

# Munich Cancer Registry



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## ICD-10 C18-C21: Colorectal cancer

### Survival

Year of diagnosis	1988-1997	1998-2020
Patients	10,376	62,687
Diseases	10,549	64,552
Cases evaluated	9,277	48,759
Creation date	04/15/2022	
Database export	12/20/2021	
Population	4.92 m	



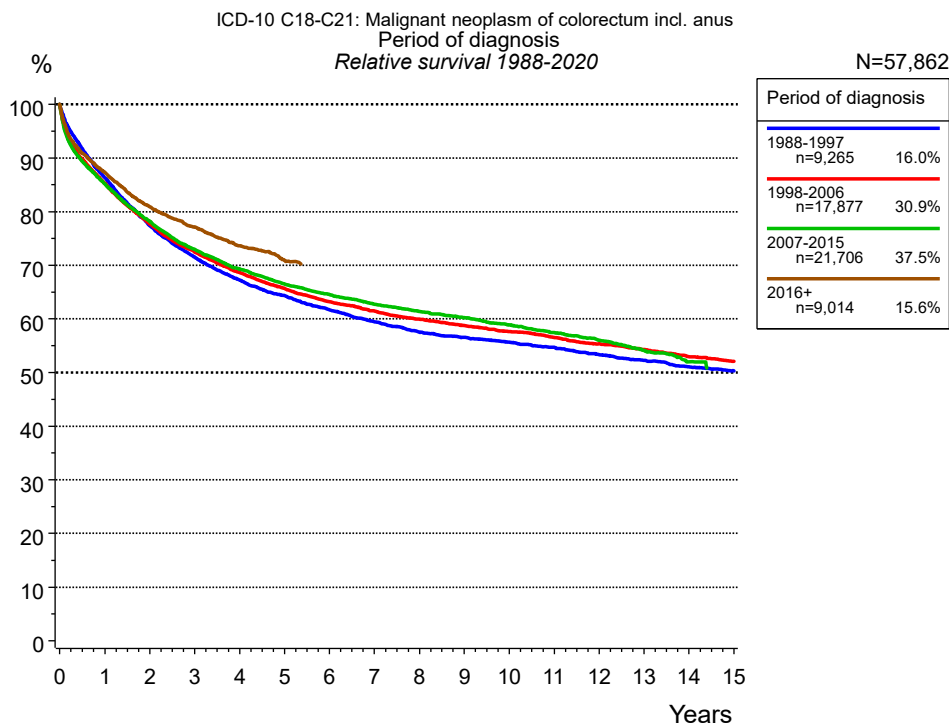
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<https://www.tumorregister-muenchen.de/en>

<https://www.tumorregister-muenchen.de/en/facts/surv/sC1821E-ICD-10-C18-C21-Colorectal-cancer-survival.pdf>

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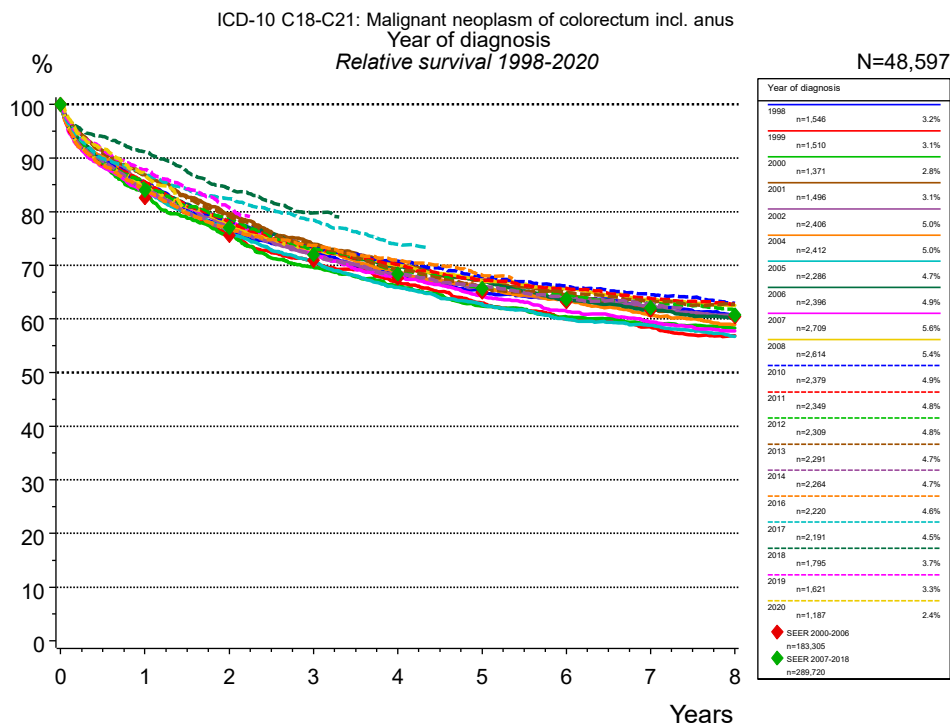


**Figure 1a.** Relative survival of patients with colorectal cancer by period of diagnosis. Included in the evaluation are 57,862 cases diagnosed between 1988 and 2020.

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=9,265		1998-2006 n=17,877		2007-2015 n=21,706		2016+ n=9,014	
	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
1	83.2	86.3	82.2	85.3	82.2	85.2	84.5	87.3
2	72.0	77.4	72.4	77.6	73.2	78.2	76.0	80.9
3	64.4	71.5	65.4	72.5	66.1	73.0	70.2	77.1
4	58.5	67.3	59.9	68.6	60.8	69.3	65.0	73.6
5	54.1	64.4	55.5	65.7	56.5	66.5	60.5	70.9
6	50.1	61.7	51.7	63.2	53.1	64.5		
7	46.6	59.4	48.6	61.5	49.9	62.7		
8	43.6	57.5	45.8	59.9	47.3	61.4		
9	41.4	56.6	43.3	58.8	44.8	60.2		
10	39.3	55.7	41.1	57.6	42.2	58.9		
11	37.2	54.7	38.9	56.5	39.7	57.4		
12	35.0	53.3	36.7	55.4	37.3	56.0		
13	33.2	52.3	34.7	54.3	34.7	54.1		
14	31.2	51.0	32.5	53.0	32.0	52.0		
15	29.6	50.3	30.7	52.1				
Median	6.0		6.6		7.0			

**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by period of diagnosis for period 1988-2020 (N=57,862).



**Figure 1c.** Relative survival of patients with colorectal cancer by year of diagnosis. Included in the evaluation are 48,597 cases diagnosed between 1998 and 2020.

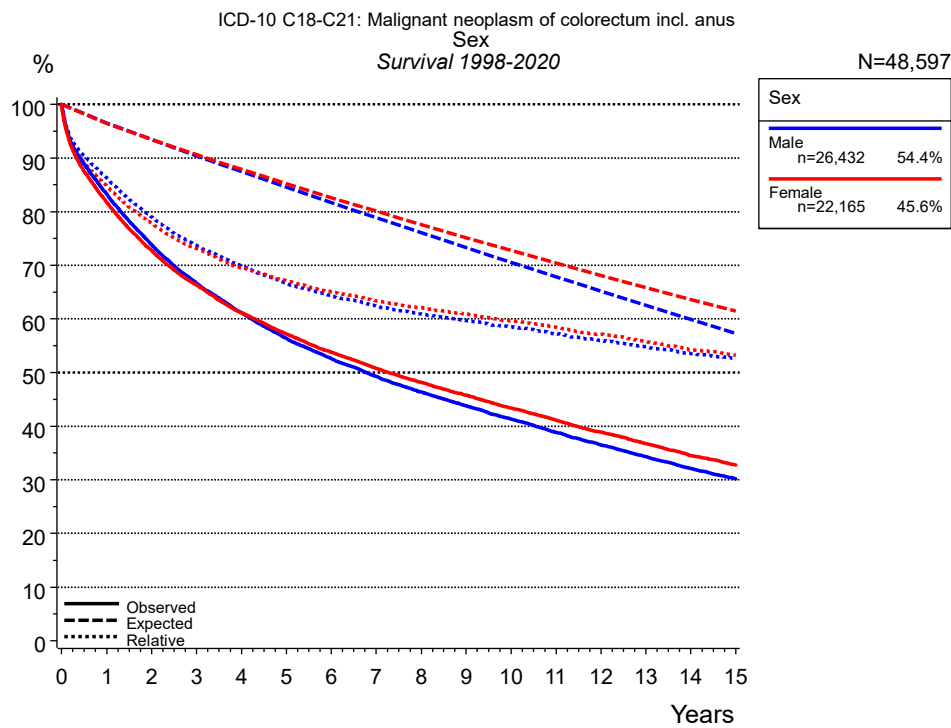
The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 2000 to 2018, and are represented by colored diamonds in order to facilitate comparisons between MCR and SEER.

Years	Year of diagnosis													
	1998		1999		2000		2001		2002		2004		2005	
	n=1,546		n=1,510		n=1,371		n=1,496		n=2,406		n=2,412		n=2,286	
	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	81.9	85.2	80.9	84.2	80.1	83.4	83.6	86.8	82.1	85.3	82.1	85.1	81.1	84.2
2	71.0	76.5	70.3	75.7	70.3	75.6	74.1	79.6	71.8	77.2	72.3	77.6	71.2	76.2
3	64.8	72.2	63.1	70.4	62.6	69.6	66.7	73.9	64.7	72.0	65.9	73.1	63.9	70.7
4	59.0	68.1	57.8	66.8	57.6	66.2	61.5	70.4	59.5	68.4	60.0	68.7	57.7	65.9
5	54.8	65.3	52.6	63.0	52.5	62.4	56.9	67.2	55.3	65.8	55.7	66.0	53.3	62.8
6	51.5	63.5	48.4	60.0	49.3	60.4	52.9	64.5	52.0	63.9	52.0	63.7	49.2	59.9
7	48.8	62.3	45.7	58.5	46.6	59.1	49.4	62.1	49.1	62.4	47.9	60.7	46.6	58.8
8	46.0	60.7	42.9	56.9	44.5	58.3	46.6	60.5	46.1	60.8	45.0	58.9	43.5	56.8
Median	6.7		5.7		5.7		6.8		6.7		6.5		5.8	

Years	Year of diagnosis													
	2006		2007		2008		2010		2011		2012		2013	
	n=2,396		n=2,709		n=2,614		n=2,379		n=2,349		n=2,309		n=2,291	
	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	82.5	85.3	80.8	83.6	81.8	84.9	82.4	85.5	82.5	85.5	82.1	85.0	83.8	86.7
2	73.1	77.9	73.1	78.1	72.6	77.7	73.1	78.3	72.8	78.0	73.9	78.9	74.3	79.3
3	66.9	73.6	65.2	72.1	65.9	72.9	66.3	73.4	66.1	73.1	66.5	73.2	67.3	74.1
4	61.4	69.7	59.4	67.8	61.2	70.0	61.8	70.8	61.4	70.1	60.8	69.0	61.0	69.2
5	57.3	67.1	54.4	64.3	56.8	67.1	57.3	67.9	57.0	67.3	56.2	65.8	56.5	66.1
6	52.6	63.6	50.3	61.5	53.8	65.7	54.0	66.1	53.9	65.7	53.5	64.5	53.9	65.0
7	49.4	61.7	47.0	59.4	50.5	63.7	50.9	64.5	50.6	63.7	50.4	62.9	50.7	63.2
8	46.5	60.1	44.2	57.8	47.8	62.5	47.9	62.9	48.2	62.7	47.8	61.6	48.7	62.7
Median	6.8		6.1		7.1		7.4		7.3		7.2		7.3	

<i>cont'd</i>	Year of diagnosis											
	2014 n=2,264		2016 n=2,220		2017 n=2,191		2018 n=1,795		2019 n=1,621		2020 n=1,187	
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	81.5	84.3	81.3	84.2	84.1	86.9	88.4	91.1	85.0	87.8	84.2	86.9
2	72.1	77.0	71.9	76.7	77.4	82.4	79.3	84.3	75.8	80.7		
3	65.3	71.9	66.9	73.7	71.4	78.4	73.0	79.8				
4	60.2	68.3	62.4	70.9	65.4	73.9						
5	56.5	66.1	58.0	68.2								
6	52.8	63.7										
7	50.5	62.8										
Median	7.1											

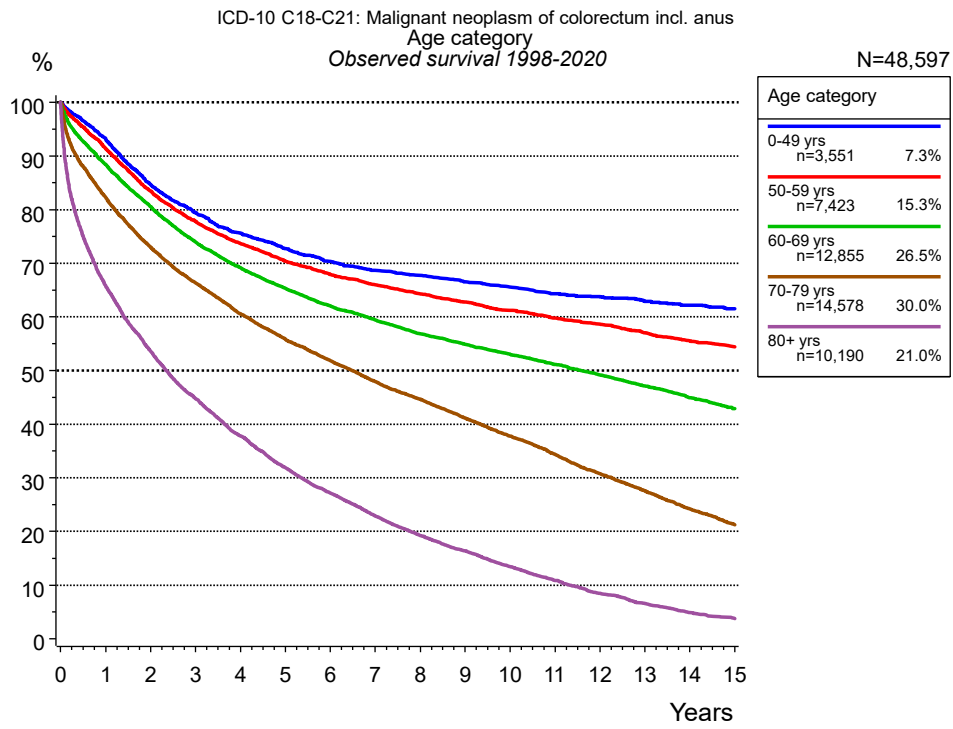
**Table 1d.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by year of diagnosis for period 1998-2020 (N=48,597).



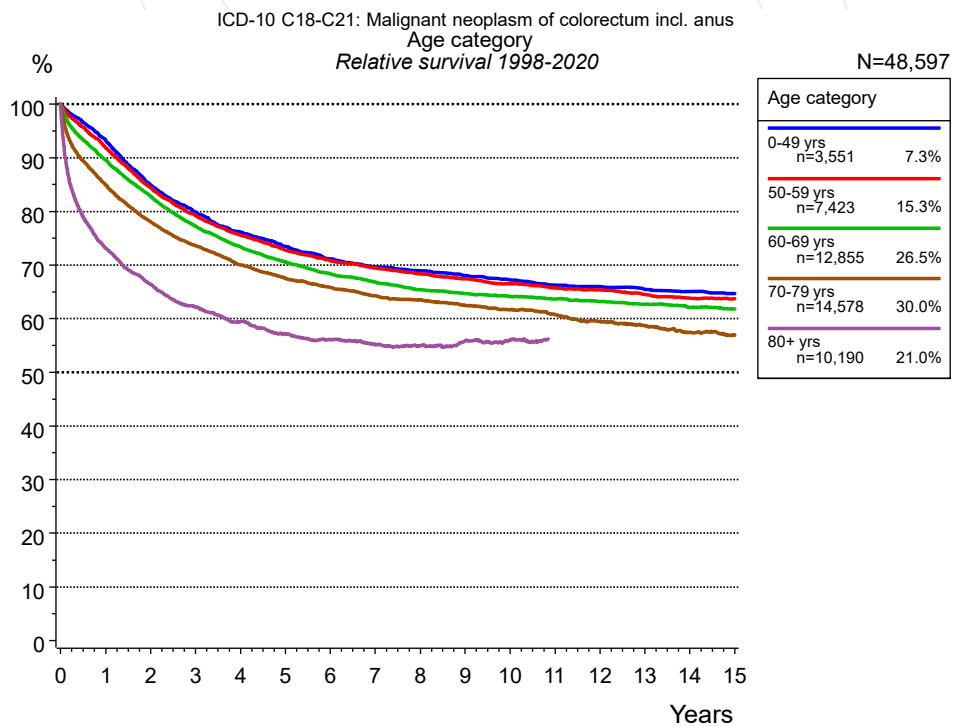
**Figure 2a.** Survival of patients with colorectal cancer by sex. Included in the evaluation are 48,597 cases diagnosed between 1998 and 2020.

Years	Sex			
	Male n=26,432		Female n=22,165	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	83.3	86.3	81.8	84.8
2	73.8	79.0	72.8	77.9
3	66.7	73.7	66.3	73.1
4	61.2	69.9	61.1	69.5
5	56.4	66.7	57.2	67.1
6	52.6	64.3	53.8	65.1
7	49.3	62.4	50.8	63.4
8	46.3	60.9	48.2	62.1
9	43.8	59.7	45.7	60.9
10	41.3	58.5	43.3	59.6
11	38.8	57.2	41.1	58.4
12	36.5	56.0	38.9	57.2
13	34.3	54.8	36.7	55.7
14	32.1	53.6	34.5	54.2
15	30.2	52.7	32.7	53.3
Median	6.8		7.3	

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by sex for period 1998-2020 (N=48,597).



**Figure 3a.** Observed survival of patients with colorectal cancer by age category. Included in the evaluation are 48,597 cases diagnosed between 1998 and 2020.

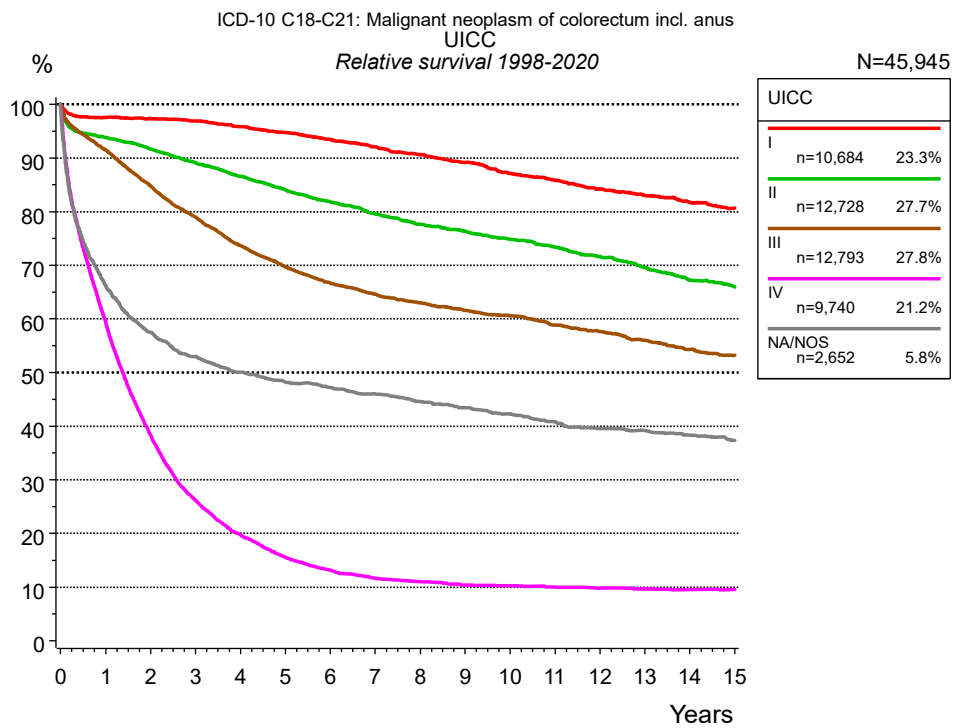


**Figure 3b.** Relative survival of patients with colorectal cancer by age category. Included in the evaluation are 48,597 cases diagnosed between 1998 and 2020.

Years	Age category									
	0-49 yrs n=3,551		50-59 yrs n=7,423		60-69 yrs n=12,855		70-79 yrs n=14,578		80+ yrs n=10,190	
	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	93.2	93.3	91.4	92.0	88.5	89.6	82.3	85.0	65.8	73.1
2	84.6	84.9	83.5	84.4	80.6	82.8	73.0	78.0	53.7	66.4
3	79.5	79.9	77.8	79.2	74.0	77.2	66.4	73.6	44.8	62.2
4	75.6	76.2	73.7	75.6	69.2	73.4	60.6	70.0	37.8	59.4
5	72.7	73.5	70.4	72.8	65.3	70.6	55.8	67.5	31.9	57.2
6	70.3	71.2	67.9	70.8	62.1	68.4	51.8	65.8	27.2	56.1
7	68.6	69.7	66.0	69.4	59.4	66.8	48.0	64.3	22.9	55.2
8	67.7	69.0	64.3	68.3	56.9	65.4	44.6	63.5	19.3	54.9
9	66.6	68.0	62.8	67.4	54.9	64.7	41.1	62.5	16.3	55.9
10	65.5	67.2	61.2	66.5	53.1	64.2	37.7	61.6	13.5	56.1
11	64.3	66.3	59.8	65.7	51.1	63.7	34.3	60.7	10.9	56.2
12	63.8	66.0	58.6	65.4	49.2	63.2	30.8	59.4	8.4	55.4
13	62.9	65.4	57.0	64.5	47.1	62.7	27.6	58.7	6.6	55.8
14	62.2	65.1	55.5	63.8	45.0	62.1	24.2	57.4	4.8	54.4
15	61.6	64.7	54.5	63.7	42.9	61.9	21.3	57.0	3.8	58.0
Median			18.6		11.6		6.5		2.3	

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by age category for period 1998-2020 (N=48,597).

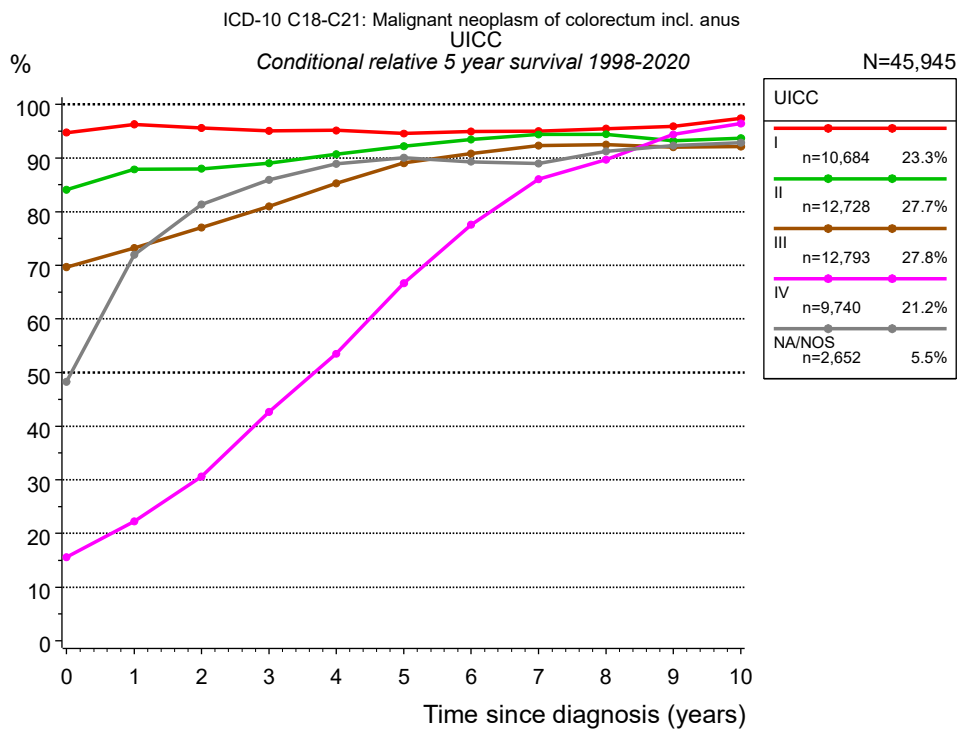




**Figure 4a.** Relative survival of patients with colorectal cancer by UICC. For 46,238 of 48,597 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 45,945 cases an evaluable classification was established. The grey line represents the subgroup of 2,652 patients with missing values regarding UICC (5.5 % of 48,597 patients, the percent values of all other categories are related to n=45,945).

Years	UICC									
	I n=10,684		II n=12,728		III n=12,793		IV n=9,740		NA/NOS n=2,652	
	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	94.6	97.6	90.1	93.8	88.5	91.5	57.6	59.5	62.5	66.2
2	91.6	97.4	84.8	91.7	79.6	84.8	36.2	38.3	52.1	57.5
3	88.3	96.9	79.4	89.1	72.0	78.9	24.1	26.1	46.3	53.0
4	84.6	95.8	74.3	86.6	65.2	73.7	17.8	19.7	42.5	50.1
5	80.9	94.8	69.5	84.1	59.9	69.7	13.7	15.6	39.8	48.3
6	77.2	93.4	65.2	81.8	55.7	66.7	11.4	13.2	37.9	47.2
7	73.5	92.1	61.0	79.5	52.3	64.6	9.8	11.7	36.0	46.0
8	70.0	90.7	57.3	77.7	49.5	63.0	9.1	11.0	34.0	44.6
9	66.5	89.2	54.2	76.4	46.9	61.6	8.4	10.4	32.2	43.5
10	62.6	87.2	51.0	74.8	44.6	60.5	8.0	10.2	30.5	42.3
11	59.4	85.8	48.1	73.4	41.9	58.8	7.6	10.0	28.7	40.8
12	56.2	84.3	45.1	71.6	39.7	57.6	7.2	9.8	27.0	39.6
13	53.3	83.0	42.0	69.6	37.3	56.0	6.9	9.6	26.1	39.2
14	50.4	81.7	38.9	67.2	34.9	54.3	6.6	9.5	24.9	38.4
15	47.7	80.7	36.5	65.9	33.0	53.2	6.4	9.5	23.5	37.4
Median	14.2		10.4		7.8		1.3		2.3	

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by UICC for period 1998-2020 (N=45,945).

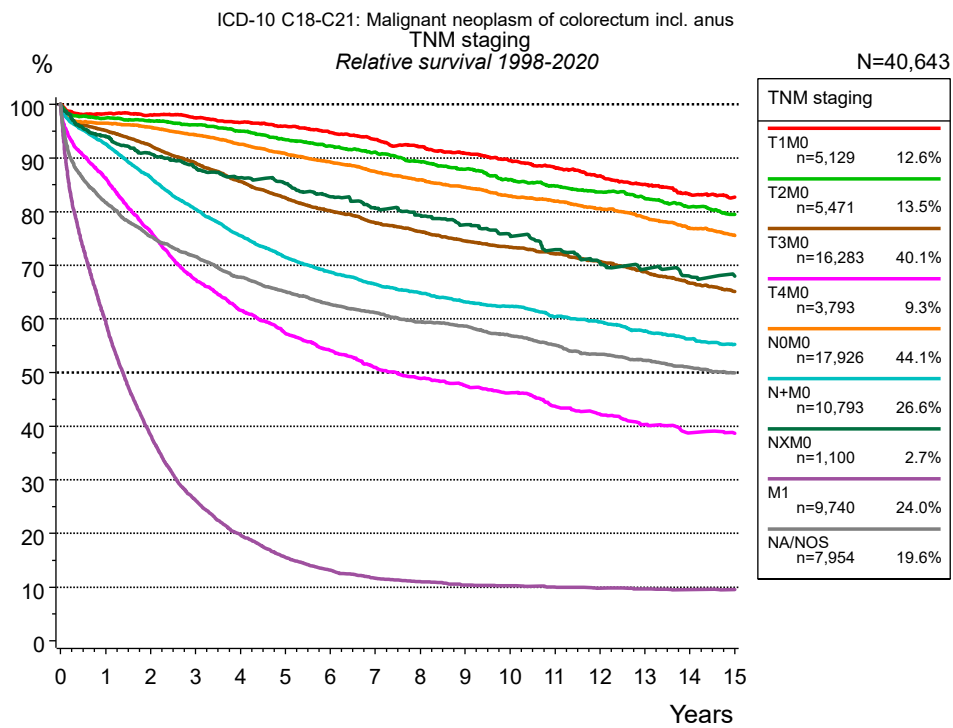


**Figure 4c.** Conditional relative 5-year survival of patients with colorectal cancer by UICC. For 46,238 of 48,597 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 45,945 cases an evaluable classification was established. The grey line represents the subgroup of 2,652 patients with missing values regarding UICC (5.5 % of 48,597 patients, the percent values of all other categories are related to n=45,945).

Years	UICC									
	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	10,684	94.8	12,728	84.1	12,793	69.7	9,740	15.6	2,652	48.3
1	9,783	96.3	11,178	87.9	11,042	73.3	5,487	22.3	1,603	72.0
2	9,171	95.6	10,154	88.0	9,556	77.0	3,301	30.6	1,315	81.3
3	8,460	95.1	9,094	89.0	8,257	81.0	2,067	42.6	1,127	85.9
4	7,676	95.2	8,105	90.7	7,040	85.2	1,411	53.5	998	89.0
5	6,919	94.6	7,136	92.2	6,038	89.0	989	66.6	895	90.1
6	6,242	94.9	6,284	93.4	5,234	90.9	751	77.5	818	89.3
7	5,574	95.0	5,521	94.4	4,600	92.3	586	86.1	751	89.0
8	4,982	95.5	4,813	94.4	4,013	92.5	494	89.7	677	91.3
9	4,369	95.9	4,220	93.2	3,486	92.0	406	94.4	608	92.3
10	3,791	97.4	3,673	93.7	3,012	92.1	346	96.5	544	92.9

**Table 4d.** Conditional relative 5-year survival of patients with colorectal cancer by UICC for period 1998-2020 (N=45,945).

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 4a). 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 95.1% (n=8,460).

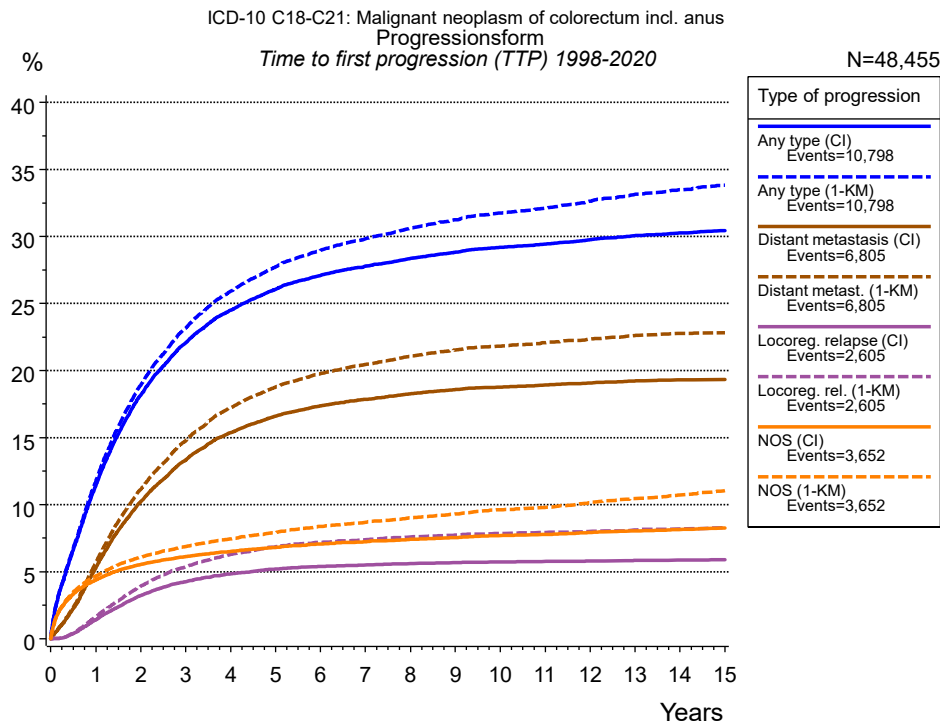


**Figure 4g.** Relative survival of patients with colorectal cancer by TNM staging. For 46,238 of 48,597 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 40,643 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 7,954 patients with missing values regarding TNM staging (16.4 % of 48,597 patients, the percent values of all other categories are related to n=40,643).

Years	T1M0 n=5,129		T2M0 n=5,471		T3M0 n=16,283		T4M0 n=3,793		NOM0 n=17,926		N+M0 n=10,793		NXM0 n=1,100	
	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	95.7	98.3	94.4	97.5	91.8	95.1	83.0	86.3	93.1	96.5	89.8	92.7	91.5	94.1
2	93.0	98.0	91.0	97.0	86.2	92.3	70.9	76.2	89.3	95.7	81.3	86.4	85.9	90.8
3	90.0	97.5	87.3	96.2	80.4	89.1	60.6	67.3	85.0	94.3	73.6	80.5	81.3	88.2
4	86.8	96.7	83.5	95.0	74.7	85.6	53.8	61.6	80.6	92.5	67.2	75.5	77.6	86.3
5	83.7	96.0	79.3	93.4	69.7	82.6	48.5	57.3	76.4	90.8	61.8	71.5	74.6	85.2
6	80.2	94.7	75.8	92.3	65.3	80.1	44.4	54.2	72.5	89.3	57.7	68.7	70.7	82.8
7	76.7	93.4	72.3	91.1	61.3	77.9	40.5	50.9	68.5	87.5	54.2	66.5	66.9	80.6
8	73.3	92.1	68.5	89.3	58.0	76.3	37.6	48.9	64.9	85.9	51.3	64.9	64.2	79.3
9	70.0	90.9	65.1	87.9	54.7	74.6	35.4	47.6	61.5	84.6	48.5	63.2	61.1	77.5
10	66.7	89.5	61.3	85.9	51.9	73.4	33.3	46.2	58.1	82.9	46.3	62.3	57.7	75.5
11	63.4	88.2	58.4	84.8	49.1	72.1	30.4	43.7	55.3	82.0	43.5	60.5	54.2	72.9
12	60.2	86.7	55.5	83.6	46.3	70.6	28.5	42.3	52.3	80.6	41.4	59.4	50.7	70.5
13	56.9	85.1	52.7	82.4	43.4	68.8	26.3	40.3	49.2	78.9	38.9	57.7	47.9	69.3
14	53.5	83.2	49.7	80.9	40.4	66.7	24.4	38.8	46.0	76.8	36.6	56.3	45.4	67.9
15	51.1	82.7	47.0	79.5	37.9	65.1	23.6	38.7	43.4	75.5	34.7	55.2	43.8	68.0
Median	15.5		13.9		10.7		4.8		12.8		8.4		12.1	

<i>cont'd</i>	TNM staging			
	M1 n=9,740		NA/NOS n=7,954	
	obs. %	rel. %	obs. %	rel. %
Years				
0	100.0	100.0	100.0	100.0
1	57.6	59.5	77.9	81.7
2	36.2	38.3	69.1	75.3
3	24.1	26.1	63.3	71.6
4	17.8	19.7	57.8	67.8
5	13.7	15.6	53.6	65.1
6	11.4	13.2	49.8	62.7
7	9.8	11.7	46.9	61.1
8	9.1	11.0	44.0	59.4
9	8.4	10.4	41.9	58.6
10	8.0	10.2	39.2	56.9
11	7.6	10.0	36.6	55.2
12	7.2	9.8	34.1	53.3
13	6.9	9.6	32.2	52.3
14	6.6	9.5	30.2	51.0
15	6.4	9.5	28.5	50.0
Median	1.3		5.9	

**Table 4h.** Observed (obs.) and relative (rel.) survival of patients with colorectal cancer by TNM staging for period 1998-2020 (N=40,643).

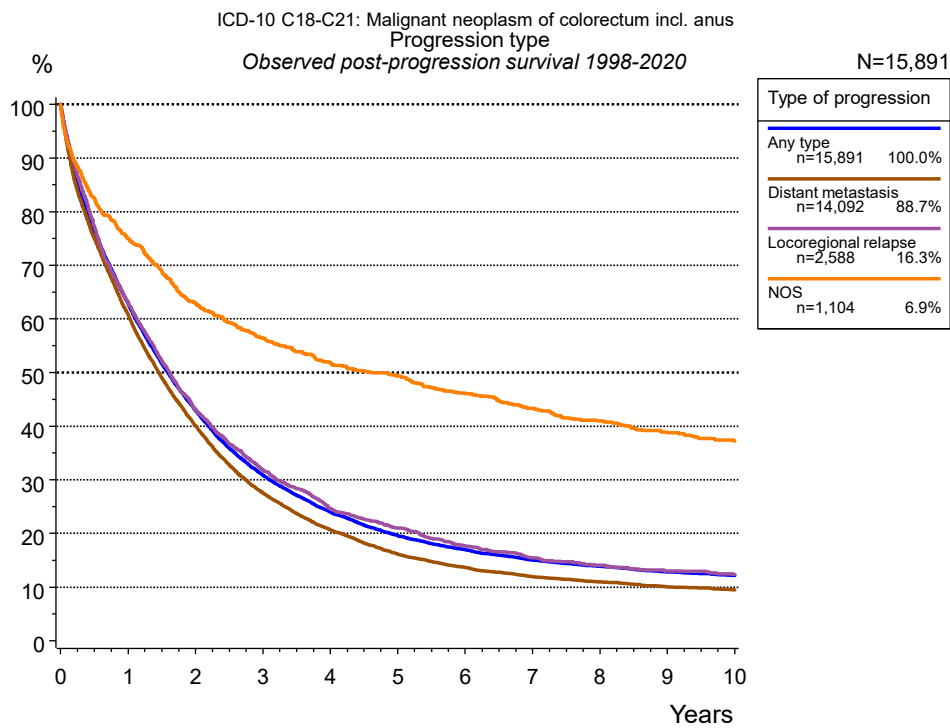


**Figure 5a.** Time to first progression of 48,455 patients with colorectal cancer diagnosed between 1998 and 2020 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

	Type of progression						
	Any type (CI)	Any type (1-KM)	Distant metastasis (CI)	Distant metast. (1-KM)	Locoreg. relapse (CI)	Locoreg. rel. (1-KM)	NOS (CI)
N	38,881	38,881	38,884	38,884	48,455	48,455	48,452
Events	10,721	10,721	6,784	6,784	2,589	2,589	3,605
compet.	9,536		12,770		24,794		23,691
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	11.4	11.8	5.3	5.7	1.4	1.6	4.4
2	18.2	18.9	10.2	11.1	3.2	3.9	5.5
3	22.1	23.2	13.3	14.8	4.3	5.4	6.1
4	24.5	25.9	15.4	17.2	4.9	6.3	6.5
5	26.1	27.7	16.6	18.8	5.2	6.9	6.8
6	27.1	29.0	17.4	19.8	5.4	7.2	7.1
7	27.8	29.8	17.9	20.5	5.5	7.4	7.2
8	28.4	30.6	18.3	21.1	5.6	7.6	7.4
9	28.8	31.3	18.6	21.5	5.7	7.8	7.6
10	29.2	31.8	18.8	21.8	5.7	7.9	7.7
11	29.4	32.1	18.9	22.1	5.8	7.9	7.8
12	29.8	32.6	19.1	22.3	5.8	8.0	7.9
13	30.1	33.1	19.2	22.6	5.8	8.1	8.1
14	30.3	33.5	19.3	22.8	5.9	8.2	8.2
15	30.4	33.8	19.3	22.8	5.9	8.3	8.3

Type of progression	
<i>cont'd</i>	NOS (1-KM)
N	48,452
Events	3,605
compet.	
Years	%
0	0.0
1	4.7
2	6.1
3	6.9
4	7.4
5	7.9
6	8.4
7	8.7
8	9.0
9	9.3
10	9.6
11	9.8
12	10.1
13	10.5
14	10.7
15	11.0

**Table 5b.** Time to first progression of patients with colorectal cancer for period 1998-2020 (N=48,455), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

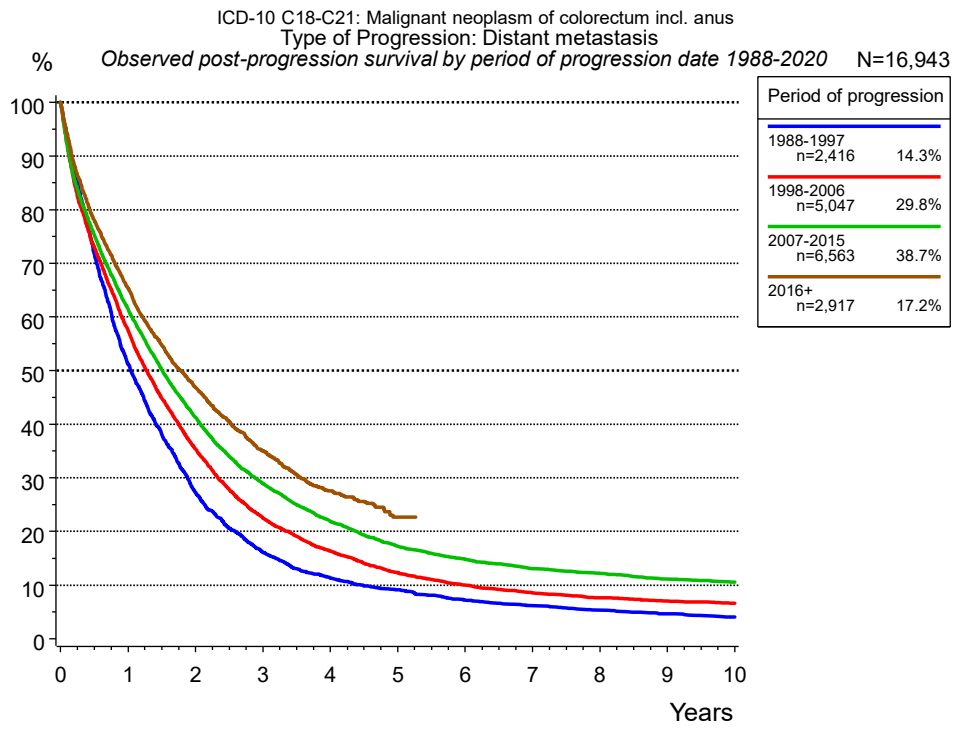


**Figure 5c.** Observed post-progression survival of 15,891 patients with colorectal cancer diagnosed between 1998 and 2020. These 15,891 patients with documented progression events during their course of disease represent 32.8 % of the totally 48,455 evaluated cases (incl. M1, n=9,574, 19.8 %). Patients with cancer relapse documented via death certificates only were excluded (n=4,481, 9.2 %). 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 “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.

Years	Type of progression			
	Any type n=15,891 %	Distant metastasis n=14,092 %	Locoregional relapse n=2,588 %	NOS n=1,104 %
0	100.0	100.0	100.0	100.0
1	62.9	60.8	62.9	75.1
2	42.9	40.1	43.1	62.9
3	30.9	27.6	31.9	56.5
4	24.0	20.7	24.6	51.8
5	19.6	16.1	21.0	49.4
6	17.0	13.7	17.7	46.1
7	15.0	11.9	15.5	43.3
8	13.9	11.0	14.1	41.0
9	12.8	10.1	13.0	38.8
10	12.2	9.5	12.3	37.3

**Table 5d.** Observed post-progression survival of patients with colorectal cancer for period 1998-2020 (N=15,891).



**Figure 5e.** Observed post-progression (distant metastasis) survival of 16,943 patients with colorectal cancer diagnosed between 1988 and 2020 by period of progression.

Years	Period of progression			
	1988-1997 n=2,416 %	1998-2006 n=5,047 %	2007-2015 n=6,563 %	2016+ n=2,917 %
0	100.0	100.0	100.0	100.0
1	51.2	57.5	61.4	65.4
2	27.2	35.3	41.3	46.8
3	16.1	22.5	29.0	35.0
4	11.2	16.3	21.9	27.6
5	9.1	12.3	17.2	22.7
6	7.2	10.0	14.8	
7	6.1	8.5	13.1	
8	5.3	7.6	12.2	
9	4.6	7.0	11.1	
10	4.0	6.6	10.6	

**Table 5f.** Observed post-progression (distant metastasis) survival of patients with colorectal cancer for period 1988-2020 by period of progression (N=16,943).



## 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

Munich Cancer Registry. Survival ICD-10 C18-C21: Colorectal cancer [Internet]. 2022 [updated 2022 Apr 15; cited 2022 Jun 1]. Available from: <https://www.tumorregister-muenchen.de/en/facts/surv/sC1821E-ICD-10-C18-C21-Colorectal-cancer-survival.pdf>

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