

# Munich Cancer Registry



- ▶ Baseline statistics
- ▶ Selection Matrix
- ▶ Homepage
- ▶ *Deutsch*

Munich Cancer Registry at Munich Cancer Center  
Marchioninstr. 15  
Munich, 81377  
Germany

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

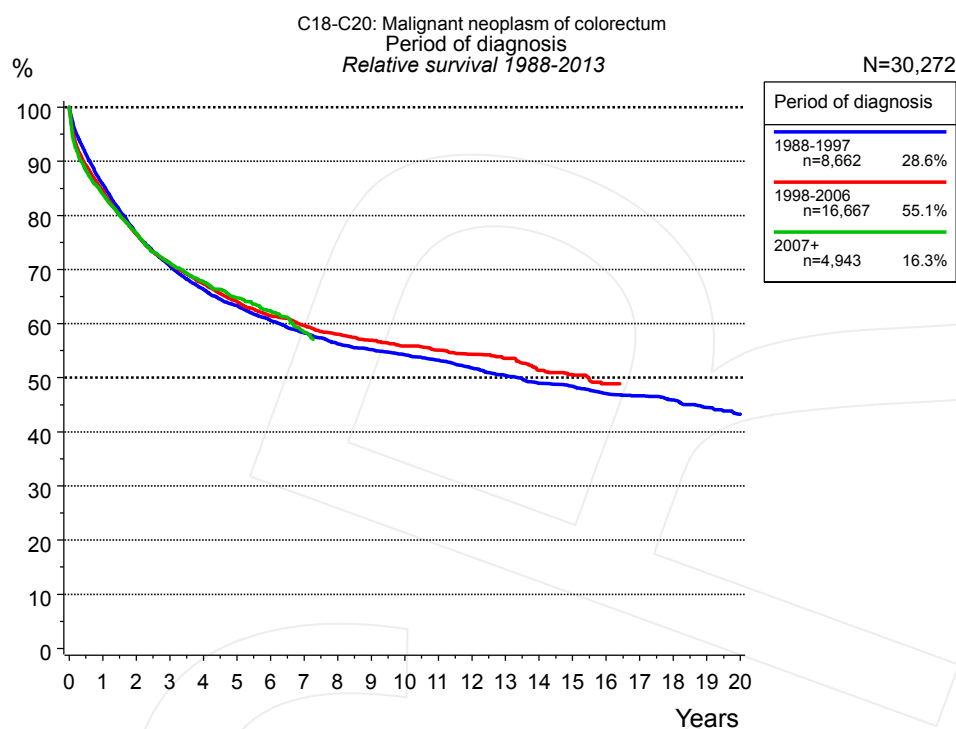
## Cancer statistics: Survival

### C18-C20: Colorectal cancer

Year of diagnosis	1988-2013
Patients	52,465
Diseases	53,860
Cases evaluated	30,272
Creation date	05/13/2015
Export date	12/30/2014
Population	4.64 m



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C1820E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C1820E.pdf)

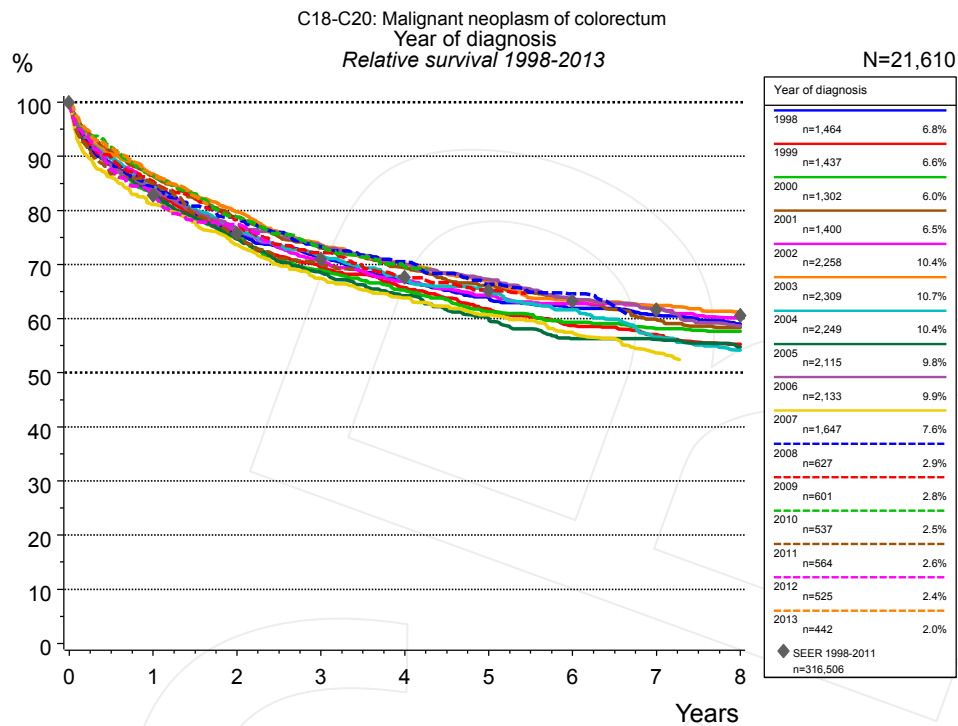


**Figure 1a.** Relative survival of patients with colorectal cancer by period of diagnosis. Included in the evaluation are 30,272 cases diagnosed between 1988 and 2013.

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.

Years	Period of diagnosis					
	1988-1997 n=8,662		1998-2006 n=16,667		2007+ n=4,943	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	82.6	85.8	81.4	84.6	80.9	83.9
2	71.3	76.6	71.2	76.5	71.5	76.8
3	63.6	70.7	64.0	71.1	64.2	71.2
4	57.6	66.4	58.6	67.4	59.1	67.8
5	53.1	63.4	53.9	64.1	54.4	64.8
6	49.0	60.6	50.0	61.5	50.6	62.4
7	45.5	58.3	46.8	59.7	45.8	58.4
8	42.4	56.3	44.0	58.1		
9	40.2	55.2	41.6	56.9		
10	38.1	54.3	39.4	55.9		
11	36.0	53.2	37.4	55.1		
12	33.8	51.8	35.5	54.3		
13	31.8	50.5	33.7	53.6		
14	29.7	49.0	31.0	51.4		
15	28.4	48.5	29.1	50.5		
16	26.6	47.1	27.2	48.9		
17	25.5	46.7				
18	24.0	45.9				
19	22.3	44.5				
20	20.9	43.3				

**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by period of diagnosis for period 1988-2013 (N=30,272).



**Figure 1c.** Relative survival of patients with colorectal cancer by year of diagnosis. Included in the evaluation are 21,610 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.

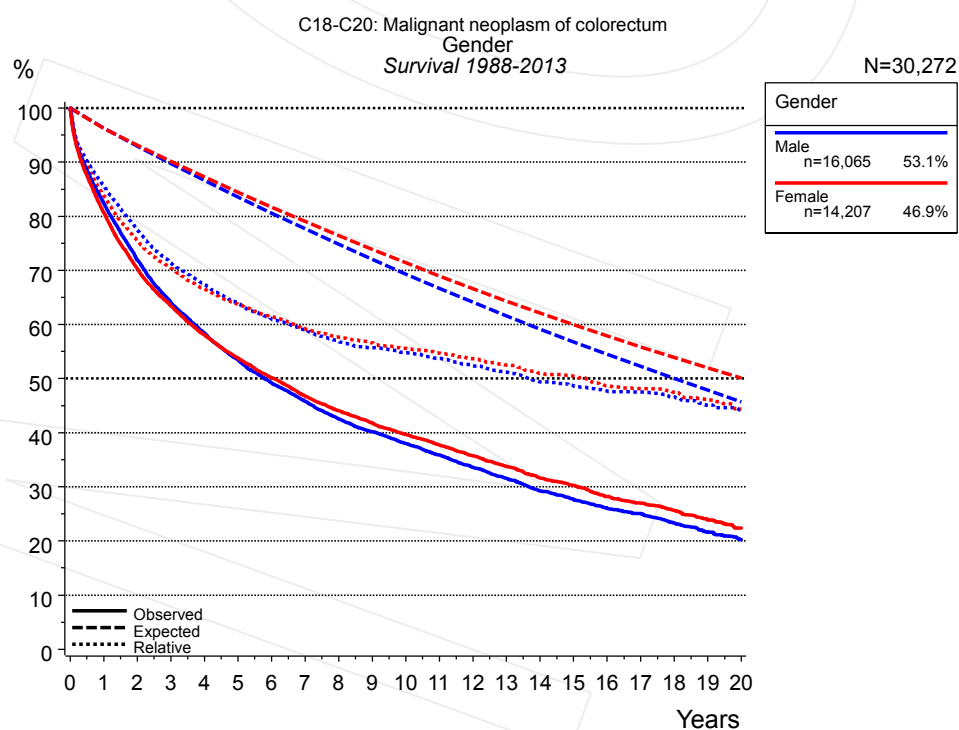
		Year of diagnosis													
		1998 n=1,464		1999 n=1,437		2000 n=1,302		2001 n=1,400		2002 n=2,258		2003 n=2,309		2004 n=2,249	
Years		obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1		81.3	84.6	80.3	83.6	79.7	83.0	83.1	86.3	81.3	84.6	83.6	86.7	81.3	84.4
2		70.0	75.6	69.4	74.8	69.6	75.0	73.2	78.7	70.6	76.1	74.4	79.7	71.2	76.5
3		63.7	71.2	62.2	69.4	61.8	68.9	65.8	73.1	63.2	70.6	66.5	73.7	64.4	71.5
4		57.8	66.9	56.8	65.7	56.6	65.3	60.5	69.4	58.0	66.9	61.2	70.1	58.5	67.2
5		53.4	64.0	51.4	61.7	51.4	61.3	55.9	66.1	53.7	64.2	56.6	66.9	54.7	65.1
6		49.9	61.9	47.3	58.7	48.2	59.3	51.8	63.3	50.9	62.8	51.8	63.5	50.1	61.6
7		47.3	60.6	44.4	57.0	45.6	58.1	47.5	59.9	48.3	61.8	49.3	62.4	44.1	56.6
8		44.5	59.0	41.7	55.3	44.0	57.6	45.0	58.4	45.3	60.1	46.5	61.3	40.6	54.2

		Year of diagnosis													
		2005 n=2,115		2006 n=2,133		2007 n=1,647		2008 n=627		2009 n=601		2010 n=537		2011 n=564	
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		80.2	83.3	81.2	84.0	78.0	81.1	81.2	84.5	82.4	85.4	83.4	86.4	81.9	85.0
2		69.8	74.8	71.7	76.5	68.6	73.6	72.7	78.4	73.0	78.2	73.4	78.8	70.0	75.0
3		62.0	68.5	66.9	73.5	60.7	67.4	65.7	73.3	65.1	72.2	65.9	73.3	63.4	70.1
4		56.1	64.2	61.6	70.0	55.5	63.8	61.2	70.5	59.1	67.8	60.4	69.6		
5		51.0	60.1	57.4	67.2	51.0	60.7	55.5	66.4	54.9	65.3				
6		45.9	56.3	52.6	63.7	46.7	57.5	52.1	64.6						
7		44.3	56.2	49.2	61.7	42.1	53.6								
8		41.7	54.8	45.1	58.7										

cont'd	Year of diagnosis			
	2012 n=525		2013 n=442	
	obs. %	rel. %	obs. %	rel. %
Years				
0	100.0	100.0	100.0	100.0
1	79.8	82.5	83.6	86.6
2	72.9	77.4		

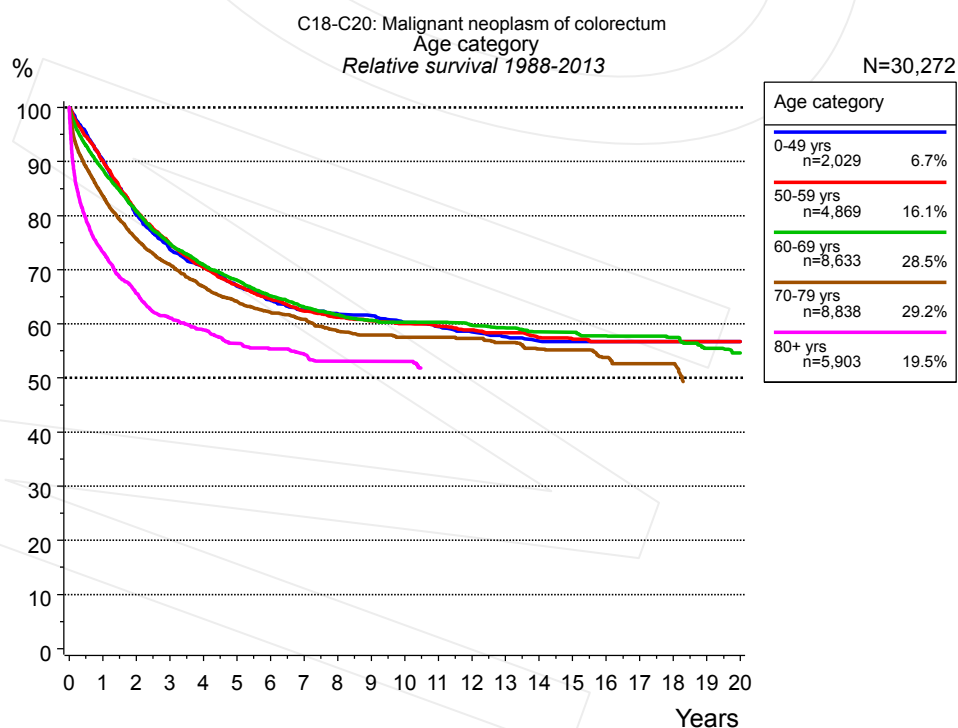
**Table 1d.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by year of diagnosis for period 1998-2013 (N=21,610).



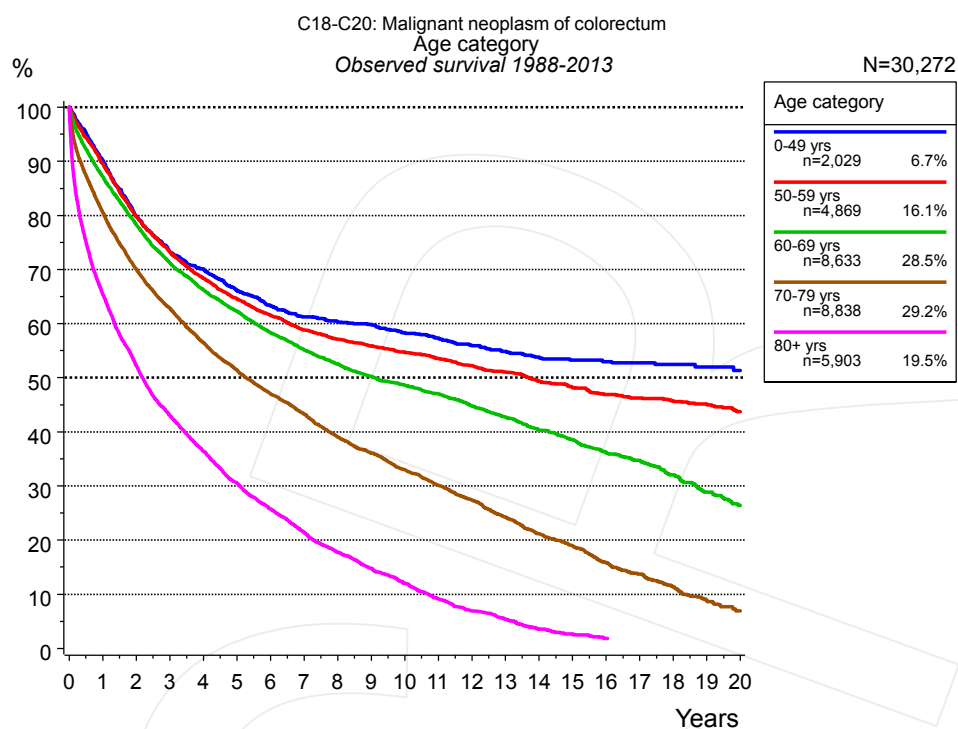
**Figure 2a.** Survival of patients with colorectal cancer by gender. Included in the evaluation are 30,272 cases diagnosed between 1988 and 2013.

Years	Gender			
	Male		Female	
	n=16,065		n=14,207	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	82.5	85.7	80.7	83.8
2	72.0	77.4	70.4	75.5
3	64.1	71.4	63.5	70.4
4	58.4	67.4	58.1	66.6
5	53.5	64.0	53.8	63.8
6	49.2	61.0	50.2	61.4
7	45.8	59.0	46.8	59.2
8	42.5	56.8	44.1	57.7
9	40.2	55.7	41.8	56.6
10	38.0	54.8	39.7	55.6
11	35.9	53.7	37.8	54.7
12	33.6	52.4	35.8	53.7
13	31.6	51.2	33.8	52.5
14	29.3	49.4	31.7	51.0
15	27.7	48.7	30.3	50.5
16	26.1	47.7	28.2	48.7
17	25.1	47.5	27.0	48.1
18	23.3	46.6	25.7	47.5
19	21.7	45.1	24.0	46.1
20	20.3	44.2	22.4	44.4

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by gender for period 1988-2013 (N=30,272).



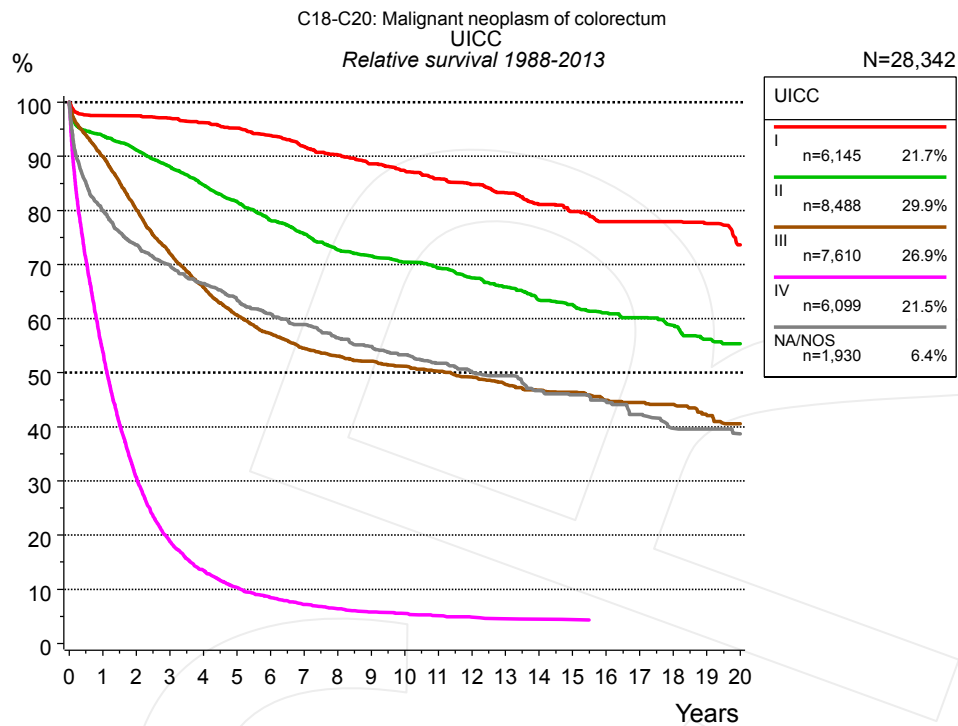
**Figure 3a.** Relative survival of patients with colorectal cancer by age category. Included in the evaluation are 30,272 cases diagnosed between 1988 and 2013.



**Figure 3b.** Observed survival of patients with colorectal cancer by age category. Included in the evaluation are 30,272 cases diagnosed between 1988 and 2013.

Years	Age category									
	0-49 yrs n=2,029		50-59 yrs n=4,869		60-69 yrs n=8,633		70-79 yrs n=8,838		80+ yrs n=5,903	
	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	90.2	90.4	89.6	90.2	87.2	88.5	80.6	83.7	65.5	73.3
2	79.8	80.2	79.8	80.9	78.3	80.8	70.1	75.7	52.3	65.7
3	73.3	73.8	73.3	74.8	71.3	74.8	62.8	71.0	43.0	61.1
4	70.1	70.8	68.4	70.5	66.3	70.9	56.5	66.9	36.4	58.9
5	66.1	67.0	64.6	67.1	62.4	68.1	51.4	64.2	30.6	56.4
6	63.3	64.4	61.5	64.6	58.4	65.2	47.1	62.1	25.7	55.4
7	61.3	62.6	58.8	62.4	55.1	63.1	43.3	60.8	21.4	54.5
8	60.3	61.8	57.1	61.2	52.5	61.6	39.1	58.7	17.8	53.1
9	59.8	61.6	55.9	60.6	50.2	60.6	36.0	57.9	14.8	53.1
10	58.3	60.3	54.7	60.1	48.6	60.3	33.0	57.5	12.0	53.1
11	57.3	59.5	53.6	59.6	47.0	60.3	30.1	57.5		
12	55.9	58.5	52.2	58.9	44.8	59.8	27.4	57.3		
13	54.8	57.6	51.0	58.4	42.8	59.3	24.2	56.6		
14	53.8	56.9	49.4	57.5	40.4	58.5	21.1	55.3		
15	53.2	56.7	48.1	57.2	38.5	58.5	19.0	55.2		
16	53.0	56.7	46.9	56.7	36.3	57.8	15.8	53.8		
17	52.7	56.7	46.3	56.7	34.7	57.7	13.7	52.7		
18	52.4	56.7	45.8	56.7	32.0	57.5	11.4	52.7		
19	52.0	56.7	45.2	56.7	28.9	55.5				
20	51.3	56.7	43.8	56.7	26.4	54.6				

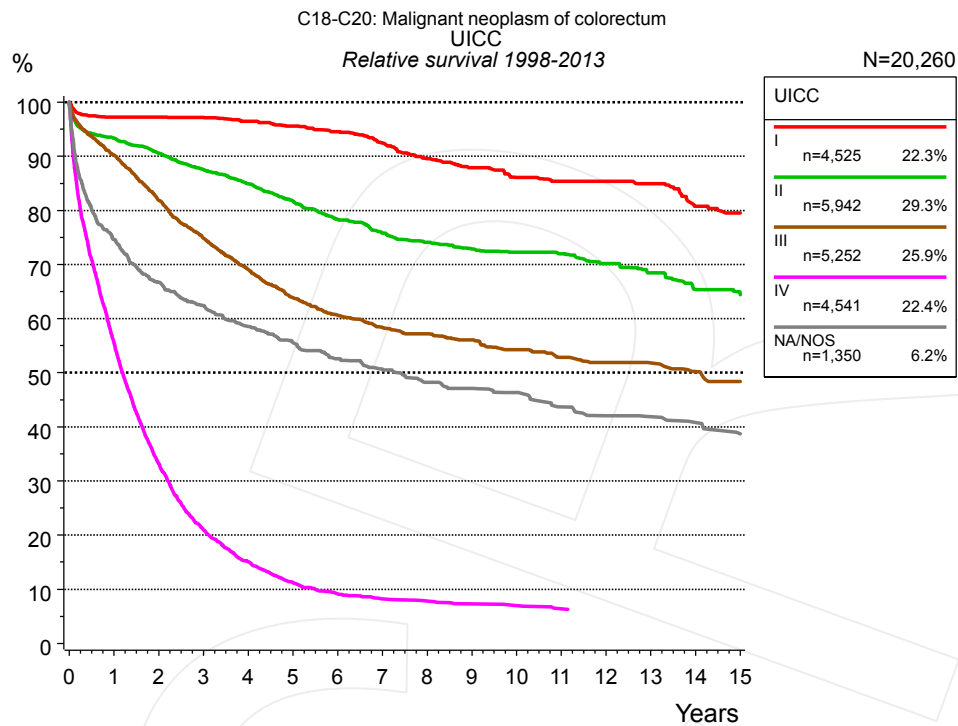
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by age category for period 1988-2013 (N=30,272).



**Figure 4a.** Relative survival of patients with colorectal cancer by UICC. For 28,583 of 30,272 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 28,342 cases an evaluable classification was established. The grey line represents the subgroup of 1,930 patients with missing values regarding UICC (6.4% of 30,272 patients, the percent values of all other categories are related to n=28,342).

Years	UICC									
	I		II		III		IV		NA/NOS	
	n=6,145		n=8,488		n=7,610		n=6,099		n=1,930	
	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	94.5	97.5	90.0	93.8	86.7	90.0	52.2	54.0	76.1	79.9
2	91.4	97.5	84.2	91.2	74.7	80.2	28.9	30.7	67.5	73.6
3	87.9	97.0	78.3	88.1	65.0	72.1	17.3	18.8	61.9	69.9
4	84.2	96.2	72.5	84.7	57.5	65.8	12.1	13.5	57.0	66.5
5	80.6	95.2	67.3	81.7	51.4	60.7	9.1	10.3	52.8	63.5
6	76.6	93.9	62.0	78.2	46.9	57.3	7.2	8.5	49.0	60.9
7	72.3	91.8	57.7	75.6	43.3	54.5	6.0	7.2	46.2	58.9
8	68.6	90.3	53.5	72.7	40.8	53.1	5.2	6.4	42.7	56.5
9	65.0	88.6	50.6	71.6	38.8	52.1	4.6	5.8	40.1	54.9
10	61.7	87.4	47.9	70.4	36.9	51.2	4.3	5.5	37.7	53.3
11	58.7	85.8	45.4	69.4	35.0	50.3	3.9	5.1	35.2	51.7
12	55.7	84.8	42.5	67.5	33.2	49.2	3.5	4.8	32.9	50.2
13	52.7	83.3	39.9	65.9	31.1	47.9	3.2	4.6	31.4	49.5
14	49.4	81.1	37.0	63.4	29.4	46.8	3.1	4.5	28.4	46.7
15	46.8	79.8	35.1	62.6	28.3	46.4	3.0	4.4	26.9	45.9
16	44.0	77.9	32.9	61.1	26.3	44.9			25.3	44.8
17	42.9	77.9	31.4	60.2	25.4	44.5			23.2	42.3
18	41.1	77.9	29.2	58.7	24.2	44.2			20.8	39.7
19	38.9	77.6	26.8	56.2	22.2	42.2			20.2	39.6
20	35.5	73.6	25.6	55.4	20.7	40.5			18.8	38.7

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by UICC for period 1988-2013 (N=28,342).

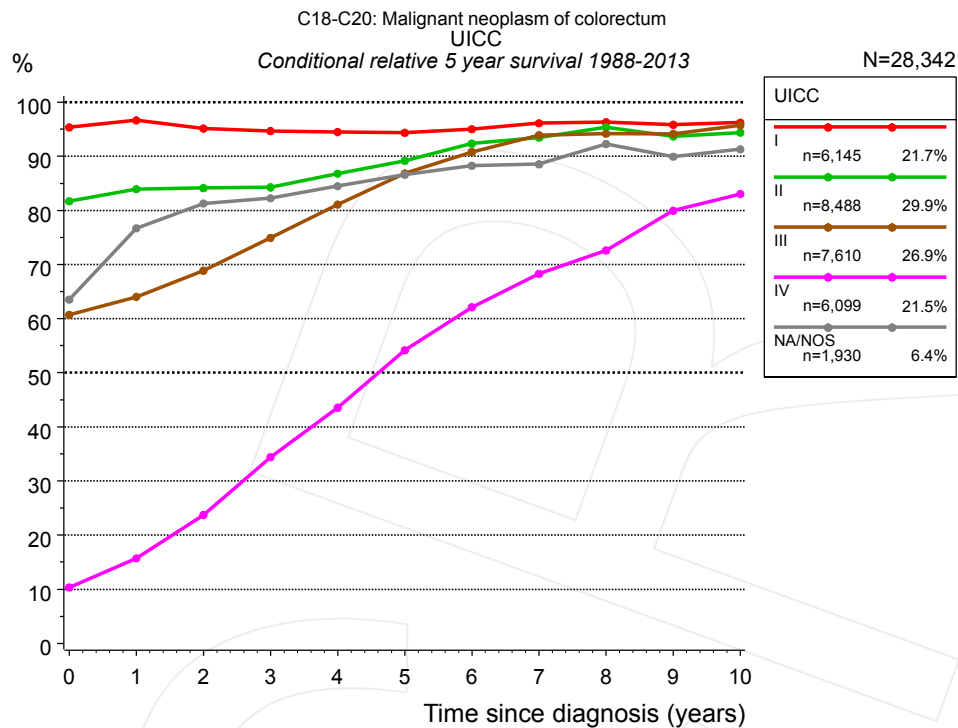


**Figure 4c.** Relative survival of patients with colorectal cancer by UICC. For 20,452 of 21,610 cases diagnosed between 1998 and 2013 valid data could be obtained for this item. For a total of 20,260 cases an evaluable classification was established. The grey line represents the subgroup of 1,350 patients with missing values regarding UICC (6.2% of 21,610 patients, the percent values of all other categories are related to n=20,260).

Years	UICC									
	I n=4,525		II n=5,942		III n=5,252		IV n=4,541		NA/NOS n=1,350	
	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	94.2	97.2	89.4	93.3	87.0	90.2	53.8	55.6	70.8	74.6
2	91.4	97.2	83.5	90.6	76.4	81.9	31.4	33.3	60.9	66.7
3	88.0	97.2	77.7	87.5	67.6	74.9	19.3	21.0	55.1	62.4
4	84.5	96.5	72.6	84.9	60.4	69.1	13.6	15.1	50.2	58.5
5	81.1	95.6	67.3	81.8	54.1	63.9	9.9	11.2	46.3	55.6
6	77.2	94.5	62.2	78.4	49.8	60.6	7.8	9.1	42.7	52.6
7	72.8	92.5	57.9	75.8	46.4	58.4	6.9	8.2	40.1	50.7
8	67.9	89.6	54.6	74.1	44.0	57.2	6.5	7.8	37.1	48.2
9	64.3	87.9	51.6	72.9	41.8	56.1	5.9	7.3	35.5	47.1
10	60.6	86.1	49.2	72.3	39.3	54.2	5.5	7.0	33.9	46.4
11	58.1	85.4	47.0	72.0	36.8	52.9	5.0	6.4	30.9	43.7
12	56.0	85.4	44.1	70.2	35.1	51.9	4.8	6.3	28.8	42.1
13	53.2	84.9	41.2	68.5	33.5	51.8	4.8	6.3	27.9	41.9
14	48.3	80.7	37.7	65.4	31.4	50.2			26.4	40.8
15	45.8	79.5	35.4	64.4	29.7	48.4			24.2	38.7

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by UICC for period 1998-2013 (N=20,260).



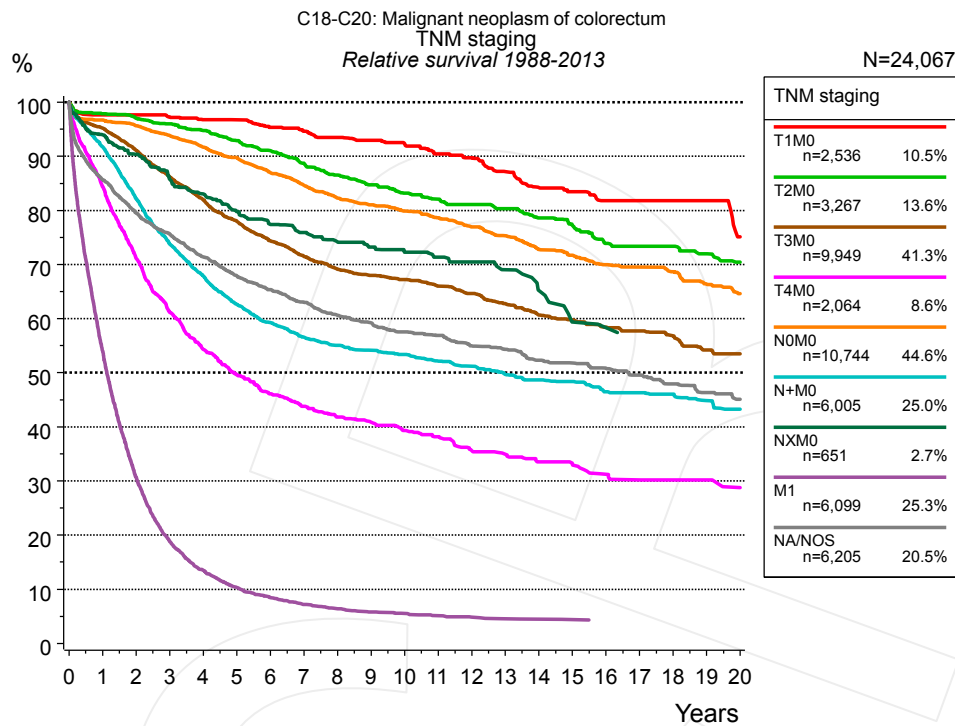


**Figure 4e.** Conditional relative 5-year survival of patients with colorectal cancer by UICC. For 28,583 of 30,272 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 28,342 cases an evaluable classification was established. The grey line represents the subgroup of 1,930 patients with missing values regarding UICC (6.4% of 30,272 patients, the percent values of all other categories are related to n=28,342).

UICC										
Years	I		II		III		IV		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	6,145	95.3	8,488	81.7	7,610	60.7	6,099	10.3	1,930	63.5
1	5,546	96.6	7,275	83.9	6,294	64.0	2,968	15.7	1,408	76.7
2	4,971	95.1	6,378	84.1	5,037	68.9	1,506	23.7	1,191	81.3
3	4,372	94.7	5,505	84.3	4,020	74.9	797	34.4	1,050	82.2
4	3,817	94.5	4,652	86.8	3,196	81.1	486	43.5	910	84.5
5	3,263	94.3	3,903	89.2	2,533	86.8	313	54.2	790	86.6
6	2,760	95.0	3,240	92.4	2,064	90.8	218	62.1	690	88.3
7	2,387	96.1	2,802	93.4	1,729	93.9	157	68.3	601	88.5
8	2,102	96.3	2,405	95.4	1,479	94.2	112	72.6	513	92.3
9	1,799	95.8	2,071	93.7	1,281	94.2	89	80.0	438	89.9
10	1,545	96.2	1,778	94.4	1,089	95.7	70	83.1	381	91.3

**Table 4f.** Conditional relative 5-year survival of patients with colorectal cancer by UICC for period 1988-2013 (N=28,342).

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 UICC="I", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 94.7% (n=4,372).

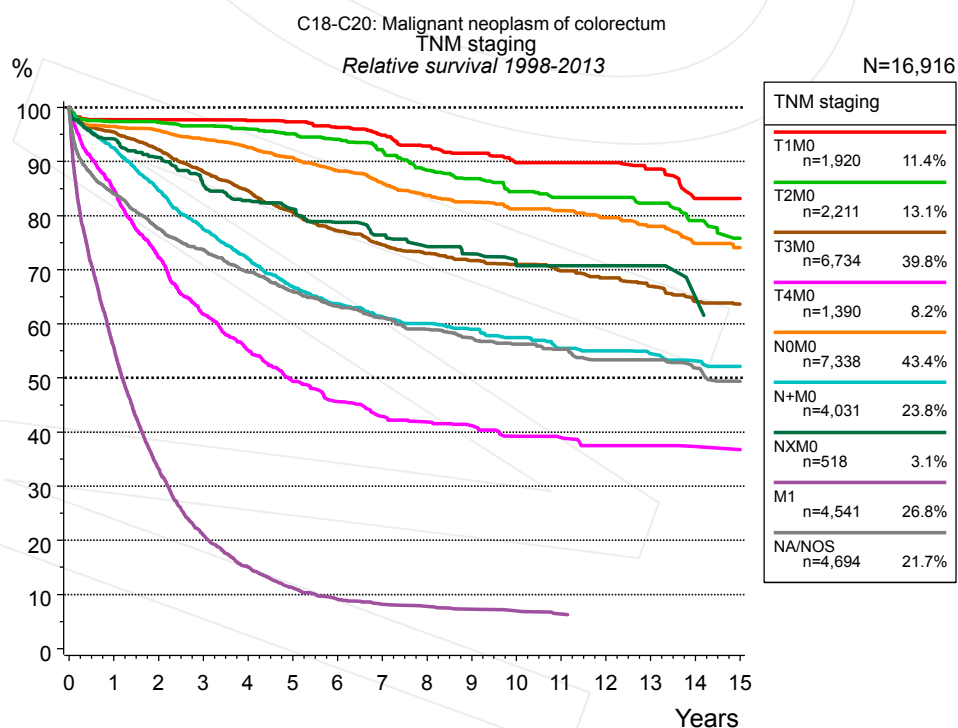


**Figure 4g.** Relative survival of patients with colorectal cancer by TNM staging. For 28,583 of 30,272 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 24,067 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 6,205 patients with missing values regarding TNM staging (20.5% of 30,272 patients, the percent values of all other categories are related to n=24,067).

TNM staging															
Years	T1M0 n=2,536		T2M0 n=3,267		T3M0 n=9,949		T4M0 n=2,064		N0M0 n=10,744		N+M0 n=6,005		NXM0 n=651		
	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	95.1	97.7	94.7	97.9	91.7	95.2	80.8	84.4	93.2	96.7	88.6	91.8	90.9	94.0	
2	92.5	97.7	90.9	97.0	84.8	91.1	65.5	71.1	89.1	95.7	76.8	82.2	84.7	90.4	
3	89.2	97.3	87.1	96.0	77.5	86.2	54.4	61.2	84.4	93.9	66.9	73.8	78.1	85.8	
4	86.1	96.8	83.1	94.8	71.1	82.0	46.5	54.3	79.6	91.7	59.6	67.9	73.6	83.0	
5	83.6	96.7	78.8	92.9	65.4	78.1	41.2	49.6	75.2	89.8	53.4	62.7	68.6	79.8	
6	79.6	95.4	74.6	91.1	60.2	74.4	36.9	46.1	70.3	87.0	49.0	59.3	64.6	77.4	
7	76.4	94.6	70.2	88.7	55.8	71.5	34.0	43.8	66.0	84.6	45.4	56.6	61.7	75.9	
8	73.3	93.5	66.2	86.6	52.1	69.2	31.3	41.8	61.9	82.3	42.8	55.1	58.4	74.2	
9	70.4	92.9	62.7	84.8	49.4	68.0	29.6	40.9	58.8	81.0	40.8	54.1	55.8	73.2	
10	67.3	92.4	59.4	83.2	47.1	67.3	27.5	39.4	55.8	79.9	39.0	53.4	53.0	72.3	
11	63.7	90.4	56.7	82.1	44.5	66.0	25.9	38.2	52.9	78.6	36.9	52.2	50.7	71.3	
12	61.0	89.8	54.0	81.1	42.1	64.7	23.3	35.6	49.9	76.9	35.1	51.2	49.2	70.5	
13	57.1	87.1	51.6	80.3	39.3	62.7	22.1	34.9	47.1	75.3	32.8	49.7	45.4	69.0	
14	53.1	84.2	48.4	78.6	36.6	60.7	20.6	33.5	43.7	72.8	31.1	48.7	41.3	65.2	
15	51.0	83.4	45.9	77.2	34.7	59.8	19.7	33.2	41.5	71.7	29.8	48.4	36.1	59.4	
16	48.1	81.8	42.2	73.9	32.8	58.4	18.1	31.2	39.0	69.9	27.7	46.5	34.9	58.3	
17	47.9	81.8	40.9	73.4	31.3	57.7	17.0	30.2	37.6	69.5	26.8	46.3	33.3	57.0	
18	45.6	81.8	39.0	73.4	29.5	56.8	16.7	30.2	35.4	68.7	25.6	46.0	33.3	56.3	
19	42.8	81.8	36.9	72.0	27.1	54.2	16.3	30.2	32.9	66.3	23.9	44.8			
20	37.6	75.1	34.6	70.4	25.9	53.5	14.7	28.8	30.8	64.6	22.6	43.3			

cont'd Years	TNM staging			
	M1 n=6,099		NA/NOS n=6,205	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	52.2	54.0	81.8	85.7
2	28.9	30.7	72.9	79.5
3	17.3	18.8	66.7	75.6
4	12.1	13.5	60.6	71.4
5	9.1	10.3	55.6	67.9
6	7.2	8.5	51.5	65.4
7	6.0	7.2	47.8	63.0
8	5.2	6.4	44.3	60.6
9	4.6	5.8	41.6	59.2
10	4.3	5.5	38.8	57.5
11	3.9	5.1	37.0	56.9
12	3.5	4.8	34.3	55.0
13	3.2	4.6	32.6	54.3
14	3.1	4.5	30.2	52.3
15	3.0	4.4	28.7	51.8
16			27.1	50.8
17			25.3	49.6
18			23.4	47.9
19			21.7	46.3
20			20.1	45.1

**Table 4h.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by TNM staging for period 1988-2013 (N=41,315).



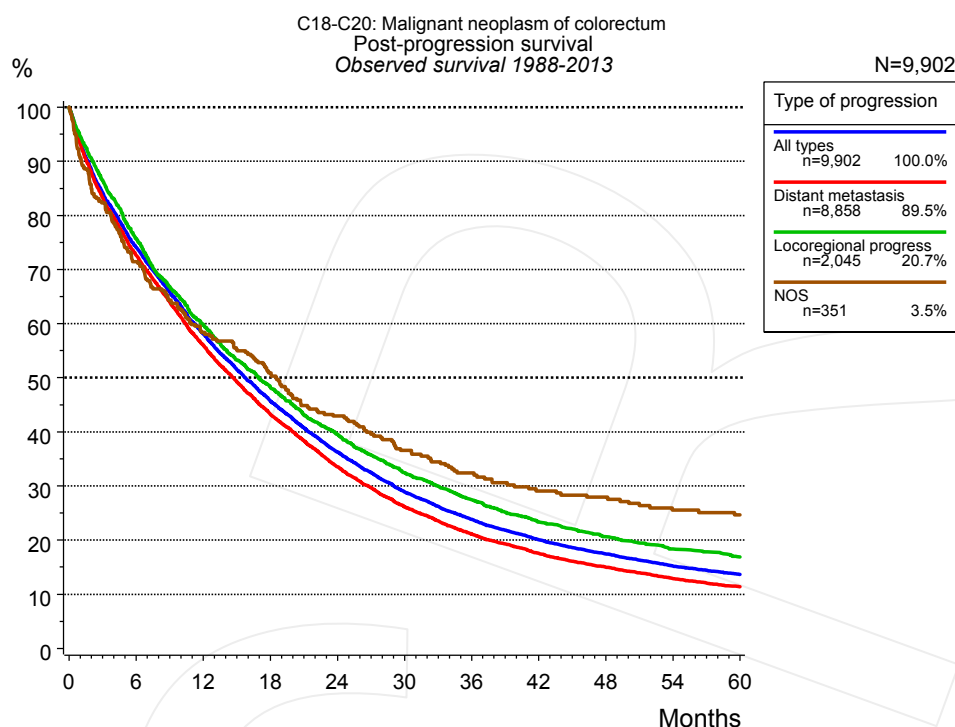
**Figure 4i.** Relative survival of patients with colorectal cancer by TNM staging. For 20,452 of 21,610 cases diagnosed between 1998 and 2013 valid data could be obtained for this item. For a total of 16,916 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 4,694 patients with missing values regarding TNM

staging (21.7% of 21,610 patients, the percent values of all other categories are related to n=16,916).

Years	TNM staging													
	T1M0 n=1,920		T2M0 n=2,211		T3M0 n=6,734		T4M0 n=1,390		N0M0 n=7,338		N+M0 n=4,031		NXM0 n=518	
	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	95.2	97.7	94.4	97.4	91.9	95.5	81.4	84.9	93.1	96.5	89.4	92.6	91.2	94.2
2	92.9	97.7	91.1	97.3	85.7	92.2	66.8	72.3	89.2	95.8	79.3	84.7	85.3	90.7
3	89.9	97.7	87.7	96.6	79.2	88.1	55.2	61.8	84.8	94.2	70.3	77.5	78.5	85.7
4	86.9	97.6	84.2	95.9	73.4	84.6	47.6	55.1	80.5	92.6	63.4	72.1	74.0	82.8
5	84.2	97.4	80.7	95.1	67.5	80.7	41.4	49.4	76.1	90.8	57.0	66.9	70.5	81.3
6	80.4	96.3	77.2	94.1	62.5	77.3	37.1	45.7	71.5	88.4	52.7	63.7	66.6	78.8
7	76.6	94.9	72.9	92.2	58.2	74.6	34.0	42.9	67.1	86.0	49.3	61.4	63.1	76.4
8	72.5	92.9	67.4	88.4	55.1	73.1	32.1	41.9	63.0	83.8	46.9	60.1	59.7	74.3
9	69.2	91.6	64.2	86.9	52.0	71.7	30.7	41.2	59.8	82.5	44.5	59.0	56.8	72.9
10	65.1	89.8	60.3	84.5	49.7	71.0	28.5	39.2	56.7	81.3	42.3	57.5	53.0	70.8
11	63.1	89.8	57.4	83.4	46.8	69.8	27.4	39.0	54.2	80.9	39.2	55.5	52.1	70.8
12	61.4	89.8	55.1	83.4	44.3	68.5	25.7	37.5	51.2	79.6	37.8	55.0	52.1	70.8
13	57.3	88.6	52.6	82.3	41.4	67.0	25.1	37.5	48.2	78.0	35.8	54.5	49.1	70.8
14	51.4	83.2	48.2	79.1	38.1	64.1	23.7	37.3	44.3	74.9	33.8	53.2	42.3	64.9
15	50.6	83.2	44.3	75.8	36.1	63.6	22.4	36.7	42.0	74.1	32.6	52.1		

Years	TNM staging			
	M1 n=4,541		NA/NOS n=4,694	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	53.8	55.6	80.2	84.0
2	31.4	33.3	71.1	77.6
3	19.3	21.0	64.9	73.7
4	13.6	15.1	59.1	69.6
5	9.9	11.2	54.0	66.1
6	7.8	9.1	49.9	63.3
7	6.9	8.2	46.5	61.1
8	6.5	7.8	43.3	59.0
9	5.9	7.3	40.5	57.4
10	5.5	7.0	38.3	56.3
11	5.0	6.4	36.3	55.3
12	4.8	6.3	33.8	53.4
13	4.8	6.3	32.6	53.4
14			30.3	51.9
15			27.6	49.4

**Table 4j.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by TNM staging for period 1998-2013 (N=28,683).



**Figure 5a.** Observed post-progression survival of 9,902 patients with colorectal cancer diagnosed between 1988 and 2013 (incl. M1). These 9,902 patients with documented progression events during their course of disease represent 32.7% of the totally 30,272 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=2,281, 7.5%). 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=9,902	Distant metastasis n=8,858	Locoregional progress n=2,045	NOS n=351
	%	%	%	%
0	100.0	100.0	100.0	100.0
12	58.1	56.0	59.7	58.3
24	36.3	33.6	39.5	42.9
36	23.8	21.1	27.5	32.4
48	17.5	15.0	20.6	27.9
60	13.7	11.4	16.9	24.7

**Table 5b.** Observed post-progression survival of patients with colorectal cancer for period 1988-2013 (N=9,902).

## 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)
progression	Date of entry: Date of first locoregional recurrence, distant metastasis, unspecified
	Event: Death of all causes
CS	Conditional survival, survival probability under the condition of surviving a given period of time

## Recommended Citation

Munich Cancer Registry. Survival C18-C20: Colorectal cancer [Internet]. 2015 [updated 2015 May 13; cited 2015 Jul 1]. Available from: [http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C1820E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C1820E.pdf)

## Copyright

The content of the public web site provided by the Munich Cancer Registry is available worldwide and free of charge. All documents are free to download, utilize, copy, print-out and distribute, providing that the MCR is referenced.

## Disclaimer

The Munich Cancer Registry reserves the right to not be responsible for the topicality, correctness, completeness or quality of the information provided. Liability claims regarding damage caused by the use of any information provided, including any kind of information which is incomplete or incorrect, will therefore be rejected.

### Index of figures and tables

Fig./Tbl.	Page
1a Relative survival by period of diagnosis (chart)	2
1b Survival by period of diagnosis (table)	2
1c Relative survival by year of diagnosis (chart)	3
1d Survival by year of diagnosis (table)	3
2a Survival by gender (chart)	4
2b Survival by gender (table)	5
3a Relative survival by age category (chart)	5
3b Observed survival by age category (chart)	6
3c Survival by age category (table)	6
4a Relative survival by UICC 1988+ (chart)	7
4b Survival by UICC 1988+ (table)	7
4c Relative survival by UICC 1998+ (chart)	8
4d Survival by UICC 1998+ (table)	8
4e Conditional survival by UICC (chart)	9
4f Conditional survival by UICC (table)	9
4g Relative survival by TNM staging 1988+ (chart)	10
4h Survival by TNM staging 1988+ (table)	10
4i Relative survival by TNM staging 1998+ (chart)	11
4j Survival by TNM staging 1998+ (table)	12
5a Observed post-progression survival (chart)	13
5b Observed post-progression survival (table)	13