurred some time ago and will probably continue. Lung cancer belongs to the prognostically unfavourable tumours, which is expressed in a low relative 5-year survival rate of about 22% in women and 17% in men. Histologically, three main types are distinguished: Adenocarcinomas account for 43% of cases, squamous cell carcinoma for about 22% and small cell lung carcinoma for about 15%, which has the worst prognosis due to its early tendency to metastasise. In an international comparison among the selected countries, the highest incidence rates for women are seen in Denmark and for men in France.

### Risk factors and early detection

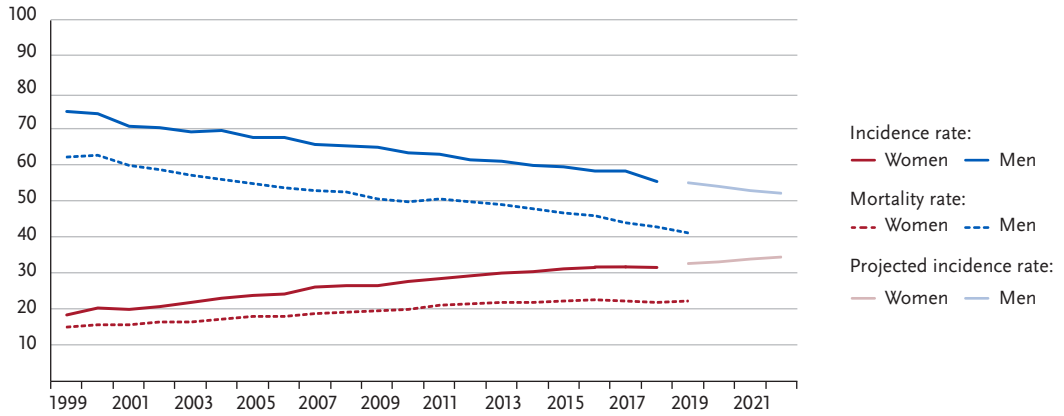
Tobacco use is the main risk factor for lung cancer. In men, up to nine out of ten and in women at least six out of ten cases are due to active smoking. Passive smoking also increases the risk of cancer.

Other risk factors play a rather subordinate role. About 9 to 15% of lung carcinomas are caused by occupational exposure to carcinogenic substances and can be recognised as an occupational disease. These include asbestos, polycyclic aromatic hydrocarbons, arsenic and quartz dusts. Occupational or domestic exposure to radon, a naturally occurring radioactive noble gas, or other sources of ionising radiation also increases the risk.

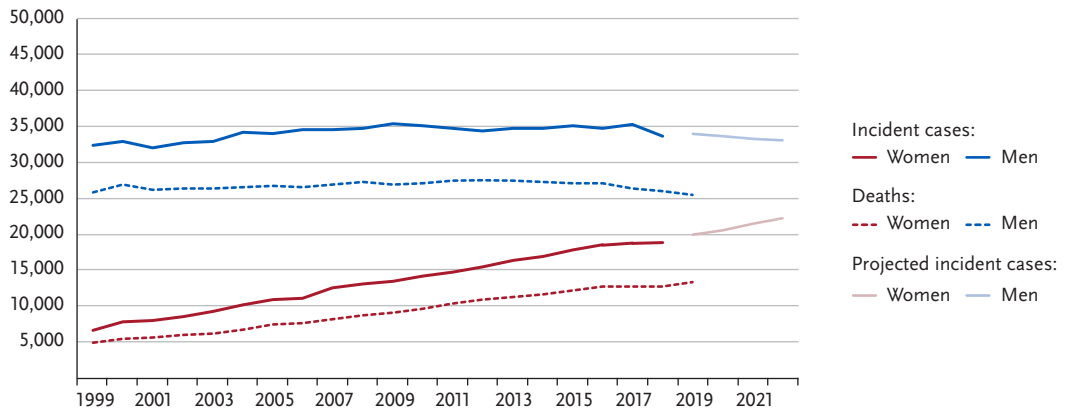
Diesel exhaust and particulate matter are the most important risk factors among air pollutants.

An influence of hereditary factors is suspected. There is not yet a suitable method for the early detection of lung cancer for the entire population. However, it is currently being examined whether and in what form early detection examinations by means of low-dose computed tomography could be implemented for defined risk groups.

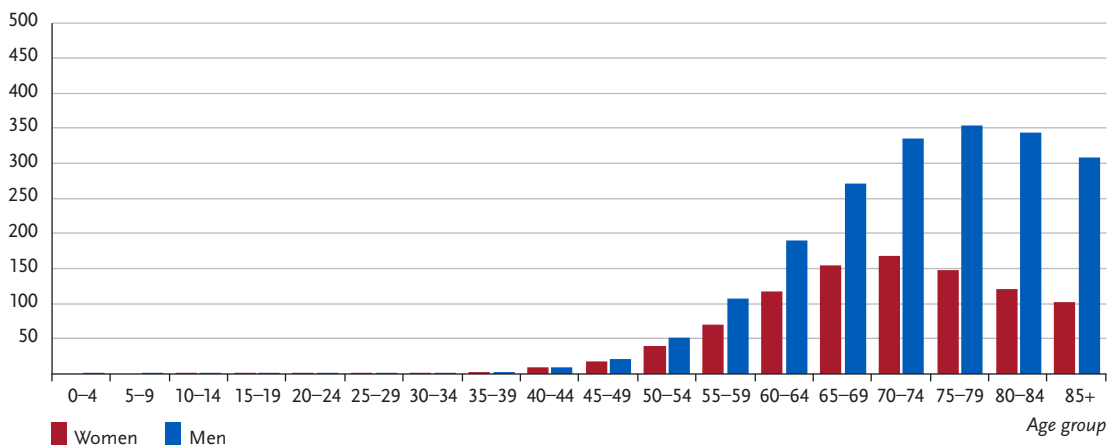
**Figure 3.12.1a**  
 Age-standardised incidence and mortality rates by sex, ICD-10 C33–C34, Germany 1999–2018/2019, projection (incidence) through 2022  
 per 100,000 (old European Standard)



**Figure 3.12.1b**  
 Absolute numbers of incident cases and deaths by sex, ICD-10 C33–C34, Germany 1999–2018/2019, projection (incidence) through 2022



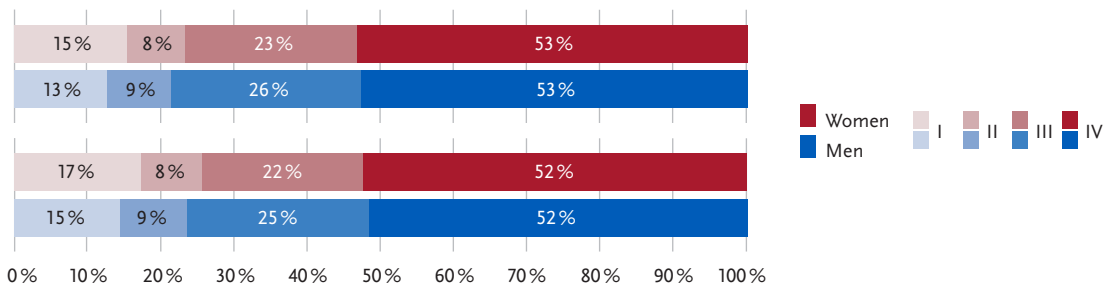
**Figure 3.12.2**  
 Age-specific incidence rates by sex, ICD-10 C33–C34, Germany 2017–2018  
 per 100,000



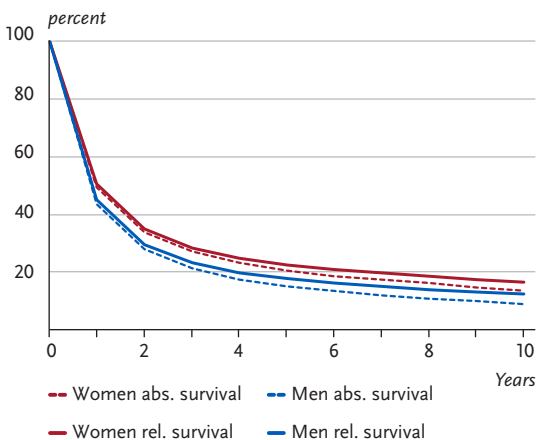
**Table 3.12.2**  
Cancer incidence and mortality risks in Germany by age and sex, ICD-10 C33–C34, database 2018

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 1,600)	4.0 %	(1 in 25)	< 0.1 %	(1 in 4,100)	3.0 %	(1 in 33)
45 years	0.3 %	(1 in 340)	3.9 %	(1 in 26)	0.2 %	(1 in 620)	3.0 %	(1 in 33)
55 years	0.9 %	(1 in 110)	3.7 %	(1 in 27)	0.6 %	(1 in 160)	2.9 %	(1 in 34)
65 years	0.9 %	(1 in 66)	2.9 %	(1 in 34)	1.1 %	(1 in 93)	2.4 %	(1 in 41)
75 years	1.2 %	(1 in 85)	1.6 %	(1 in 61)	1.0 %	(1 in 99)	1.5 %	(1 in 65)
Lifetime risk			3.9 %	(1 in 25)			3.0 %	(1 in 33)
Men aged	in the next 10 years		ever		in the next 10 years		ever	
35 years	0.1 %	(1 in 1,400)	6.5 %	(1 in 15)	< 0.1 %	(1 in 3,200)	5.4 %	(1 in 19)
45 years	0.4 %	(1 in 270)	6.6 %	(1 in 15)	0.2 %	(1 in 430)	5.4 %	(1 in 18)
55 years	1.4 %	(1 in 71)	6.4 %	(1 in 16)	1.0 %	(1 in 99)	5.4 %	(1 in 19)
65 years	2.7 %	(1 in 38)	5.5 %	(1 in 18)	2.0 %	(1 in 49)	4.8 %	(1 in 21)
75 years	2.7 %	(1 in 37)	3.6 %	(1 in 27)	2.4 %	(1 in 42)	3.5 %	(1 in 28)
Lifetime risk			6.5 %	(1 in 15)			5.3 %	(1 in 19)

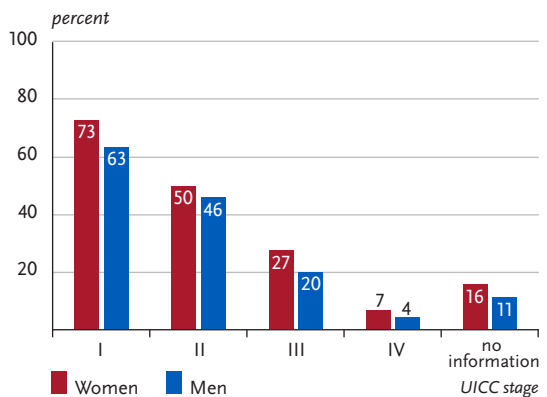
**Figure 3.12.3**  
Distribution of UICC stages at diagnosis by sex, ICD-10 C33–C34, Germany 2017–2018  
top: according to 7<sup>th</sup> edition TNM; bottom: according to 8<sup>th</sup> edition TNM.  
The DCO proportion was 10%. For 32% of the remaining cases, no UICC stage could be assigned.



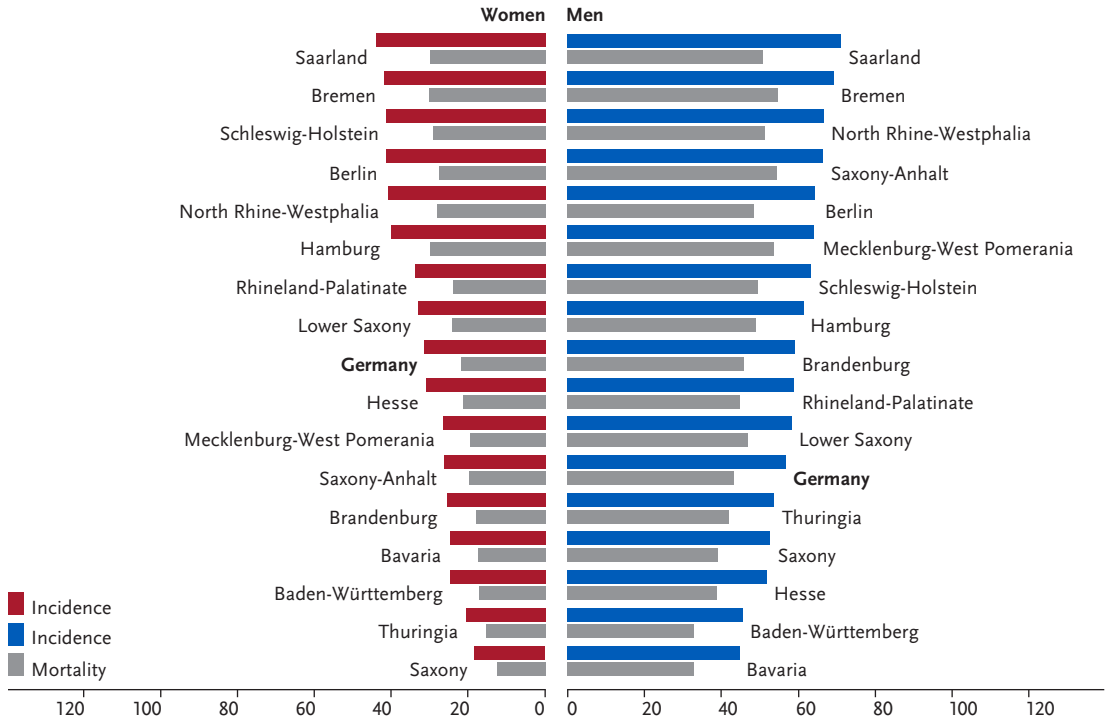
**Figure 3.12.4**  
Absolute and relative survival rates up to 10 years after diagnosis by sex, ICD-10 C33–C34, Germany 2017–2018



**Figure 3.12.5**  
Relative 5-year survival by UICC stage (7<sup>th</sup> edition TNM) and sex, ICD-10 C33–C34, Germany 2016–2018



**Figure 3.12.6**  
 Age-standardised incidence and mortality rates in German federal states by sex, ICD-10 C33–C34, 2017–2018  
 per 100,000 (old European Standard)



**Figure 3.12.7**  
 International comparison of age-standardised incidence and mortality rates by sex,  
 ICD-10 C33–C34, 2017–2018 or latest available year (details and sources, see appendix)  
 per 100,000 (old European Standard)

