

# Munich Cancer Registry



- ▶ Baseline statistics
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Munich Cancer Registry at Munich Cancer Center  
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Germany

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

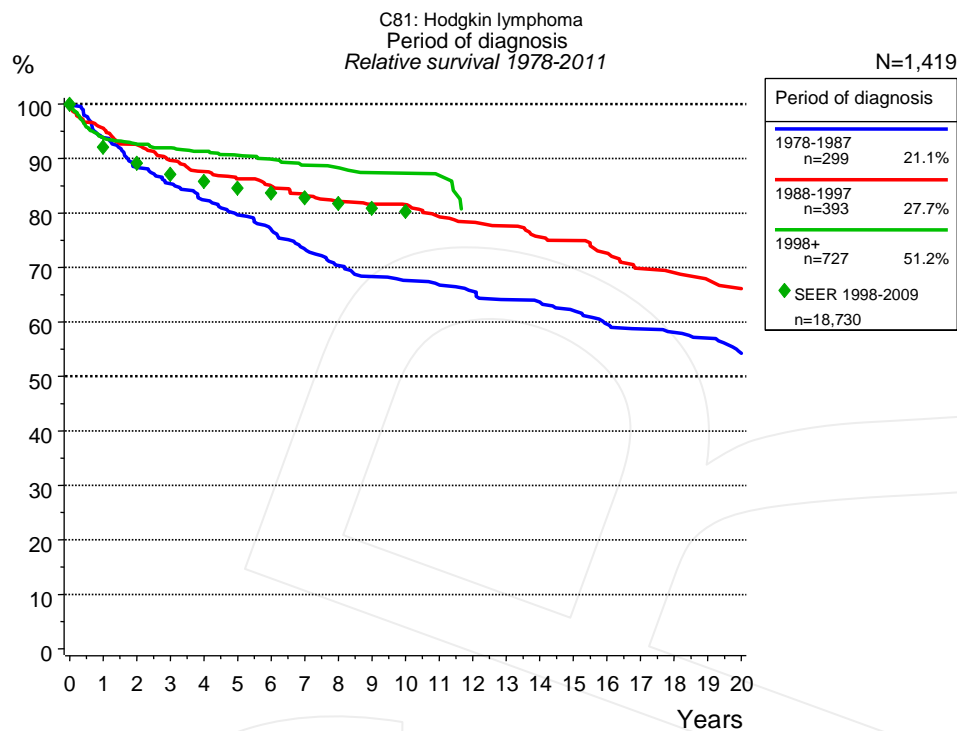
## Cancer statistics: Survival

### C81: Hodgkin lymphoma

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	340	449	1,293
Diseases	340	449	1,293
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C81\\_\\_E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C81__E.pdf)



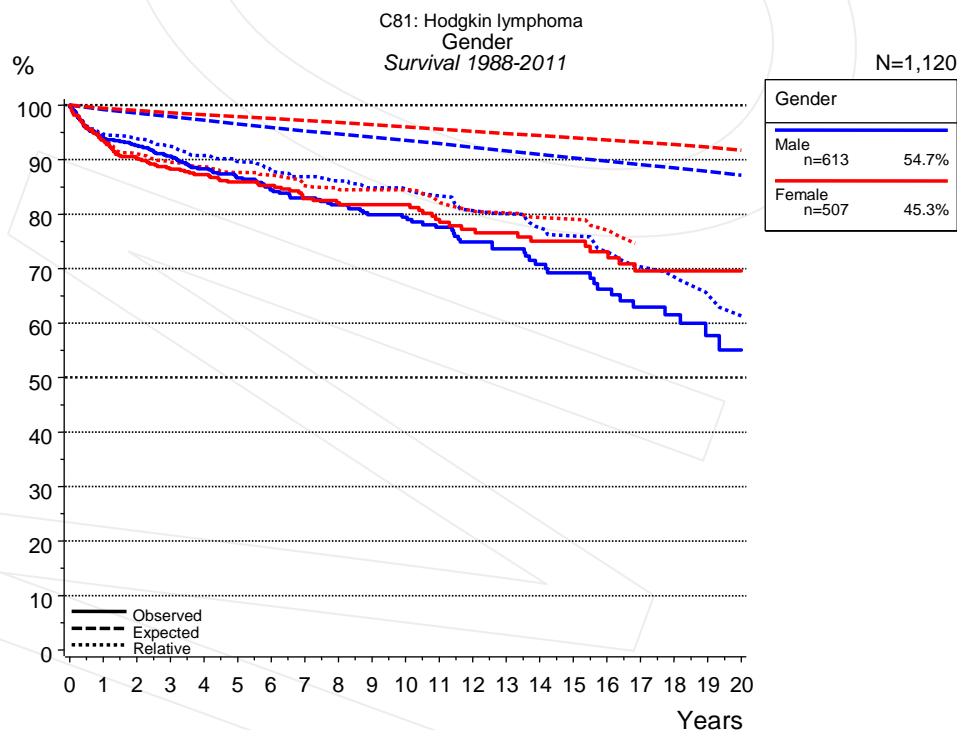
**Figure 1a.** Relative survival of patients with Hodgkin lymphoma by period of diagnosis. Included in the evaluation are 1,419 cases diagnosed between 1978 and 2011.

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		1988-1997		1998+	
	n=299		n=393		n=727	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	93.3	93.8	94.9	95.5	93.1	93.8
2	87.6	88.4	91.5	92.5	91.6	92.6
3	84.2	85.4	88.1	89.7	90.6	92.0
4	80.9	82.4	85.7	87.6	89.4	91.3
5	77.8	79.6	83.8	86.3	88.2	90.6
6	75.1	76.9	82.1	85.0	86.9	89.8
7	71.3	73.4	79.9	83.2	85.5	88.8
8	68.1	70.3	78.5	82.1	85.0	88.3
9	66.0	68.4	77.7	81.6	83.4	87.4
10	64.9	67.6	77.4	81.5	83.4	87.3
11	64.2	66.8	74.9	79.3	82.1	86.9
12	62.7	65.6	73.6	78.3		
13	60.8	64.1	72.5	77.6		
14	60.1	63.6	70.1	75.6		
15	58.6	62.1	69.3	75.0		
16	55.9	59.6	67.0	72.6		
17	54.8	58.7	63.7	69.8		
18	54.0	58.1	63.0	69.1		
19	52.9	57.0	61.2	67.7		
20	50.2	54.3	59.9	66.1		

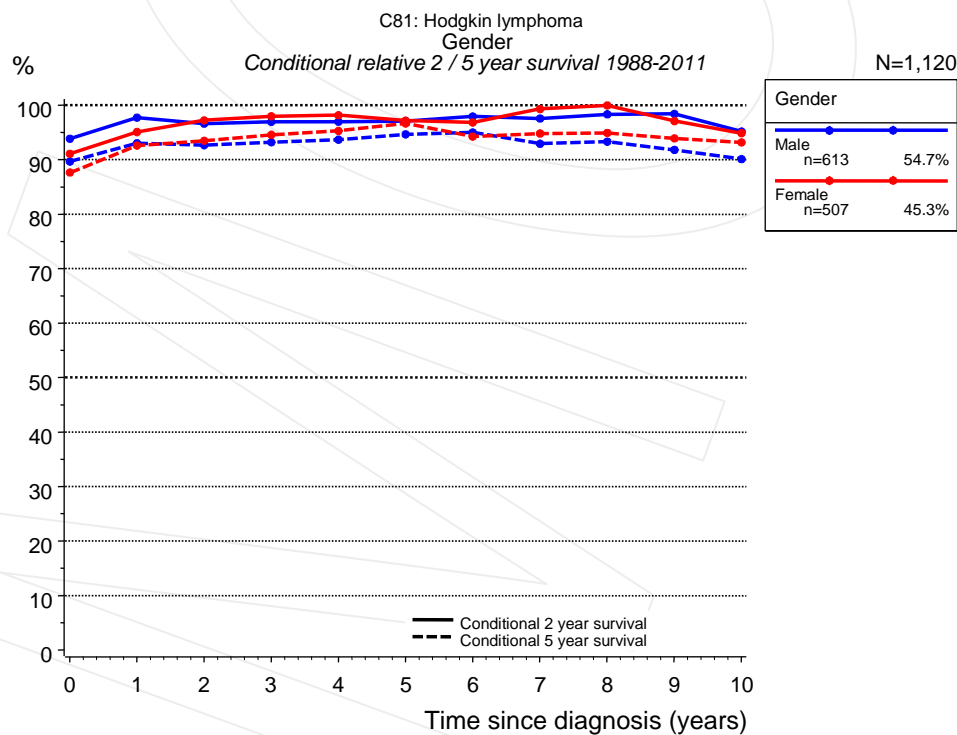
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with Hodgkin lymphoma by period of diagnosis for period 1978-2011 (N=1,419).



**Figure 2a.** Survival of patients with Hodgkin lymphoma by gender. Included in the evaluation are 1,120 cases diagnosed between 1988 and 2011.

Years	Gender		Gender	
	Male n=613		Female n=507	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	93.8	94.6	93.6	94.0
2	92.6	93.9	90.3	91.1
3	90.7	92.4	88.3	89.5
4	88.3	90.7	87.3	88.7
5	86.6	89.7	85.9	87.6
6	84.4	87.9	85.2	87.2
7	83.0	86.9	82.9	85.2
8	81.7	86.1	82.1	84.5
9	79.9	84.8	81.7	84.4
10	79.4	84.6	81.7	84.4
11	77.5	83.3	79.1	82.1
12	74.9	80.6	77.2	80.6
13	73.6	80.0	76.6	80.2
14	70.8	77.5	75.1	79.3
15	69.2	76.0	75.1	79.1
16	66.2	73.0	73.1	77.0
17	62.9	70.3		
18	61.5	68.4		
19	57.7	65.2		
20	55.1	61.3		

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with Hodgkin lymphoma by gender for period 1988-2011 (N=1,120).

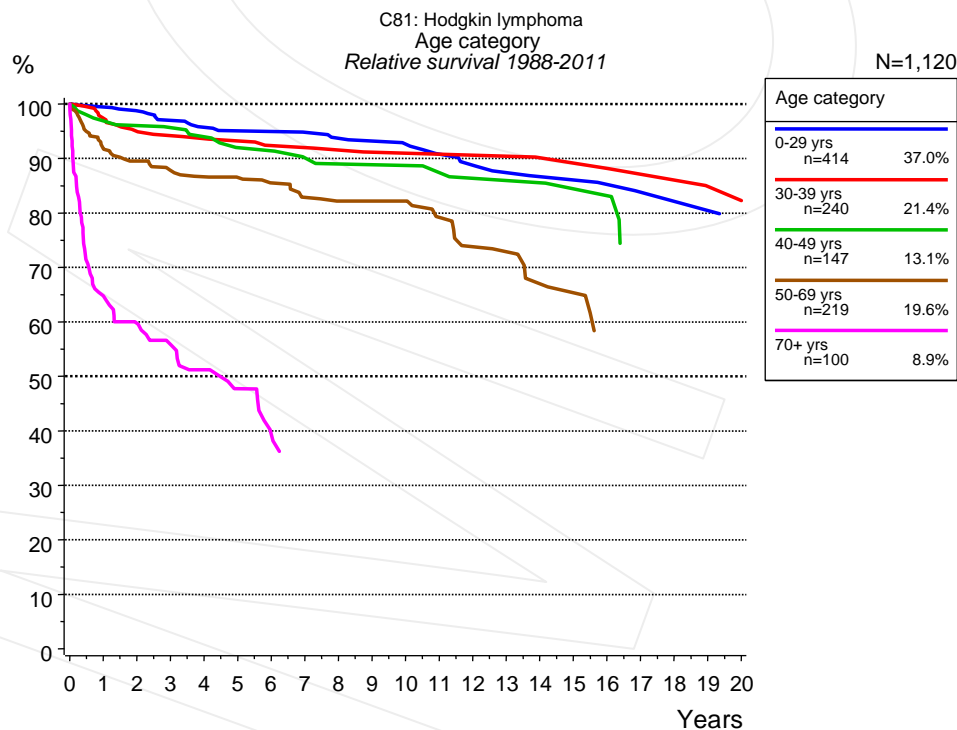


**Figure 2c.** Conditional relative 2 / 5-year survival of patients with Hodgkin lymphoma by gender. For 1,120 of 1,120 cases diagnosed between 1988 and 2011 valid data could be obtained for this item.

Years	Gender					
	Male			Female		
	n	Cond. surv. % 2 yrs	5 yrs	n	Cond. surv. % 2 yrs	5 yrs
0	613	93.9	89.7	507	91.1	87.6
1	543	97.7	93.0	460	95.1	92.6
2	502	96.6	92.7	416	97.2	93.5
3	445	96.9	93.2	375	98.0	94.6
4	384	97.0	93.7	319	98.2	95.3
5	336	97.1	94.7	292	97.2	96.6
6	303	97.9	95.0	265	96.8	94.2
7	271	97.6	92.9	235	99.3	94.8
8	241	98.3	93.3	214	100.0	94.9
9	212	98.4	91.8	190	97.1	93.9
10	177	95.2	90.1	166	94.9	93.2

**Table 2d.** Conditional relative 2 / 5-year survival of patients with Hodgkin lymphoma by gender for period 1988-2011 (N=1,120).

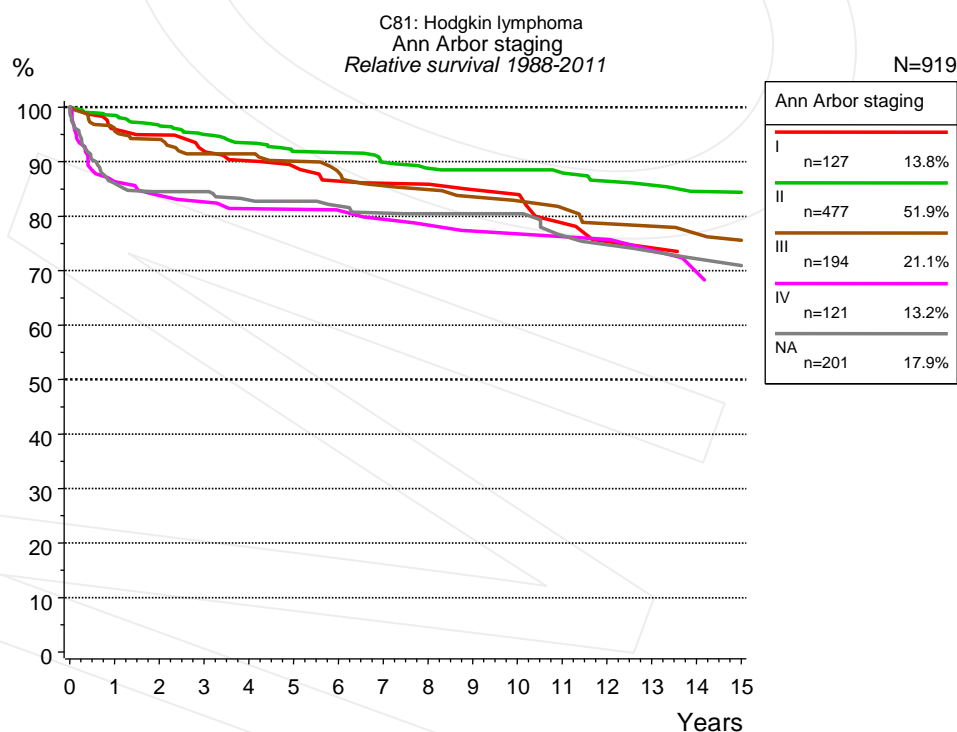
Conditional relative survival rates refer to the relative survival probability, in this case for 2 and 5 years after cancer diagnosis, compared to the age- and sex-matched population (=100%) under the condition of being alive for a certain time period (x-axis in Figure 2a). The results illustrate to 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 gender="Male", who are alive at least 3 years after cancer diagnosis, the conditional relative 2-year survival rate is 96.9% (n=445).



**Figure 3a.** Relative survival of patients with Hodgkin lymphoma by age category. Included in the evaluation are 1,120 cases diagnosed between 1988 and 2011.

Years	Age category									
	0-29 yrs n=414		30-39 yrs n=240		40-49 yrs n=147		50-69 yrs n=219		70+ yrs n=100	
	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	99.5	99.4	97.4	97.4	97.3	96.9	90.8	91.7	62.5	64.8
2	98.7	98.8	95.2	94.9	95.9	96.1	87.9	89.5	54.9	59.7
3	97.0	97.0	94.2	94.2	95.1	95.7	85.1	87.8	49.0	55.9
4	95.7	95.7	93.7	93.6	93.5	94.0	83.4	86.6	42.6	51.2
5	95.0	95.1	93.1	93.2	90.7	92.0	82.0	86.5	36.6	47.7
6	95.0	95.0	91.8	92.4	90.7	91.4	79.8	85.5	28.8	39.4
7	94.5	94.8	91.8	92.0	88.3	90.1	76.4	82.9		
8	93.5	93.7	91.1	91.6	87.0	89.0	74.6	82.1		
9	93.0	93.2	90.2	91.2	87.0	88.8	73.6	82.1		
10	92.4	92.6	90.2	91.0	87.0	88.7	73.6	82.1		
11	90.4	90.8	90.2	90.8	85.0	87.4	68.5	79.2		
12	88.9	88.7	90.2	90.6	82.7	86.3	62.9	73.8		
13	87.1	87.4	90.2	90.4	82.7	85.9	61.1	72.9		
14	86.2	86.7	88.3	90.1	82.7	85.5	55.3	66.9		
15	86.2	86.1	88.3	89.1	79.9	84.4	53.2	65.3		
16	84.8	85.2	88.3	88.2	79.9	83.1	45.2	57.4		
17	83.2	83.8	85.6	87.1	68.2	72.2				
18	83.2	82.1	85.6	86.0						
19	83.2	80.5	81.7	84.9						
20			81.7	82.3						

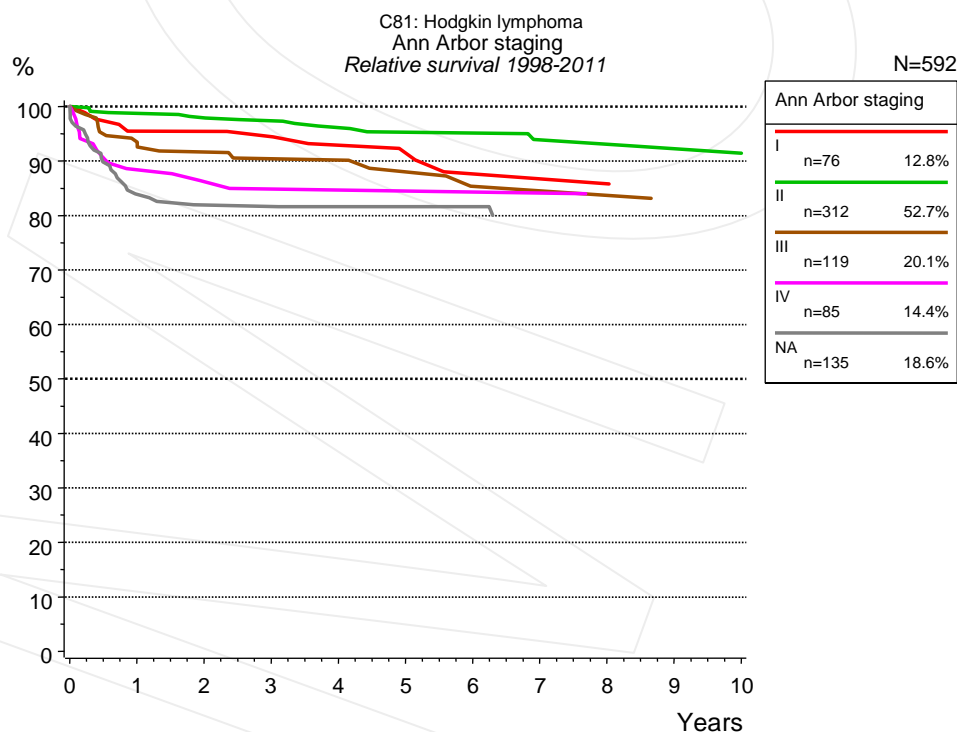
**Table 3b.** Observed (obs.) and relative (rel.) survival of patients with Hodgkin lymphoma by age category for period 1988-2011 (N=1,120).



**Figure 4a.** Relative survival of patients with Hodgkin lymphoma by Ann Arbor staging. For 919 of 1,120 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. The grey line represents the subgroup of 201 patients with missing values regarding Ann Arbor staging (17.9% of 1,120 patients, the percent values of all other categories are related to n=919).

Ann Arbor staging											
Years	I n=127		II n=477		III n=194		IV n=121		NA n=201		
	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	95.2	95.9	98.3	98.5	95.3	96.0	85.5	86.3	85.3	86.0	
2	93.5	94.9	96.0	96.6	93.2	94.1	82.6	83.8	83.2	84.5	
3	89.9	91.9	94.1	95.0	89.8	91.5	81.6	82.6	83.2	84.5	
4	87.1	90.1	92.4	93.4	89.8	91.5	79.4	81.3	80.8	83.0	
5	85.1	89.1	90.4	91.9	87.7	90.1	79.4	81.2	80.1	82.7	
6	81.7	86.4	90.0	91.7	85.2	88.0	78.0	81.1	78.6	81.9	
7	80.5	86.0	88.0	89.9	82.6	85.6	76.5	79.4	77.0	80.6	
8	80.5	85.8	86.6	88.8	81.7	84.9	74.9	78.3	76.1	80.4	
9	77.5	84.8	86.1	88.5	79.7	83.5	73.2	77.3	76.1	80.4	
10	77.5	83.9	86.1	88.5	78.5	82.8	73.2	76.7	76.1	80.4	
11	71.9	78.7	85.5	87.9	77.1	81.5	73.2	76.2	71.0	76.5	
12	67.2	75.3	83.3	86.4	74.1	78.6	73.2	75.7	69.6	74.8	
13	67.2	74.2	82.4	85.7	74.1	78.2	70.3	73.7	67.7	73.5	
14	64.3	72.5	80.5	84.5	72.5	76.8	66.6	69.7	65.7	72.2	
15	64.3	70.1	80.5	84.4	70.6	75.6	62.6	65.3	65.7	70.9	

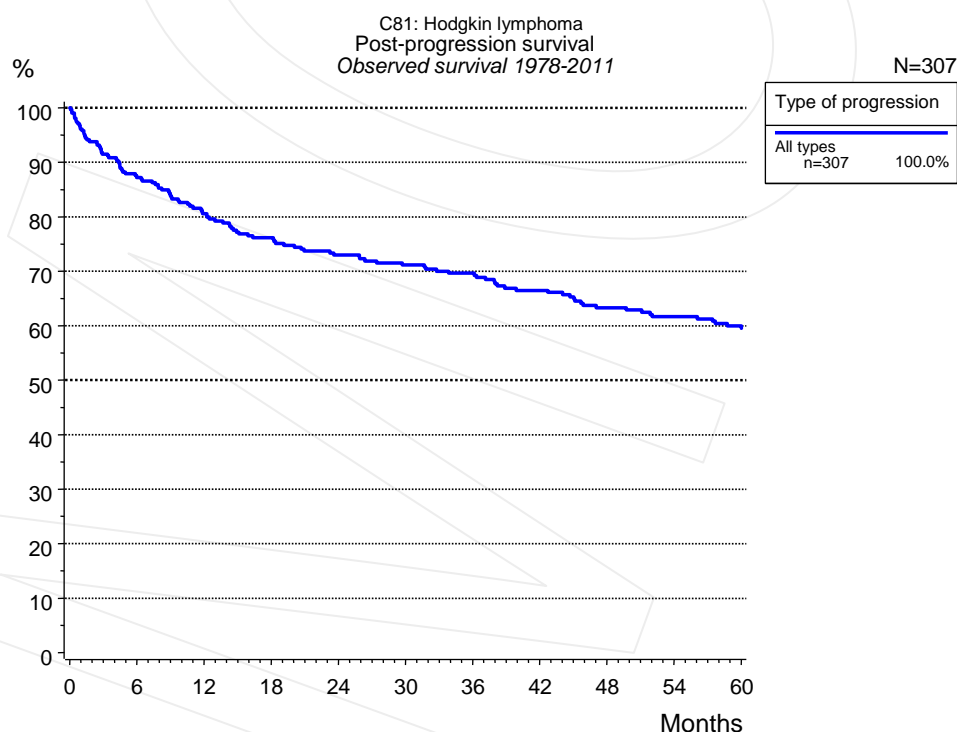
**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with Hodgkin lymphoma by Ann Arbor staging for period 1988-2011 (N=919).



**Figure 4c.** Relative survival of patients with Hodgkin lymphoma by Ann Arbor staging. For 592 of 727 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. The grey line represents the subgroup of 135 patients with missing values regarding Ann Arbor staging (18.6% of 727 patients, the percent values of all other categories are related to n=592).

Years	Ann Arbor staging									
	I n=76		II n=312		III n=119		IV n=85		NA n=135	
	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	95.5	98.7	98.8	92.3	93.2	87.8	88.4	83.2	83.9
2	94.6	95.4	97.6	97.9	90.6	91.6	85.0	86.2	80.8	81.9
3	93.1	94.5	96.8	97.4	88.7	90.4	83.4	84.9	80.8	81.7
4	89.7	92.9	95.3	96.1	88.7	90.2	83.4	84.7	79.9	81.6
5	87.6	91.4	94.1	95.3	85.7	88.0	83.4	84.5	79.9	81.6
6	83.0	87.6	94.1	95.1	81.7	85.4	83.4	84.3	79.9	81.6
7	83.0	86.7	92.0	93.9	81.7	84.5	83.4	84.1	76.7	79.5
8	83.0	85.8	92.0	93.1	81.7	83.7			76.7	78.6
9	79.1	81.8	90.6	92.3	78.5	81.4			76.7	77.8
10	79.1	77.8	90.6	91.4	78.5	76.6			76.7	77.0

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with Hodgkin lymphoma by Ann Arbor staging for period 1998-2011 (N=592).



**Figure 5a.** Observed post-progression survival of 307 patients with Hodgkin lymphoma diagnosed between 1978 and 2011 (incl. M1). These 307 patients with documented progression events during their course of disease represent 21.6% of the totally 1,419 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=40, 2.8%).

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.

Type of progression	
All types n=307	
Months	%
0	100.0
12	80.6
24	73.0
36	69.6
48	63.3
60	59.5

**Table 5b.** Observed post-progression survival of patients with Hodgkin lymphoma for period 1978-2011 (N=307).

**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**

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