# **Munich Cancer Registry**



- Incidence and Mortality
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## ICD-10 C83.7: Burkitt lymphoma



### Survival

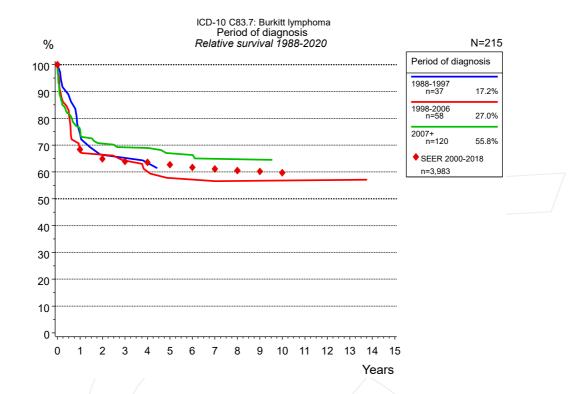
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https://www.tumorregister-muenchen.de/en

https://www.tumorregister-muenchen.de/en/facts/surv/sC837\_E-ICD-10-C83.7-Burkitt-lymphoma-survival.pdf

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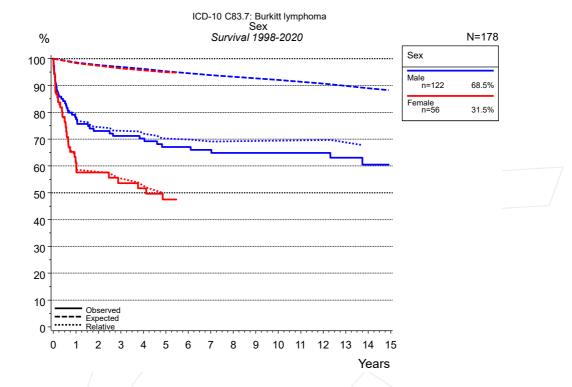
**Figure 1a.** Relative survival of patients with Burkitt lymphoma by period of diagnosis. Included in the evaluation are 215 cases diagnosed between 1988 and 2020.

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.

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 populationbased 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.

		F	gnosis	S			
		1988-	1997	1998-2006		2007+	
		n=	37	n=58		n=120	
	Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
	0	100.0	100.0	100.0	100.0	100.0	100.0
	1	74.3	74.2	68.1	68.5	75.3	75.8
	2	65.5	66.4	66.3	66.4	69.1	70.6
	3	65.5	65.3	62.6	64.3	67.2	69.2
	4	62.5	63.4	58.9	60.1	67.2	69.0
	5			55.3	57.7	63.8	66.9
	6			55.3	57.2	63.8	66.3
	7			55.3	56.6	61.4	64.9
	8			53.3	56.7	61.4	64.7
	9			53.3	56.7	61.4	64.6
	10			53.3	56.8	59.7	64.1
	11			53.3	56.9	59.7	63.1
	12			53.3	57.0	59.7	62.2
	13			53.3	57.0		
	14			51.2	57.0		
	15			51.2	56.8		
	Median			17.2			

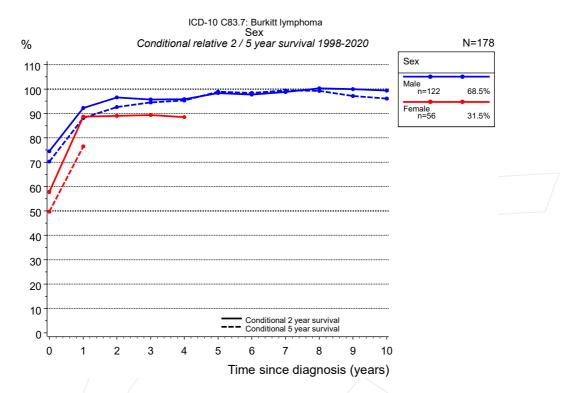
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with Burkitt lymphoma by period of diagnosis for period 1988-2020 (N=215).



**Figure 2a.** Survival of patients with Burkitt lymphoma by sex. Included in the evaluation are 178 cases diagnosed between 1998 and 2020.

		Sex			
	Male		Female		
	n=122		n=	n=56	
Years	obs. %	rel. %	obs. %	rel. %	
0	100.0	100.0	100.0	100.0	
1	78.2	78.6	61.4	61.7	
2	73.0	74.5	57.6	57.8	
3	71.2	73.1	53.6	55.4	
4	70.2	72.2	51.6	52.6	
5	67.1	70.2	47.5	49.7	
6	67.1	69.9	47.5	47.7	
7	66.0	69.1			
8	64.9	69.2			
9	64.9	69.3			
10	64.9	69.5			
11	64.9	69.6			
12	64.9	69.7			
13	63.1	68.8			
14	60.5	67.7			
15	60.5	67.3			
Median			4.1		
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	n=1   Years obs. %   0 100.0   1 78.2   2 73.0   3 71.2   4 70.2   5 67.1   6 67.1   7 66.0   8 64.9   9 64.9   10 64.9   11 64.9   12 64.9   13 63.1   14 60.5   15 60.5	n=122   Years obs. % rel. %   0 100.0 100.0   1 78.2 78.6   2 73.0 74.5   3 71.2 73.1   4 70.2 72.2   5 67.1 70.2   6 67.1 69.9   7 66.0 69.1   8 64.9 69.2   9 64.9 69.3   10 64.9 69.5   11 64.9 69.5   12 64.9 69.7   13 63.1 68.8   14 60.5 67.7   15 60.5 67.7	$\begin{array}{c c c c c } & M &   & Fen \\ \hline n =   & 2 & n = \\ \hline Years & obs. \% & rel. \% & obs. \% \\ \hline 0 & 100.0 & 100.0 & 100.0 \\ \hline 1 & 78.2 & 78.6 & 61.4 \\ 2 & 73.0 & 74.5 & 57.6 \\ 3 & 71.2 & 73.1 & 53.6 \\ 4 & 70.2 & 72.2 & 51.6 \\ 5 & 67.1 & 70.2 & 47.5 \\ 6 & 67.1 & 70.2 & 47.5 \\ 6 & 67.1 & 69.9 & 47.5 \\ 7 & 66.0 & 69.1 & \\ 7 & 60.1 & 60.1 & \\ 7 & 60.1 &$	

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with Burkitt lymphoma by sex for period 1998-2020 (N=178).

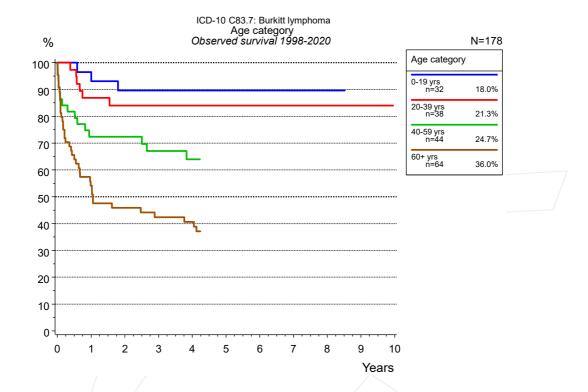


**Figure 2c.** Conditional relative 2 / 5-year survival of patients with Burkitt lymphoma by sex. For 178 of 178 cases diagnosed between 1998 and 2020 valid data could be obtained for this item.

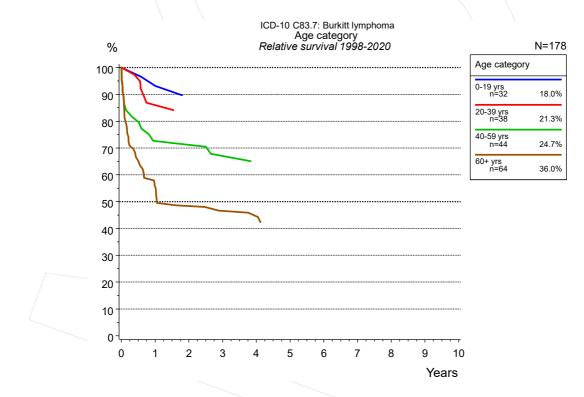
			Sex			
		Male		F	emale	
	Cond. surv. %				Cond. s	surv. %
Years	n	2 yrs	5 yrs	n	2 yrs	5 yrs
0	122	74.5	70.2	56	57.8	49.7
1	92	92.2	88.1	32	88.7	76.5
2	80	96.6	92.6	30	89.1	
3	76	95.8	94.5	27	89.4	
4	69	95.9	95.3	26	88.5	
5	63	98.3	98.9			
6	61	97.7	98.4			
7	59	98.8	99.5			
8	54	100.3	99.3			
9	50	100.0	97.1			
10	47	99.4	96.0			

**Table 2d.** Conditional relative 2 / 5-year survival of patients with Burkitt lymphoma by sex for period 1998-2020 (N=178).

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 sex="Male", who are alive at least 3 years after cancer diagnosis, the conditional relative 2-year survival rate is 95.8% (n=76).



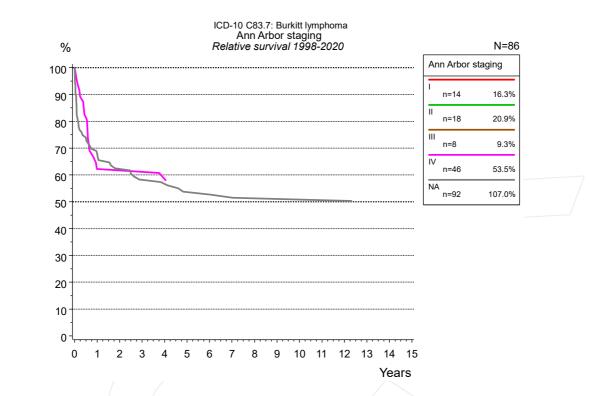
**Figure 3a.** Observed survival of patients with Burkitt lymphoma by age category. Included in the evaluation are 178 cases diagnosed between 1998 and 2020.



**Figure 3b.** Relative survival of patients with Burkitt lymphoma by age category. Included in the evaluation are 178 cases diagnosed between 1998 and 2020.

Age category									
	0-19 yrs 20-39 y		9 yrs	40-59 yrs		60+ yrs			
	n=	n=32		n=38		n=44		n=64	
Years	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	96.6	93.2	86.8	86.0	72.4	72.6	54.1	55.6	
2					72.4	71.2	45.9	48.4	
3					67.0	67.0	42.4	46.6	
4					64.0	65.0	40.6	44.5	
Median		/					1.1		

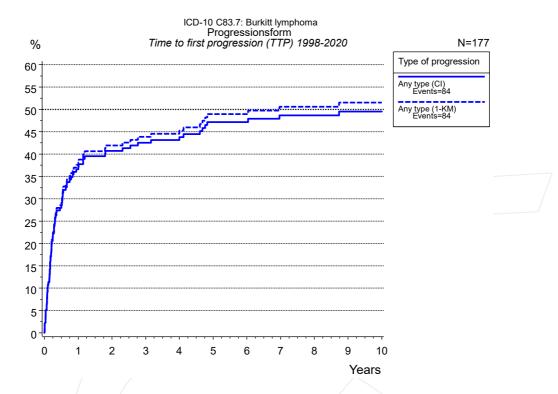
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with Burkitt lymphoma by age category for period 1998-2020 (N=178).



**Figure 4a.** Relative survival of patients with Burkitt lymphoma by Ann Arbor staging. For 86 of 178 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. The grey line represents the subgroup of 92 patients with missing values regarding Ann Arbor staging (51.7 % of 178 patients, the percent values of all other categories are related to n=86). Subgroups with sample size <20 are omitted from the chart.

	Ann A	rbor st	taging		
	IV	V	NA		
	n=	n=46 n=92		92	
Years	obs. %	rel. %	obs. %	rel. %	
0	100.0	100.0	100.0	100.0	Ì
1	61.7	62.2	67.6	67.9	
2	61.7	61.7	60.8	62.3	
3	61.7	61.1	56.1	58.2	
4	59.1	58.5	54.8	56.7	
5			50.9	53.6	
6			50.9	52.7	
7			49.6	51.5	
8			48.3	51.3	
9			48.3	51.1	
10			48.3	50.8	
11			48.3	50.6	
12			48.3	50.4	
Median			6.0	7	•
	Years 0 1 2 3 4 5 6 7 8 9 10 11 12	Years obs. %   0 100.0   1 61.7   2 61.7   3 61.7   4 59.1   5 6   7 2   8 9   10 1   11 12	IV   n=46   Years obs. % rel. %   0 100.0 100.0   1 61.7 62.2   2 61.7 61.7   3 61.7 61.1   4 59.1 58.5   5 6 7   8 9 100   10 6 7   11 12 6	Yearsn=46 obs.%n= obs.%0100.0100.0161.762.261.761.760.8361.761.1459.158.5554.8554.8550.9650.9749.6848.3948.31048.31148.31248.3	IV NA   n=46 n=92   Years obs. % rel. % obs. % rel. %   0 100.0 100.0 100.0 100.0   1 61.7 62.2 67.6 67.9   2 61.7 61.7 60.8 62.3   3 61.7 61.1 56.1 58.2   4 59.1 58.5 54.8 56.7   5 5 50.9 53.6   6 50.9 52.7   7 49.6 51.5   8 48.3 51.3   9 48.3 51.3   9 48.3 50.8   11 48.3 50.6   12 48.3 50.4

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with Burkitt lymphoma by Ann Arbor staging for period 1998-2020 (N=86).



**Figure 5a.** Time to first progression of 177 patients with Burkitt lymphoma 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)	
N	177	177	
Events	84	84	
compet.	11		
Years	%	%	
0	0.0	0.0	
1	36.6	37.6	
2	40.7	41.9	
3	42.6	43.9	
4	43.2	44.5	
5	47.2	49.0	
6	47.2	49.0	
7	48.7	50.6	
8	48.7	50.6	
9	49.5	51.5	
10	49.5	51.5	

**Table 5b.** Time to first progression of patients with Burkitt lymphoma for period 1998-2020 (N=177), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

#### Shortcuts

MCR	Munich Cancer Registry, Germany						
NCI	National Cancer Institute, USA						
SEER	Surveillance, Epidemiology						
UICC	Union for International Can	cer 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-КМ	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**

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