Munich Cancer Registry

Munich Cancer Registry at Munich Cancer Center
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Munich, 81377
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http://www.tumorregister-muenchen.de/en

Cancer statistics: Survival

C50: Breast cancer (women)

Year of diagnosis	1988-2013
Patients	60,768
Diseases	64,021
Cases evaluated	34,559
Creation date	05/13/2015
Export date	12/30/2014
Population (females)	2.36 m

C50: Malignant neoplasm of breast (women)
Period of diagnosis
Relative survival 1988-2013

N=34,559

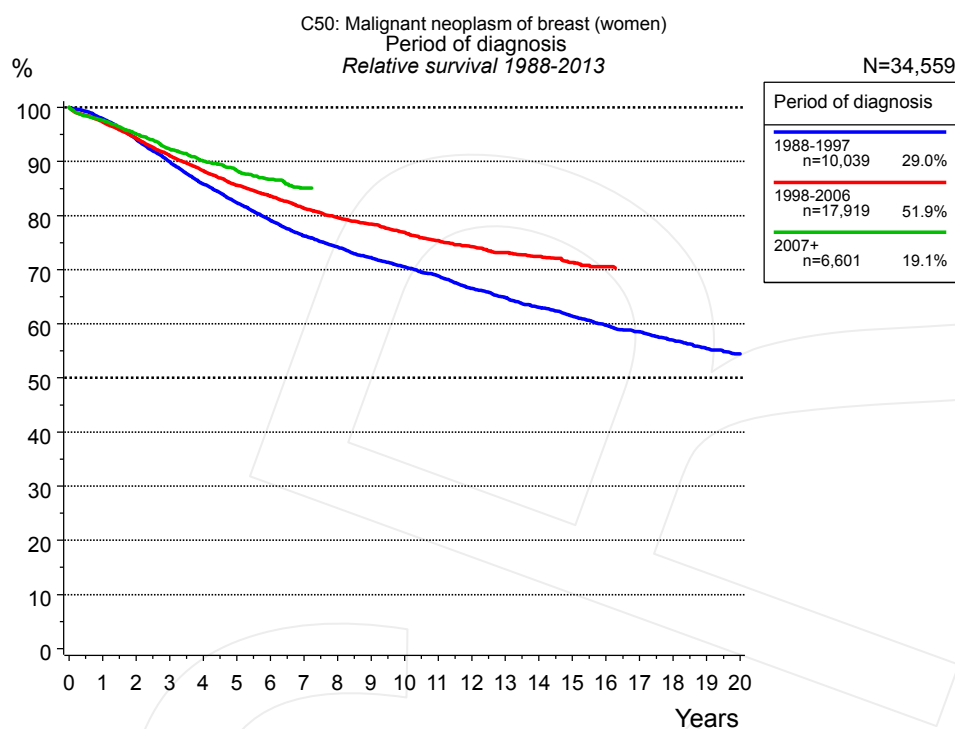| Period of diagnosis		
1988-1997 n=10,039		29.0%
1998-2006 n=17,919		51.9%
2007+ n=6,601		19.1%

Figure 1a. Relative survival of patients with breast cancer (women) by period of diagnosis. Included in the evaluation are 34,559 cases diagnosed between 1988 and 2013.

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 1988, 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.

	Period of diagnosis					
	1988-1997 n=10,039		1998-2006 n=17,919		2007+ n=6,601	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	96.3	97.9	95.6	97.3	95.9	97.6
2	91.0	94.1	91.1	94.3	92.0	95.1
3	85.5	89.9	86.6	91.1	88.0	92.3
4	80.2	85.8	82.5	88.3	84.5	90.1
5	75.7	82.3	78.7	85.6	81.7	88.4
6	71.5	79.1	75.6	83.6	79.0	86.7
7	67.8	76.3	72.4	81.3	76.3	85.1
8	64.8	74.2	69.7	79.7		
9	62.0	72.2	67.5	78.4		
10	59.5	70.5	65.0	76.9		
11	57.1	68.8	62.5	75.4		
12	54.2	66.5	60.4	74.3		
13	51.8	64.8	58.4	73.1		
14	49.5	63.0	56.8	72.5		
15	47.3	61.4	54.9	71.3		
16	45.1	59.7	53.1	70.6		
17	43.2	58.5				
18	41.2	57.0				
19	39.2	55.4				
20	37.8	54.4				

Table 1b. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by period of diagnosis for period 1988-2013 (N=34,559).

C50: Malignant neoplasm of breast (women)
Year of diagnosis
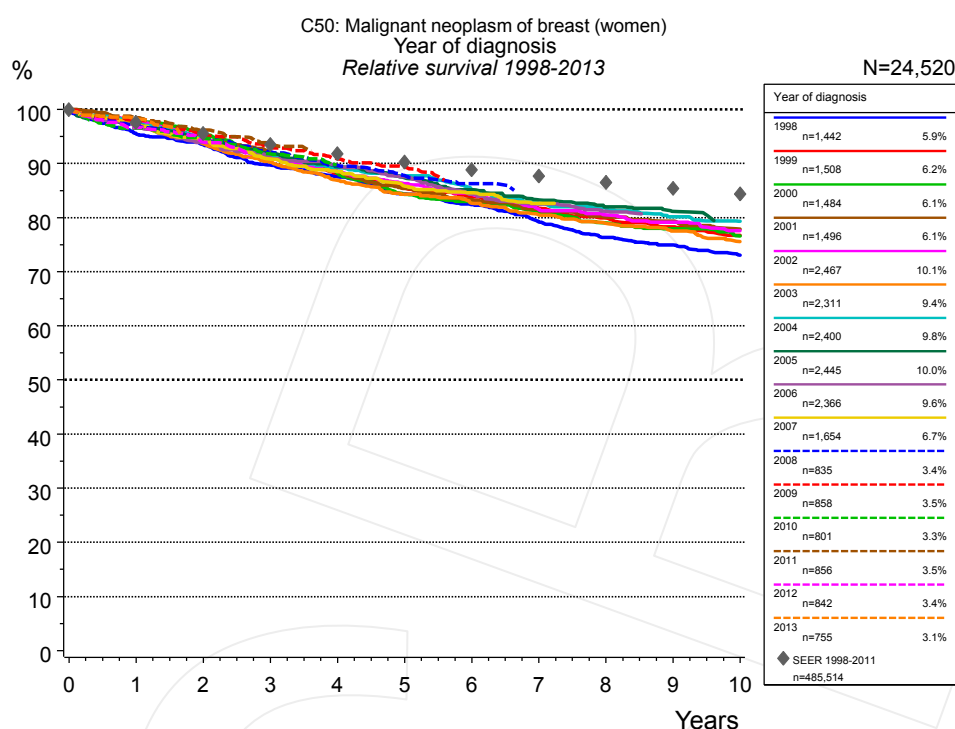*Relative survival 1998-2013*

Figure 1c. Relative survival of patients with breast cancer (women) by year of diagnosis. Included in the evaluation are 24,520 cases diagnosed between 1998 and 2013.

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 2011, and are represented by gray diamonds in order to facilitate comparisons between MCR and SEER.

	Year of diagnosis													
	1998 n=1,442		1999 n=1,508		2000 n=1,484		2001 n=1,496		2002 n=2,467		2003 n=2,311		2004 n=2,400	
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	93.8	95.5	95.5	97.2	96.0	97.8	96.1	97.7	96.2	98.0	95.5	97.2	95.8	97.5
2	90.2	93.5	91.0	94.2	92.2	95.5	91.4	94.4	91.1	94.4	90.4	93.6	91.4	94.5
3	85.2	89.7	86.8	91.5	87.1	91.9	87.6	91.9	86.5	91.2	85.7	90.3	86.7	91.2
4	81.7	87.5	82.3	88.1	82.3	88.2	83.1	88.5	82.7	88.6	81.1	86.9	83.6	89.2
5	77.5	84.4	78.5	85.5	77.1	84.2	79.0	85.4	79.2	86.3	77.5	84.3	80.9	87.7
6	74.4	82.4	75.7	83.8	74.6	82.9	76.1	83.3	76.2	84.3	74.6	82.7	77.2	85.2
7	70.3	79.2	72.6	81.7	71.7	81.0	73.2	81.4	72.4	81.6	71.5	80.5	73.7	82.6
8	66.7	76.3	69.9	79.9	68.9	79.0	70.9	80.1	70.1	80.5	68.9	79.0	71.8	81.8
9	64.4	74.9	67.5	78.3	66.8	77.9	69.2	79.4	67.9	79.1	66.4	77.5	69.1	80.1
10	61.8	73.1	65.2	76.7	64.4	76.6	66.7	77.9	65.0	77.5	63.6	75.6	67.2	79.4

	Year of diagnosis													
cont'd	2005 n=2,445		2006 n=2,366		2007 n=1,654		2008 n=835		2009 n=858		2010 n=801		2011 n=856	
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	95.5	97.2	95.4	97.0	95.6	97.4	95.7	97.2	96.4	98.0	95.1	96.6	97.0	98.5
2	91.2	94.3	91.0	93.9	91.1	94.3	91.9	94.7	92.4	95.4	91.8	94.7	93.2	96.2
3	87.4	91.9	87.0	91.2	86.6	90.8	88.0	92.2	88.7	93.0	87.6	91.8	89.0	93.4
4	83.7	89.4	84.2	89.7	83.1	88.5	84.3	89.6	85.3	90.9				
5	80.5	87.4	80.8	87.6	79.6	85.8	81.3	87.8	82.6	89.4				
6	77.2	85.1	76.5	84.3	77.2	84.5	78.7	86.2						
7	74.3	83.3	73.6	82.5	74.4	82.6								
8	71.8	82.0	71.2	81.2										
9	69.8	81.1												

	Year of diagnosis			
cont'd	2012 n=842		2013 n=755	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	95.1	96.7	96.7	98.3
2	91.0	94.0		

Table 1d. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by year of diagnosis for period 1998-2013 (N=24,520).
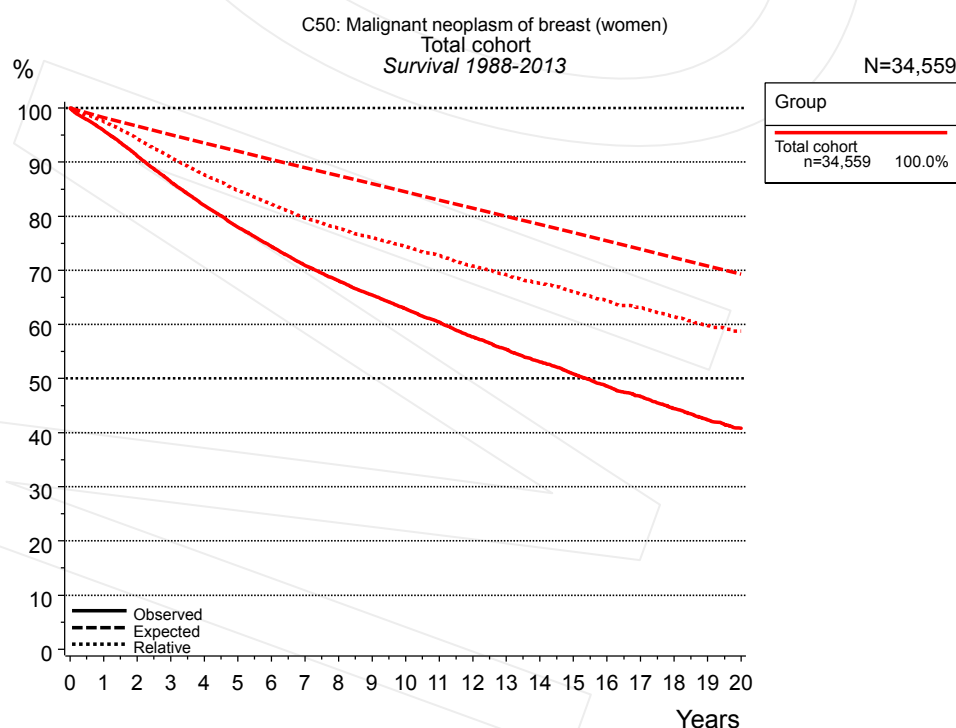

Figure 2a. Observed, expected and relative survival of the total cohort with breast cancer (women). Included in the evaluation are 34,559 cases diagnosed between 1988 and 2013.

	Group	
	Total cohort	
	n=34,559	
Years	obs. %	rel. %
0	100.0	100.0
1	95.8	97.5
2	91.2	94.3
3	86.4	90.9
4	82.0	87.7
5	78.0	84.8
6	74.4	82.2
7	70.9	79.7
8	68.1	77.8
9	65.5	76.1
10	62.9	74.4
11	60.4	72.8
12	57.7	70.8
13	55.4	69.2
14	53.1	67.6
15	50.9	66.0
16	48.6	64.4
17	46.7	63.1
18	44.5	61.5
19	42.3	59.8
20	40.8	58.8

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with breast cancer (women) for period 1988-2013 (N=34,559).
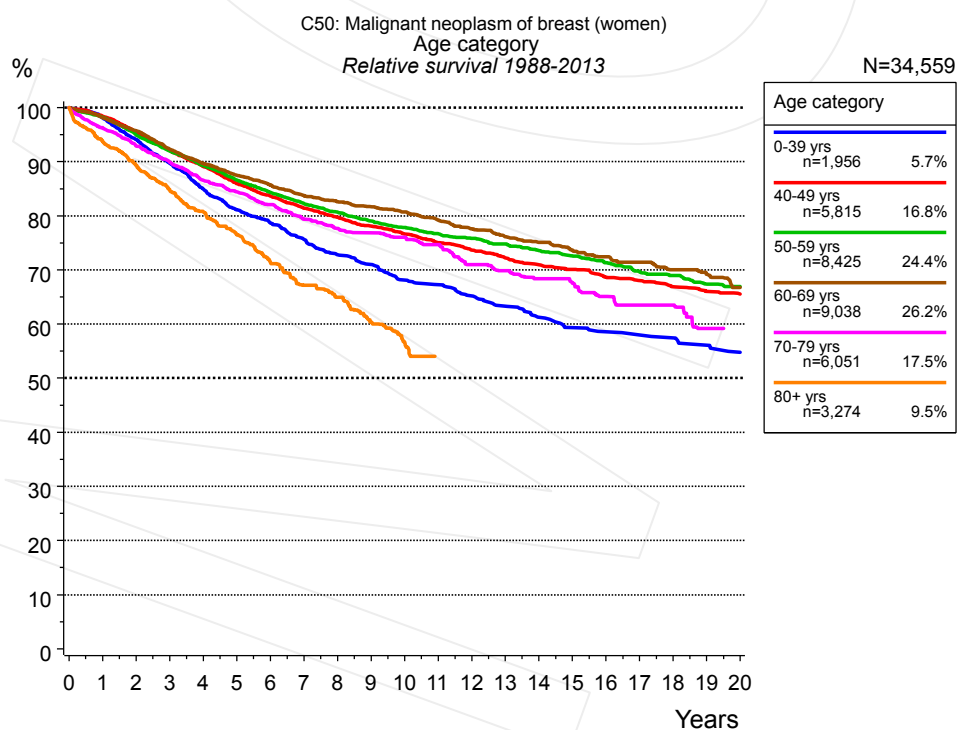

Figure 3a. Relative survival of patients with breast cancer (women) by age category. Included in the evaluation are 34,559 cases diagnosed between 1988 and 2013.

C50: Malignant neoplasm of breast (women)
Age category
Observed survival 1988-2013

N=34,559

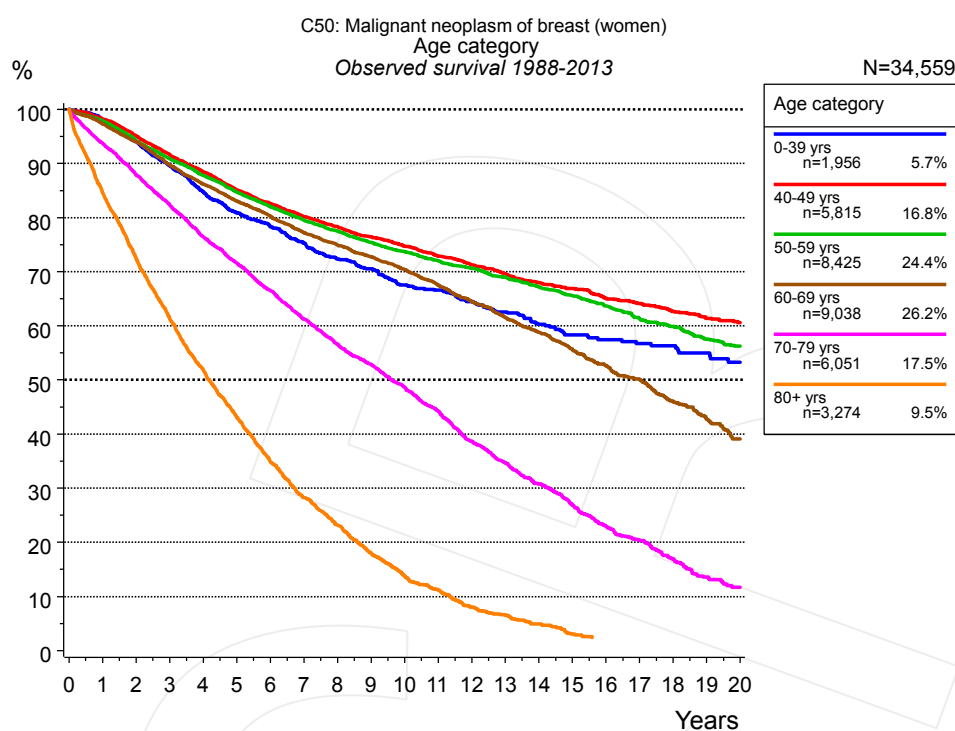| Age category		
0-39 yrs n=1,956	5.7%	
40-49 yrs n=5,815	16.8%	
50-59 yrs n=8,425	24.4%	
60-69 yrs n=9,038	26.2%	
70-79 yrs n=6,051	17.5%	
80+ yrs n=3,274	9.5%	

Figure 3b. Observed survival of patients with breast cancer (women) by age category. Included in the evaluation are 34,559 cases diagnosed between 1988 and 2013.

	Age category											
	0-39 yrs n=1,956		40-49 yrs n=5,815		50-59 yrs n=8,425		60-69 yrs n=9,038		70-79 yrs n=6,051		80+ yrs n=3,274	
Years	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
1	98.1	98.1	98.2	98.4	97.9	98.2	97.2	98.1	93.8	96.3	84.7	93.8
2	94.0	94.1	95.1	95.5	94.3	95.0	94.0	95.7	87.9	92.9	72.5	89.3
3	89.6	89.7	91.6	92.1	90.9	92.0	89.8	92.4	82.4	89.9	61.4	84.8
4	84.8	85.0	88.4	89.1	87.8	89.3	86.2	89.7	76.4	86.6	51.9	80.8
5	80.9	81.1	85.1	86.0	84.7	86.6	83.0	87.5	71.6	84.5	43.1	76.6
6	78.3	78.7	82.6	83.6	82.0	84.3	80.2	85.7	66.5	82.1	34.9	71.4
7	75.3	75.7	80.1	81.4	79.6	82.3	77.2	83.7	61.2	79.4	28.3	67.2
8	72.3	72.8	78.3	79.8	77.5	80.7	74.9	82.6	56.6	77.7	23.1	65.0
9	70.5	71.0	76.4	78.1	75.4	79.1	72.8	81.7	52.9	76.9	18.0	60.4
10	67.6	68.1	74.7	76.6	73.7	77.9	70.4	80.7	48.6	76.0	13.8	56.7
11	66.6	67.3	72.9	75.0	72.0	76.7	67.5	79.2	44.3	74.7		
12	64.5	65.2	71.2	73.7	70.6	75.9	64.5	77.6	38.7	71.0		
13	62.5	63.3	69.5	72.2	69.0	74.8	61.5	76.2	34.6	69.9		
14	60.3	61.3	68.0	71.0	67.2	73.6	58.8	75.1	30.8	68.4		
15	58.3	59.4	66.9	70.1	65.5	72.6	55.7	73.7	26.9	67.6		
16	57.4	58.6	65.1	68.7	63.6	71.3	52.7	72.5	23.0	65.1		
17	56.7	58.0	64.1	68.0	61.2	69.6	50.1	71.4	20.3	63.5		
18	56.3	57.4	62.7	66.9	59.9	69.0	46.0	70.0	16.9	63.5		
19	55.0	56.1	61.4	66.1	57.6	67.4	42.7	69.2	13.5	59.2		
20	53.2	54.8	60.6	65.5	56.3	67.0	39.1	66.8				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by age category for period 1988-2013 (N=34,559).
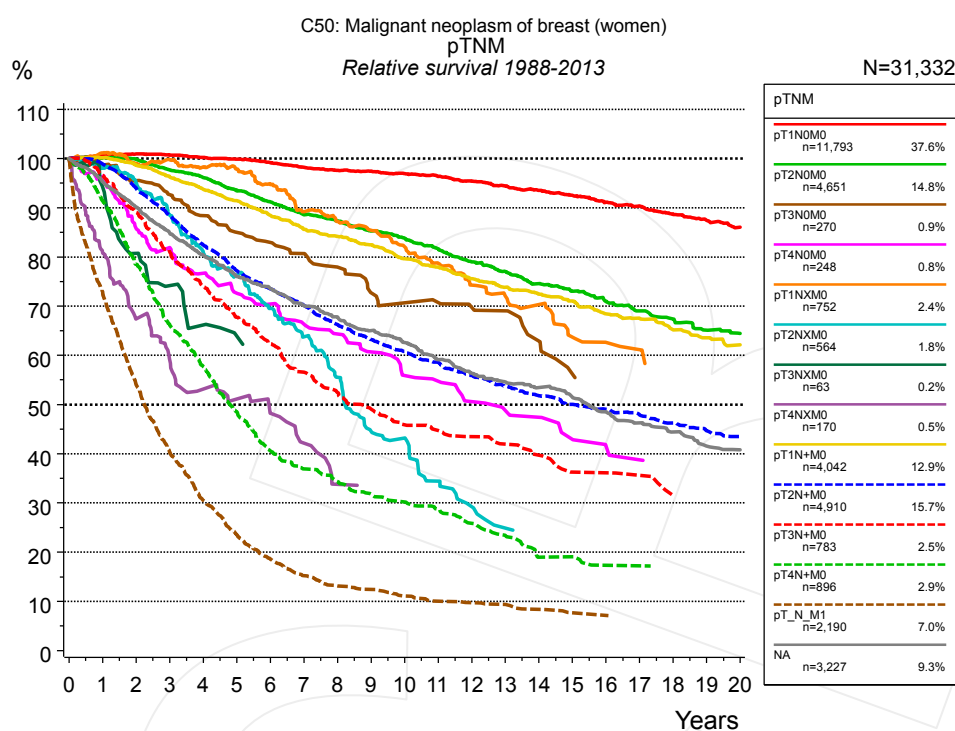
C50: Malignant neoplasm of breast (women)
pTNM
Relative survival 1988-2013   N=31,332

pTNM		
pT1N0M0 n=11,793		37.6%
pT2N0M0 n=4,651		14.8%
pT3N0M0 n=270		0.9%
pT4N0M0 n=248		0.8%
pT1NXM0 n=752		2.4%
pT2NXM0 n=564		1.8%
pT3NXM0 n=63		0.2%
pT4NXM0 n=170		0.5%
pT1N+M0 n=4,042		12.9%
pT2N+M0 n=4,910		15.7%
pT3N+M0 n=783		2.5%
pT4N+M0 n=896		2.9%
pT_N_M1 n=2,190		7.0%
NA n=3,227		9.3%

Figure 4a. Relative survival of patients with breast cancer (women) by pTNM. For 33,373 of 34,559 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 31,332 cases an evaluable classification was established. The grey line represents the subgroup of 3,227 patients with missing values regarding pTNM (9.3% of 34,559 patients, the percent values of all other categories are related to n=31,332).

	pTNM													
	pT1N0M0 n=11,793		pT2N0M0 n=4,651		pT3N0M0 n=270		pT4N0M0 n=248		pT1NXM0 n=752		pT2NXM0 n=564		pT3NXM0 n=63	
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	99.5	100.5	98.5	100.2	96.2	98.6	91.9	96.3	96.4	101.1	90.7	98.2	85.4	94.3
2	98.8	100.9	96.6	99.8	91.1	95.5	77.9	85.8	89.6	98.9	81.1	95.0	67.1	80.7
3	97.4	100.7	92.9	97.7	86.2	92.7	71.3	81.9	86.1	99.8	69.5	88.5	55.0	74.2
4	95.7	100.2	89.9	96.2	80.4	88.4	63.7	76.6	80.8	98.3	58.7	80.8	45.1	66.2
5	94.1	99.9	85.8	93.5	75.5	85.0	58.1	72.7	76.6	97.9	51.2	76.3	38.4	63.9
6	92.2	99.2	82.2	91.2	72.4	82.9	54.2	70.4	70.7	94.7	43.0	69.5		
7	90.1	98.2	78.4	88.6	69.1	80.7	49.2	66.3	63.8	89.2	36.5	63.7		
8	88.2	97.6	75.9	87.4	64.9	78.0	45.9	64.4	59.6	87.2	29.4	55.5		
9	86.7	97.4	72.7	85.3	59.4	72.7	41.8	60.7	56.3	85.4	22.0	44.5		
10	84.9	97.0	70.1	83.8	56.9	70.7	37.2	55.9	51.8	82.1	20.1	43.2		
11	83.0	96.4	67.0	81.7	56.1	70.7	35.6	54.8	47.5	78.7	15.1	34.4		
12	80.7	95.4	63.5	79.0	54.1	69.8	31.7	50.6	43.2	74.3	12.3	29.2		
13	78.4	94.4	60.7	77.0	53.0	69.1	29.7	48.8	40.3	72.0	10.0	24.9		
14	76.4	93.5	57.6	74.6	47.7	62.9	28.5	47.4	38.2	70.3				
15	74.1	92.5	55.3	73.0	41.8	56.2	25.1	42.9	33.3	63.7				
16	71.6	91.1	52.7	71.0	40.1	54.3	22.7	41.7	31.2	62.6				
17	69.5	90.3	50.1	69.1			21.4	38.8	30.2	61.1				
18	66.8	88.7	48.0	67.4			20.2	38.8	27.7	57.5				
19	64.6	87.5	45.1	65.1			20.2	39.0	27.7	56.4				
20	62.3	86.0	43.6	64.5			20.2	39.1	27.7	55.4				

	pTNM													
cont'd	pT4NXM0 n=170		pT1N+M0 n=4,042		pT2N+M0 n=4,910		pT3N+M0 n=783		pT4N+M0 n=896		pT_N_M1 n=2,190		NA n=3,227	
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	73.4	80.7	99.2	100.2	97.5	98.9	95.2	96.6	88.2	91.5	71.0	72.7	93.2	95.3
2	55.9	67.4	96.6	98.7	91.4	94.0	86.6	89.1	73.1	78.5	51.8	54.1	86.5	90.1
3	44.9	59.1	93.3	96.3	84.7	88.4	77.6	81.0	59.8	66.2	37.8	40.3	80.0	84.8
4	37.3	53.2	89.7	93.7	77.8	82.4	69.7	74.0	50.3	57.7	28.1	30.5	74.6	80.4
5	33.1	51.1	86.5	91.5	71.7	77.2	63.0	67.7	40.9	48.5	21.3	23.5	69.3	76.0
6	28.5	48.3	82.6	88.4	67.3	73.5	57.3	62.4	33.3	40.5	16.5	18.6	66.0	73.5
7	23.4	42.2	78.9	85.6	63.2	70.1	51.3	56.6	29.5	36.9	13.2	15.2	61.9	70.1
8	17.3	33.8	76.6	84.2	58.7	66.2	46.8	52.5	26.7	34.3	11.2	13.1	58.8	67.7
9			74.0	82.5	55.2	63.3	43.2	49.1	24.1	31.8	10.4	12.4	55.4	65.0
10			70.3	79.6	52.2	60.8	39.8	45.9	22.3	30.2	9.1	11.1	52.4	62.6
11			67.9	77.9	49.4	58.6	38.1	44.8	20.8	28.8	8.1	10.0	48.6	59.1
12			64.9	75.6	46.4	55.9	36.6	43.5	18.2	25.9	7.6	9.7	45.4	56.4
13			62.5	73.9	43.9	53.8	34.9	42.0	16.0	23.4	7.3	9.4	43.1	54.6
14			60.3	72.5	41.6	51.8	32.8	39.7	12.6	19.0	6.3	8.3	41.3	53.5
15			58.2	71.1	39.5	50.0	29.2	36.3	12.6	19.0	5.6	7.6	39.0	51.4
16			55.0	68.4	37.9	49.0	29.2	36.1	11.0	17.3	5.2	7.1	36.1	48.5
17			53.3	67.6	36.3	47.9	28.4	35.6	11.0	17.2			33.7	46.3
18			50.6	65.2	34.5	46.3	25.2	31.5	10.3	16.5			31.5	44.5
19			48.3	63.6	32.6	44.7	24.1	30.4					28.8	41.6
20			46.4	62.2	31.3	43.5							27.7	40.8

Table 4b. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by pTNM for period 1988-2013 (N=31,332).
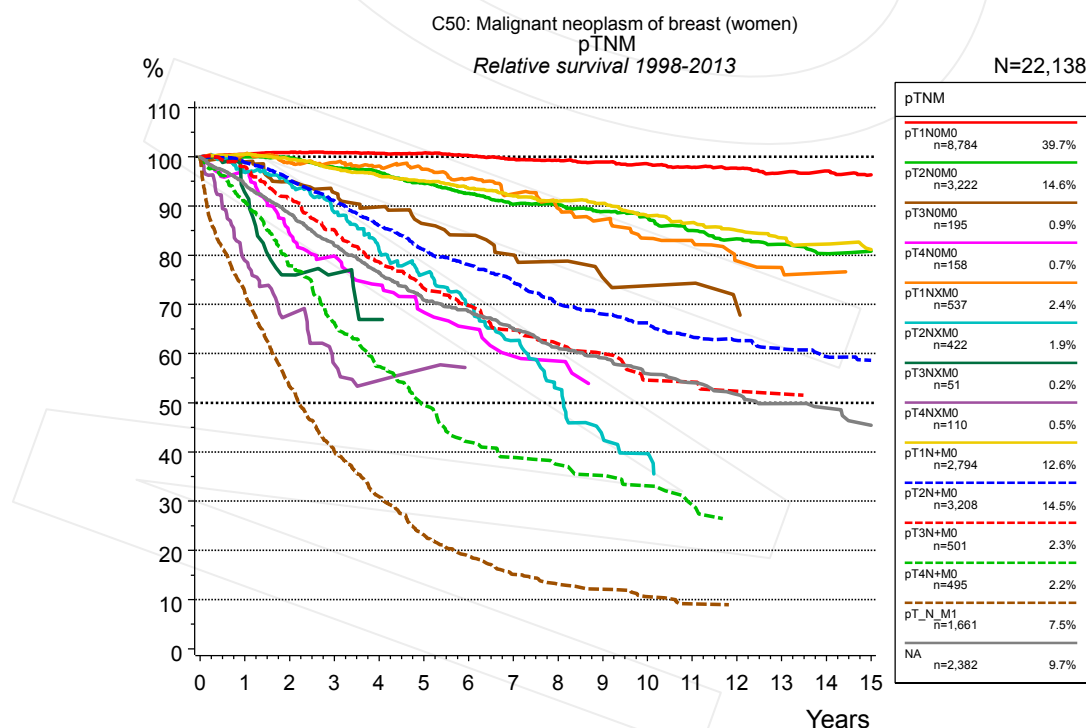

Figure 4c. Relative survival of patients with breast cancer (women) by pTNM. For 23,932 of 24,520 cases diagnosed between 1998 and 2013 valid data could be obtained for this item. For a total of 22,138 cases an evaluable classification was established. The grey line represents the subgroup of 2,382 patients with missing values regarding pTNM (9.7% of 24,520 patients, the percent values of all other categories are related to n=22,138).

	pTNM												
	pT1N0M0 n=8,784		pT2N0M0 n=3,222		pT3N0M0 n=195		pT4N0M0 n=158		pT1NXM0 n=537		pT2NXM0 n=422		pT3NXM0 n=51	
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	99.5	100.5	98.3	100.0	96.3	99.0	92.3	97.1	95.8	100.5	89.2	96.9	83.8	92.8
2	98.8	100.9	96.5	99.8	90.2	94.9	76.0	84.4	89.8	98.9	80.3	94.6	63.0	76.0
3	97.7	100.9	92.9	97.8	85.6	92.7	68.8	79.8	85.5	98.9	68.8	88.7	56.2	76.3
4	96.3	100.7	90.5	96.9	81.2	89.8	60.6	74.0	81.1	98.1	58.0	81.2	45.8	66.9
5	95.2	100.8	86.7	94.6	75.8	86.4	53.9	68.4	76.9	97.5	50.3	76.2		
6	93.4	100.3	83.3	92.6	72.5	84.1	49.4	65.3	72.2	95.6	42.2	69.7		
7	91.5	99.5	79.7	90.4	67.6	80.1	43.8	59.5	67.1	92.5	35.1	62.7		
8	90.0	99.3	78.1	90.2	64.9	78.8	42.3	58.5	62.3	89.5	27.4	52.9		
9	88.3	99.0	75.5	88.8	59.6	75.4	37.0	52.9	58.5	87.2	20.8	43.0		
10	86.5	98.6	72.9	87.6	57.6	73.8			54.0	83.5	18.2	39.6		
11	84.3	97.9	69.3	85.0	57.6	74.3			51.5	82.9				
12	82.7	97.7	66.3	83.3	52.1	69.8			47.4	78.9				
13	80.4	96.8	64.1	82.2	48.9	64.8			44.8	77.3				
14	79.3	97.2	61.5	80.3					43.8	76.5				
15	77.1	96.4	60.6	80.8										

	pTNM												
cont'd	pT4NXM0 n=110		pT1N+M0 n=2,794		pT2N+M0 n=3,208		pT3N+M0 n=501		pT4N+M0 n=495		pT_N_M1 n=1,661		NA n=2,382	
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	71.4	79.0	99.5	100.5	97.4	98.8	96.3	97.9	87.3	91.0	70.9	72.5	92.3	94.4
2	55.8	67.9	97.4	99.4	92.8	95.5	88.4	91.4	71.9	77.9	51.1	53.4	84.9	88.5
3	42.9	57.9	94.7	97.6	87.1	91.1	80.8	85.2	59.3	66.3	37.8	40.1	77.5	82.0
4	37.4	54.6	92.1	96.1	81.0	86.0	73.4	78.6	49.6	57.4	28.6	30.9	71.3	76.4
5	35.7	56.9	90.1	95.1	75.2	81.2	67.6	73.3	41.4	49.6	21.0	23.2	65.2	70.9
6			87.4	93.6	71.2	78.1	63.4	69.8	34.0	42.1	16.8	18.9	62.2	68.6
7			84.9	92.0	66.9	74.5	58.1	64.8	30.7	38.9	13.2	15.1	58.4	65.1
8			82.7	91.0	61.9	70.1	55.0	62.0	28.4	37.5	11.4	13.1	54.2	61.3
9			81.2	90.5	59.1	68.0	52.3	60.0	26.5	35.2	10.4	12.1	51.7	59.1
10			77.6	88.0	56.6	66.3	46.8	54.6	24.2	33.2	8.8	10.6	48.3	55.9
11			75.3	86.6	53.5	63.4	46.8	54.2	20.7	29.3	7.5	9.2	46.2	54.1
12			72.9	85.1	51.7	62.7	44.5	52.4	17.8	26.1	7.1	8.9	43.6	51.7
13			70.3	83.5	49.5	61.0	44.5	51.8	17.8	24.9	7.1	8.5	41.5	49.8
14			68.3	82.3	47.4	59.4	41.9	49.1	17.8	23.7			40.3	48.9
15			66.1	81.1	46.1	58.6			17.8	22.5			37.6	45.4

Table 4d. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by pTNM for period 1998-2013 (N=22,138).

C50: Malignant neoplasm of breast (women)
Extent of disease
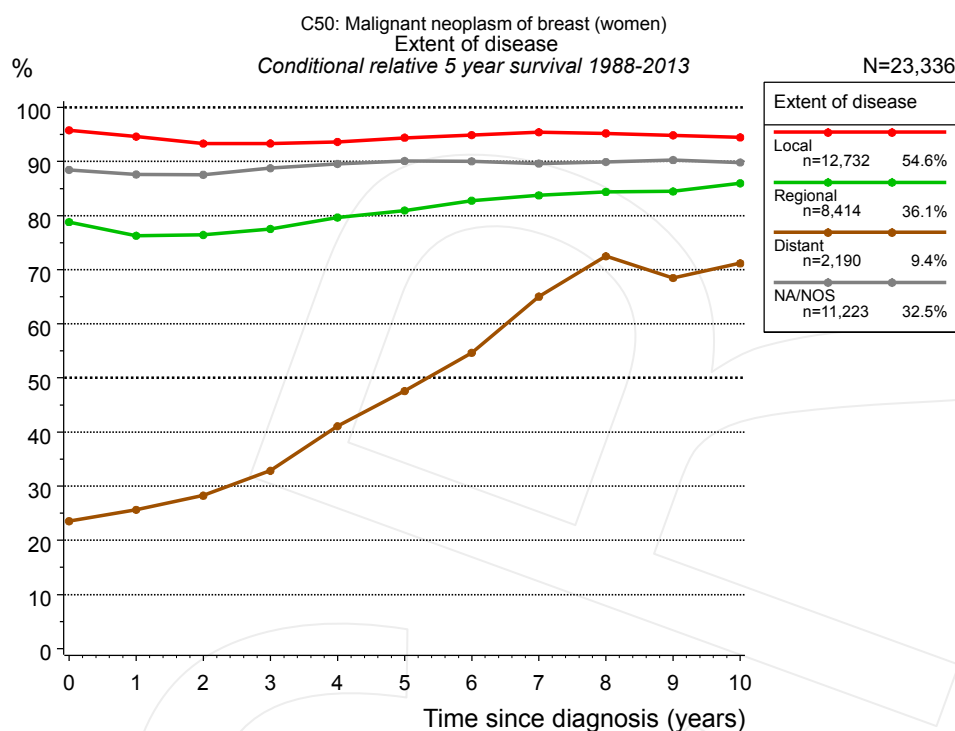*Conditional relative 5 year survival 1988-2013*   N=23,336

Figure 4e. Conditional relative 5-year survival of patients with breast cancer (women) by extent of disease. For 33,373 of 34,559 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 23,336 cases an evaluable classification was established. The grey line represents the subgroup of 11,223 patients with missing values regarding extent of disease (32.5% of 34,559 patients, the percent values of all other categories are related to n=23,336).

	Extent of disease							
	Local		Regional		Distant		NA/NOS	
		Cond. surv. %		Cond. surv. %		Cond. surv. %		Cond. surv. %
Years	n	5 yrs	n	5 yrs	n	5 yrs	n	5 yrs
0	12,732	95.8	8,414	78.8	2,190	23.5	11,223	88.5
1	11,994	94.6	7,803	76.3	1,463	25.7	10,437	87.6
2	10,742	93.3	6,743	76.4	975	28.3	9,455	87.6
3	9,498	93.3	5,745	77.5	660	32.9	8,368	88.8
4	8,243	93.6	4,800	79.6	448	41.1	7,456	89.6
5	7,118	94.4	4,049	80.9	298	47.6	6,587	90.1
6	6,163	94.9	3,403	82.8	204	54.6	5,685	90.0
7	5,455	95.4	2,984	83.8	155	65.0	4,940	89.6
8	4,885	95.2	2,575	84.4	115	72.5	4,290	89.9
9	4,363	94.8	2,204	84.5	98	68.5	3,683	90.3
10	3,899	94.5	1,886	86.0	77	71.2	3,137	89.8

Table 4f. Conditional relative 5-year survival of patients with breast cancer (women) by extent of disease for period 1988-2013 (N=23,336).

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 4c). 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 93.3% (n=9,498).
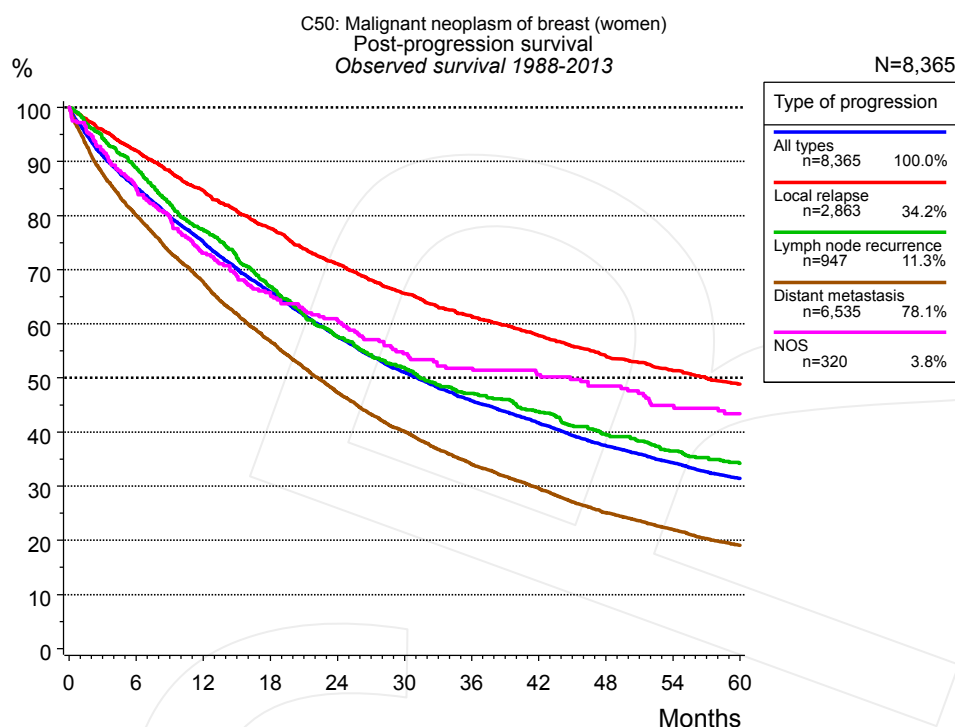
C50: Malignant neoplasm of breast (women)
Post-progression survival
Observed survival 1988-2013

N=8,365

Type of progression		
All types	n=8,365	100.0%
Local relapse	n=2,863	34.2%
Lymph node recurrence	n=947	11.3%
Distant metastasis	n=6,535	78.1%
NOS	n=320	3.8%

Figure 5a. Observed post-progression survival of 8,365 patients with breast cancer (women) diagnosed between 1988 and 2013 (incl. M1). These 8,365 patients with documented progression events during their course of disease represent 24.2% of the totally 34,559 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=1,081, 3.1%). Multiple progression types on different sites are included in the evaluation even when not occuring 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.

	Type of progression				
	All types	Local relapse	Lymph node recurrence	Distant metastasis	NOS
	n=8,365	n=2,863	n=947	n=6,535	n=320
Months	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	75.2	84.6	77.5	67.7	73.1
24	57.6	71.1	57.7	47.3	60.6
36	45.8	61.4	47.2	34.1	51.8
48	37.5	54.2	39.6	25.1	48.5
60	31.4	48.8	34.2	19.1	43.4

Table 5b. Observed post-progression survival of patients with breast cancer (women) for period 1988-2013 (N=8,365).

Shortcuts

MCR　　　Munich Cancer Registry, Germany (Tumorregister München)
NCI　　　　National Cancer Institute, USA
SEER　　　Surveillance, Epidemiology, and End Results, USA
UICC　　　Union for International Cancer Control, Geneva

DCO　　　Death certificate only. The death certificate provides the only notification to the registry.
NA　　　　Not available
NOS　　　Not otherwise specified

OS　　　　Observed/overall survival (Kaplan-Meier estimate)
RS　　　　Relative survival, compared to the general population,
　　　　　ratio of observed to expected survival (Ederer II method),
　　　　　reflecting excess mortality among cancer patients
AS　　　　Assembled survival chart (observed, expected, relative)
PPS　　　Post-progression survival, survival since first relapse (Kaplan-Meier estimate)
　　　　　Date of entry:　　　　　　Date of first locoregional recurrence, distant metastasis, unspecified
progression
　　　　　Event:　　　　　　　　　Death of all causes
CS　　　　Conditional survival, survival probability under the condition of surviving a given period of time

Recommended Citation

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Index of figures and tables