

# 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>

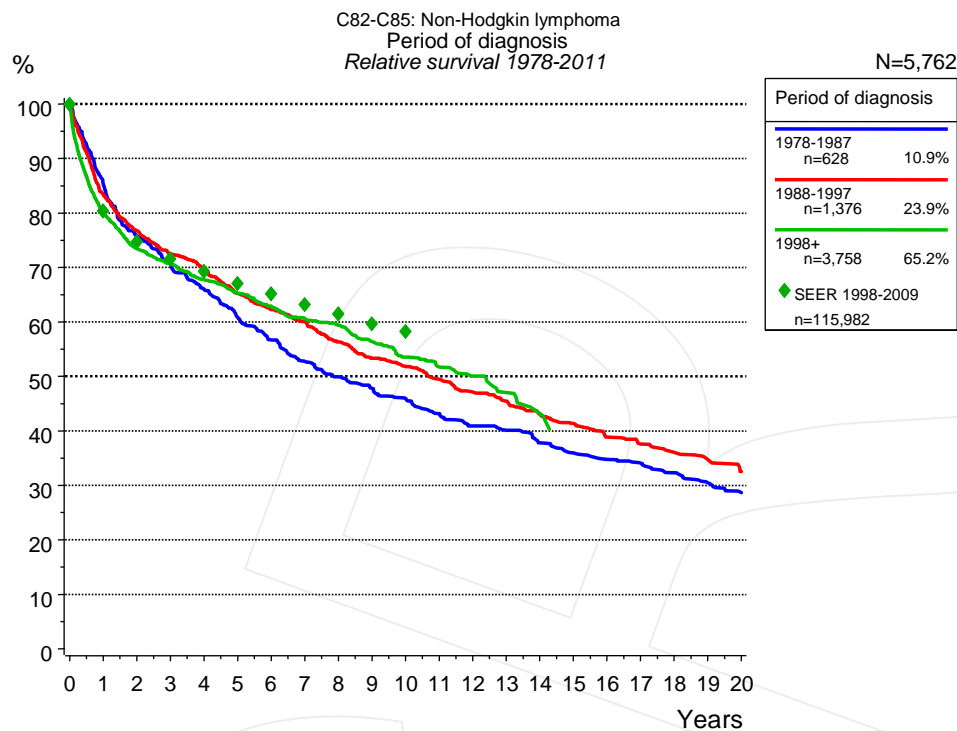
## Cancer statistics: Survival

### C82-C85: NHL

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	701	1,629	7,371
Diseases	701	1,636	7,388
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C8285E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C8285E.pdf)



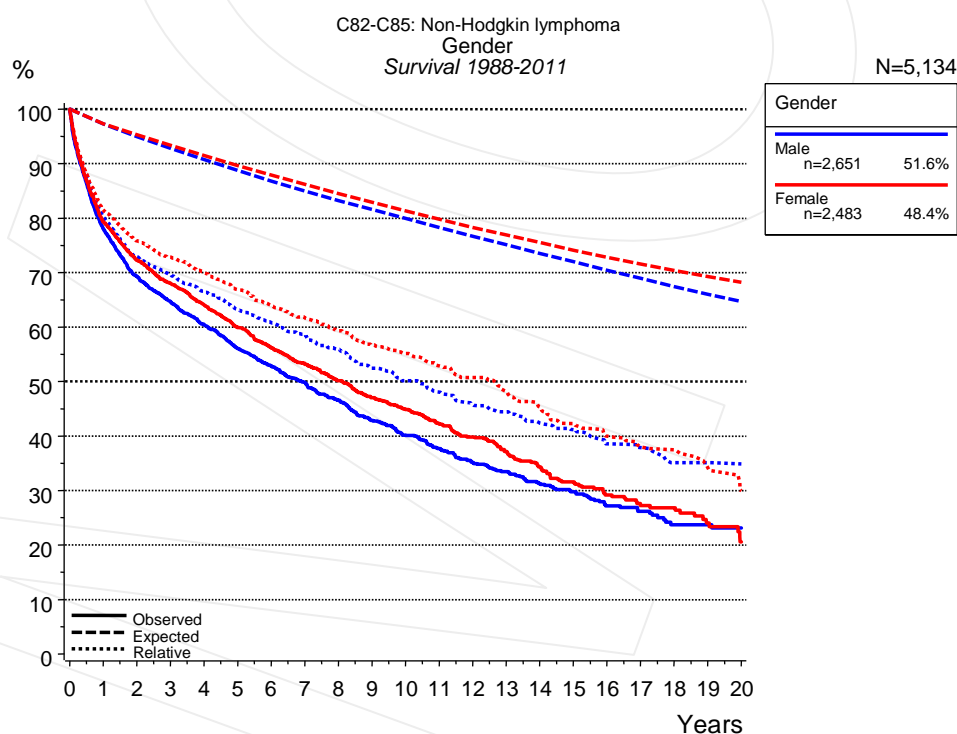
**Figure 1a.** Relative survival of patients with nHL by period of diagnosis. Included in the evaluation are 5,762 cases diagnosed between 1978 and 2011.

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=628		n=1,376		n=3,758	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	83.3	85.2	81.2	83.2	77.6	79.9
2	72.6	75.7	73.3	76.7	69.8	73.4
3	66.2	70.5	67.7	72.5	65.9	70.8
4	60.8	66.0	63.8	69.7	61.7	67.8
5	55.0	60.9	58.3	65.2	58.1	65.3
6	50.4	56.7	54.6	62.2	54.9	62.9
7	45.9	52.7	51.6	60.0	51.9	60.6
8	42.7	49.9	47.4	56.3	49.8	59.4
9	40.1	47.8	44.0	53.3	46.4	56.4
10	37.9	45.9	41.9	51.8	43.2	53.5
11	34.9	43.2	39.3	49.5	40.9	51.7
12	32.5	41.0	36.7	47.1	38.7	50.1
13	31.2	40.1	34.8	45.5	35.8	47.0
14	28.9	37.8	32.4	43.1	32.9	43.1
15	27.1	35.9	30.5	41.3		
16	25.6	34.7	28.0	38.8		
17	24.8	34.1	26.6	37.6		
18	23.1	32.3	25.2	36.0		
19	21.4	30.5	23.8	34.7		
20	19.8	28.7	21.8	32.5		

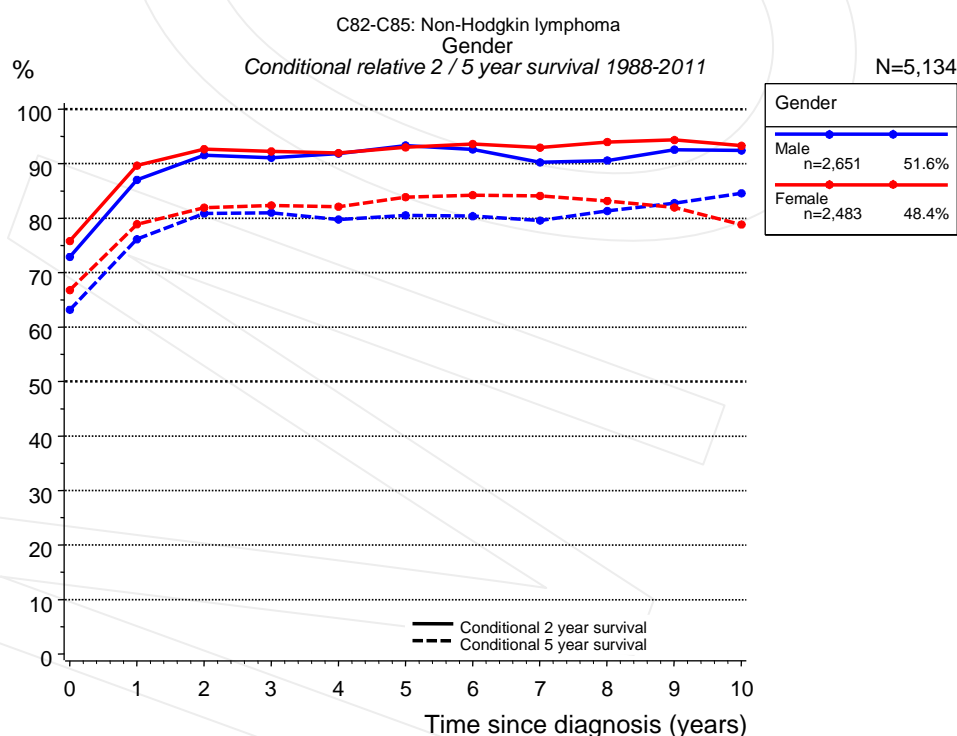
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with nHL by period of diagnosis for period 1978-2011 (N=5,762).



**Figure 2a.** Survival of patients with nHL by gender. Included in the evaluation are 5,134 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=2,651		Female n=2,483	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	78.0	80.2	79.2	81.4
2	69.3	72.9	72.2	75.8
3	64.7	69.7	68.0	72.8
4	60.5	66.6	64.1	70.0
5	56.1	63.2	59.9	66.8
6	52.8	60.8	56.2	63.9
7	49.9	58.6	53.1	61.6
8	46.6	55.9	50.1	59.3
9	42.8	52.4	47.1	56.7
10	40.1	50.1	44.9	55.1
11	37.7	48.0	42.3	52.9
12	35.1	45.7	39.8	50.7
13	33.5	44.4	37.2	48.2
14	31.3	42.3	34.4	45.3
15	29.7	41.2	31.6	42.3
16	27.2	38.5	29.2	40.0
17	26.2	37.9	27.2	38.0
18	23.7	35.1	26.8	37.5
19	23.7	35.1	24.0	34.1
20	23.1	34.9	20.6	30.0

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with nHL by gender for period 1988-2011 (N=5,134).

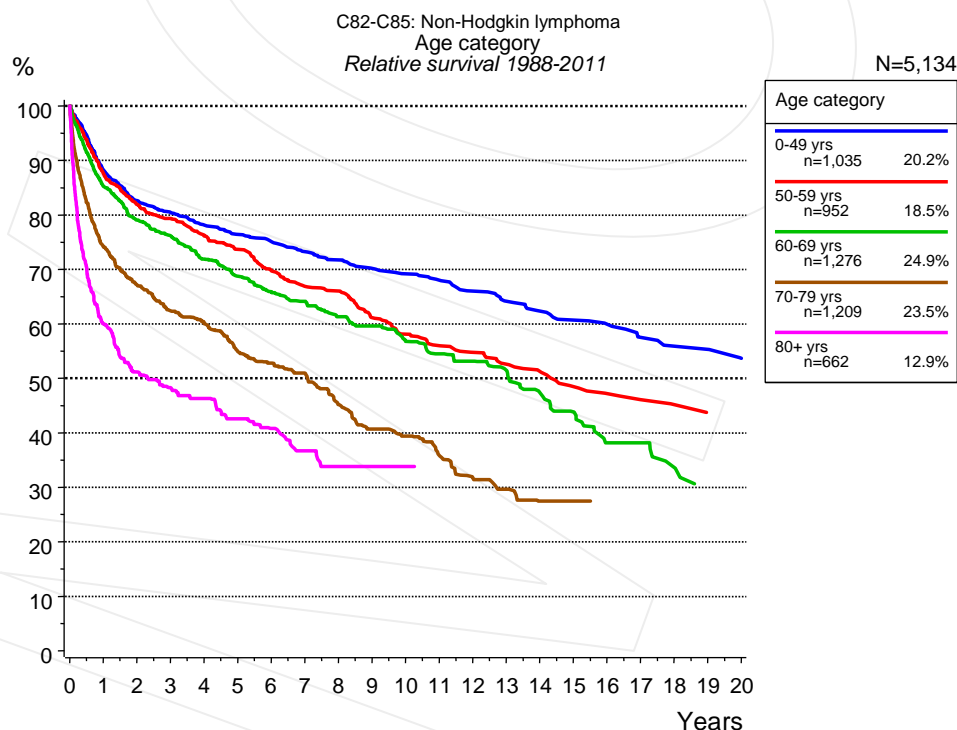


**Figure 2c.** Conditional relative 2 / 5-year survival of patients with nHL by gender. For 5,134 of 5,134 cases diagnosed between 1988 and 2011 valid data could be obtained for this item.

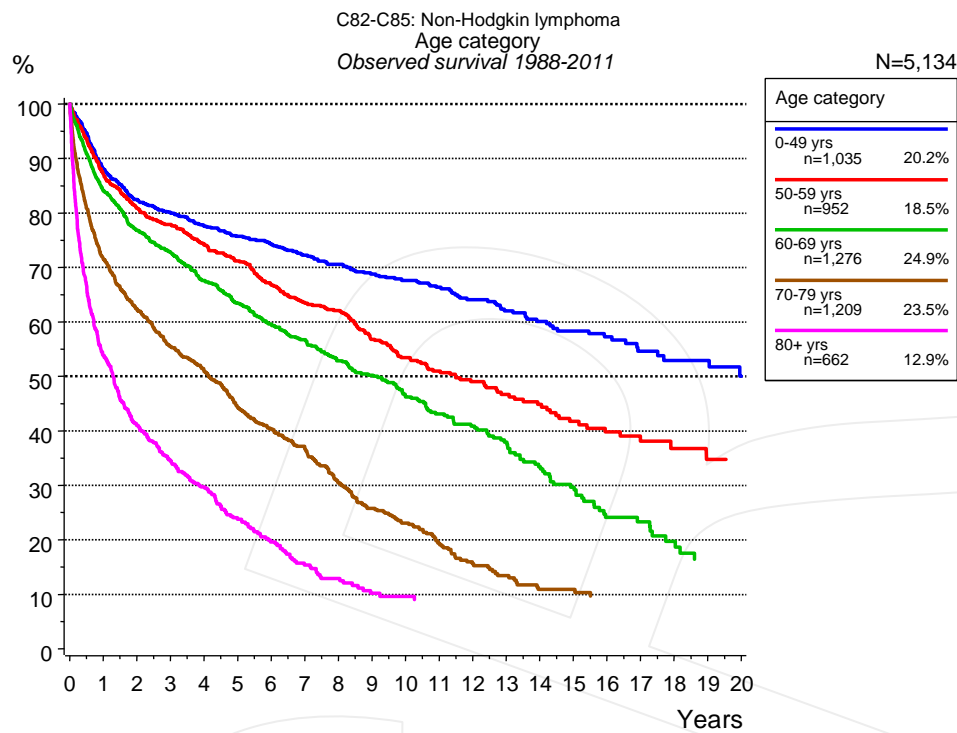
Years	Gender					
	Male			Female		
	n	Cond. surv. % 2 yrs	5 yrs	n	Cond. surv. % 2 yrs	5 yrs
0	2,651	72.9	63.2	2,483	75.8	66.8
1	1,962	87.0	76.1	1,880	89.6	78.9
2	1,579	91.6	80.9	1,593	92.7	81.9
3	1,336	91.1	81.0	1,371	92.3	82.3
4	1,117	91.9	79.7	1,161	91.9	82.1
5	922	93.3	80.5	963	93.0	83.9
6	763	92.6	80.4	806	93.6	84.2
7	655	90.2	79.6	694	93.0	84.1
8	549	90.6	81.3	588	94.0	83.2
9	456	92.6	82.8	488	94.4	82.0
10	374	92.4	84.6	403	93.3	78.8

**Table 2d.** Conditional relative 2 / 5-year survival of patients with nHL by gender for period 1988-2011 (N=5,134).

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 91.1% (n=1,336).



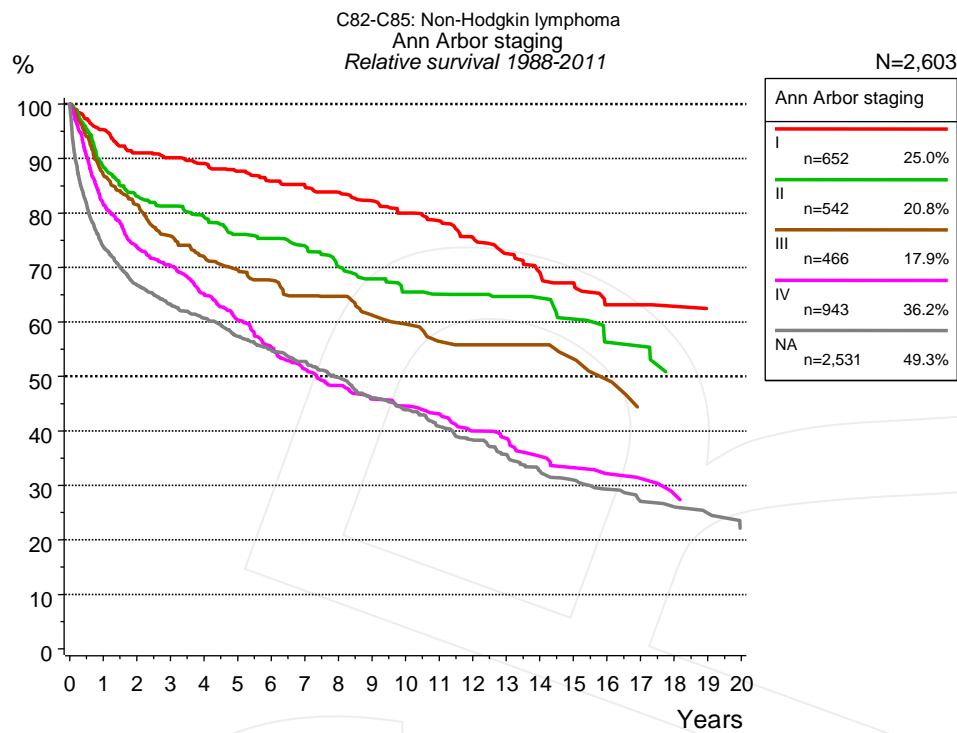
**Figure 3a.** Relative survival of patients with nHL by age category. Included in the evaluation are 5,134 cases diagnosed between 1988 and 2011.



**Figure 3b.** Observed survival of patients with nHL by age category. Included in the evaluation are 5,134 cases diagnosed between 1988 and 2011.

Years	Age category									
	0-49 yrs n=1,035		50-59 yrs n=952		60-69 yrs n=1,276		70-79 yrs n=1,209		80+ yrs n=662	
	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	88.1	88.2	87.1	87.6	84.0	85.2	71.5	74.2	53.8	60.0
2	82.4	82.6	80.9	81.9	76.8	79.0	62.4	67.2	41.0	51.2
3	80.0	80.4	77.9	79.3	72.8	76.2	55.5	62.4	34.7	48.3
4	77.6	78.2	74.3	76.3	67.6	71.9	51.1	60.1	29.7	46.3
5	75.7	76.4	71.2	73.7	63.4	68.8	44.4	55.0	23.8	42.6
6	74.3	75.1	66.7	69.7	59.6	65.9	40.4	52.8	19.6	40.8
7	72.2	73.3	63.4	66.9	56.7	64.1	36.8	51.0	15.4	36.7
8	70.6	71.7	62.1	66.0	52.9	61.3	30.5	45.2	12.9	33.8
9	68.8	70.2	56.8	61.1	50.2	59.6	25.8	40.7	10.2	33.8
10	67.6	69.2	53.4	58.1	46.2	56.8	23.1	39.4	9.6	33.8
11	66.3	68.0	51.0	56.0	43.1	54.5	19.4	35.9		
12	64.0	66.0	49.1	54.8	40.9	53.1	15.6	31.8		
13	62.0	64.2	46.7	52.6	37.9	51.5	13.4	29.7		
14	60.1	62.4	44.8	51.2	33.4	47.4	10.9	27.5		
15	58.3	60.7	41.7	48.5	29.7	43.8	10.9	27.5		
16	57.3	59.9	39.8	47.2	24.1	38.2				
17	54.6	57.5	38.1	46.1	23.3	38.2				
18	52.9	55.9	36.8	45.2	19.8	33.6				
19	52.9	55.3	34.7	43.6	16.5	29.4				
20	50.0	53.7								

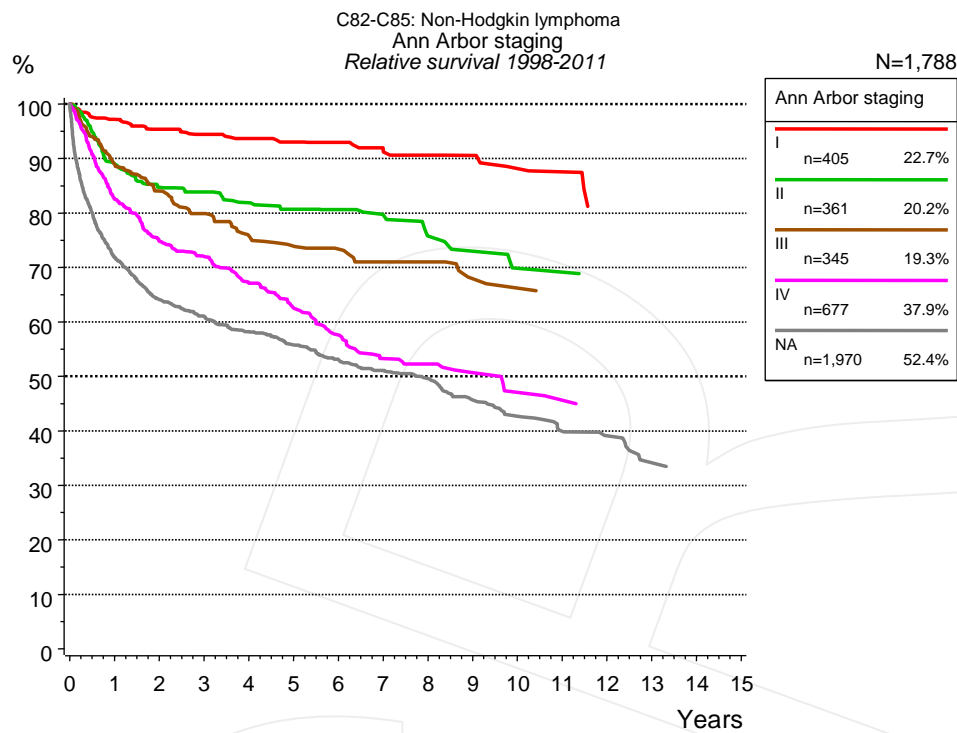
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with nHL by age category for period 1988-2011 (N=5,134).



**Figure 4a.** Relative survival of patients with nHL by Ann Arbor staging. For 2,608 of 5,134 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,603 cases an evaluable classification was established. The grey line represents the subgroup of 2,531 patients with missing values regarding Ann Arbor staging (49.3% of 5,134 patients, the percent values of all other categories are related to n=2,603).

Ann Arbor staging											
Years	I n=652		II n=542		III n=466		IV n=943		NA n=2,531		
	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	93.4	95.3	86.3	88.3	85.3	87.0	79.9	81.4	71.3	73.8	
2	87.5	91.0	79.6	83.0	78.5	81.5	71.1	73.6	62.8	66.8	
3	85.0	90.1	76.5	81.3	71.9	75.7	66.8	70.2	58.0	63.2	
4	82.1	89.1	73.3	79.3	66.8	72.0	60.7	64.9	54.3	60.7	
5	79.0	87.7	69.0	76.0	63.7	69.6	55.4	60.3	50.0	57.3	
6	75.7	85.9	67.5	75.3	60.8	67.6	50.1	55.3	46.6	54.8	
7	73.6	85.0	64.7	73.9	57.5	64.8	45.6	51.3	43.9	52.7	
8	71.0	83.8	60.4	70.1	56.6	64.7	42.4	48.3	40.4	49.8	
9	68.1	82.2	57.8	67.9	52.5	61.2	39.5	45.8	36.6	46.1	
10	65.1	80.0	54.7	65.5	50.0	59.6	38.0	44.6	34.0	43.9	
11	62.5	78.6	53.6	65.1	46.7	56.4	36.3	43.1	31.0	40.8	
12	58.6	75.5	53.1	65.1	45.7	55.8	32.8	40.0	28.5	38.3	
13	55.1	72.6	51.6	64.6	45.7	55.8	31.5	38.6	26.0	35.7	
14	51.8	69.0	50.8	64.4	45.7	55.8	28.1	35.3	23.3	32.6	
15	49.4	67.2	47.1	60.5	42.9	53.2	25.9	33.2	21.6	31.0	
16	44.9	63.1	42.6	56.3	39.7	49.4	24.6	32.1	19.9	29.3	
17	44.9	63.1	42.6	55.6	34.1	44.2	23.6	31.3	17.9	27.0	
18	43.7	62.8	37.2	49.9	34.1	43.0	21.3	28.4	17.3	26.0	
19	41.7	62.4	37.2	46.0	34.1	41.7			16.1	24.9	
20	41.7	60.5	37.2	42.2					13.7	22.0	

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with nHL by Ann Arbor staging for period 1988-2011 (N=2,603).

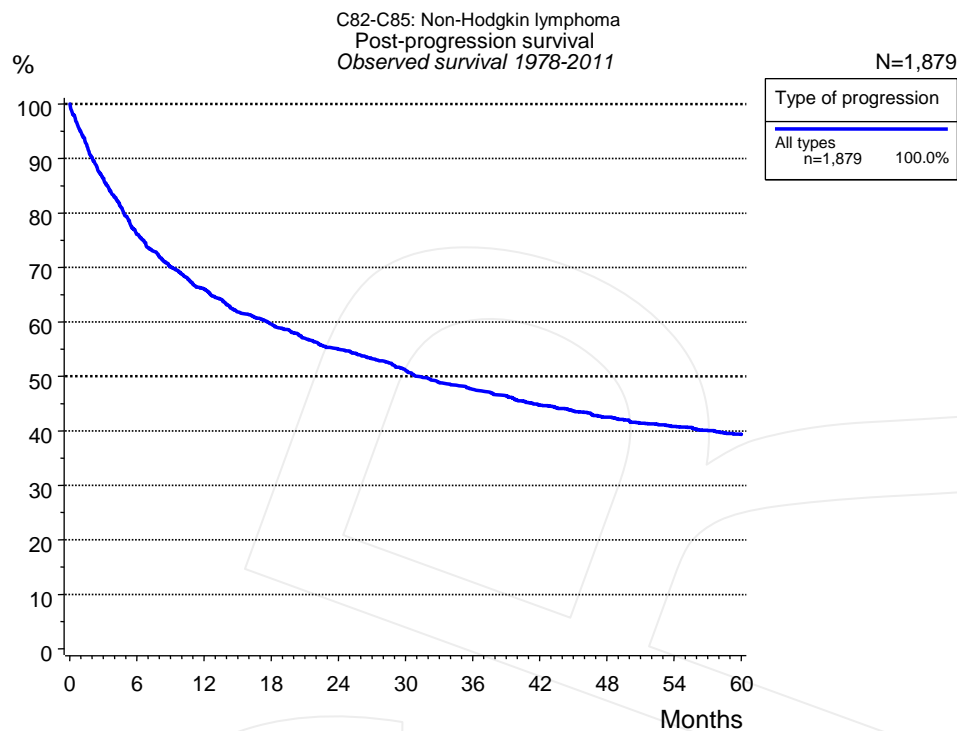


**Figure 4c.** Relative survival of patients with nHL by Ann Arbor staging. For 1,792 of 3,758 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 1,788 cases an evaluable classification was established. The grey line represents the subgroup of 1,970 patients with missing values regarding Ann Arbor staging (52.4% of 3,758 patients, the percent values of all other categories are related to n=1,788).

Ann Arbor staging											
Years	I		II		III		IV		NA		
	n=405		n=361		n=345		n=677		n=1,970		
	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	95.3	97.2	86.9	89.0	87.2	89.0	80.9	82.5	69.5	71.9	
2	92.0	95.4	81.2	84.7	80.7	84.0	72.0	74.8	60.3	64.1	
3	89.4	94.4	79.4	83.8	75.3	79.9	68.3	72.0	56.0	61.0	
4	87.1	93.7	76.0	81.9	69.7	75.8	62.4	67.1	52.1	58.2	
5	84.8	93.0	73.6	80.7	67.0	73.9	57.2	62.5	48.7	55.7	
6	83.1	93.0	72.3	80.6	65.1	73.3	52.1	57.6	45.2	53.1	
7	80.2	91.3	69.9	79.6	62.2	71.0	47.2	53.3	42.7	51.1	
8	78.6	90.6	65.5	75.8	61.3	71.0	45.9	52.3	40.4	49.6	
9	76.6	90.5	62.8	73.0	56.8	67.9	43.6	50.7	36.4	45.7	
10	72.8	88.1	58.4	69.9	55.2	66.2	40.2	47.1	33.4	42.7	
11	71.3	87.5	58.4	69.2			38.8	45.6	30.8	39.9	
12	64.0	80.0	55.5	66.0			37.2	43.9	29.4	39.1	
13	64.0	77.2					37.2	42.4	25.6	34.1	

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with nHL by Ann Arbor staging for period 1998-2011 (N=1,788).





**Figure 5a.** Observed post-progression survival of 1,879 patients with nHL diagnosed between 1978 and 2011 (incl. M1). These 1,879 patients with documented progression events during their course of disease represent 32.6% of the totally 5,762 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=799, 13.9%).

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=1,879	
Months	%
0	100.0
12	66.0
24	55.0
36	47.5
48	42.5
60	39.3

**Table 5b.** Observed post-progression survival of patients with nHL for period 1978-2011 (N=1,879).

**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 C82-C85: NHL [Internet]. 2013 [updated 2013 Apr 1; cited 2013 May 1]. Available from: [http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C8285E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C8285E.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)	3
2a Survival by gender (chart)	3
2b Survival by gender (table)	4
2c Conditional survival by gender (chart)	4
2d Conditional 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 Ann Arbor staging 1988+ (chart)	7
4b Survival by Ann Arbor staging 1988+ (table)	7
4c Relative survival by Ann Arbor staging 1998+ (chart)	8
4d Survival by Ann Arbor staging 1998+ (table)	8
5a Observed post-progression survival (chart)	9
5b Observed post-progression survival (table)	9