

### 3.31 Leukaemia

Table 3.31.1  
Overview of key epidemiological parameters for Germany, ICD-10 C91 – C95

Incidence	2019		2020			
	Women	Men	Women	Men		
Incident cases	5,800	8,110	5,640	7,920		
Crude incidence rate <sup>1</sup>	13.8	19.8	13.4	19.3		
Age-standardised incidence rate <sup>1,2</sup>	8.2	13.2	8.0	12.9		
Median age at diagnosis	74	71	73	71		
Mortality	2019		2020		2021	
	Women	Men	Women	Men	Women	Men
Deaths	3,670	4,590	3,573	4,784	3,530	4,674
Crude mortality rate <sup>1</sup>	8.7	11.2	8.5	11.7	8.4	11.4
Age-standardised mortality rate <sup>1,2</sup>	3.7	6.3	3.5	6.4	3.5	6.2
Median age at death	80	78	80	78	81	78
Prevalence and survival rates	5 years		10 years		25 years	
	Women	Men	Women	Men	Women	Men
Prevalence	17,200	23,900	30,000	40,300	48,300	62,600
Absolute survival rate (2019–2020) <sup>3</sup>	49 (39–53)	51 (43–54)	37 (23–41)	35 (31–38)		
Relative survival rate (2019–2020) <sup>3</sup>	56 (45–62)	60 (51–65)	50 (31–56)	51 (44–56)		

<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 2020, about 13,570 people in Germany were diagnosed with leukaemia, of whom 4% were under the age of 15. Among children and adolescents, the risk of developing leukaemia decreases with increasing age. In adulthood, this trend is reversed, with a higher incidence rate in men compared to women. One in 90 women and one in 64 men will develop leukaemia in the course of their lives. At around 38%, chronic lymphocytic leukaemia (CLL) is the most common form.

Between 1999 and 2020, the age-standardised incidence rates remained relatively stable, while the age-standardised mortality rates declined continuously.

The prognosis for people with leukaemia depends on the form of the disease and the age of diagnosis: Children have by far the best survival prospects, while in adults the acute forms continue to have a rather poor prognosis. The relative 10-year survival rate is around 50% for women and men. In the case of chronic leukaemia, a cure can only rarely be achieved, e.g. by means of a high-risk stem cell transplant.

#### Risk factors

No generally valid risk factors can be named for the group of all leukaemias. However, some factors increase the risk of developing certain leukaemias.

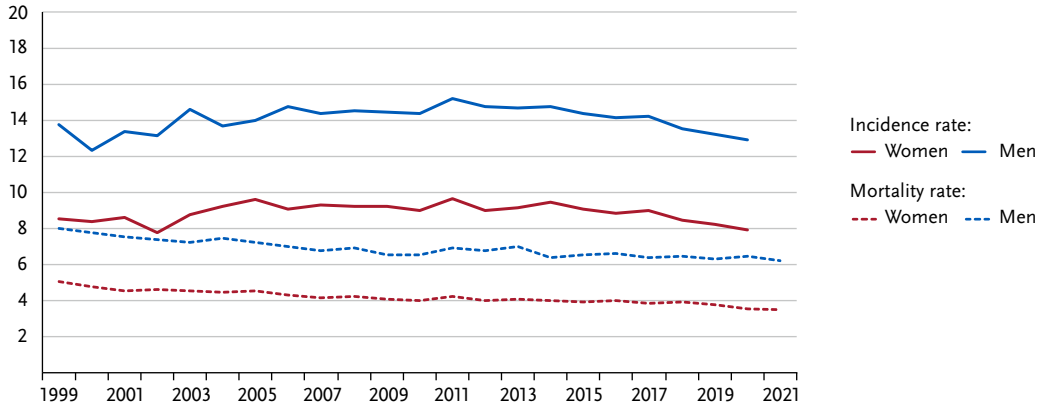
Known risk factors for acute leukaemia include ionising radiation and cytostatic drugs. Occupational exposure to benzene and 1,3-butadiene can also contribute to the development of leukaemia. Some rare genetic changes can increase the risk of acute leukaemia, including trisomy of chromosome 21.

With the exception of the human T-lymphotropic virus (HTLV), which is extremely rare in Europe, viruses have not yet been confirmed as a risk factor for leukaemia. A number of other risk factors are currently being discussed as causes of leukaemia. In addition to environmental influences, these include lifestyle factors such as smoking or obesity.

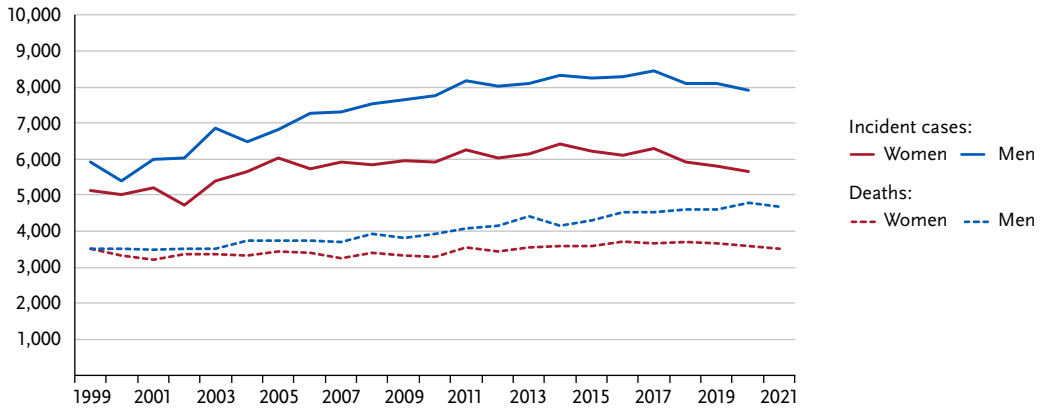
However, a causal relation has not yet been fully established. Overall, for many patients no clear cause can be found for the development of leukaemia.

Presumably, several factors have to work together for this to happen.

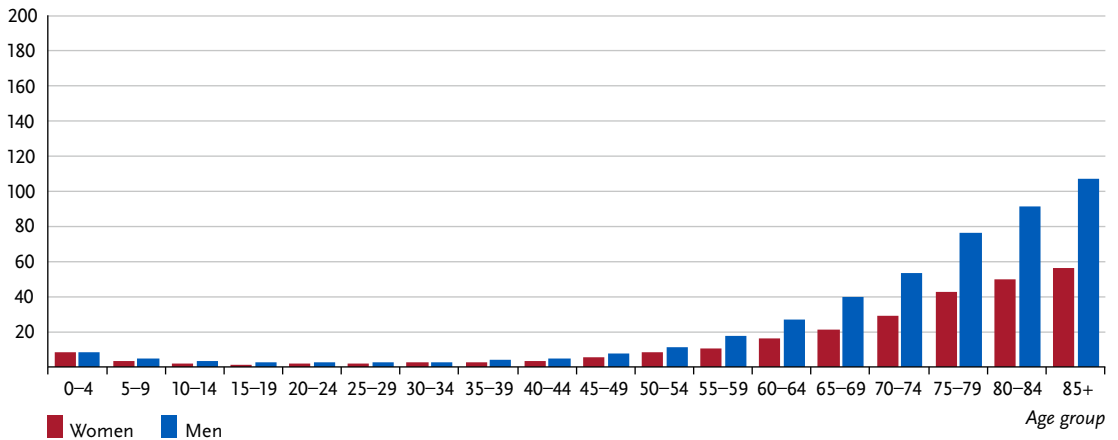
**Figure 3.31.1a**  
 Age-standardised incidence and mortality rates by sex, ICD-10 C91 – C95, Germany 1999 – 2020/2021  
 per 100,000 (old European Standard)



**Figure 3.31.1b**  
 Absolute numbers of incident cases and deaths by sex, ICD-10 C91 – C95, Germany 1999 – 2020/2021



**Figure 3.31.2**  
 Age-specific incidence rates by sex, ICD-10 C91 – C95, Germany 2019 – 2020  
 per 100,000



**Table 3.31.2**  
Cancer incidence and mortality risks in Germany by age and sex, ICD-10 C91 – C95, database 2019

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 3,100)	1.0 %	(1 in 99)	< 0.1 %	(1 in 11,100)	0.7 %	(1 in 140)
45 years	0.1 %	(1 in 1,400)	1.0 %	(1 in 100)	< 0.1 %	(1 in 6,100)	0.7 %	(1 in 140)
55 years	0.1 %	(1 in 770)	0.9 %	(1 in 110)	< 0.1 %	(1 in 2,300)	0.7 %	(1 in 140)
65 years	0.2 %	(1 in 400)	0.8 %	(1 in 120)	0.1 %	(1 in 740)	0.7 %	(1 in 140)
75 years	0.4 %	(1 in 250)	0.7 %	(1 in 150)	0.3 %	(1 in 300)	0.6 %	(1 in 160)
Lifetime risk			1.1 %	(1 in 90)			0.7 %	(1 in 140)
Men aged	in the next 10 years		ever		in the next 10 years		ever	
35 years	< 0.1 %	(1 in 2,200)	1.5 %	(1 in 69)	< 0.1 %	(1 in 9,800)	0.9 %	(1 in 110)
45 years	0.1 %	(1 in 1,000)	1.4 %	(1 in 70)	< 0.1 %	(1 in 4,200)	0.9 %	(1 in 110)
55 years	0.2 %	(1 in 450)	1.4 %	(1 in 72)	0.1 %	(1 in 1,300)	0.9 %	(1 in 110)
65 years	0.4 %	(1 in 230)	1.3 %	(1 in 78)	0.2 %	(1 in 440)	1.0 %	(1 in 110)
75 years	0.7 %	(1 in 150)	1.1 %	(1 in 95)	0.5 %	(1 in 200)	0.9 %	(1 in 110)
Lifetime risk			1.6 %	(1 in 64)			0.9 %	(1 in 110)

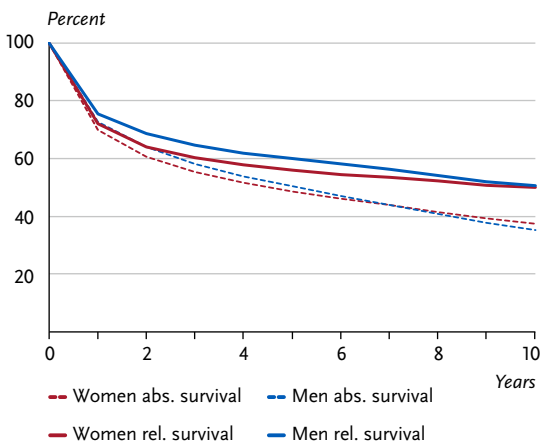
**Figure 3.31.3**  
Distribution of UICC stages at diagnosis by sex  
*Not included because UICC stages are not defined for leukaemias.*

**Table 3.31.3**  
Proportion of incident leukaemias C91 – C95 by type and sex, Germany 2019 – 2020

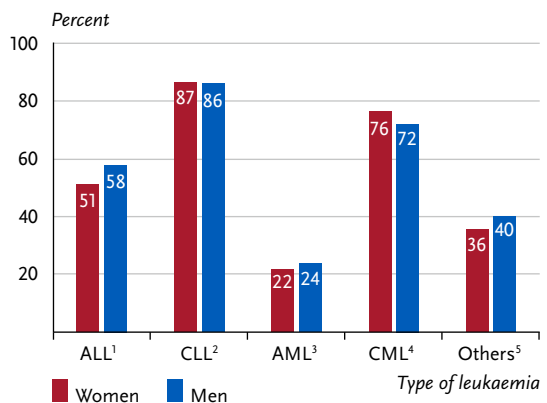
	ALL <sup>1</sup>	CLL <sup>2</sup>	AML <sup>3</sup>	CML <sup>4</sup>	Others <sup>5</sup>
Women	6 %	36 %	27 %	8 %	23 %
Men	5 %	40 %	22 %	8 %	25 %

<sup>1</sup> Acute lymphatic leukaemia (C91.0)  
<sup>2</sup> Chronic lymphatic leukaemia (C91.1)  
<sup>3</sup> Acute myeloid leukaemia (C92.0)  
<sup>4</sup> Chronic myeloid leukaemia (C92.1)  
<sup>5</sup> incl. unspecified leukaemia forms

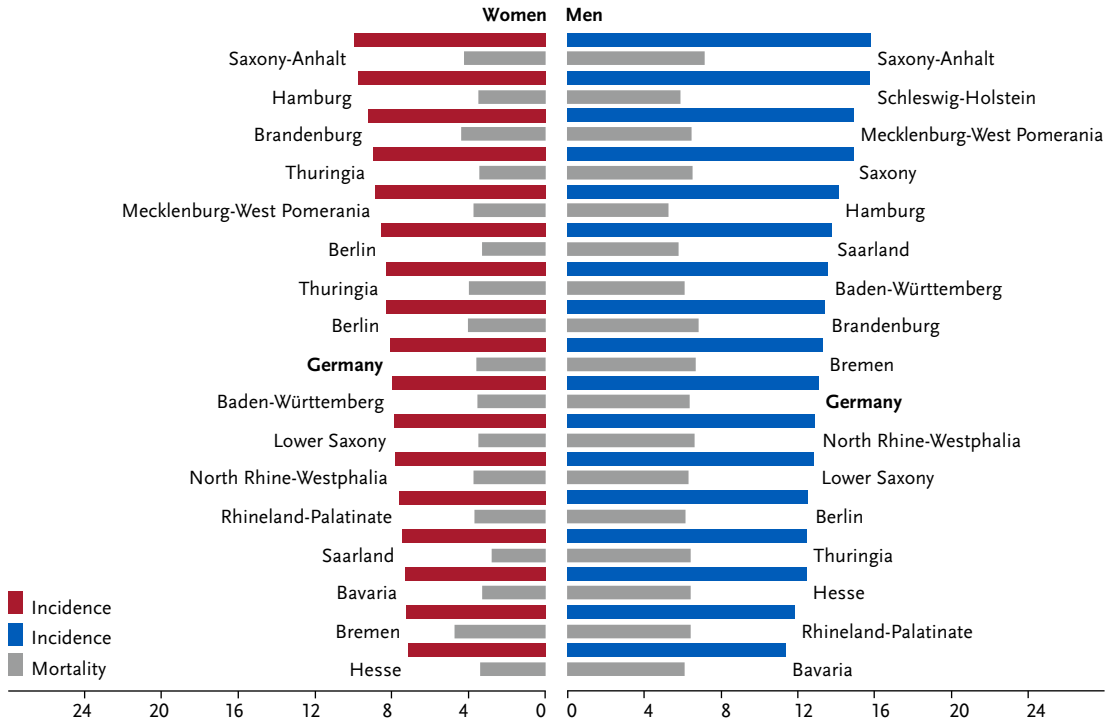
**Figure 3.31.4**  
Absolute and relative survival rates up to 10 years after diagnosis, by sex, ICD-10 C91 – C95, Germany 2019 – 2020



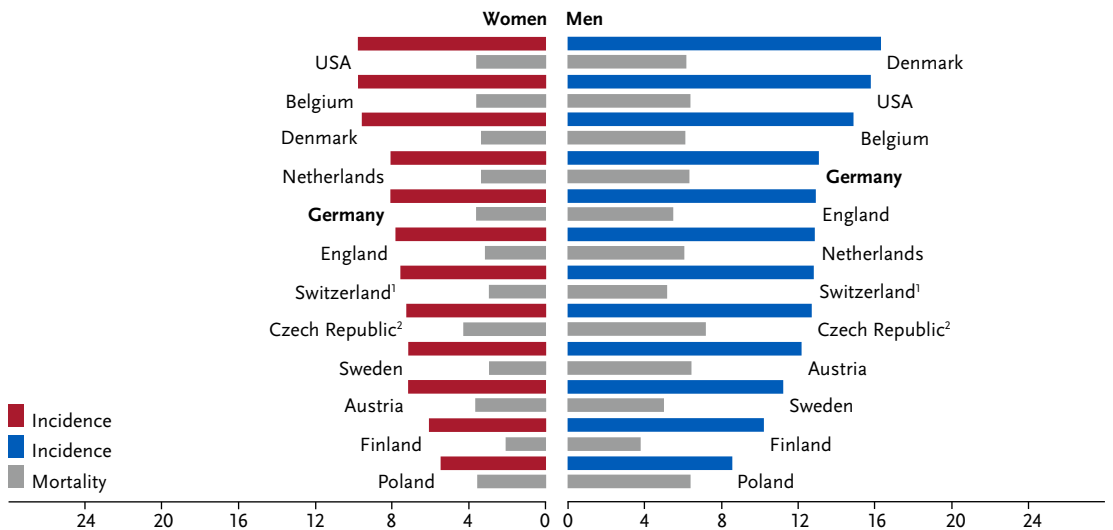
**Figure 3.31.5**  
Relative 5-year survival by type of leukaemia and sex, ICD-10 C91 – C95, Germany 2019 – 2020



**Figure 3.31.6**  
 Age-standardised incidence and mortality rates in German federal states by sex, ICD-10 C91 – C95, 2019 – 2020  
 per 100,000 (old European Standard)



**Figure 3.31.7**  
 International comparison of age-standardised incidence and mortality rates by sex,  
 ICD-10 C91 – C95, 2019 – 2020 or latest available year (details and sources, see appendix)  
 per 100,000 (old European Standard)



<sup>1</sup> Switzerland: incidence data for 2015 – 2019

<sup>2</sup> Czech Republic: incidence estimates by ENCR