

# Munich Cancer Registry



- ▶ Baseline statistics
- ▶ Selection Matrix
- ▶ Homepage

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

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

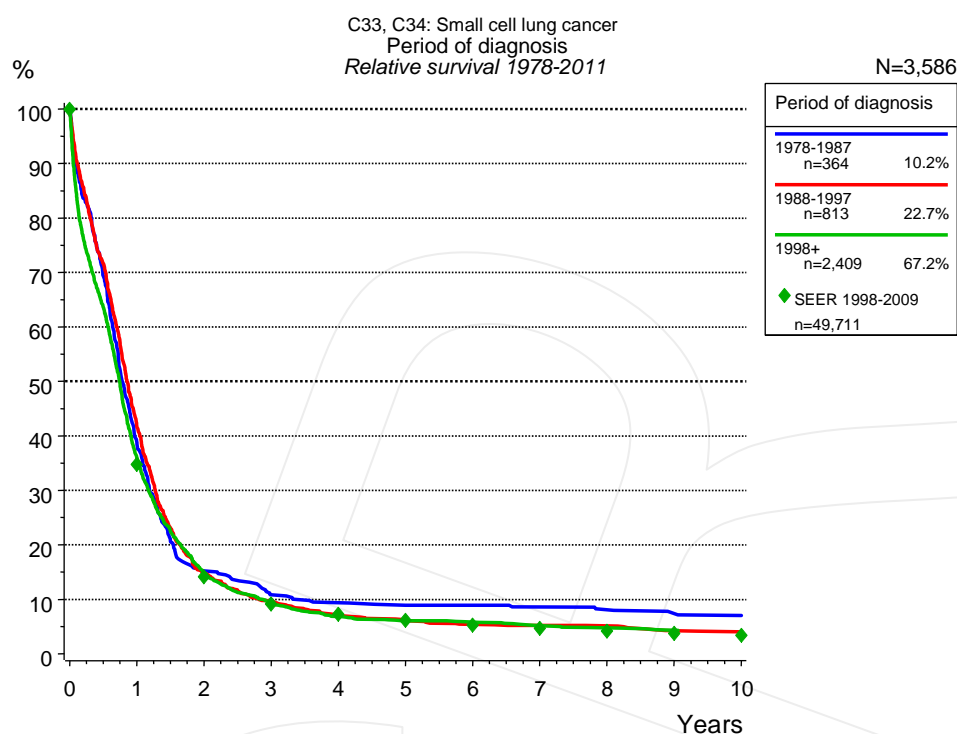
## Cancer statistics: Survival

### C33, C34: Small cell LC

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	405	912	3,865
Diseases	405	912	3,866
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C34s\\_E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C34s_E.pdf)



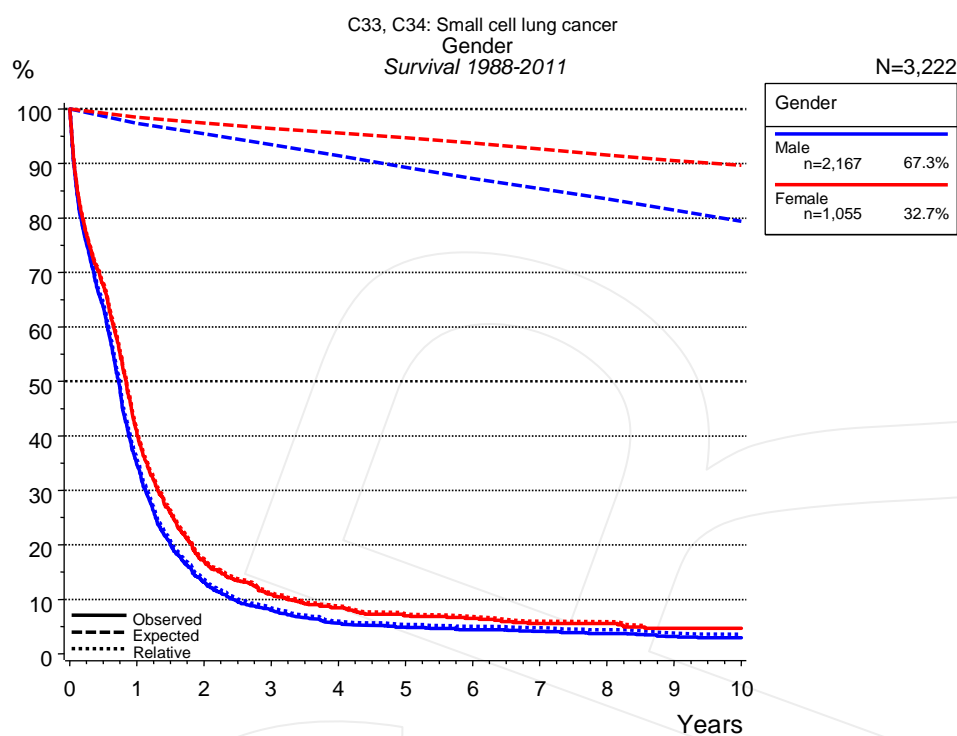
**Figure 1a.** Relative survival of patients with small cell LC by period of diagnosis. Included in the evaluation are 3,586 cases diagnosed between 1978 and 2011.

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 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					
	1978-1987 n=364		1988-1997 n=813		1998+ n=2,409	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	37.9	38.7	41.1	41.8	35.2	36.0
2	14.6	15.2	14.4	14.9	14.4	15.0
3	10.2	10.9	9.2	9.7	8.8	9.3
4	8.8	9.4	6.7	7.2	6.4	6.8
5	8.0	8.9	5.7	6.2	5.6	6.1
6	8.0	8.9	4.8	5.4	5.3	5.8
7	7.5	8.6	4.6	5.2	4.6	5.1
8	6.9	8.1	4.5	5.1	4.2	4.7
9	6.4	7.4	3.6	4.2	3.8	4.3
10	5.8	7.1	3.4	4.1		

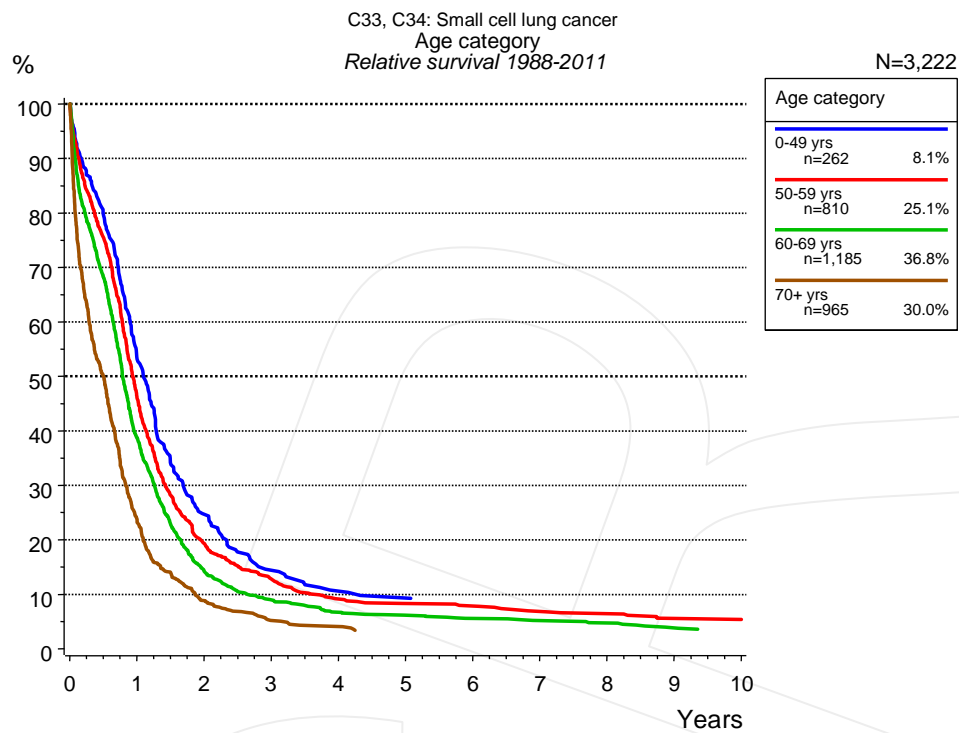
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with small cell LC by period of diagnosis for period 1978-2011 (N=3,586).



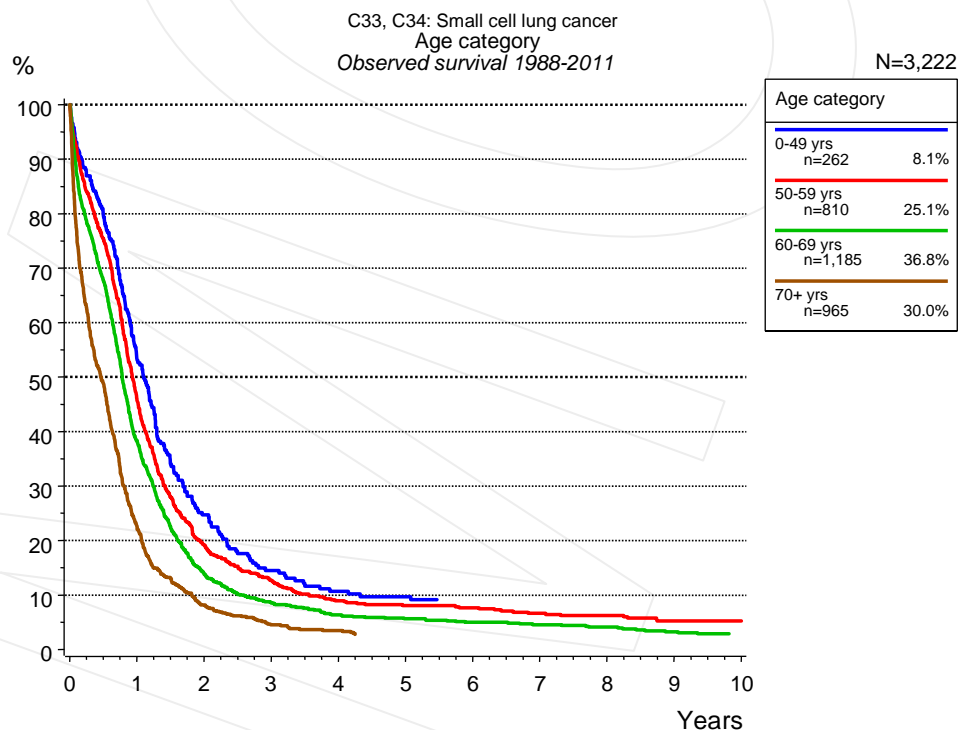
**Figure 2a.** Survival of patients with small cell LC by gender. Included in the evaluation are 3,222 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=2,167		Female n=1,055	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	34.8	35.7	40.6	41.1
2	13.1	13.7	17.0	17.4
3	7.9	8.4	11.0	11.2
4	5.5	6.0	8.5	8.8
5	4.9	5.4	7.0	7.3
6	4.4	5.0	6.5	6.8
7	4.1	4.8	5.6	6.0
8	3.7	4.4	5.6	5.9
9	3.2	3.8	4.7	5.2
10	3.0	3.6	4.7	5.1

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with small cell LC by gender for period 1988-2011 (N=3,222).



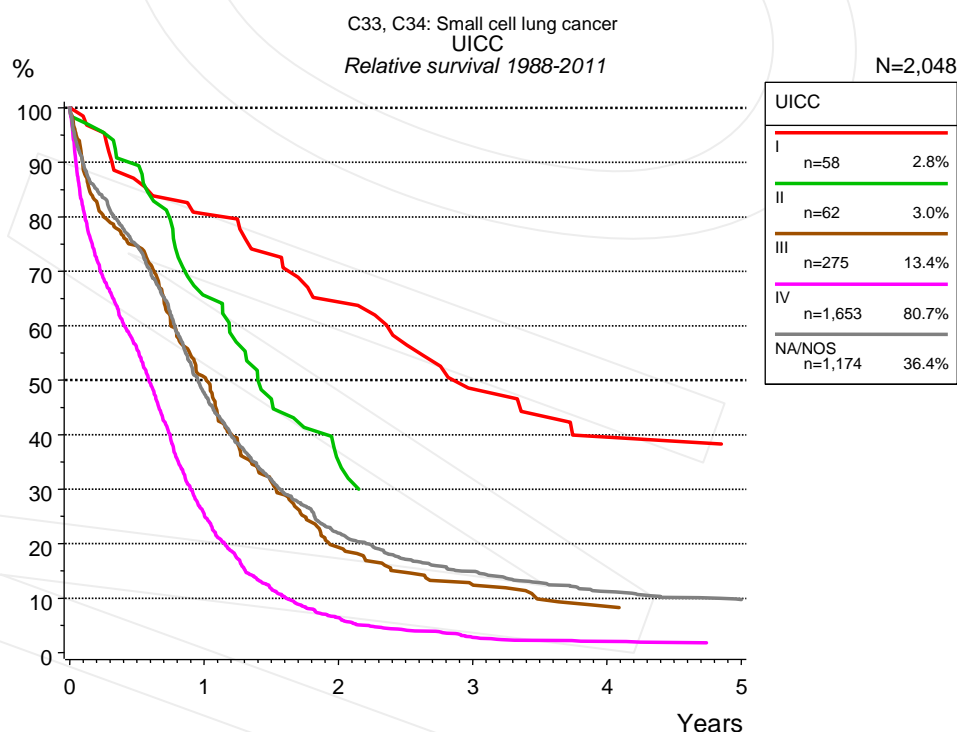
**Figure 3a.** Relative survival of patients with small cell LC by age category. Included in the evaluation are 3,222 cases diagnosed between 1988 and 2011.



**Figure 3b.** Observed survival of patients with small cell LC by age category. Included in the evaluation are 3,222 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=262		50-59 yrs n=810		60-69 yrs n=1,185		70+ yrs n=965	
	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	53.0	53.1	46.0	46.3	38.2	38.8	22.6	23.6
2	24.7	24.7	19.2	19.4	13.8	14.2	8.1	8.8
3	14.5	14.4	12.6	12.8	8.6	9.0	4.5	5.2
4	10.7	10.6	8.9	9.1	6.3	6.7	3.5	4.0
5	9.7	9.3	8.0	8.3	5.6	6.1		
6	9.1	9.2	7.6	7.9	5.0	5.5		
7	9.1	9.1	6.6	6.9	4.5	5.2		
8	9.1	9.0	6.2	6.5	4.1	4.7		
9	9.1	8.8	5.2	5.6	3.2	3.8		
10	9.1	8.7	5.2	5.4	2.9	3.6		

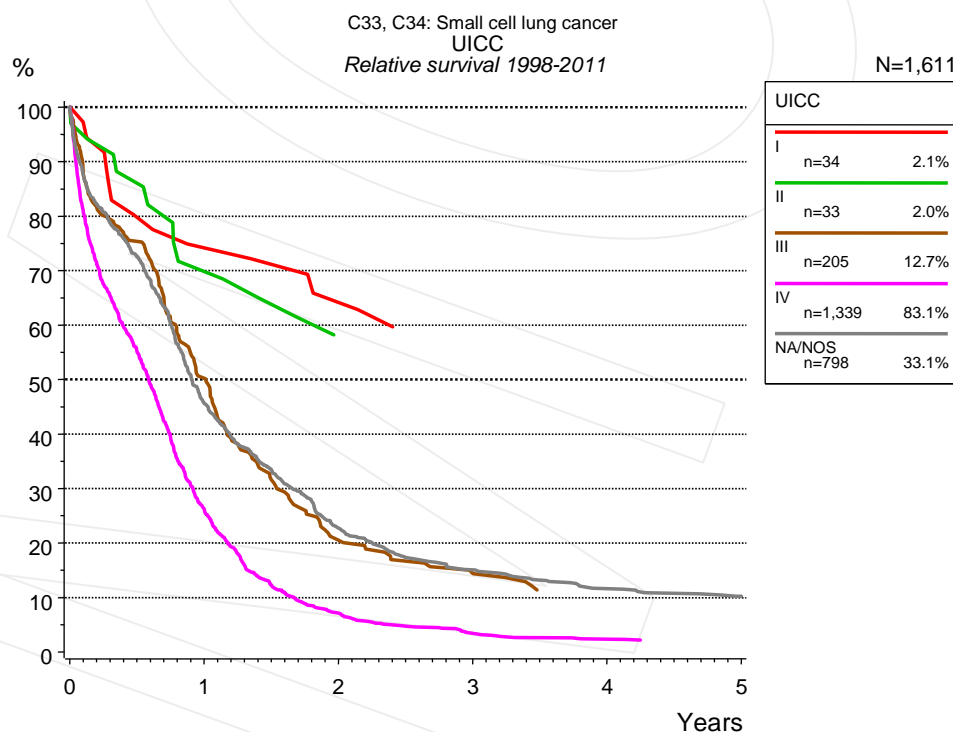
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with small cell LC by age category for period 1988-2011 (N=3,222).



**Figure 4a.** Relative survival of patients with small cell LC by UICC. For 2,634 of 3,222 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,048 cases an evaluable classification was established. The grey line represents the subgroup of 1,174 patients with missing values regarding UICC (36.4% of 3,222 patients, the percent values of all other categories are related to n=2,048).

Years	UICC									
	I n=58		II n=62		III n=275		IV n=1,653		NA/NOS n=1,174	
	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	79.2	80.5	64.5	65.6	49.8	50.5	25.0	25.4	46.6	47.7
2	62.8	64.4	34.7	35.3	18.7	19.3	6.2	6.4	21.1	21.9
3	45.6	48.4			12.2	12.4	2.7	2.8	14.1	14.9
4	36.9	39.6			8.3	8.5	2.0	2.1	10.4	11.2
5	34.6	37.5					1.7	1.8	9.0	9.7

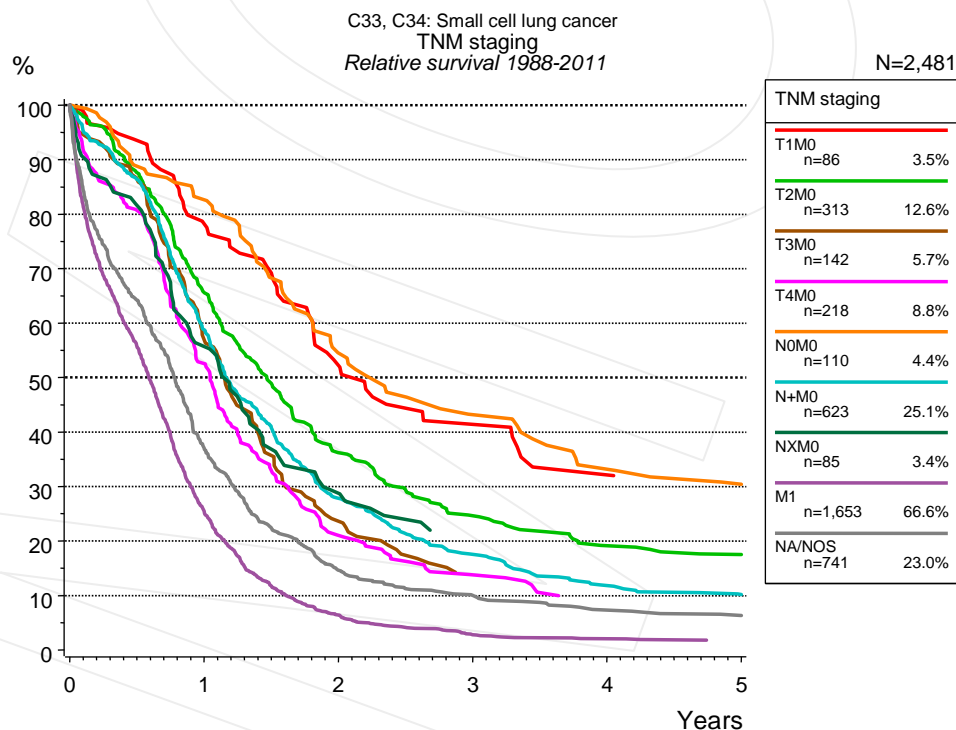
**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with small cell LC by UICC for period 1988-2011 (N=2,048).



**Figure 4c.** Relative survival of patients with small cell LC by UICC. For 1,988 of 2,409 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 1,611 cases an evaluable classification was established. The grey line represents the subgroup of 798 patients with missing values regarding UICC (33.1% of 2,409 patients, the percent values of all other categories are related to n=1,611).

Years	UICC									
	I		II		III		IV		NA/NOS	
	n=34		n=33		n=205		n=1,339		n=798	
	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	73.4	74.2	70.7	69.8	49.6	50.2	25.6	26.1	44.5	45.6
2	63.4	64.1			19.9	20.5	6.9	7.1	21.8	22.7
3					14.3	14.4	3.2	3.4	14.3	15.0
4							2.3	2.3	10.9	11.6
5									9.3	10.2

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with small cell LC by UICC for period 1998-2011 (N=1,611).

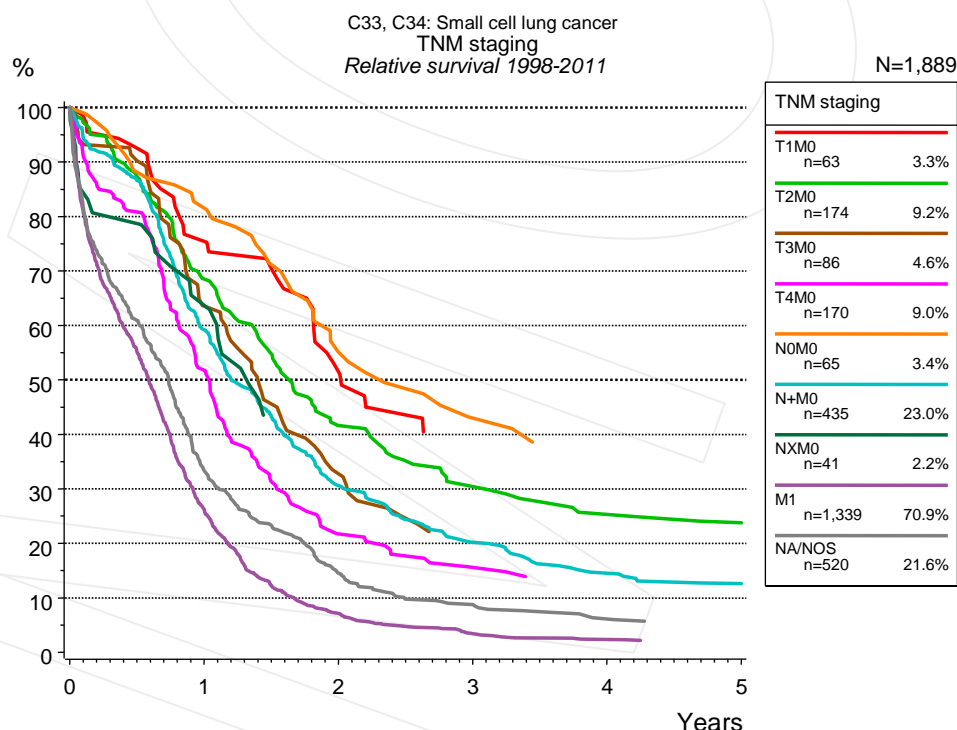


**Figure 4e.** Relative survival of patients with small cell LC by TNM staging. For 2,634 of 3,222 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,481 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 741 patients with missing values regarding TNM staging (23.0% of 3,222 patients, the percent values of all other categories are related to n=2,481).

TNM staging														
	T1M0 n=86		T2M0 n=313		T3M0 n=142		T4M0 n=218		N0M0 n=110		N+M0 n=623		NXM0 n=85	
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	77.4	78.2	64.5	65.6	56.7	57.0	51.9	52.5	81.7	82.6	57.8	58.8	55.4	55.7
2	51.5	52.2	34.9	36.2	23.3	23.6	20.4	21.1	52.5	54.5	26.9	27.8	29.1	28.7
3	40.2	41.4	23.5	24.6			13.2	13.8	40.8	43.2	16.7	17.5		
4	31.6	32.2	18.0	19.1					31.5	33.2	11.2	11.8		
5			16.3	17.5					27.9	30.4	9.4	10.2		

TNM staging				
Years	M1 n=1,653		NA/NOS n=741	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	25.0	25.4	36.0	37.0
2	6.2	6.4	14.0	14.7
3	2.7	2.8	9.5	10.0
4	2.0	2.1	6.9	7.3
5	1.7	1.8	5.9	6.3

**Table 4f.** Observed (obs.) and relative (rel.) survival of patients with small cell LC by TNM staging for period 1988-2011 (N=3,230).



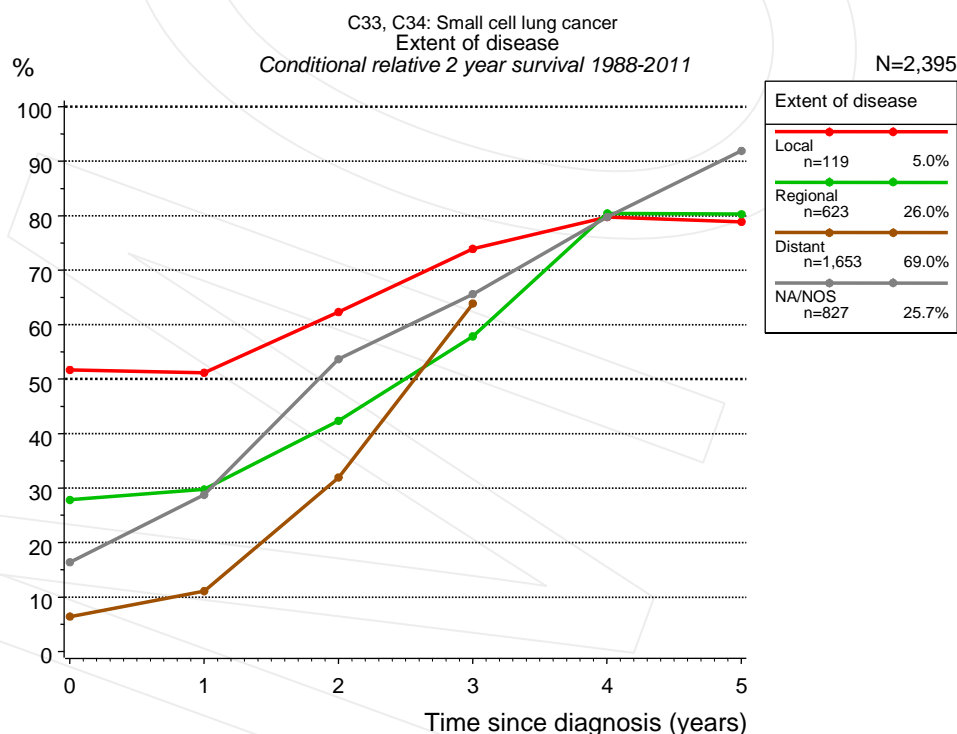
**Figure 4g.** Relative survival of patients with small cell LC by TNM staging. For 1,988 of 2,409 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 1,889 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 520 patients with missing values regarding TNM staging (21.6% of 2,409 patients, the percent values of all other categories are related to n=1,889).



TNM staging														
	T1M0 n=63		T2M0 n=174		T3M0 n=86		T4M0 n=170		N0M0 n=65		N+M0 n=435		NXM0 n=41	
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	75.5	75.4	67.4	68.5	62.5	63.5	51.3	51.8	81.3	81.5	58.2	59.2	64.6	63.7
2	51.1	51.5	40.2	41.6	32.5	32.7	21.0	21.7	53.3	55.1	29.7	30.6		
3	38.6	39.1	29.1	30.4			14.9	15.6	41.0	43.0	19.3	20.2		
4			24.2	25.3							13.8	14.5		
5			22.3	23.8							11.8	12.6		

TNM staging				
Years	M1 n=1,339		NA/NOS n=520	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	25.6	26.1	32.4	33.3
2	6.9	7.1	13.9	14.5
3	3.2	3.4	8.4	8.7
4	2.3	2.3	5.8	6.1

**Table 4h.** Observed (obs.) and relative (rel.) survival of patients with small cell LC by TNM staging for period 1998-2011 (N=2,373).

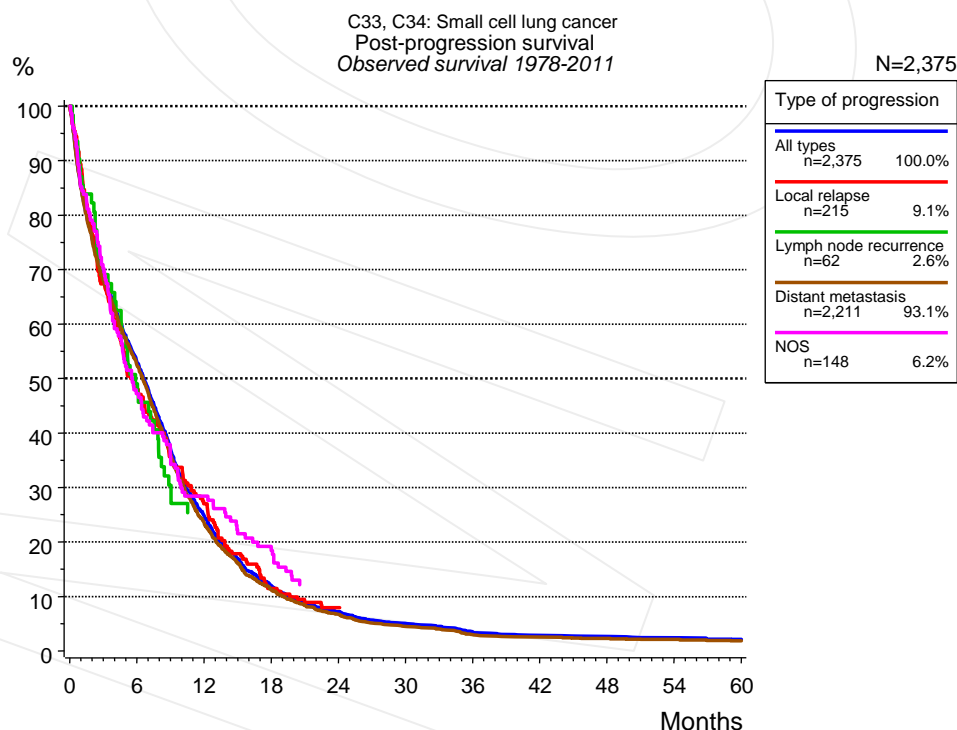


**Figure 4i.** Conditional relative 2-year survival of patients with small cell LC by extent of disease. For 2,634 of 3,222 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,395 cases an evaluable classification was established. The grey line represents the subgroup of 827 patients with missing values regarding extent of disease (25.7% of 3,222 patients, the percent values of all other categories are related to n=2,395).

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	119	51.7	623	27.8	1,653	6.4	827	16.4
1	90	51.2	339	29.7	385	11.1	296	28.8
2	52	62.3	146	42.3	85	31.9	111	53.7
3	38	73.9	80	57.9	32	63.9	72	65.6
4	28	79.7	47	80.4			51	79.8
5	25	78.9	35	80.3			39	91.9

**Table 4j.** Conditional relative 2-year survival of patients with small cell LC by extent of disease for period 1988-2011 (N=2,395).

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 73.9% (n=38).



**Figure 5a.** Observed post-progression survival of 2,375 patients with small cell LC diagnosed between 1978 and 2011 (incl. M1). These 2,375 patients with documented progression events during their course of disease represent 66.2% of the totally 3,586 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=639, 17.8%). 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				NOS n=148 %
	All types n=2,375 %	Local relapse n=215 %	Lymph node recurrence n=62 %	Distant metastasis n=2,211 %	
0	100.0	100.0	100.0	100.0	100.0
12	24.8	27.0		23.6	28.4
24	7.2	7.9		6.7	12.2
36	3.5			2.9	
48	2.6			2.3	
60	2.1			1.9	

**Table 5b.** Observed post-progression survival of patients with small cell LC for period 1978-2011 (N=2,375).

**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 C33, C34: Small cell LC [Internet]. 2013 [updated 2013 Apr 1; cited 2013 May 1]. Available from: [http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C34s\\_E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C34s_E.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
2a Survival by gender (chart)	3
2b Survival by gender (table)	3
3a Relative survival by age category (chart)	4
3b Observed survival by age category (chart)	4
3c Survival by age category (table)	5
4a Relative survival by UICC 1988+ (chart)	5
4b Survival by UICC 1988+ (table)	6
4c Relative survival by UICC 1998+ (chart)	6
4d Survival by UICC 1998+ (table)	7
4e Relative survival by TNM staging 1988+ (chart)	7
4f Survival by TNM staging 1988+ (table)	8
4g Relative survival by TNM staging 1998+ (chart)	8
4h Survival by TNM staging 1998+ (table)	9
4i Conditional survival by extent of disease (chart)	9
4j Conditional survival by extent of disease (table)	10
5a Observed post-progression survival (chart)	10
5b Observed post-progression survival (table)	11