# **Munich Cancer Registry**



- ▶ Baseline statistics
- ▶ Selection Matrix
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Munich Cancer Registry at Munich Cancer Center Marchioninistr. 15 Munich, 81377 Germany

http://www.tumorregister-muenchen.de/en

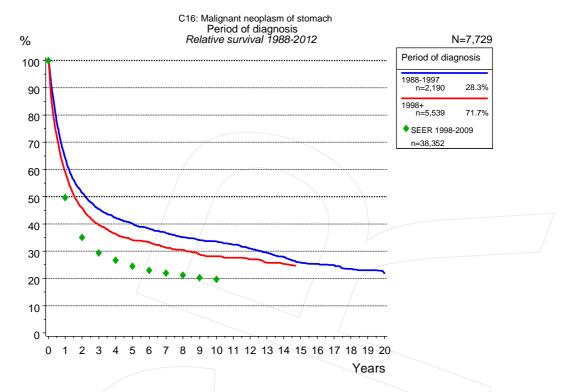
## **Cancer statistics: Survival**

### C16: Stomach cancer

Year of diagnosis	1988-2012
Patients	13,337
Diseases	13,348
Cases evaluated	7,729
Creation date	03/25/2014
Export date	02/12/2014
Population	4.5 m



http://www.tumorregister-muenchen.de/en/facts/surv/surv\_C16\_\_E.pdf



**Figure 1a.** Relative survival of patients with stomach cancer by period of diagnosis. Included in the evaluation are 7,729 cases diagnosed between 1988 and 2012.

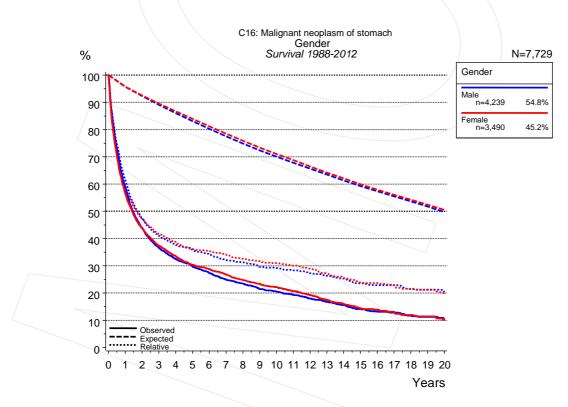
The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 1998 to 2009, and are represented by green diamonds in order to facilitate comparisons between MCR and SEER.

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 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.



ļ	Period	of dia	gnosis				
	1988-	1997	199	98+			
	n=2,	190	n=5,539				
Years	obs. %	rel. %	obs. %	rel. %			
0	100.0	100.0	100.0	100.0			
1	61.6	64.0	56.2	58.9			
2	47.7	51.4	42.3	45.8			
3	40.7	45.4	35.3	39.6			
4	36.7	42.2	31.3	36.4			
5	33.7	40.1	28.3	34.0			
6	31.1	38.2	26.6	33.2			
7	28.9	36.7	24.2	31.3			
8	26.8	35.1	22.8	30.5			
9	25.1	34.1	20.8	28.8			
10	24.0	33.6	19.8	28.1			
11	22.4	32.3	18.7	27.6			
12	20.7	31.0	17.7	27.0			
13	19.1	29.4	16.4	25.8			
14	17.4	27.8	15.5	25.4			
15	15.7	25.8					
16	14.9	25.3					
17	14.1	24.9					
18	13.0	23.5					
19	12.4	23.0					
20	11.2	21.9					

**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by period of diagnosis for period 1988-2012 (N=7,729).

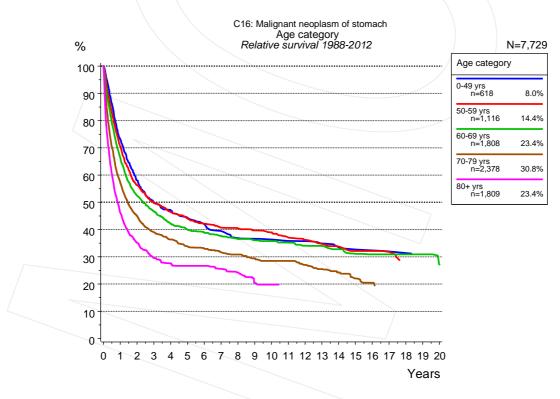


**Figure 2a.** Survival of patients with stomach cancer by gender. Included in the evaluation are 7,729 cases diagnosed between 1988 and 2012.

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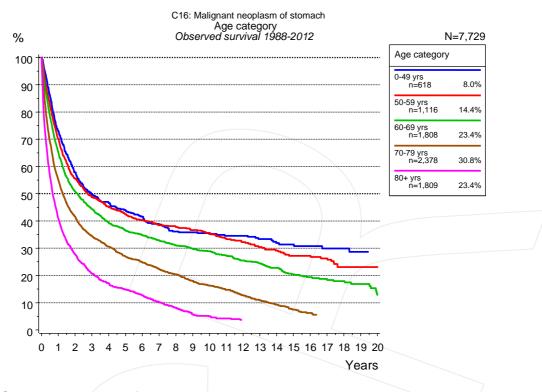
Gender										
	Ma	ale	Fem	nale						
	n=4,	239	n=3,490							
Years	obs. %	rel. %	obs. %	rel. %						
0	100.0	100.0	100.0	100.0						
1	58.9	61.5	56.4	59.0						
2	44.0	47.6	43.7	47.3						
3	36.5	41.0	37.3	41.7						
4	32.4	37.6	33.7	38.7						
5	29.7	35.7	30.4	36.1						
6	27.3	34.0	28.7	35.4						
7	24.9	32.1	26.7	34.0						
8	23.4	31.2	24.7	32.5						
9	21.4	29.6	23.4	31.7						
10	20.5	29.2	22.2	31.0						
11	19.2	28.3	20.7	30.0						
12	17.9	27.3	19.2	28.9						
13	16.7	26.3	17.5	27.1						
14	15.5	25.3	15.9	25.5						
15	14.1	23.5	14.4	23.8						
16	13.2	22.8	13.9	23.7						
17	12.8	22.8	12.9	22.9						
18	11.7	21.4	11.9	21.5						
19	11.2	21.2	11.4	21.2						
20	10.2	20.4	10.1	20.0						

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by gender for period 1988-2012 (N=7,729).



**Figure 3a.** Relative survival of patients with stomach cancer by age category. Included in the evaluation are 7,729 cases diagnosed between 1988 and 2012.

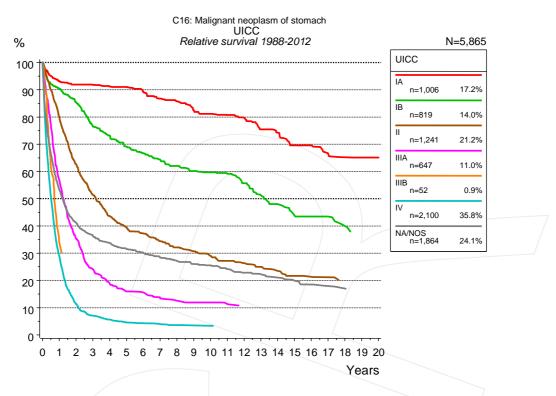
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**Figure 3b.** Observed survival of patients with stomach cancer by age category. Included in the evaluation are 7,729 cases diagnosed between 1988 and 2012.

				_	categ	-					
	0-49		50-59	•	60-69	•	70-79	•	+08	yrs	
	n=6	818	n=1,			n=1,808 n=			n=1,809		
Years	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	72.9	73.1	70.2	70.6	65.2	66.2	55.0	57.2	40.9	46.1	
2	57.9	58.0	55.5	56.3	50.8	52.4	41.5	45.0	27.8	35.1	
3	49.6	49.9	48.7	49.7	44.4	46.6	34.4	39.0	20.6	29.5	
4	46.7	47.1	45.1	46.4	39.3	42.1	30.6	36.3	17.1	27.6	
5	43.8	44.4	42.5	44.1	36.5	39.9	26.9	33.8	14.7	26.6	
6	41.6	41.9	40.2	42.2	34.7	38.8	24.8	33.0	12.6	26.6	
7	38.7	39.4	38.4	40.7	32.9	37.7	22.3	31.6	10.1	25.6	
8	36.1	36.8	37.7	40.4	31.0	36.5	20.4	30.8	8.2	24.3	
9	35.8	36.6	36.7	39.7	29.7	36.1	18.0	29.4	5.6	20.4	
10	35.2	36.3	35.7	38.9	28.9	35.8	16.3	28.5	5.0	19.8	
11	34.5	35.8	33.5	37.0	27.2	35.2	14.8	28.5			
12	34.5	35.7	32.2	36.2	25.5	34.0	12.7	27.0			
13	33.3	34.9	30.4	34.7	24.4	34.0	10.9	25.5			
14	31.9	33.5	29.1	33.7	22.8	32.7	9.3	24.2			
15	31.3	32.7	27.2	32.1	20.4	31.1	7.4	22.0			
16	30.7	32.3	27.2	32.1	19.4	30.9	6.2	20.4			
17	29.9	32.0	26.3	31.7	18.3	30.9					
18	29.9	31.4	23.0	28.7	17.9	30.9					
19	28.6	30.6	23.0	28.7	16.9	30.9					
20	28.6	29.7	23.0	28.6	12.9	27.1					

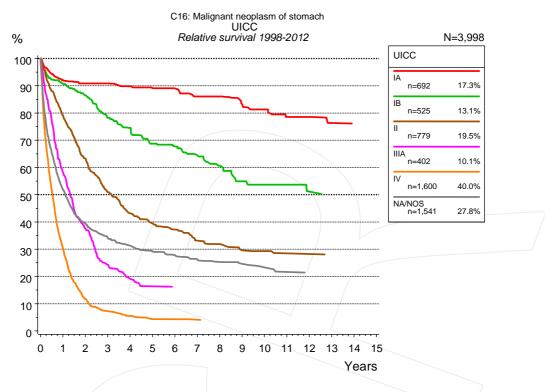
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by age category for period 1988-2012 (N=7,729).



**Figure 4a.** Relative survival of patients with stomach cancer by UICC. For 6,340 of 7,729 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 5,865 cases an evaluable classification was established. The grey line represents the subgroup of 1,864 patients with missing values regarding UICC (24.1% of 7,729 patients, the percent values of all other categories are related to n=5,865).

							UICC							
	I.A	4	IE	3	- 1	l	III	Α	III	В	- 1	<b>/</b>	NA/N	NOS
	n=1,	,006	n=8	319	n=1,	241	n=6	647	n=	52	n=2,	100	n=1,	864
Years	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	90.0	93.1	86.9	90.4	77.1	79.8	54.3	56.7	32.7	33.8	27.8	28.8	49.9	53.3
2	86.4	91.9	79.0	85.4	58.5	62.6	32.5	35.3			10.7	11.3	37.0	41.2
3	83.1	91.8	68.1	76.5	46.5	51.4	21.4	24.1			6.5	7.0	31.4	36.3
4	79.9	91.1	62.7	73.2	38.3	43.6	16.2	18.7			5.1	5.6	28.2	33.8
5	77.3	91.0	56.6	69.1	33.4	39.3	13.2	16.0			4.1	4.6	25.5	31.5
6	73.3	89.1	52.3	66.6	30.6	37.2	12.7	15.6			3.8	4.3	23.6	30.0
7	68.9	86.8	48.6	64.4	27.3	34.4	10.6	13.5			3.4	4.0	21.7	28.4
8	65.8	85.7	45.2	62.0	24.7	32.1	9.3	12.6			3.1	3.6	20.3	27.2
9	61.4	82.4	41.9	60.1	22.7	30.7	8.6	11.9			3.0	3.5	18.8	26.0
10	59.3	81.2	40.1	59.7	20.8	29.0	8.6	11.9			2.8	3.4	18.0	25.5
11	56.7	80.7	37.8	59.1	18.9	27.2	7.8	11.3					16.5	24.2
12	54.3	79.7	34.3	55.6	17.7	26.3							15.1	22.8
13	49.8	75.5	30.3	51.2	16.3	25.0							14.4	22.2
14	47.6	74.3	27.2	48.0	14.8	23.5							13.1	21.1
15	43.3	69.6	23.9	43.8	13.3	21.7							12.3	19.9
16	42.3	69.6	22.8	43.5	12.9	21.3							11.0	18.5
17	38.8	66.5	22.8	43.5	12.5	21.2							10.3	17.9
18	37.2	65.2	19.7	39.9	11.3	19.9							9.8	17.0
19	36.2	65.1	17.9	37.7	11.3	19.0							9.2	16.5
20	36.2	65.1												

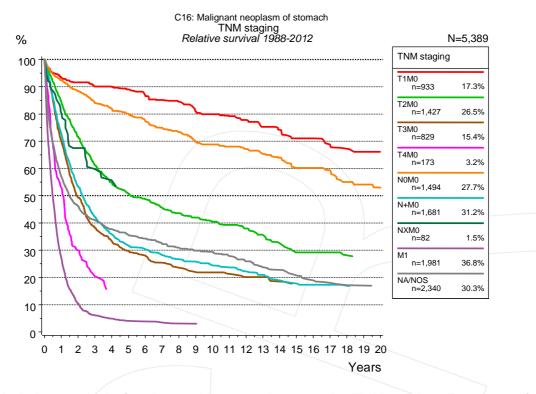
**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by UICC for period 1988-2012 (N=5,865).



**Figure 4c.** Relative survival of patients with stomach cancer by UICC. For 4,403 of 5,539 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 3,998 cases an evaluable classification was established. The grey line represents the subgroup of 1,541 patients with missing values regarding UICC (27.8% of 5,539 patients, the percent values of all other categories are related to n=3,998).

						UICC						
	I/	Ą	IE	3	- 1	I	III	Α	IV	/	NA/N	NOS
	n=6	92	n=5	525	25 n=779		n=402		n=1,	600	n=1,541	
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	88.8	92.0	87.0	90.7	76.6	79.2	55.7	58.1	29.3	30.3	48.5	51.9
2	85.1	90.8	79.8	86.5	59.2	63.3	34.6	37.6	11.1	11.7	35.4	39.4
3	81.8	90.8	69.2	78.2	46.4	51.0	21.7	24.3	6.7	7.2	29.5	34.2
4	78.2	89.8	63.3	74.5	38.1	43.2	16.7	19.1	5.1	5.5	26.1	31.3
5	74.9	89.1	55.7	68.7	33.7	39.4	13.8	16.3	3.9	4.3	23.6	29.1
6	72.1	89.0	52.2	67.7	30.8	37.2	13.0	15.3	3.9	4.3	21.8	27.7
7	67.2	86.0	47.3	64.4	26.6	33.1			3.7	4.1	20.1	26.1
8	65.4	86.0	42.5	60.6	24.9	31.9					19.1	25.3
9	60.7	83.2	36.7	54.9	22.1	29.6					18.2	24.7
10	57.4	81.3	35.0	53.7	21.6	29.3					17.0	23.3
11	53.4	78.5	35.0	53.7	20.4	28.5					15.2	21.6
12	52.4	78.5	29.3	51.1	19.7	28.3					14.5	21.0
13	48.6	76.3	27.8	48.8	18.6	27.6						

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by UICC for period 1998-2012 (N=3,998).

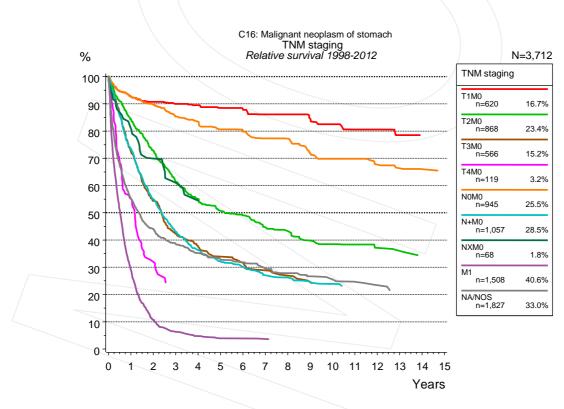


**Figure 4e.** Relative survival of patients with stomach cancer by TNM staging. For 6,340 of 7,729 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 5,389 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potientially considered in more than one subgroup. The grey line represents the subgroup of 2,340 patients with missing values regarding TNM staging (30.3% of 7,729 patients, the percent values of all other categories are related to n=5,389).

TNM staging T1M0															
Years         n=933         n=1,427         n=829         n=173         n=1,494         n=1,681         n=82           0         100.0         10							TNI	VI stag	ing						
Years         obs. %         rel. %         obs. %         rel. % </td <td></td> <td>T1I</td> <td>M0</td> <td>T2</td> <td>M0</td> <td colspan="2">T3M0</td> <td>T4I</td> <td colspan="2">T4M0 N0M0</td> <td>M0</td> <td colspan="2">N+M0</td> <td>NX</td> <td>M0</td>		T1I	M0	T2	M0	T3M0		T4I	T4M0 N0M0		M0	N+M0		NX	M0
0       100.0       100		n=9	933	n=1	,427	n=829 n=173		173	n=1,494		n=1,681		n=	82	
1       90.4       93.4       81.4       84.4       67.4       69.8       51.2       53.0       89.2       92.3       70.3       72.8       77.5       80.1         2       86.2       91.6       66.8       71.6       46.1       49.2       28.4       29.9       82.7       88.4       50.0       53.4       62.6       67.5         3       81.9       90.1       55.1       61.1       34.9       38.2       18.5       20.4       75.9       84.0       38.4       42.2       52.4       59.7         4       79.3       90.0       47.8       54.8       29.6       33.2       13.9       15.1       71.7       82.0       31.7       35.9       46.6       55.6         5       76.0       89.0       42.5       50.7       25.6       29.6       67.6       80.0       27.1       31.6       44.3       53.5         6       71.8       86.7       39.4       48.7       23.7       28.0       63.2       77.2       25.3       30.4       44.3       53.5         7       68.3       85.2       35.5       45.6       21.1       25.4       59.2       74.9       22.8       28	Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
2       86.2       91.6       66.8       71.6       46.1       49.2       28.4       29.9       82.7       88.4       50.0       53.4       62.6       67.5         3       81.9       90.1       55.1       61.1       34.9       38.2       18.5       20.4       75.9       84.0       38.4       42.2       52.4       59.7         4       79.3       90.0       47.8       54.8       29.6       33.2       13.9       15.1       71.7       82.0       31.7       35.9       46.6       55.6         5       76.0       89.0       42.5       50.7       25.6       29.6       67.6       80.0       27.1       31.6       44.3       53.5         6       71.8       86.7       39.4       48.7       23.7       28.0       63.2       77.2       25.3       30.4       44.3       53.5         7       68.3       85.2       35.5       45.6       21.1       25.4       59.2       74.9       22.8       28.2       44.3       53.5         8       65.4       84.5       32.8       43.5       18.7       23.5       56.0       73.3       20.9       26.7       44.3       53	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
3       81.9       90.1       55.1       61.1       34.9       38.2       18.5       20.4       75.9       84.0       38.4       42.2       52.4       59.7         4       79.3       90.0       47.8       54.8       29.6       33.2       13.9       15.1       71.7       82.0       31.7       35.9       46.6       55.6         5       76.0       89.0       42.5       50.7       25.6       29.6       67.6       80.0       27.1       31.6       44.3       53.5         6       71.8       86.7       39.4       48.7       23.7       28.0       63.2       77.2       25.3       30.4       44.3       53.5         7       68.3       85.2       35.5       45.6       21.1       25.4       59.2       74.9       22.8       28.2       44.3       53.5         8       65.4       84.5       32.8       43.5       18.7       23.5       56.0       73.3       20.9       26.7       44.3       53.5         9       60.9       81.0       30.4       42.0       17.2       21.9       51.5       69.8       19.5       25.8       44.3       53.5         10<	1	90.4	93.4	81.4	84.4	67.4	69.8	51.2	53.0	89.2	92.3	70.3	72.8	77.5	80.1
4       79.3       90.0       47.8       54.8       29.6       33.2       13.9       15.1       71.7       82.0       31.7       35.9       46.6       55.6         5       76.0       89.0       42.5       50.7       25.6       29.6       67.6       80.0       27.1       31.6       44.3       53.5         6       71.8       86.7       39.4       48.7       23.7       28.0       63.2       77.2       25.3       30.4       44.3       53.5         7       68.3       85.2       35.5       45.6       21.1       25.4       59.2       74.9       22.8       28.2       44.3       53.5         8       65.4       84.5       32.8       43.5       18.7       23.5       56.0       73.3       20.9       26.7       44.3       53.5         9       60.9       81.0       30.4       42.0       17.2       21.9       51.5       69.8       19.5       25.8       44.3       53.5         10       59.1       79.9       28.2       40.4       16.9       21.8       49.8       68.8       17.9       24.4       44.3       53.5         11       56.1       79.2	2	86.2	91.6	66.8	71.6	46.1	49.2	28.4	29.9	82.7	88.4	50.0	53.4	62.6	67.5
5       76.0       89.0       42.5       50.7       25.6       29.6       67.6       80.0       27.1       31.6       44.3       53.5         6       71.8       86.7       39.4       48.7       23.7       28.0       63.2       77.2       25.3       30.4       44.3       53.5         7       68.3       85.2       35.5       45.6       21.1       25.4       59.2       74.9       22.8       28.2       44.3       53.5         8       65.4       84.5       32.8       43.5       18.7       23.5       56.0       73.3       20.9       26.7       44.3       53.5         9       60.9       81.0       30.4       42.0       17.2       21.9       51.5       69.8       19.5       25.8       44.3       53.5         10       59.1       79.9       28.2       40.4       16.9       21.8       49.8       68.8       17.9       24.4       44.3       53.5         11       56.1       79.2       26.4       39.3       15.6       21.2       47.0       68.0       16.7       23.7       44.3       53.5         12       53.9       77.8       24.5       37.	3	81.9	90.1	55.1	61.1	34.9	38.2	18.5	20.4	75.9	84.0	38.4	42.2	52.4	59.7
6       71.8       86.7       39.4       48.7       23.7       28.0       63.2       77.2       25.3       30.4       44.3       53.5         7       68.3       85.2       35.5       45.6       21.1       25.4       59.2       74.9       22.8       28.2       44.3       53.5         8       65.4       84.5       32.8       43.5       18.7       23.5       56.0       73.3       20.9       26.7       44.3       53.5         9       60.9       81.0       30.4       42.0       17.2       21.9       51.5       69.8       19.5       25.8       44.3       53.5         10       59.1       79.9       28.2       40.4       16.9       21.8       49.8       68.8       17.9       24.4       44.3       53.5         11       56.1       79.2       26.4       39.3       15.6       21.2       47.0       68.0       16.7       23.7       44.3       53.5         12       53.9       77.8       24.5       37.9       14.2       20.1       45.0       67.2       15.2       22.2         13       50.2       75.3       22.2       35.6       14.2       20	4	79.3	90.0	47.8	54.8	29.6	33.2	13.9	15.1	71.7	82.0	31.7	35.9	46.6	55.6
7       68.3       85.2       35.5       45.6       21.1       25.4       59.2       74.9       22.8       28.2       44.3       53.5         8       65.4       84.5       32.8       43.5       18.7       23.5       56.0       73.3       20.9       26.7       44.3       53.5         9       60.9       81.0       30.4       42.0       17.2       21.9       51.5       69.8       19.5       25.8       44.3       53.5         10       59.1       79.9       28.2       40.4       16.9       21.8       49.8       68.8       17.9       24.4       44.3       53.5         11       56.1       79.2       26.4       39.3       15.6       21.2       47.0       68.0       16.7       23.7       44.3       53.5         12       53.9       77.8       24.5       37.9       14.2       20.1       45.0       67.2       15.2       22.2         13       50.2       75.3       22.2       35.6       14.2       20.1       42.2       65.3       14.0       20.9         14       48.0       74.2       19.4       32.5       12.5       18.5       39.9       6	5	76.0	89.0	42.5	50.7	25.6	29.6			67.6	80.0	27.1	31.6	44.3	53.5
8       65.4       84.5       32.8       43.5       18.7       23.5       56.0       73.3       20.9       26.7       44.3       53.5         9       60.9       81.0       30.4       42.0       17.2       21.9       51.5       69.8       19.5       25.8       44.3       53.5         10       59.1       79.9       28.2       40.4       16.9       21.8       49.8       68.8       17.9       24.4       44.3       53.5         11       56.1       79.2       26.4       39.3       15.6       21.2       47.0       68.0       16.7       23.7       44.3       53.5         12       53.9       77.8       24.5       37.9       14.2       20.1       45.0       67.2       15.2       22.2         13       50.2       75.3       22.2       35.6       14.2       20.1       42.2       65.3       14.0       20.9         14       48.0       74.2       19.4       32.5       12.5       18.5       39.9       64.0       12.1       18.9         15       44.7       71.0       16.8       29.2       11.3       17.2       35.5       60.2       10.7	6	71.8	86.7	39.4	48.7	23.7	28.0			63.2	77.2	25.3	30.4	44.3	53.5
9       60.9       81.0       30.4       42.0       17.2       21.9       51.5       69.8       19.5       25.8       44.3       53.5         10       59.1       79.9       28.2       40.4       16.9       21.8       49.8       68.8       17.9       24.4       44.3       53.5         11       56.1       79.2       26.4       39.3       15.6       21.2       47.0       68.0       16.7       23.7       44.3       53.5         12       53.9       77.8       24.5       37.9       14.2       20.1       45.0       67.2       15.2       22.2         13       50.2       75.3       22.2       35.6       14.2       20.1       42.2       65.3       14.0       20.9         14       48.0       74.2       19.4       32.5       12.5       18.5       39.9       64.0       12.1       18.9         15       44.7       71.0       16.8       29.2       11.3       17.2       35.5       60.2       10.7       17.3         17       40.2       68.7       16.8       29.2       33.3       59.2       10.7       17.3         18       38.9       66	7	68.3	85.2	35.5	45.6	21.1	25.4			59.2	74.9	22.8	28.2	44.3	53.5
10       59.1       79.9       28.2       40.4       16.9       21.8       49.8       68.8       17.9       24.4       44.3       53.5         11       56.1       79.2       26.4       39.3       15.6       21.2       47.0       68.0       16.7       23.7       44.3       53.5         12       53.9       77.8       24.5       37.9       14.2       20.1       45.0       67.2       15.2       22.2         13       50.2       75.3       22.2       35.6       14.2       20.1       42.2       65.3       14.0       20.9         14       48.0       74.2       19.4       32.5       12.5       18.5       39.9       64.0       12.1       18.9         15       44.7       71.0       16.8       29.2       11.3       17.6       36.1       60.2       11.2       17.8         16       43.2       71.0       16.8       29.2       11.3       17.2       35.5       60.2       10.7       17.3         17       40.2       68.7       16.8       29.2       33.3       59.2       10.7       17.3         18       38.9       66.1       14.3       2	8	65.4	84.5	32.8	43.5	18.7	23.5			56.0	73.3	20.9	26.7	44.3	53.5
11       56.1       79.2       26.4       39.3       15.6       21.2       47.0       68.0       16.7       23.7       44.3       53.5         12       53.9       77.8       24.5       37.9       14.2       20.1       45.0       67.2       15.2       22.2         13       50.2       75.3       22.2       35.6       14.2       20.1       42.2       65.3       14.0       20.9         14       48.0       74.2       19.4       32.5       12.5       18.5       39.9       64.0       12.1       18.9         15       44.7       71.0       16.8       29.2       11.3       17.6       36.1       60.2       11.2       17.8         16       43.2       71.0       16.8       29.2       11.3       17.2       35.5       60.2       10.7       17.3         17       40.2       68.7       16.8       29.2       33.3       59.2       10.7       17.3         18       38.8       67.3       14.9       28.1       30.1       55.0       9.8       16.9         19       36.9       66.1       14.3       27.2       28.9       54.1       9.3       16.	9	60.9	81.0	30.4	42.0	17.2	21.9			51.5	69.8	19.5	25.8	44.3	53.5
12       53.9       77.8       24.5       37.9       14.2       20.1       45.0       67.2       15.2       22.2         13       50.2       75.3       22.2       35.6       14.2       20.1       42.2       65.3       14.0       20.9         14       48.0       74.2       19.4       32.5       12.5       18.5       39.9       64.0       12.1       18.9         15       44.7       71.0       16.8       29.2       11.3       17.6       36.1       60.2       11.2       17.8         16       43.2       71.0       16.8       29.2       11.3       17.2       35.5       60.2       10.7       17.3         17       40.2       68.7       16.8       29.2       33.3       59.2       10.7       17.3         18       38.8       67.3       14.9       28.1       30.1       55.0       9.8       16.9         19       36.9       66.1       14.3       27.2       28.9       54.1       9.3       16.5	10	59.1	79.9	28.2	40.4	16.9	21.8			49.8	68.8	17.9	24.4	44.3	53.5
13       50.2       75.3       22.2       35.6       14.2       20.1       42.2       65.3       14.0       20.9         14       48.0       74.2       19.4       32.5       12.5       18.5       39.9       64.0       12.1       18.9         15       44.7       71.0       16.8       29.2       11.3       17.6       36.1       60.2       11.2       17.8         16       43.2       71.0       16.8       29.2       11.3       17.2       35.5       60.2       10.7       17.3         17       40.2       68.7       16.8       29.2       33.3       59.2       10.7       17.3         18       38.8       67.3       14.9       28.1       30.1       55.0       9.8       16.9         19       36.9       66.1       14.3       27.2       28.9       54.1       9.3       16.5	11	56.1	79.2	26.4	39.3	15.6	21.2			47.0	68.0	16.7	23.7	44.3	53.5
14     48.0     74.2     19.4     32.5     12.5     18.5     39.9     64.0     12.1     18.9       15     44.7     71.0     16.8     29.2     11.3     17.6     36.1     60.2     11.2     17.8       16     43.2     71.0     16.8     29.2     11.3     17.2     35.5     60.2     10.7     17.3       17     40.2     68.7     16.8     29.2     33.3     59.2     10.7     17.3       18     38.8     67.3     14.9     28.1     30.1     55.0     9.8     16.9       19     36.9     66.1     14.3     27.2     28.9     54.1     9.3     16.5	12	53.9	77.8	24.5	37.9	14.2	20.1			45.0	67.2	15.2	22.2		
15     44.7     71.0     16.8     29.2     11.3     17.6     36.1     60.2     11.2     17.8       16     43.2     71.0     16.8     29.2     11.3     17.2     35.5     60.2     10.7     17.3       17     40.2     68.7     16.8     29.2     33.3     59.2     10.7     17.3       18     38.8     67.3     14.9     28.1     30.1     55.0     9.8     16.9       19     36.9     66.1     14.3     27.2     28.9     54.1     9.3     16.5	13	50.2	75.3	22.2	35.6	14.2	20.1			42.2	65.3	14.0	20.9		
16     43.2     71.0     16.8     29.2     11.3     17.2     35.5     60.2     10.7     17.3       17     40.2     68.7     16.8     29.2     33.3     59.2     10.7     17.3       18     38.8     67.3     14.9     28.1     30.1     55.0     9.8     16.9       19     36.9     66.1     14.3     27.2     28.9     54.1     9.3     16.5	14	48.0	74.2	19.4	32.5	12.5	18.5			39.9	64.0	12.1	18.9		
17     40.2     68.7     16.8     29.2     33.3     59.2     10.7     17.3       18     38.8     67.3     14.9     28.1     30.1     55.0     9.8     16.9       19     36.9     66.1     14.3     27.2     28.9     54.1     9.3     16.5	15	44.7	71.0	16.8	29.2	11.3	17.6			36.1	60.2	11.2	17.8		
18     38.8     67.3     14.9     28.1     30.1     55.0     9.8     16.9       19     36.9     66.1     14.3     27.2     28.9     54.1     9.3     16.5	16	43.2	71.0	16.8	29.2	11.3	17.2			35.5	60.2	10.7	17.3		
19 36.9 66.1 14.3 27.2 28.9 54.1 9.3 16.5	17	40.2	68.7	16.8	29.2					33.3	59.2	10.7	17.3		
	18	38.8	67.3	14.9	28.1					30.1	55.0	9.8	16.9		
20 35.4 66.0 27.2 53.0	19	36.9	66.1	14.3	27.2					28.9	54.1	9.3	16.5		
	20	35.4	66.0							27.2	53.0				

	TNM staging									
cont'd	M	_	NA/N	NOS						
oon a	n=1,	-	n=2.							
Years	obs. %		obs. %							
0	100.0	100.0	100.0	100.0						
1	26.2	27.2	53.5	57.0						
2	9.8	10.3	41.4	46.2						
3	5.6	6.0	35.3	41.0						
4	4.4	4.9	31.2	37.7						
5	3.6	4.0	28.3	35.5						
6	3.4	3.8	26.2	34.2						
7	3.0	3.4	23.8	32.3						
8	2.7	3.1	22.0	30.9						
9	2.7	3.0	20.5	29.8						
10	2.5	2.8	19.6	29.4						
11			18.0	27.9						
12			16.0	25.9						
13			14.3	23.7						
14			13.2	22.8						
15			11.8	20.7						
16			10.5	18.9						
17			9.7	18.0						
18			9.1	17.2						
19			8.6	17.0						

**Table 4f.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by TNM staging for period 1988-2012 (N=8,600).

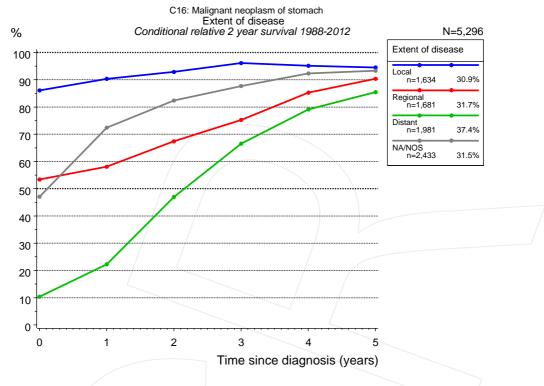


**Figure 4g.** Relative survival of patients with stomach cancer by TNM staging. For 4,403 of 5,539 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 3,712 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potientially considered in more than one subgroup. The grey line represents the subgroup of 1,827 patients with missing values regarding TNM staging (33.0% of 5,539 patients, the percent values of all other categories are related to n=3,712).

						TNI	M stagi	ing						
	T1I	M0	T2l	M0	T3M0 T4M0			NOMO N+N		M0	NX	M0		
	n=620		n=8	368	n=566		n=1	19	n=945		n=1,057		n=68	
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	89.7	92.7	81.3	84.4	70.0	72.3	53.7	55.1	89.3	92.5	71.1	73.5	78.9	81.0
2	85.0	90.7	67.9	72.8	51.2	54.3	30.7	32.0	83.8	89.8	51.7	55.0	65.5	69.9
3	81.3	90.0	55.3	61.4	39.0	42.3			76.9	85.3	39.3	43.0	54.5	61.0
4	78.5	89.5	47.9	55.1	33.9	37.5			72.7	83.4	32.3	36.3		
5	74.6	88.5	42.4	50.7	30.1	33.9			67.6	80.6	27.7	32.1		
6	71.5	87.9	39.5	49.0	27.6	31.6			64.6	79.8	25.4	30.1		
7	67.8	86.1	34.6	44.7	24.7	28.9			60.2	77.3	22.1	27.0		
8	66.3	86.1	32.5	43.3	22.6	26.9			57.9	77.2	21.0	26.3		
9	61.8	84.5	28.5	39.8	20.2	24.5			51.9	71.9	19.0	24.7		
10	59.1	82.5	27.1	38.5	19.4	23.9			49.5	69.8	18.1	23.9		
11	54.6	80.6	26.0	38.3	19.4	23.7			47.0	69.8	17.0	23.1		
12	53.5	80.6	23.8	37.1					43.8	67.6	17.0	23.1		
13	49.5	78.5	22.9	36.0					41.4	66.3				
14			20.6	33.9					39.4	66.0				

TNM staging											
cont'd	M	11	NA/N	NOS							
	n=1	,508	n=1,	827							
Years	obs. %	rel. %	obs. %	rel. %							
0	100.0	100.0	100.0	100.0							
1	28.0	28.9	51.6	55.1							
2	10.1	10.7	39.2	43.9							
3	5.9	6.3	33.0	38.5							
4	4.4	4.7	28.9	35.2							
5	3.5	3.9	26.0	32.8							
6	3.5	3.8	24.2	31.8							
7	3.3	3.6	21.6	29.5							
8			19.7	27.9							
9			18.2	26.7							
10			17.1	25.5							
11			15.8	24.7							
12			14.7	23.4							

**Table 4h.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by TNM staging for period 1998-2012 (N=5,751).

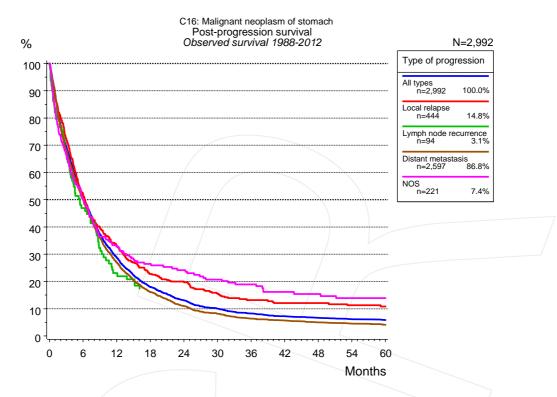


**Figure 4i.** Conditional relative 2-year survival of patients with stomach cancer by extent of disease. For 6,340 of 7,729 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 5,296 cases an evaluable classification was established. The grey line represents the subgroup of 2,433 patients with missing values regarding extent of disease (31.5% of 7,729 patients, the percent values of all other categories are related to n=5,296).

			Exten	t of dis	ease				
	Loc	al	Regio	onal	Dista	ant	NA/N	IOS	
	Cond.		Cond.			Cond.		Cond.	
		surv. %		surv. %		surv. %	surv. %		
Years	n	2 yrs	n	2 yrs	n	2 yrs	n	2 yrs	
0	1,634	86.1	1,681	53.4	1,981	10.3	2,433	47.1	
1	1,357	90.3	1,124	58.1	483	22.3	1,240	72.4	
2	1,161	92.9	746	67.4	161	47.0	887	82.4	
3	984	96.1	522	75.2	80	66.5	693	87.7	
4	849	95.1	395	85.3	57	79.1	528	92.3	
5	735	94.5	313	90.4	43	85.4	427	93.3	

**Table 4j.** Conditional relative 2-year survival of patients with stomach cancer by extent of disease for period 1988-2012 (N=5,296).

Conditional relative survival rates refer to the relative survival probability, in this case for 2 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 2-year survival rate is 96.1% (n=984).



**Figure 5a.** Observed post-progression survival of 2,992 patients with stomach cancer diagnosed between 1988 and 2012 (incl. M1). These 2,992 patients with documented progression events during their course of disease represent 38.7% of the totally 7,729 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=1,400, 18.1%). 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 potientially considered in more than one subgroup.

		Type of	f progression	1	
	All types	Local relapse	Lymph node recurrence	Distant metastasis	NOS
	n=2,992	n=444	n=94	n=2,597	n=221
Months	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	28.7	33.1	23.1	26.9	32.7
24	13.0	19.9		10.9	24.1
36	8.2	13.1		6.4	18.9
48	6.6	12.0		4.9	15.4
60	5.8	10.8		4.1	13.8

**Table 5b.** Observed post-progression survival of patients with stomach cancer for period 1988-2012 (N=2,992).

#### **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**

Munich Cancer Registry. Survival C16: Stomach cancer [Internet]. 2014 [updated 2014 Mar 25; cited 2014 May 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/surv/surv\_C16\_\_E.pdf

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