

# Munich Cancer Registry



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## ICD-10 D05: Breast cancer i.s. (women)

### Survival

Year of diagnosis	1988-1997	1998-2016
Patients	672	5,639
Diseases	682	5,733
Cases evaluated	536	4,471
Creation date	08/22/2018	
Export date	08/09/2018	
Population (females)	2.43 m	



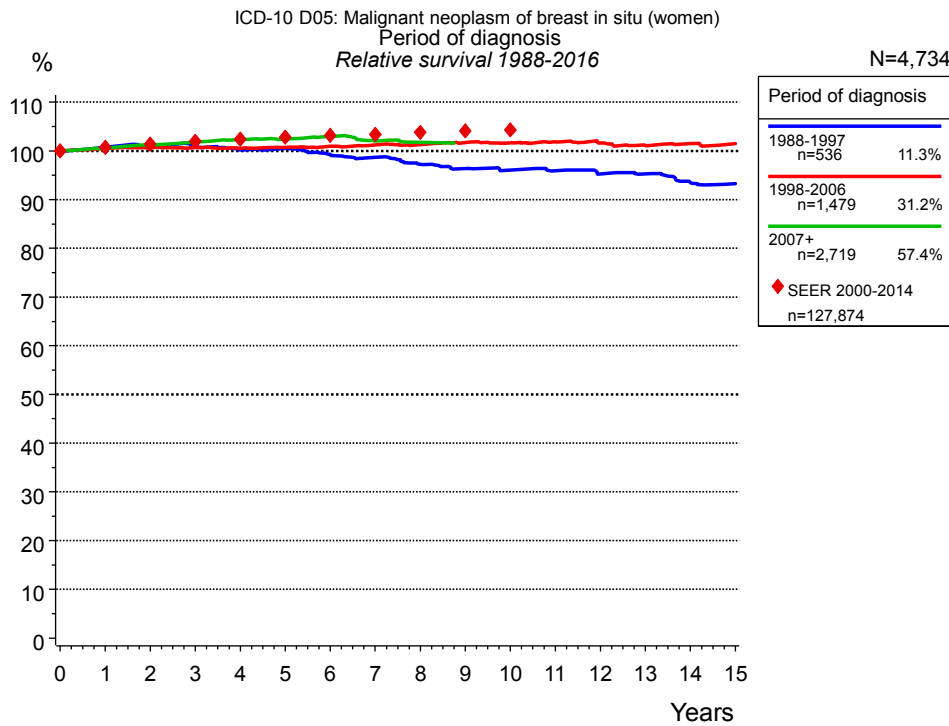
Munich Cancer Registry  
Cancer Registry Bavaria - Upper Bavaria Regional Center  
at Klinikum Grosshadern/IBE  
Marchioninstr. 15  
Munich, 81377  
Germany

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

[https://www.tumorregister-muenchen.de/en/facts/surv/sD05f\\_E-ICD-10-D05-Breast-cancer-i.s.-women-survival.pdf](https://www.tumorregister-muenchen.de/en/facts/surv/sD05f_E-ICD-10-D05-Breast-cancer-i.s.-women-survival.pdf)

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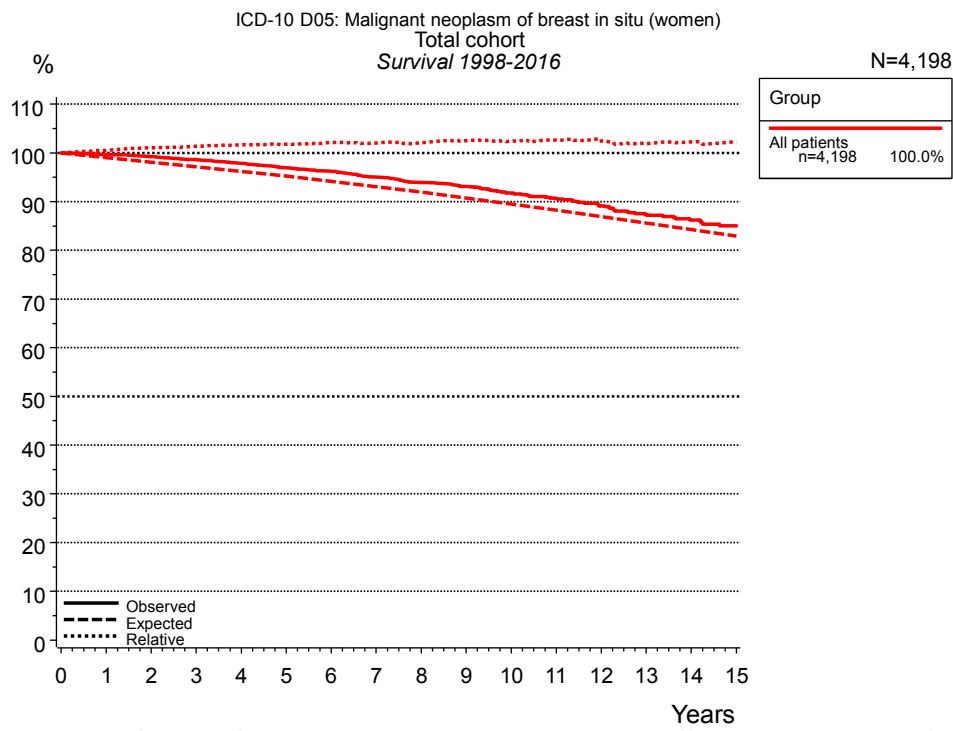
**Figure 1a.** Relative survival of patients with breast cancer i.s. (women) by period of diagnosis. Included in the evaluation are 4,734 cases diagnosed between 1988 and 2016.

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=536		1998-2006 n=1,479		2007+ n=2,719	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	99.6	100.7	99.7	100.5	99.6	100.5
2	98.7	101.0	98.9	100.7	99.4	101.2
3	97.3	100.9	98.0	100.7	98.9	101.8
4	95.6	100.2	96.9	100.5	98.5	102.3
5	94.9	100.5	96.1	100.7	97.5	102.5
6	92.4	99.2	95.3	100.9	96.9	103.0
7	90.8	98.7	94.5	101.2	94.8	102.0
8	88.5	97.2	93.4	101.3	93.8	101.7
9	86.7	96.4	92.6	101.7		
10	85.4	96.0	91.3	101.6		
11	84.2	95.9	90.2	101.8		
12	82.6	95.3	88.7	101.6		
13	81.6	95.3	86.9	101.1		
14	78.9	93.5	85.8	101.5		
15	77.7	93.3	84.6	101.5		

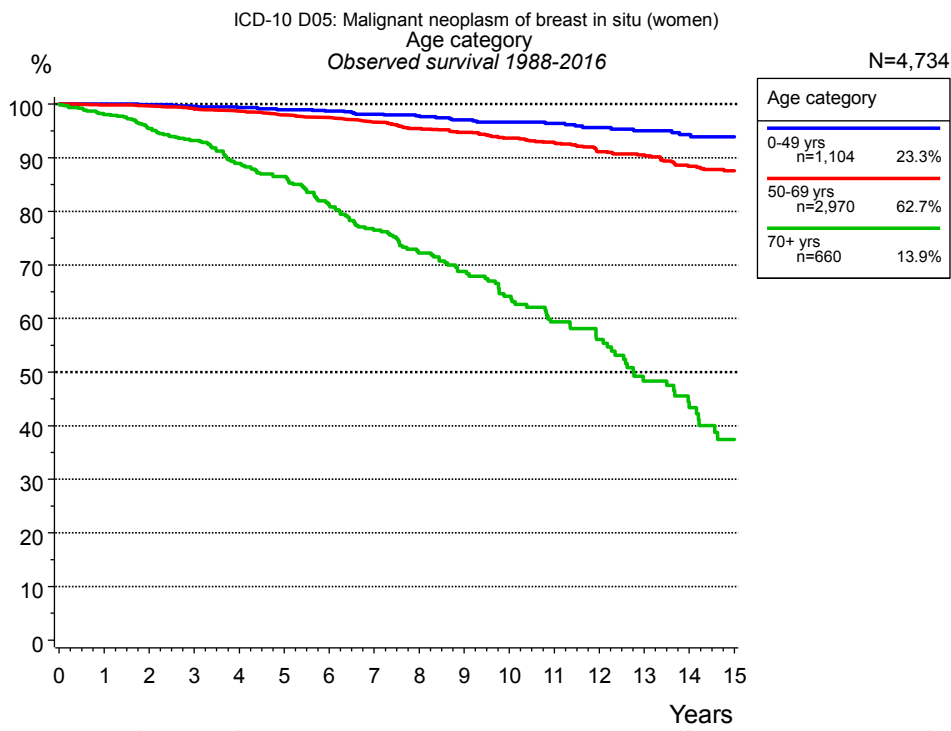
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with breast cancer i.s. (women) by period of diagnosis for period 1988-2016 (N=4,734).



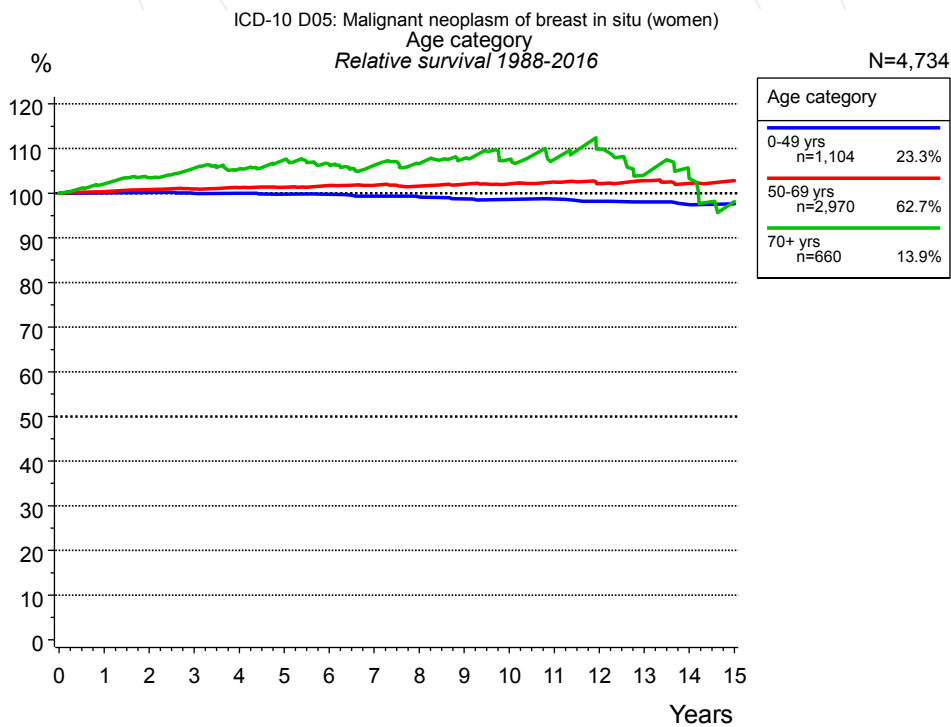
**Figure 2a.** Observed, expected and relative survival of the total cohort with breast cancer i.s. (women). Included in the evaluation are 4,198 cases diagnosed between 1998 and 2016.

Years	Group	
	obs. %	rel. %
	All patients n=4,198	
0	100.0	100.0
1	99.6	100.5
2	99.2	101.0
3	98.6	101.4
4	97.8	101.6
5	96.9	101.8
6	96.2	102.1
7	94.9	102.0
8	93.9	102.1
9	93.1	102.5
10	91.8	102.4
11	90.6	102.7
12	89.1	102.4
13	87.4	101.9
14	86.2	102.3
15	85.1	102.3

**Table 2b.** Observed (obs.) and relative (rel.) survival of the total cohort with breast cancer i.s. (women) for period 1998-2016 (N=4,198).



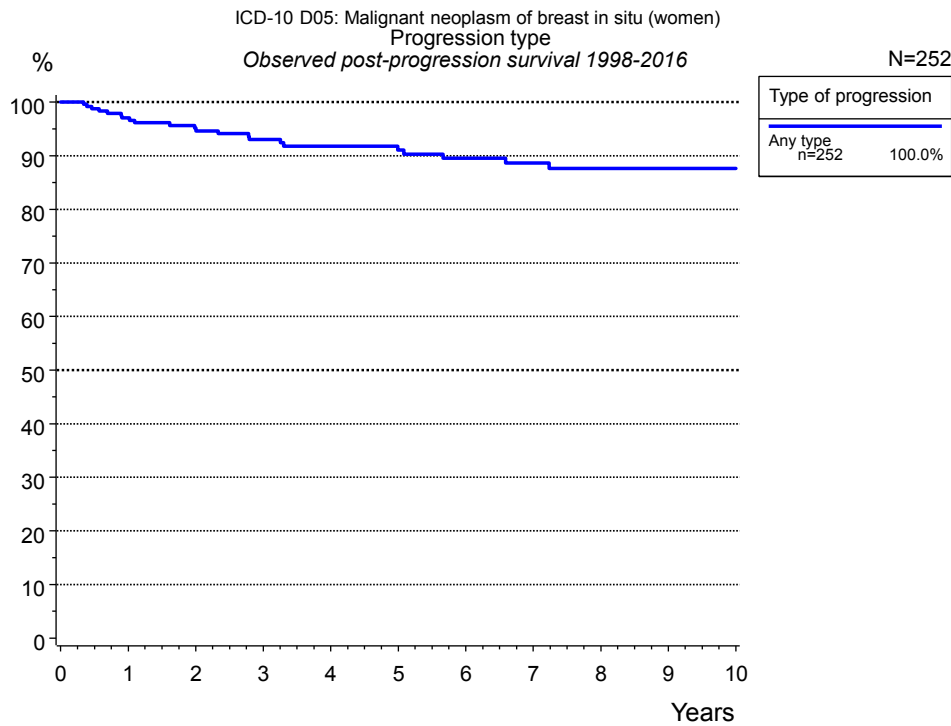
**Figure 3a.** Observed survival of patients with breast cancer i.s. (women) by age category. Included in the evaluation are 4,734 cases diagnosed between 1988 and 2016.



**Figure 3b.** Relative survival of patients with breast cancer i.s. (women) by age category. Included in the evaluation are 4,734 cases diagnosed between 1988 and 2016.

Years	Age category					
	0-49 yrs n=1,104		50-69 yrs n=2,970		70+ yrs n=660	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	100.0	100.1	99.8	100.4	98.1	102.1
2	99.9	100.2	99.6	100.8	95.4	103.5
3	99.6	100.0	99.1	101.0	93.2	105.6
4	99.3	100.0	98.7	101.3	88.9	105.4
5	99.0	99.8	98.0	101.3	86.5	107.5
6	98.7	99.7	97.5	101.7	81.1	106.4
7	98.1	99.3	96.6	101.8	76.5	106.2
8	97.8	99.2	95.4	101.6	72.3	106.6
9	97.1	98.7	94.8	102.0	68.8	107.7
10	96.7	98.6	93.7	102.1	64.1	107.5
11	96.4	98.7	92.8	102.5	59.3	107.6
12	95.6	98.2	91.2	102.1	56.1	109.8
13	95.0	98.0	90.5	102.8	48.4	104.1
14	94.3	97.4	88.4	102.2	43.4	103.3
15	93.9	97.6	87.5	102.8	37.5	98.1

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with breast cancer i.s. (women) by age category for period 1988-2016 (N=4,734).



**Figure 5c.** Observed post-progression survival of 252 patients with breast cancer i.s. (women) diagnosed between 1998 and 2016. These 252 patients with documented progression events during their course of disease represent 6.0 % of the totally 4,177 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=10, 0.2 %).

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 “Any type” 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.

Type of progression	
Years	Any type n=252 %
0	100.0
1	97.0
2	95.1
3	93.0
4	91.8
5	91.1
6	89.5
7	88.6
8	87.6
9	87.6
10	87.6

**Table 5d.** Observed post-progression survival of patients with breast cancer i.s. (women) for period 1998-2016 (N=252).

**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**

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