

# Munich Cancer Registry



- ▶ Incidence and Mortality
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## ICD-10 D09.0, D41.4: Bladder tumor

### Survival

Year of diagnosis	1988-1997	1998-2019
Patients	2,003	11,327
Diseases	2,003	11,337
Cases evaluated	1,782	8,539
Creation date	01/28/2021	
Database export	01/07/2021	
Population	4.92 m	



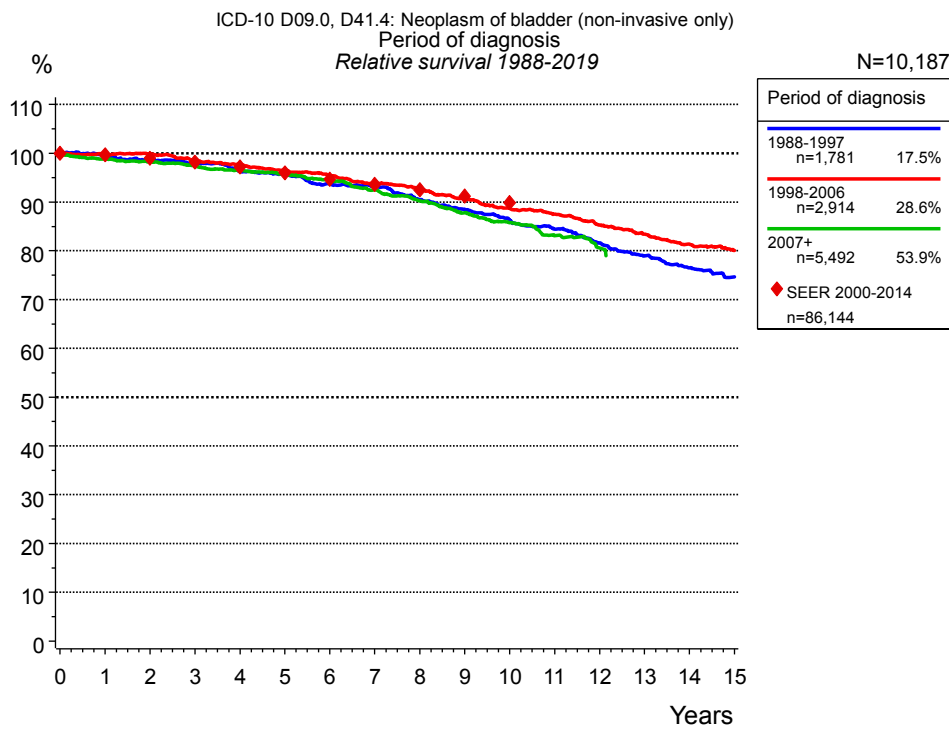
Munich Cancer Registry  
Cancer Registry Bavaria - Upper Bavaria Regional Center  
at Klinikum Grosshadern/IBE  
Marchioninstr. 15  
Munich, 81377  
Germany

<https://www.tumorregister-muenchen.de/en>

<https://www.tumorregister-muenchen.de/en/facts/surv/sD0941E-ICD-10-D09.0-D41.4-Bladder-tumor-survival.pdf>

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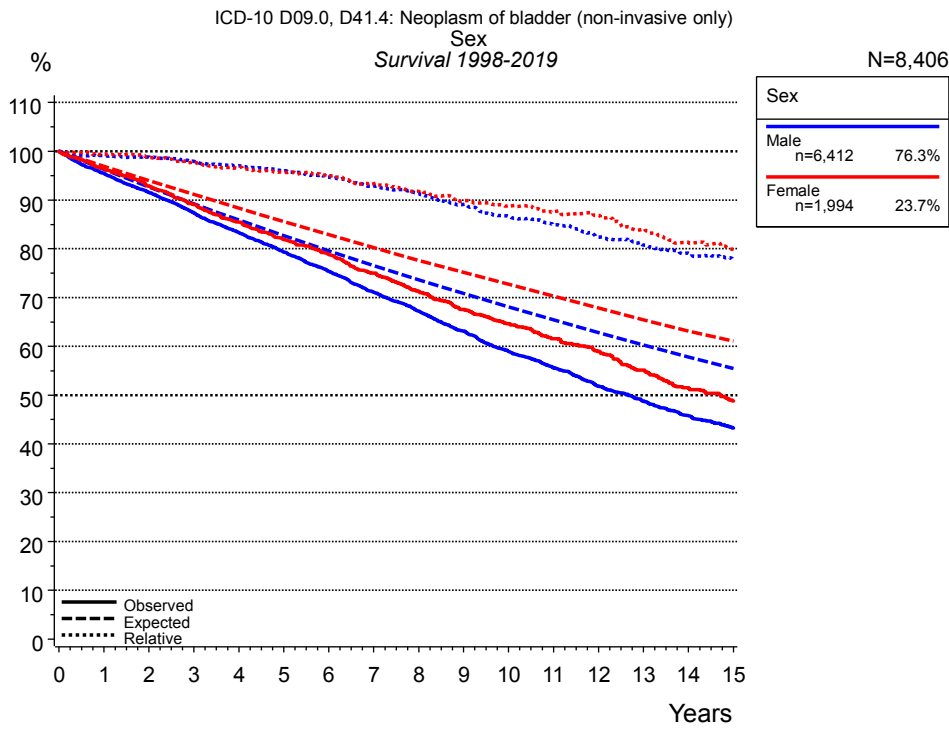
**Figure 1a.** Relative survival of patients with bladder tumor by period of diagnosis. Included in the evaluation are 10,187 cases diagnosed between 1988 and 2019.

The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 2000 to 2014, and are represented by colored diamonds in order to facilitate comparisons between MCR and SEER.

The presented survival curves are derived from clinical records with valid follow-up informations, which means that death certificate cases (DCO) cases are omitted from the analysis. With this one restriction, the MCR has provided population-based statistics since 1998, collecting data on all cancer cases in the region of southern Bavaria. Historical data of previous time periods can be heavily selected, therefore, univariate survival comparisons of the presented time periods must be carefully considered. Nonetheless, all calculable survival curves are depicted to facilitate the comparison of long time follow-up analyses of relative survival between particular cancers.

Years	Period of diagnosis					
	1988-1997 n=1,781		1998-2006 n=2,914		2007+ n=5,492	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	95.5	99.7	96.2	99.9	95.3	98.8
2	90.4	98.4	92.7	99.8	91.4	98.2
3	86.4	97.9	88.3	98.6	87.5	97.4
4	81.6	96.3	84.3	97.6	83.6	96.6
5	78.0	95.7	80.2	96.4	79.8	95.6
6	73.4	93.7	76.6	95.4	76.0	94.5
7	70.3	93.3	72.5	93.8	71.7	92.5
8	65.7	90.5	69.0	92.7	67.5	90.3
9	61.9	88.5	65.2	90.9	63.3	87.8
10	58.1	86.3	61.2	88.7	59.6	85.8
11	54.9	84.5	58.1	87.5	55.6	83.1
12	51.2	81.7	54.5	85.3	52.2	80.6
13	47.6	79.0	51.2	83.4		
14	44.5	76.5	48.0	81.4		
15	41.9	74.7	45.4	80.1		
Median	12.2		13.3			

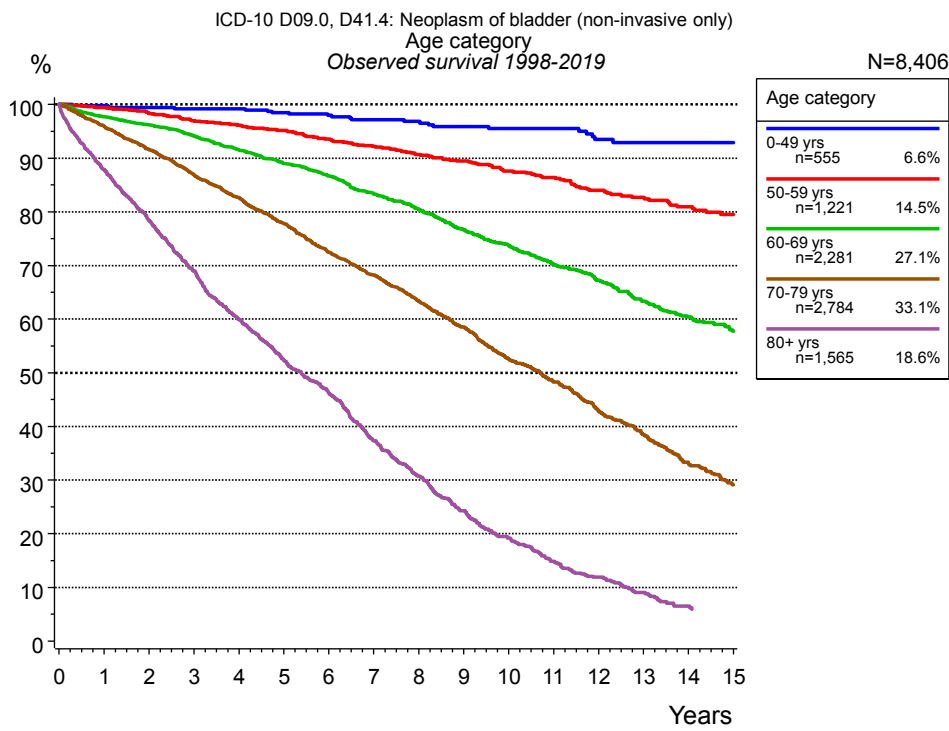
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with bladder tumor by period of diagnosis for period 1988-2019 (N=10,187).



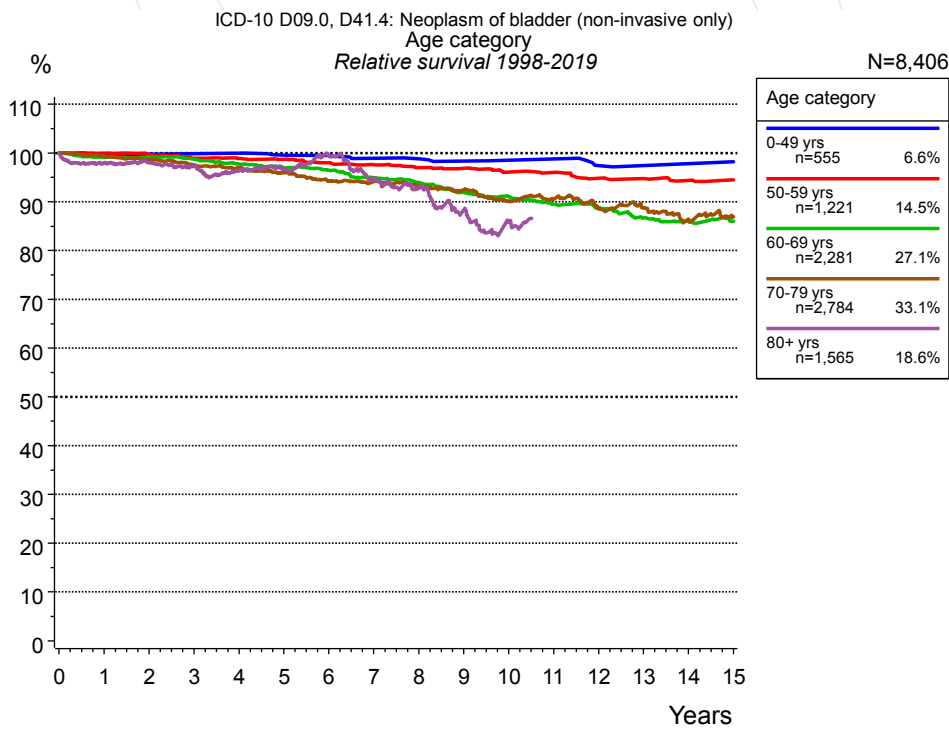
**Figure 2a.** Survival of patients with bladder tumor by sex. Included in the evaluation are 8,406 cases diagnosed between 1998 and 2019.

Years	Sex			
	Male n=6,412		Female n=1,994	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	95.4	99.1	96.4	99.4
2	91.6	98.8	92.9	98.7
3	87.4	97.9	89.0	97.6
4	83.4	97.0	85.4	96.7
5	79.3	95.9	81.9	95.7
6	75.4	94.7	78.8	95.0
7	71.1	92.8	75.0	93.4
8	67.2	91.3	71.2	91.7
9	63.1	89.1	67.6	89.8
10	59.0	86.6	64.6	88.8
11	55.6	85.0	61.6	87.6
12	51.8	82.4	59.0	86.8
13	48.8	80.8	55.1	84.0
14	45.8	79.1	51.6	81.3
15	43.3	78.0	48.8	79.9
Median	12.7		14.7	

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with bladder tumor by sex for period 1998-2019 (N=8,406).



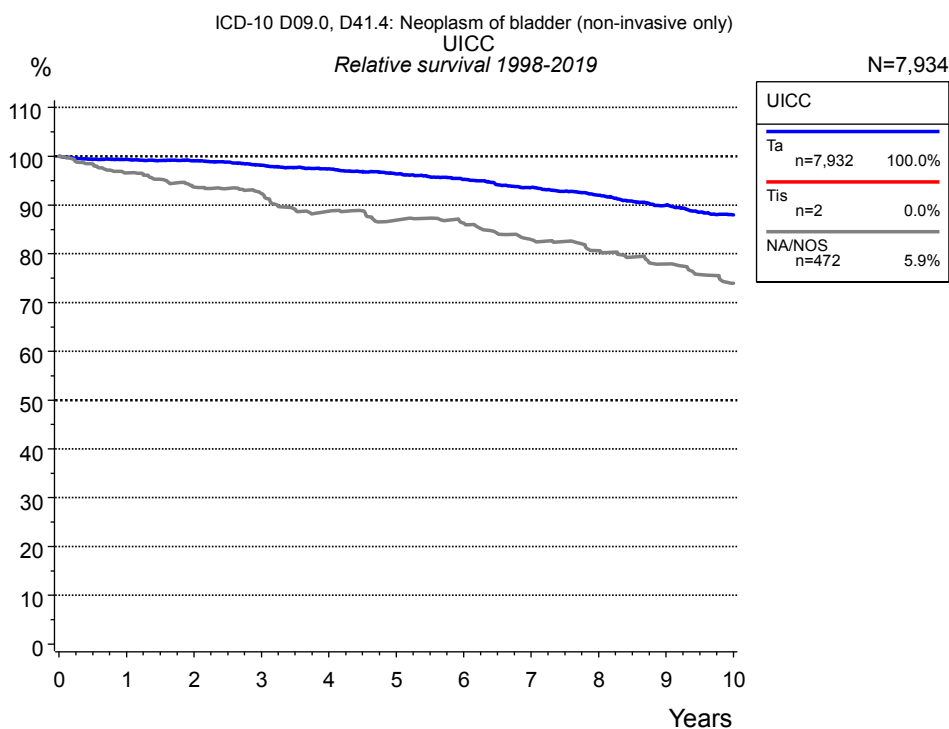
**Figure 3a.** Observed survival of patients with bladder tumor by age category. Included in the evaluation are 8,406 cases diagnosed between 1998 and 2019.



**Figure 3b.** Relative survival of patients with bladder tumor by age category. Included in the evaluation are 8,406 cases diagnosed between 1998 and 2019.

Years	Age category									
	0-49 yrs n=555		50-59 yrs n=1,221		60-69 yrs n=2,281		70-79 yrs n=2,784		80+ yrs n=1,565	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	99.8	99.8	99.4	100.0	97.6	99.1	96.0	99.4	87.9	98.0
2	99.4	99.7	98.3	99.6	96.2	99.2	91.6	98.6	78.4	98.0
3	99.2	99.8	97.0	98.9	94.1	98.7	86.9	97.5	69.0	97.3
4	99.2	100.0	96.1	98.9	91.5	97.7	82.6	97.0	60.0	96.4
5	98.5	99.6	95.1	98.7	88.9	96.9	77.8	95.9	52.3	96.7
6	98.0	99.5	93.6	98.0	86.7	96.4	72.4	94.3	46.3	99.4
7	97.2	99.0	92.2	97.6	83.3	94.9	68.2	94.1	37.3	94.5
8	96.9	98.9	90.7	97.0	80.5	93.9	63.3	93.2	30.7	92.9
9	95.9	98.4	89.5	96.9	76.7	91.9	58.5	92.5	24.3	88.3
10	95.5	98.6	87.6	96.1	73.7	91.1	52.6	90.2	19.2	85.9
11	95.5	98.8	86.4	96.0	70.2	89.5	48.3	90.5	14.8	82.4
12	93.5	97.4	84.0	94.8	67.3	88.7	42.9	88.6	11.9	84.2
13	92.9	97.4	82.7	94.8	63.3	86.7	38.5	88.8	9.1	82.8
14	92.9	97.8	80.9	94.4	60.4	86.1	33.2	86.3	6.5	78.5
15	92.9	98.2	79.5	94.5	57.8	86.0	29.1	86.9		
Median					18.5		10.7		5.4	

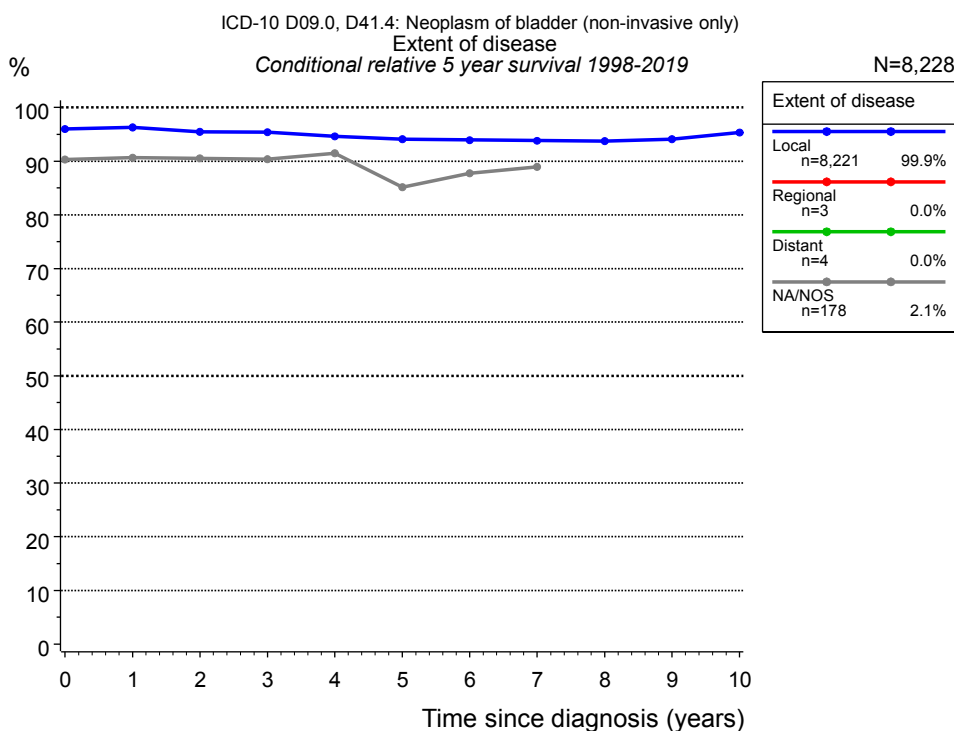
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with bladder tumor by age category for period 1998-2019 (N=8,406).



**Figure 4a.** Relative survival of patients with bladder tumor by UICC. For 8,231 of 8,406 cases diagnosed between 1998 and 2019 valid data could be obtained for this item. For a total of 7,934 cases an evaluable classification was established. The grey line represents the subgroup of 472 patients with missing values regarding UICC (5.6 % of 8,406 patients, the percent values of all other categories are related to n=7,934). Subgroups with sample size <20 are omitted from the chart.

Years	UICC			
	Ta n=7,932		NA/NOS n=472	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	95.8	99.4	93.1	96.6
2	92.2	99.1	87.2	93.7
3	88.0	98.2	82.9	92.4
4	84.3	97.4	76.9	88.7
5	80.4	96.4	72.7	86.9
6	76.6	95.3	69.8	86.3
7	72.5	93.6	64.5	82.9
8	68.6	92.0	60.8	80.7
9	64.7	90.0	56.6	77.9
10	60.9	88.0	51.6	74.0
Median	13.1		10.5	

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with bladder tumor by UICC for period 1998-2019 (N=7,934).



**Figure 4i.** Conditional relative 5-year survival of patients with bladder tumor by extent of disease. For 8,231 of 8,406 cases diagnosed between 1998 and 2019 valid data could be obtained for this item. For a total of 8,228 cases an evaluable classification was established. The grey line represents the subgroup of 178 patients with missing values regarding extent of disease (2.1 % of 8,406 patients, the percent values of all other categories are related to n=8,228). Subgroups with sample size <20 are omitted from the chart.

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	8,221	96.0	3		4		178	90.3
1	7,441	96.3					161	90.6
2	6,800	95.5					143	90.5
3	6,164	95.4					130	90.3
4	5,583	94.6					118	91.5
5	4,992	94.1					105	85.2
6	4,384	93.9					91	87.8
7	3,796	93.8					80	88.9
8	3,257	93.7						
9	2,728	94.1						
10	2,286	95.3						

**Table 4j.** Conditional relative 5-year survival of patients with bladder tumor by extent of disease for period 1998-2019 (N=8,228).

Conditional relative survival rates refer to the relative survival probability, in this case for 5 years after cancer diagnosis, compared to the age- and sex-matched population (=100 %) under the condition of being alive for a certain time period (x-axis in Figure 4g). The results illustrate to what extent the cancer induced mortality of particular subgroups declines in the subsequent years after detection of the malignancy. For instance, according to the presented survival statistics, patients in the subgroup extent of disease="Local", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 95.4% (n=6,164).



## Shortcuts

MCR Munich Cancer Registry, Germany

NCI National Cancer Institute, USA

SEER Surveillance, Epidemiology, and End Results, USA

UICC Union for International Cancer Control, Geneva

DCO Death certificate only Death certificate provides the only notification to the registry.

NA Not available

NOS Not otherwise specified

OS Overall/Observed survival Overall/Observed survival (Kaplan-Meier estimate)  
Date of entry: diagnosis  
Event: death from any cause

RS Relative survival Survival compared to “general population”,  
ratio of observed to expected survival (Ederer II method),  
reflecting cancer specific survival

AS Assembled survival Assembled chart of  
observed, expected, relative survival

CS Conditional survival Survival probability under the condition of surviving  
a given period of time

TTP Time to progression Time to first progression / relapse  
Date of entry: diagnosis  
Event: (progression / relapse): first local-, lymph node recurrence,  
distant metastasis or unspecified progression

1-KM 1 minus Kaplan-Meier estimator  
 (“inverse” Kaplan-Meier estimator)

CI Cumulative incidence  
Death as competing risk (according to Kalbfleisch und Prentice)

PPS Post-progression survival Survival since first progression / relapse (Kaplan-Meier estimate)  
Date of entry (progression / relapse): first local-, lymph node  
recurrence, distant metastasis or unspecified progression  
Event: death from any cause

## Recommended Citation

Munich Cancer Registry. Survival ICD-10 D09.0, D41.4: Bladder tumor [Internet]. 2021 [updated 2021 Jan 28; cited 2021 Mar 1]. Available from: <https://www.tumorregister-muenchen.de/en/facts/surv/sD0941E-ICD-10-D09.0-D41.4-Bladder-tumor-survival.pdf>

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