

Munich Cancer Registry



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

Munich Cancer Registry at Munich Cancer Center
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Munich, 81377
Germany

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

Cancer statistics: Survival

Sarcoma morph.: Sarcoma (morph.)

Year of diagnosis	1988-2012
Patients	7,254
Diseases	7,295
Cases evaluated	3,964
Creation date	03/25/2014
Export date	02/12/2014
Population	4.5 m



http://www.tumorregister-muenchen.de/en/facts/surv/surv_hST__E.pdf

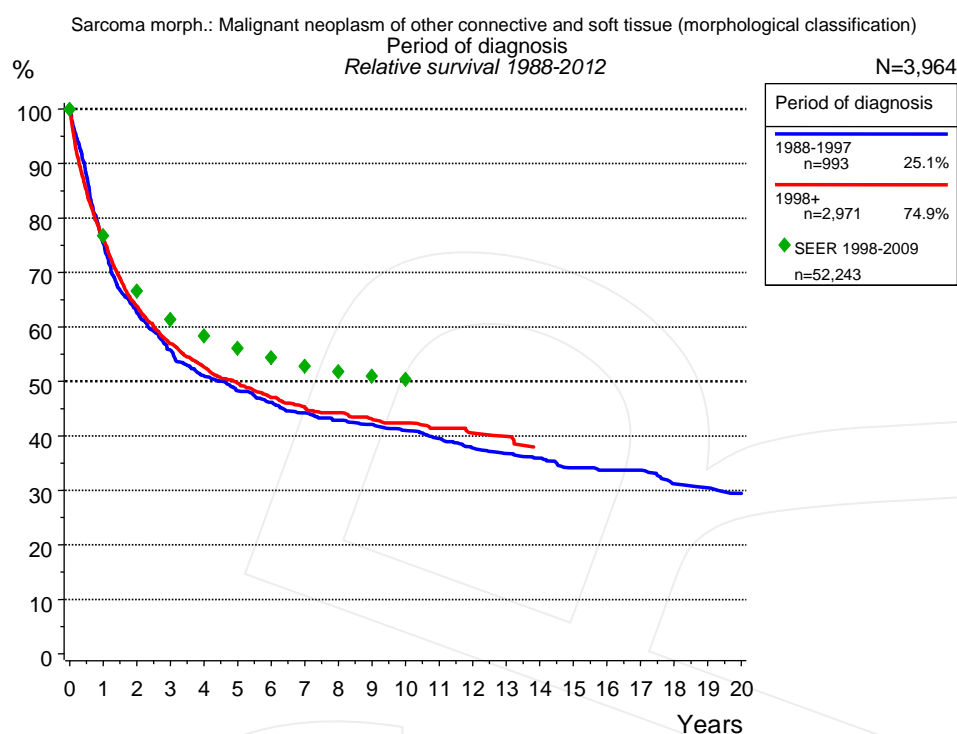


Figure 1a. Relative survival of patients with sarcoma (morph.) by period of diagnosis. Included in the evaluation are 3,964 cases diagnosed between 1988 and 2012.

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.

Years	Period of diagnosis			
	1988-1997		1998+	
	n=993		n=2,971	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	73.6	75.3	73.9	75.8
2	60.1	62.5	61.0	63.8
3	52.6	55.7	53.5	57.0
4	47.3	51.0	48.6	52.6
5	44.0	48.3	45.0	49.7
6	41.4	46.2	41.9	47.0
7	39.0	44.2	39.8	45.3
8	37.2	42.9	38.3	44.3
9	35.9	42.1	36.7	43.1
10	34.3	41.0	35.6	42.4
11	32.5	39.5	34.3	41.4
12	30.7	37.8	33.0	40.6
13	29.3	36.7	32.2	39.9
14	28.3	35.9		
15	26.4	34.1		
16	25.7	33.7		
17	25.5	33.7		
18	23.0	31.2		
19	22.3	30.5		
20	21.1	29.4		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with sarcoma (morph.) by period of diagnosis for period 1988-2012 (N=3,964).

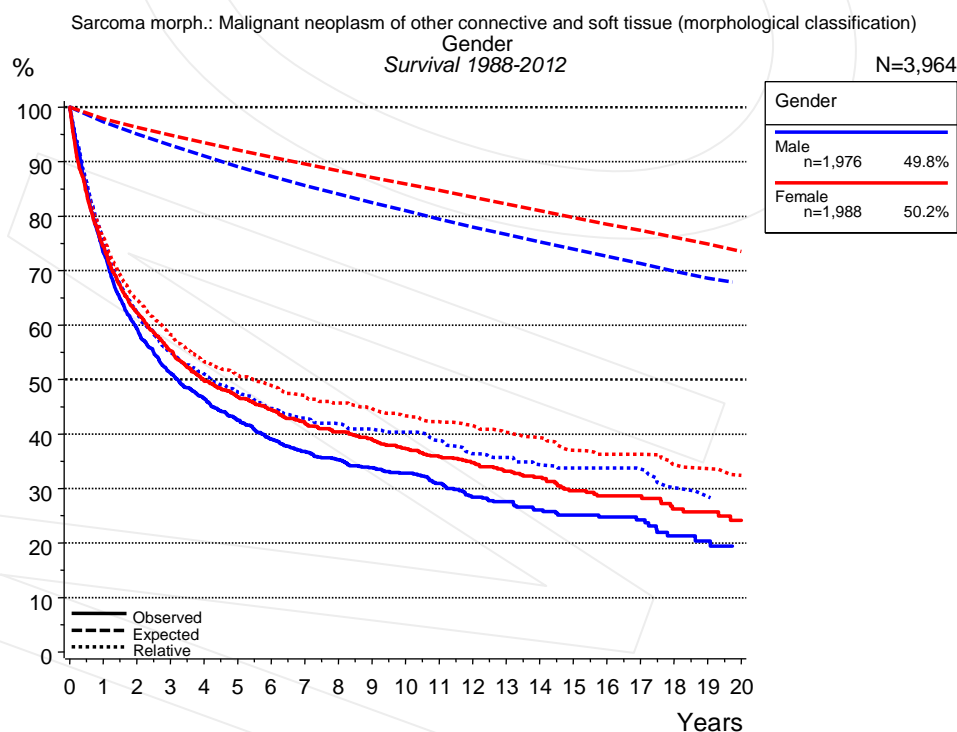


Figure 2a. Survival of patients with sarcoma (morph.) by gender. Included in the evaluation are 3,964 cases diagnosed between 1988 and 2012.

Years	Gender			
	Male n=1,976		Female n=1,988	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	73.3	75.3	74.3	76.0
2	59.3	62.3	62.2	64.6
3	51.2	55.0	55.3	58.2
4	46.5	51.0	49.8	53.2
5	42.5	47.7	46.8	50.8
6	39.1	44.7	44.5	48.9
7	36.8	42.9	42.2	46.9
8	35.3	41.9	40.4	45.7
9	33.8	40.9	39.0	44.7
10	32.8	40.4	37.3	43.3
11	30.9	38.8	35.8	42.2
12	28.4	36.4	34.8	41.5
13	27.6	35.7	33.2	40.3
14	26.1	34.4	32.1	39.3
15	25.2	33.7	29.6	37.0
16	24.8	33.7	28.6	36.3
17	24.2	33.5	28.6	36.3
18	21.3	30.2	26.3	34.4
19	20.4	28.5	25.7	33.7
20	19.4	27.5	24.1	32.4

Table 2b. Observed (obs.) and relative (rel.) survival of patients with sarcoma (morph.) by gender for period 1988-2012 (N=3,964).

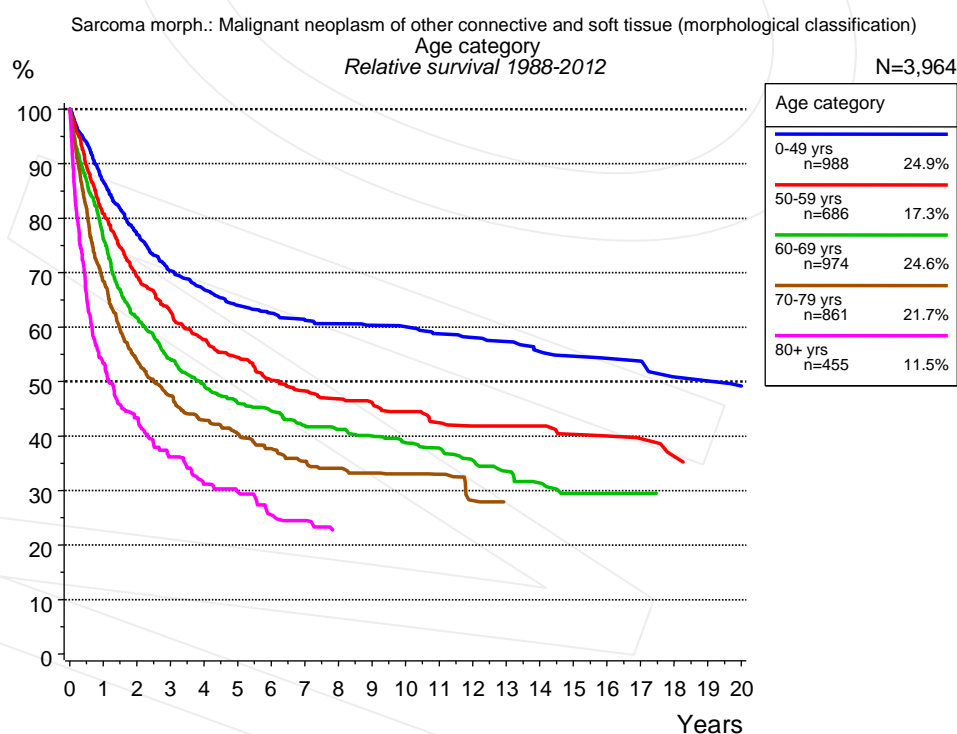


Figure 3a. Relative survival of patients with sarcoma (morph.) by age category. Included in the evaluation are 3,964 cases diagnosed between 1988 and 2012.

Years	Age category									
	0-49 yrs n=988		50-59 yrs n=686		60-69 yrs n=974		70-79 yrs n=861		80+ yrs n=455	
	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	86.6	86.7	80.4	80.8	75.0	76.0	66.2	68.4	47.9	53.3
2	76.8	77.0	68.5	69.3	60.0	61.7	50.2	53.8	35.1	43.4
3	70.1	70.3	61.8	62.9	51.8	54.1	42.4	47.4	26.0	36.2
4	66.6	66.9	56.3	57.7	46.4	49.3	36.6	42.9	19.5	31.2
5	63.6	64.0	52.7	54.5	42.5	46.0	32.8	40.4	16.1	29.7
6	62.1	62.5	48.2	50.2	40.4	44.6	29.2	37.7	12.0	25.5
7	60.8	61.3	46.0	48.3	37.3	41.9	25.7	35.3	10.6	24.5
8	60.0	60.6	44.2	46.8	35.7	41.2	23.6	34.0	7.6	22.8
9	59.5	60.3	43.4	46.2	33.9	40.0	21.6	33.2		
10	59.2	60.1	41.2	44.5	31.8	38.7	19.7	33.0		
11	57.7	58.8	39.0	42.5	30.1	37.8	17.9	33.0		
12	57.0	58.1	37.7	41.9	27.6	35.5	14.0	28.1		
13	56.2	57.3	37.7	41.9	25.1	33.5	12.6	27.9		
14	54.3	55.5	37.1	41.9	22.7	31.4				
15	53.2	54.6	35.0	40.3	20.4	29.5				
16	52.5	54.3	34.2	40.0	19.7	29.5				
17	52.5	53.7	33.0	39.5	19.7	29.5				
18	48.7	50.9	30.2	36.3	18.6	29.5				
19	48.7	50.1			18.6	29.5				
20	47.0	49.2								

Table 3b. Observed (obs.) and relative (rel.) survival of patients with sarcoma (morph.) by age category for period 1988-2012 (N=3,964).

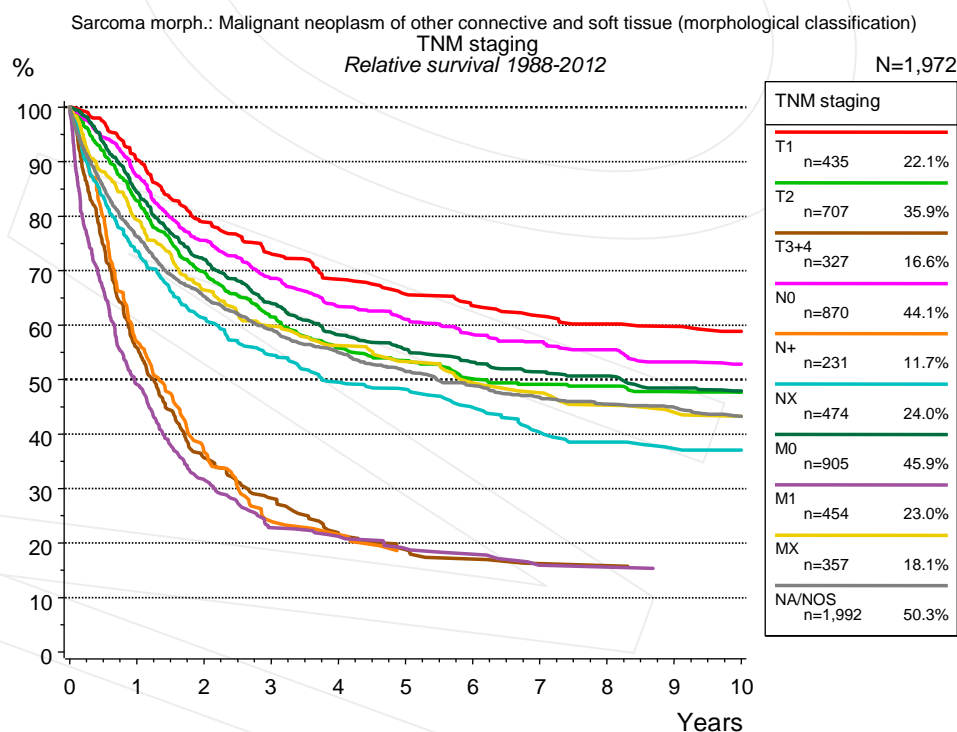


Figure 4a. Relative survival of patients with sarcoma (morph.) by TNM staging. For 1,974 of 3,964 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 1,972 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 1,992 patients with missing values regarding TNM staging (50.3% of 3,964 patients, the percent values of all other categories are related to n=1,972).

TNM staging														
Years	T1 n=435		T2 n=707		T3+4 n=327		N0 n=870		N+ n=231		NX n=474		M0 n=905	
	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	88.3	90.4	81.2	82.8	54.5	55.8	85.8	87.3	55.9	56.9	71.3	73.5	82.7	84.3
2	75.5	78.9	67.3	69.7	34.1	35.6	73.0	75.5	35.7	36.6	58.0	61.3	69.5	72.1
3	68.8	73.0	58.4	61.5	26.6	28.2	65.2	68.6	23.5	23.9	50.3	54.5	60.7	64.0
4	63.4	68.4	52.3	55.8	20.1	21.7	59.5	63.4	20.8	21.6	44.9	49.5	54.3	58.2
5	60.0	65.7	49.3	53.5	17.3	18.8	56.3	61.1	17.5	18.6	42.8	48.2	51.0	55.6
6	57.0	63.5	45.5	50.1	15.5	17.0	52.9	58.3	17.5	18.6	39.0	44.9	48.1	53.2
7	54.7	61.7	43.9	49.1	14.2	16.2	51.0	56.9	17.5	18.5	34.2	40.3	45.7	51.4
8	52.7	60.2	43.1	48.8	14.2	15.9	49.1	55.5	17.5	18.5	32.3	38.5	44.4	50.7
9	51.7	59.8	41.2	47.8	13.3	15.7	46.3	53.2	17.5	18.4	30.7	37.3	41.8	48.5
10	49.8	58.8	40.5	47.7	13.3	15.6	45.1	52.8	17.5	18.4	30.1	37.0	40.5	47.9

TNM staging						
<i>cont'd</i>	M1 n=454		MX n=357		NA/NOS n=1,992	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	48.2	49.1	77.2	79.3	74.3	76.2
2	30.6	31.6	63.1	66.4	62.3	65.3
3	21.9	22.8	55.5	59.8	55.4	59.2
4	20.5	21.2	51.4	56.3	50.5	55.0
5	18.0	19.0	47.7	53.3	46.4	51.5
6	17.1	17.9	43.3	49.4	43.4	48.9
7	14.6	15.9	41.3	47.6	40.9	46.7
8	14.6	15.6	38.6	45.3	39.0	45.5
9	14.0	15.1	36.9	44.0	37.9	44.9
10	14.0	14.6	35.9	43.3	35.9	43.3

Table 4b. Observed (obs.) and relative (rel.) survival of patients with sarcoma (morph.) by TNM staging for period 1988-2012 (N=4,760).

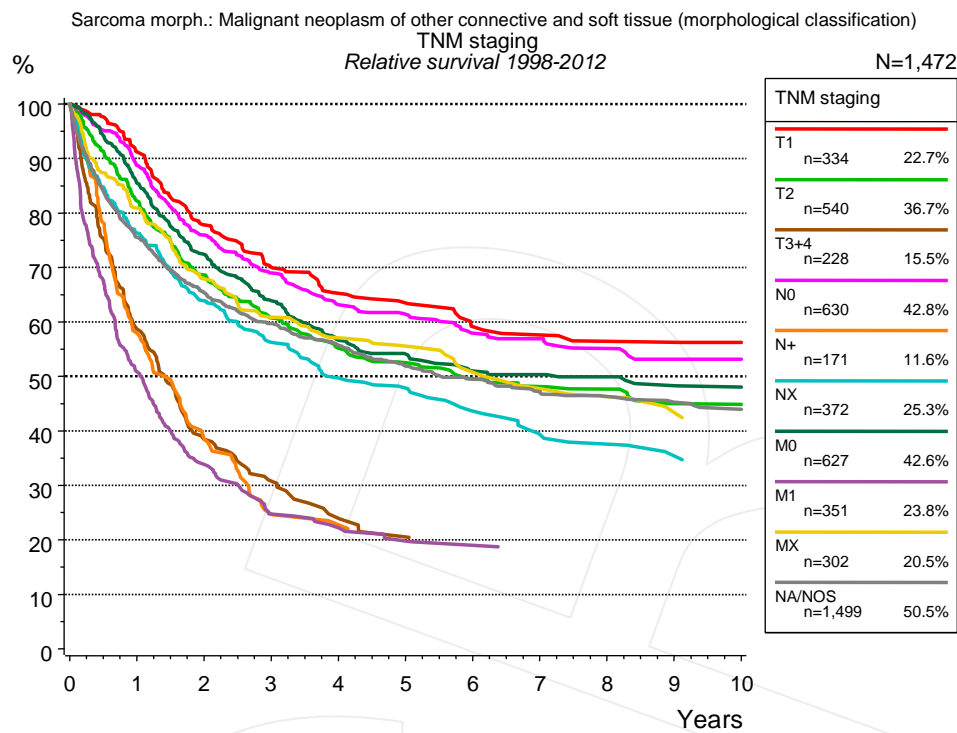


Figure 4c. Relative survival of patients with sarcoma (morph.) by TNM staging. For 1,473 of 2,971 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 1,472 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 1,499 patients with missing values regarding TNM staging (50.5% of 2,971 patients, the percent values of all other categories are related to n=1,472).

TNM staging														
	T1 n=334		T2 n=540		T3+4 n=228		N0 n=630		N+ n=171		NX n=372		M0 n=627	
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	89.0	91.2	80.6	82.2	57.2	58.7	87.2	88.7	56.9	57.9	74.0	76.3	83.8	85.5
2	74.3	77.8	66.3	68.6	36.8	38.5	73.6	75.9	37.5	38.5	60.6	63.9	69.9	72.4
3	65.9	70.0	57.6	60.7	29.1	30.8	65.7	68.9	24.5	24.6	52.0	56.3	60.8	63.9
4	60.3	65.2	51.8	55.2	22.9	23.9	59.5	63.1	22.3	22.7	45.2	49.7	53.2	56.7
5	58.1	63.5	48.4	52.5	19.7	20.5	56.9	61.4			42.6	47.8	50.0	54.1
6	53.0	59.2	44.9	49.6			52.9	57.9			37.9	43.6	46.5	51.0
7	51.4	57.6	43.1	48.1			51.7	56.9			33.6	39.3	45.7	50.3
8	49.5	56.5	42.1	47.7			49.4	55.1			32.0	37.6	44.7	49.9
9	49.5	56.3	38.8	45.0			47.0	53.2			29.6	35.4	42.9	48.3
10	48.1	56.2	38.8	44.9			47.0	53.2			28.2	34.1	42.1	48.1

cont'd	TNM staging					
	M1 n=351		MX n=302		NA/NOS n=1,499	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
Years						
0	100.0	100.0	100.0	100.0	100.0	100.0
1	49.9	50.8	78.7	80.9	73.5	75.5
2	32.7	33.8	64.8	67.9	62.3	65.4
3	23.7	24.7	56.7	60.9	55.7	59.7
4	21.7	22.2	52.4	57.1	51.0	55.7
5	19.1	19.8	50.0	55.6	46.5	51.9
6	18.4	19.0	44.7	50.8	43.7	49.5
7			42.0	47.8	41.0	47.2
8			40.0	46.3	39.6	46.3
9			37.1	43.4	38.0	45.2
10			35.2	41.7	36.5	44.0

Table 4d. Observed (obs.) and relative (rel.) survival of patients with sarcoma (morph.) by TNM staging for period 1998-2012 (N=3,555).

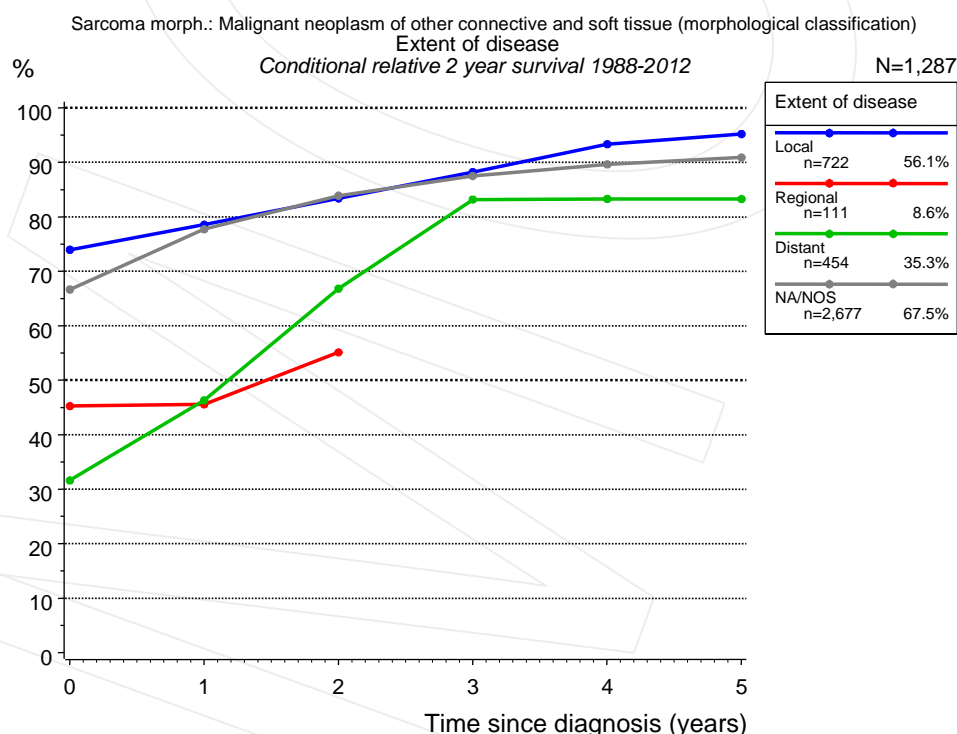


Figure 4e. Conditional relative 2-year survival of patients with sarcoma (morph.) by extent of disease. For 1,974 of 3,964 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 1,287 cases an evaluable classification was established. The grey line represents the subgroup of 2,677 patients with missing values regarding extent of disease (67.5% of 3,964 patients, the percent values of all other categories are related to n=1,287).

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	722	73.9	111	45.3	454	31.6	2,677	66.7
1	580	78.6	64	45.6	206	46.3	1,932	77.7
2	451	83.4	37	55.1	118	66.8	1,493	83.9
3	362	88.2			70	83.2	1,199	87.5
4	297	93.3			51	83.3	961	89.6
5	261	95.2			43	83.3	766	90.9

Table 4f. Conditional relative 2-year survival of patients with sarcoma (morph.) by extent of disease for period 1988-2012 (N=1,287).

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 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 2-year survival rate is 88.2% (n=362).

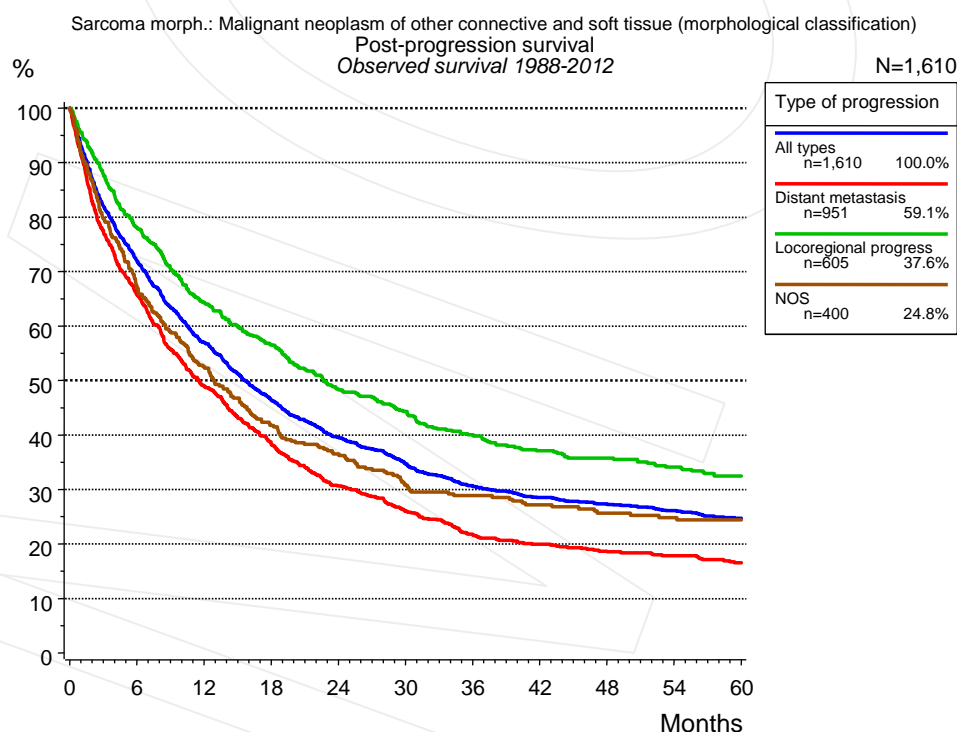


Figure 5a. Observed post-progression survival of 1,610 patients with sarcoma (morph.) diagnosed between 1988 and 2012 (incl. M1). These 1,610 patients with documented progression events during their course of disease represent 40.6% of the totally 3,964 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=576, 14.5%). 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=1,610 %	Distant metastasis n=951 %	Locoregional progress n=605 %	NOS n=400 %
0	100.0	100.0	100.0	100.0
12	56.9	49.0	64.4	52.5
24	39.6	30.7	48.4	36.5
36	30.6	21.7	40.0	28.9
48	27.4	18.7	35.7	25.7
60	24.7	16.6	32.5	24.4

Table 5b. Observed post-progression survival of patients with sarcoma (morph.) for period 1988-2012 (N=1,610).

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

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Index of figures and tables

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