

# Munich Cancer Registry



- ▶ Baseline statistics
- ▶ Selection Matrix
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Munich Cancer Registry at Munich Cancer Center  
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<http://www.tumorregister-muenchen.de/en>

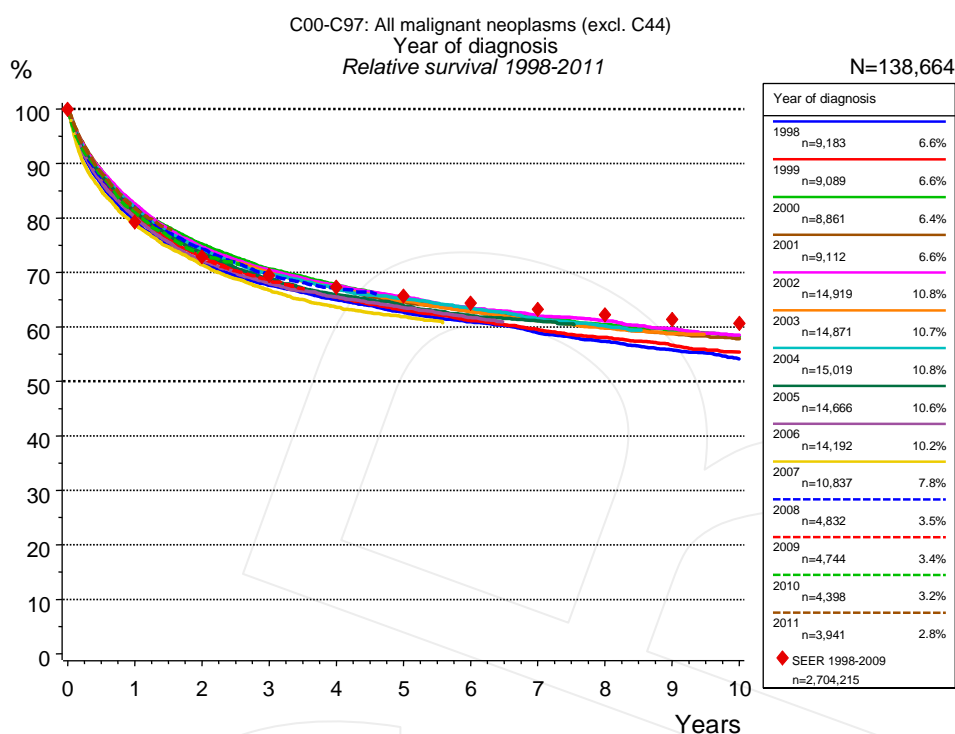
## Cancer statistics: Survival

### C00-C97: All cancers (excl. C44)

Year of diagnosis	1978-1997	1998-2011
Patients	85,240	249,060
Diseases	91,039	270,234
Creation date	04/01/2013	
Export date	01/03/2013	
Population	4.5 m	



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C0097E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C0097E.pdf)



**Figure 1a.** Relative survival of patients with all cancers (excl. C44) by year of diagnosis. Included in the evaluation are 138,664 cases diagnosed between 1998 and 2011.

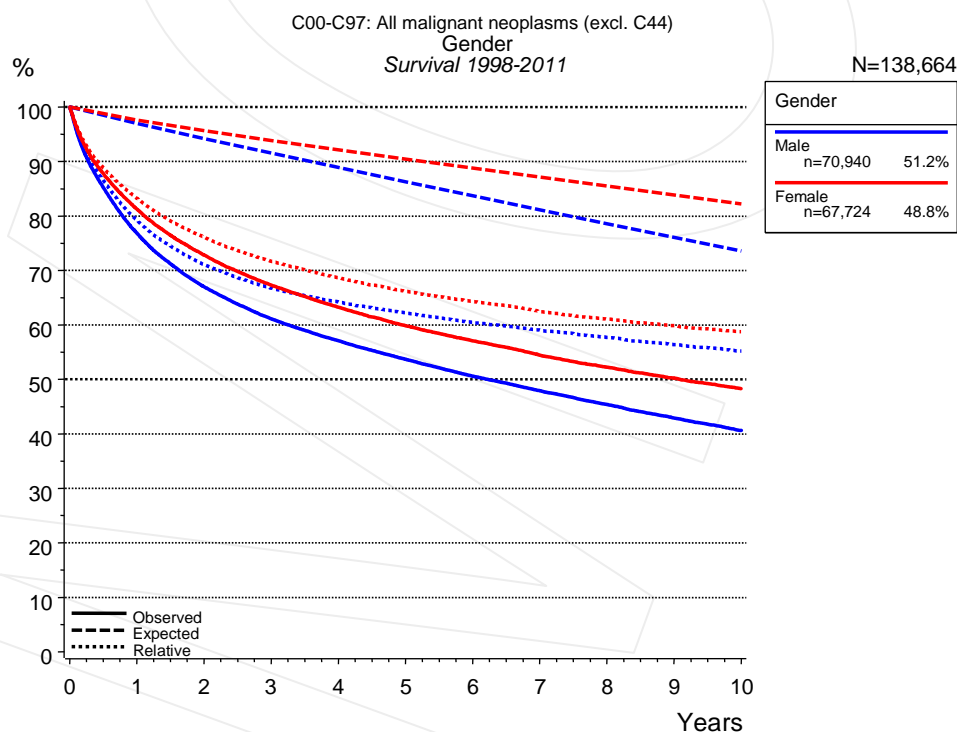
The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 1998 to 2009, and are represented by red diamonds in order to facilitate comparisons between MCR and SEER.

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	Year of diagnosis													
	1998		1999		2000		2001		2002		2003		2004	
	n=9,183		n=9,089		n=8,861		n=9,112		n=14,919		n=14,871		n=15,019	
	obs. %	rel. %	obs. %	rel. %	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	100.0	100.0	100.0	100.0
1	77.0	79.4	78.1	80.5	80.1	82.4	79.9	82.1	80.2	82.6	79.5	81.7	79.8	81.9
2	68.0	72.0	69.0	72.9	71.2	75.2	70.5	74.3	70.7	74.6	70.4	74.2	70.5	74.2
3	62.3	67.7	63.1	68.4	65.3	70.7	64.9	70.1	65.0	70.4	64.9	70.0	64.8	69.8
4	58.3	65.0	58.9	65.4	61.2	67.8	60.9	67.2	61.0	67.6	60.7	67.1	60.8	67.0
5	54.9	62.7	55.4	63.1	57.3	65.1	57.1	64.6	57.6	65.5	57.2	64.8	57.8	65.2
6	52.0	60.9	52.4	61.1	54.4	63.3	54.3	62.8	54.5	63.4	54.1	62.8	54.9	63.4
7	49.1	58.9	49.8	59.5	51.8	61.8	51.8	61.4	51.9	62.0	51.4	61.2	51.9	61.5
8	46.6	57.4	47.5	58.1	49.5	60.4	49.4	59.9	49.8	61.1	49.0	59.8	49.6	60.2
9	44.2	55.8	45.2	56.6	47.5	59.4	47.3	58.8	47.4	59.6	46.9	58.8		
10	41.9	54.2	43.2	55.4	45.3	58.2	45.4	57.8	45.2	58.5				

cont'd	Year of diagnosis													
	2005		2006		2007		2008		2009		2010		2011	
	n=14,666		n=14,192		n=10,837		n=4,832		n=4,744		n=4,398		n=3,941	
Years	obs. %	rel. %	obs. %	rel. %	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	100.0	100.0	100.0	100.0
1	79.0	81.1	78.0	80.1	76.5	78.8	79.9	81.9	79.1	81.1	79.1	81.1	79.9	81.8
2	69.9	73.6	68.5	72.1	67.9	71.4	70.8	74.3	69.5	72.9	69.9	73.3		
3	63.9	68.8	63.2	68.0	62.1	66.7	64.9	69.5	64.0	68.6				
4	59.9	65.9	59.4	65.4	57.9	63.6	61.2	67.1						
5	56.7	63.9	56.3	63.5	55.1	61.9								
6	53.8	62.0	53.4	61.7										
7	51.6	61.1												

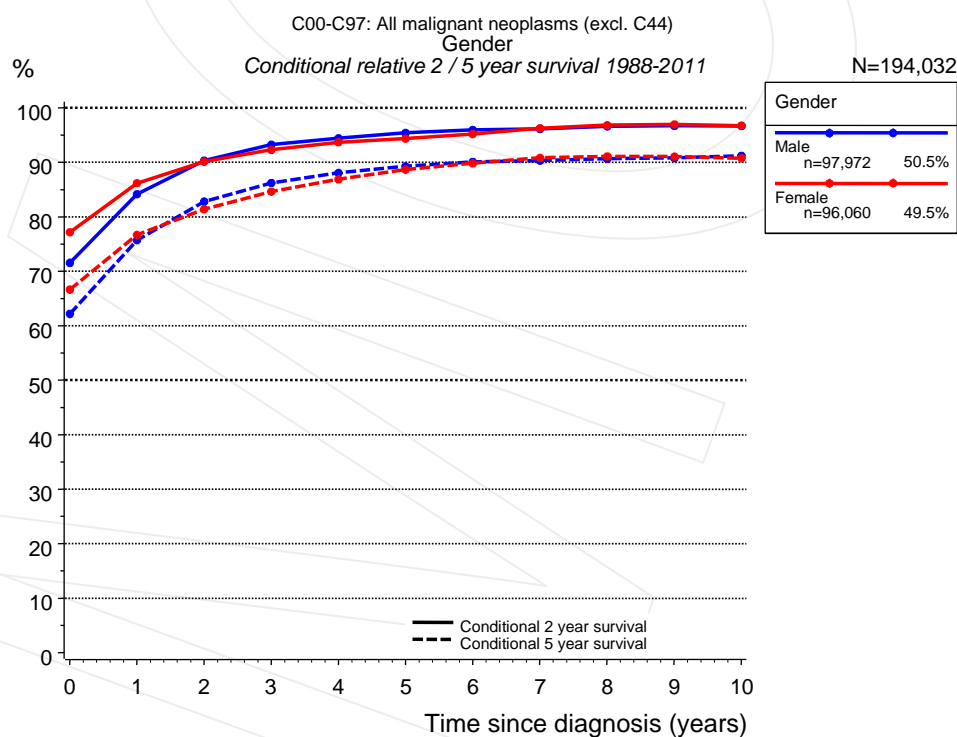
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with all cancers (excl. C44) by year of diagnosis for period 1998-2011 (N=138,664).



**Figure 2a.** Survival of patients with all cancers (excl. C44) by gender. Included in the evaluation are 138,664 cases diagnosed between 1998 and 2011.

Years	Gender			
	Male n=70,940		Female n=67,724	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	76.8	79.2	81.2	83.2
2	67.0	71.1	72.8	76.1
3	61.1	66.8	67.3	71.7
4	57.1	64.2	63.3	68.7
5	53.7	62.2	59.9	66.2
6	50.6	60.4	57.1	64.3
7	47.9	59.0	54.4	62.5
8	45.4	57.7	52.3	61.1
9	42.9	56.4	50.2	59.9
10	40.6	55.2	48.3	58.7

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with all cancers (excl. C44) by gender for period 1998-2011 (N=138,664).

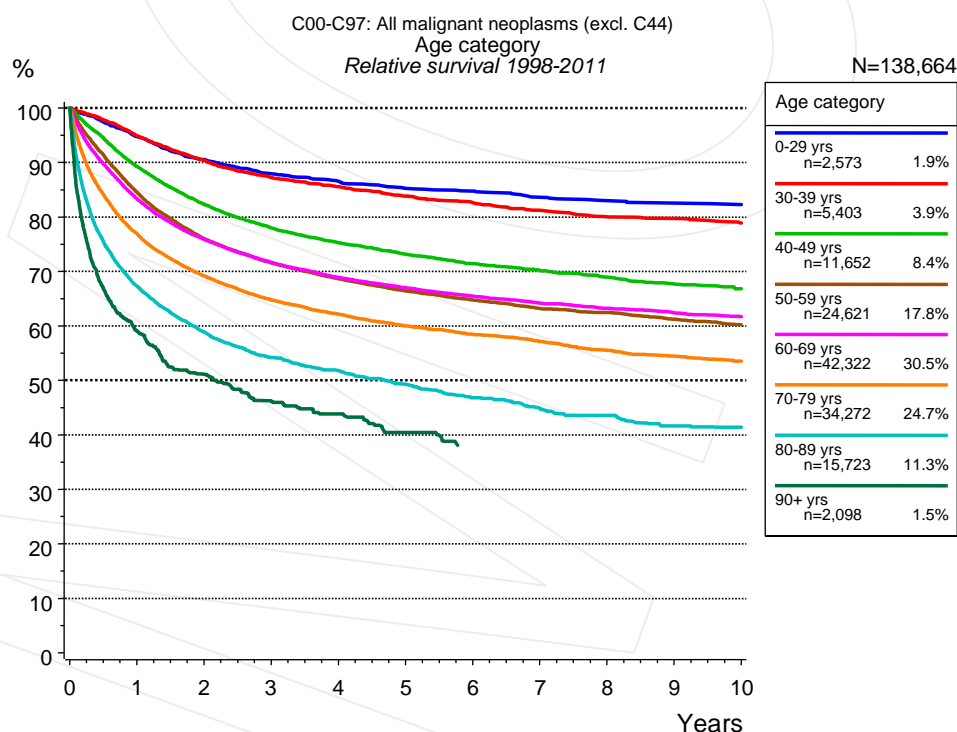


**Figure 2c.** Conditional relative 2 / 5-year survival of patients with all cancers (excl. C44) by gender. For 194,032 of 194,032 cases diagnosed between 1988 and 2011 valid data could be obtained for this item.

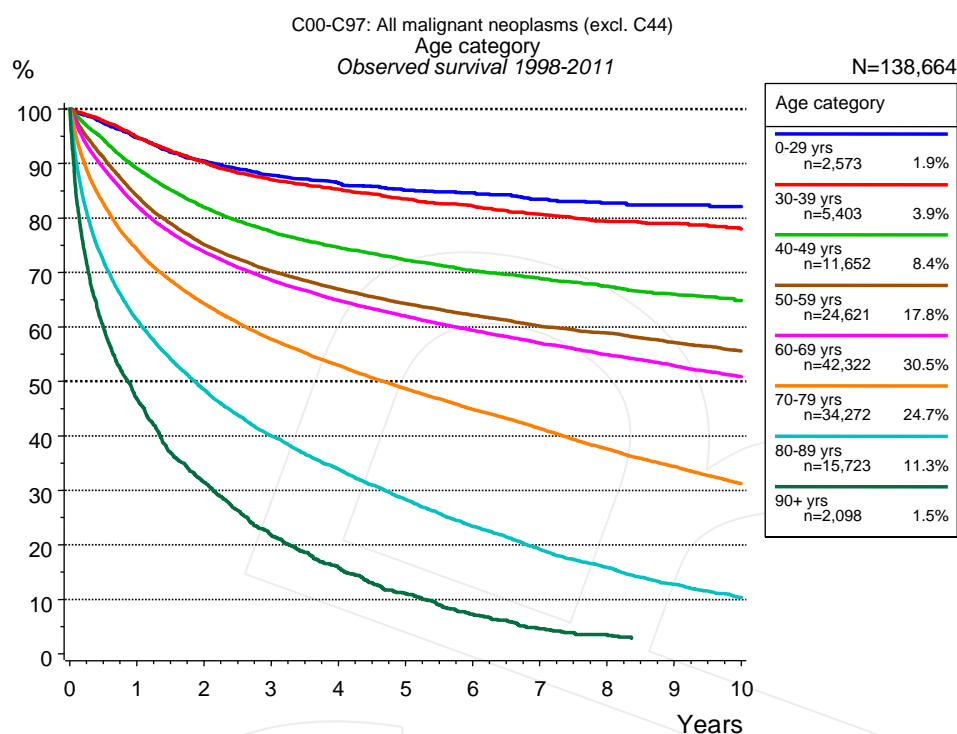
Years	Gender					
	Male			Female		
	n	Cond. surv. % 2 yrs	5 yrs	n	Cond. surv. % 2 yrs	5 yrs
0	97,972	71.6	62.2	96,060	77.2	66.6
1	71,935	84.2	75.7	75,195	86.2	76.7
2	57,682	90.3	82.8	62,180	90.1	81.4
3	47,860	93.2	86.2	52,411	92.3	84.6
4	40,010	94.4	88.1	44,323	93.7	86.9
5	33,125	95.4	89.2	37,500	94.3	88.7
6	27,482	95.9	90.1	31,801	95.2	89.8
7	23,509	96.1	90.3	27,622	96.3	90.8
8	19,968	96.6	90.6	24,016	96.8	91.1
9	16,763	96.7	90.8	20,712	97.0	91.1
10	13,848	96.7	91.2	17,773	96.7	90.7

**Table 2d.** Conditional relative 2 / 5-year survival of patients with all cancers (excl. C44) by gender for period 1988-2011 (N=194,032).

Conditional relative survival rates refer to the relative survival probability, in this case for 2 and 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 2a). 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 gender="Male", who are alive at least 3 years after cancer diagnosis, the conditional relative 2-year survival rate is 93.2% (n=47,860).



**Figure 3a.** Relative survival of patients with all cancers (excl. C44) by age category. Included in the evaluation are 138,664 cases diagnosed between 1998 and 2011.

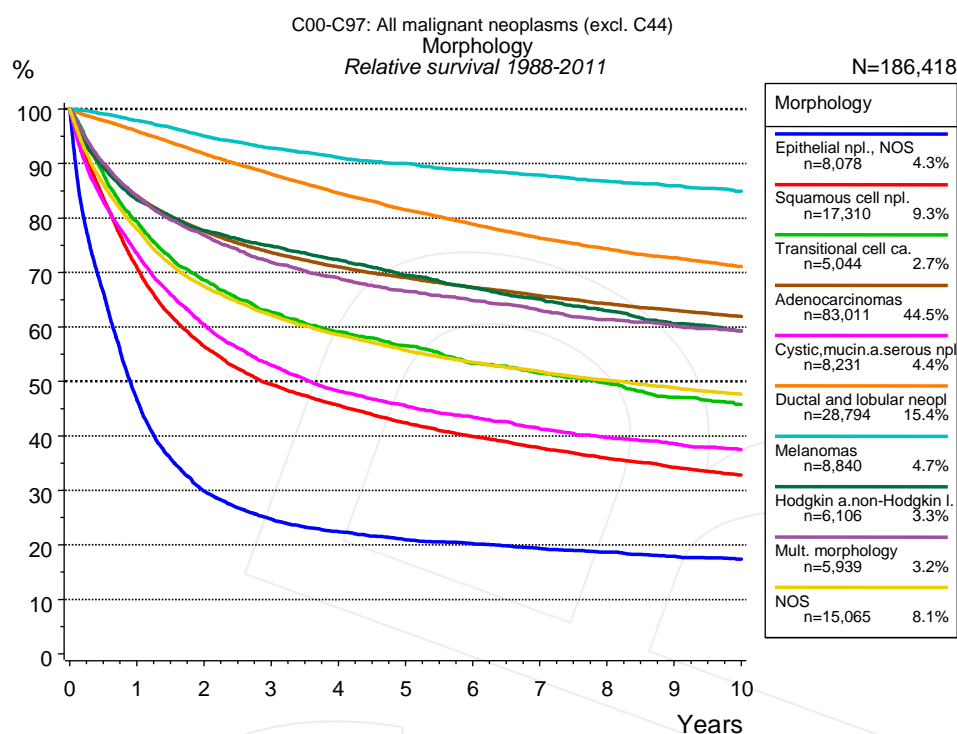


**Figure 3b.** Observed survival of patients with all cancers (excl. C44) by age category. Included in the evaluation are 138,664 cases diagnosed between 1998 and 2011.

Years	Age category													
	0-29 yrs n=2,573		30-39 yrs n=5,403		40-49 yrs n=11,652		50-59 yrs n=24,621		60-69 yrs n=42,322		70-79 yrs n=34,272		80-89 yrs n=15,723	
	obs. %	rel. %	obs. %	rel. %	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	100.0	100.0	100.0	100.0
1	94.7	94.8	94.8	94.9	89.1	89.2	84.0	84.5	82.2	83.4	74.2	76.9	61.3	67.3
2	90.4	90.5	90.2	90.4	81.9	82.3	75.1	76.0	73.8	75.9	64.3	69.2	48.5	58.9
3	87.9	87.9	87.0	87.2	77.5	78.0	70.3	71.6	68.6	71.7	57.7	64.8	40.0	54.2
4	86.5	86.6	85.3	85.5	74.6	75.3	66.9	68.7	64.9	68.9	52.9	62.2	33.9	51.8
5	85.1	85.2	83.5	83.8	72.2	73.1	64.3	66.4	62.0	67.0	48.6	60.0	28.3	49.3
6	84.6	84.7	82.1	82.6	70.3	71.4	62.1	64.8	59.3	65.4	44.8	58.4	23.4	46.8
7	83.5	83.6	80.6	81.2	68.9	70.2	60.2	63.2	57.0	64.2	41.3	57.1	19.1	44.8
8	82.8	83.0	79.4	80.0	67.4	69.0	58.9	62.5	54.9	63.2	37.6	55.5	15.8	43.6
9	82.4	82.6	79.0	79.7	65.9	67.7	57.1	61.2	52.9	62.4	34.4	54.5	12.7	41.7
10	82.1	82.3	78.0	78.9	64.8	66.8	55.6	60.2	50.9	61.7	31.2	53.6	10.3	41.4

Age category		
cont'd		
90+ yrs n=2,098		
Years	obs. %	rel. %
0	100.0	100.0
1	46.7	59.0
2	31.4	51.1
3	21.8	46.2
4	15.7	43.8
5	11.1	40.4

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with all cancers (excl. C44) by age category for period 1998-2011 (N=138,664).

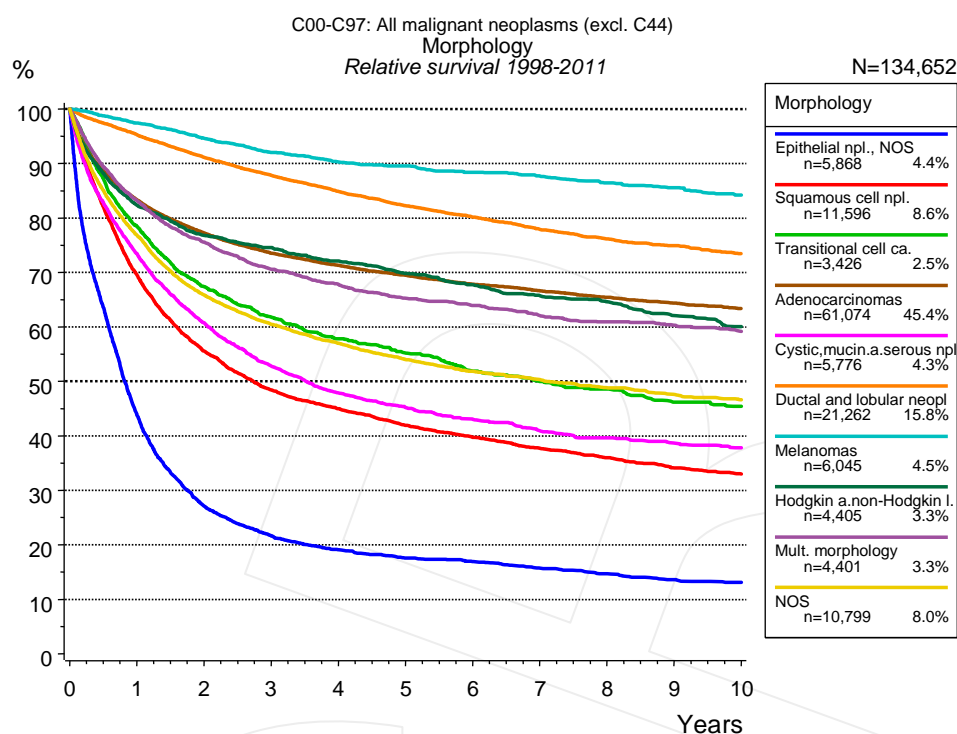


**Figure 4a.** Relative survival of patients with all cancers (excl. C44) by morphology. For 186,418 of 194,032 cases diagnosed between 1988 and 2011 valid data could be obtained for this item.

Morphology															
	Epithelial npl., NOS		Squamous cell npl.		Adenocarcinomas		Cystic,mucin.a.serous npl.		Ductal and lobular neoplasms		Melanomas		Hodgkin a.non-Hodgkin l.		
	n=8,078		n=17,310		n=83,011		n=8,231		n=28,794		n=8,840		n=6,106		
Years	obs. %	rel. %	obs. %	rel. %	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	100.0	100.0	100.0	100.0	
1	45.3	46.6	69.3	70.9	81.3	84.0	71.3	73.6	94.3	95.9	96.0	97.9	81.4	83.3	
2	28.3	29.9	54.1	56.4	72.8	77.6	57.1	60.5	88.8	91.8	91.5	95.0	74.5	77.7	
3	22.8	24.7	46.4	49.4	67.0	73.6	48.7	53.0	83.9	88.1	87.8	92.8	70.5	74.9	
4	20.2	22.4	42.0	45.6	62.7	71.0	43.1	48.2	79.2	84.5	84.6	91.1	67.0	72.3	
5	18.3	20.9	38.3	42.4	59.0	69.1	39.6	45.5	75.1	81.5	82.2	90.0	63.2	69.5	
6	17.2	20.2	35.3	39.9	55.6	67.2	36.8	43.4	71.5	78.8	79.5	88.8	60.1	67.2	
7	16.0	19.3	32.8	37.8	52.6	65.7	34.0	41.3	68.1	76.3	77.4	87.9	57.3	65.1	
8	15.1	18.7	30.6	35.9	49.8	64.2	31.8	39.7	65.2	74.3	75.0	86.7	54.6	63.0	
9	14.1	17.9	28.6	34.2	47.2	63.0	30.1	38.6	62.8	72.7	73.1	85.9	51.8	60.6	
10	13.3	17.4	26.8	32.8	44.8	61.9	28.4	37.5	60.3	71.1	70.9	84.9	50.0	59.3	

Morphology				
Years	Mult. morphology n=5,939		NOS n=20,109	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	82.0	84.1	76.3	78.3
2	73.5	76.9	64.6	67.7
3	67.2	71.9	58.2	62.3
4	63.3	69.0	53.8	58.6
5	59.7	66.5	50.3	55.8
6	57.1	64.8	47.3	53.4
7	54.4	63.0	45.0	51.6
8	51.9	61.4	42.7	49.9
9	50.0	60.3	40.7	48.3
10	48.0	59.2	39.0	47.0

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with all cancers (excl. C44) by morphology for period 1988-2011 (N=186,418).



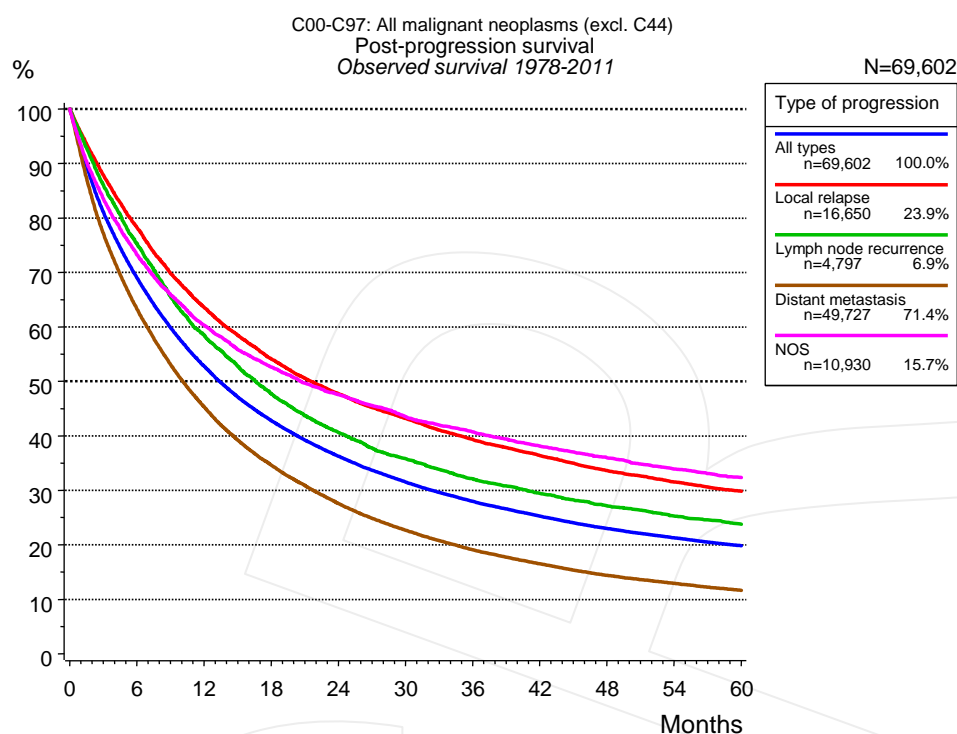
**Figure 4c.** Relative survival of patients with all cancers (excl. C44) by morphology. For 134,652 of 138,664 cases diagnosed between 1998 and 2011 valid data could be obtained for this item.

Morphology														
Years	Epithelial npl., NOS n=5,868		Squamous cell npl. n=11,596		Adenocarcinomas n=61,074		Cystic, mucin.a.serous npl. n=5,776		Ductal and lobular neoplasms n=21,262		Melanomas n=6,045		Hodgkin a.non-Hodgkin l. n=4,405	
	obs. %	rel. %	obs. %	rel. %	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	100.0	100.0	100.0	100.0
1	42.6	43.9	67.9	69.5	80.7	83.3	71.2	73.5	93.6	95.3	95.6	97.4	80.3	82.3
2	25.7	27.1	53.2	55.6	72.6	77.2	57.3	60.7	88.1	91.1	91.1	94.6	73.5	76.8
3	20.0	21.6	45.5	48.4	67.2	73.5	48.5	52.8	83.6	87.8	87.0	92.0	70.1	74.6
4	17.1	19.1	41.5	45.0	63.2	71.3	42.7	47.9	79.5	84.9	84.0	90.3	66.6	72.1
5	15.3	17.6	38.0	41.9	59.7	69.5	39.2	45.2	75.8	82.2	81.8	89.5	63.3	69.8
6	14.3	16.9	35.3	39.7	56.5	67.8	36.3	43.0	72.7	80.2	79.3	88.4	60.4	67.7
7	12.9	15.7	32.9	37.7	53.8	66.6	33.5	40.9	69.5	77.9	77.3	87.7	57.7	65.7
8	11.8	14.7	30.8	36.0	51.1	65.4	31.6	39.7	66.8	76.2	74.9	86.4	55.8	64.6
9	10.7	13.6	28.6	34.1	48.6	64.4	30.0	38.7	64.6	74.9	73.0	85.5	52.8	62.1
10	10.1	13.1	27.1	33.0	46.2	63.3	28.5	37.8	62.2	73.5	70.6	84.2	50.3	60.1

Morphology				
Years	Mult. morphology n=4,401		NOS n=14,225	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	81.3	83.3	75.2	77.2
2	72.3	75.6	63.2	66.2
3	66.2	70.6	56.9	60.8
4	62.4	67.8	52.5	57.2
5	58.8	65.3	49.0	54.2
6	56.5	63.9	46.0	51.8
7	53.9	62.1	43.8	50.1
8	51.9	60.9	41.9	48.7
9	50.3	60.3	39.9	47.1
10	48.3	59.2	38.5	46.2

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with all cancers (excl. C44) by morphology for period 1998-2011 (N=134,652).





**Figure 5a.** Observed post-progression survival of 69,602 patients with all cancers (excl. C44) diagnosed between 1978 and 2011 (incl. M1). These 69,602 patients with documented progression events during their course of disease represent 32.2% of the totally 216,394 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=19,131, 8.8%). Multiple progression types on different sites are included in the evaluation even when not occurring synchronously. The NOS (not otherwise specified) class is included under the condition, that it is the one and only progression type during the course of disease.

Medical record documentation often lacks the linguistic severity to distinguish between local relapse, regional lymph node metastasis and distant spread in solid cancers. Frequently, the statement “not specified” is the only information in registries regarding relapse of the disease. The category “All types” denotes all cases who suffered from at least one relapse during the course of disease (incl. primary M1-status). Although, the real number of relapsed patients is likely to be much higher. The accumulated percentage of patients with local relapse or distant metastasis exceeds the 100% value because patients are potentially considered in more than one subgroup.

Months	Type of progression				
	All types n=69,602	Local relapse n=16,650	Lymph node recurrence n=4,797	Distant metastasis n=49,727	NOS n=10,930
	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	52.8	63.6	58.5	45.3	60.3
24	36.2	47.7	40.6	27.5	47.6
36	28.0	39.4	32.1	19.1	40.7
48	23.0	33.6	27.2	14.4	36.0
60	19.8	29.8	23.8	11.6	32.4

**Table 5b.** Observed post-progression survival of patients with all cancers (excl. C44) for period 1978-2011 (N=69,602).

## Shortcuts

AS	Assembled survival chart (observed, expected, relative)
CS	Conditional survival
DCO	Death certificate only. The death certificate provides the only notification to the registry.
MCR	Munich Cancer Registry, Germany (Tumorregister München)
NA	Not available
NCI	National Cancer Institute, USA
NOS	Not otherwise specified
OS	Observed/overall survival (Kaplan-Meier estimate)
PPS	Post-progression survival
RS	Relative Survival. Ratio of observed and expected survival (derived from the normal population)
SEER	Surveillance, Epidemiology, and End Results, USA
TTP	Time to progression
	Date of entry: Date of diagnosis
	Event (Progression): First local recurrence, lymph node relapse or distant metastasis, unspecified recurrence
	First all-cause recurrence is illustrated by survival curves (Kaplan-Meier estimate).
	First local recurrence, lymph node relapse or distant metastasis are depicted cumulatively, where applicable ("reverse" Kaplan-Meier estimate).
UICC	Union for International Cancer Control, Geneva

## Recommended Citation

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