

# 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>

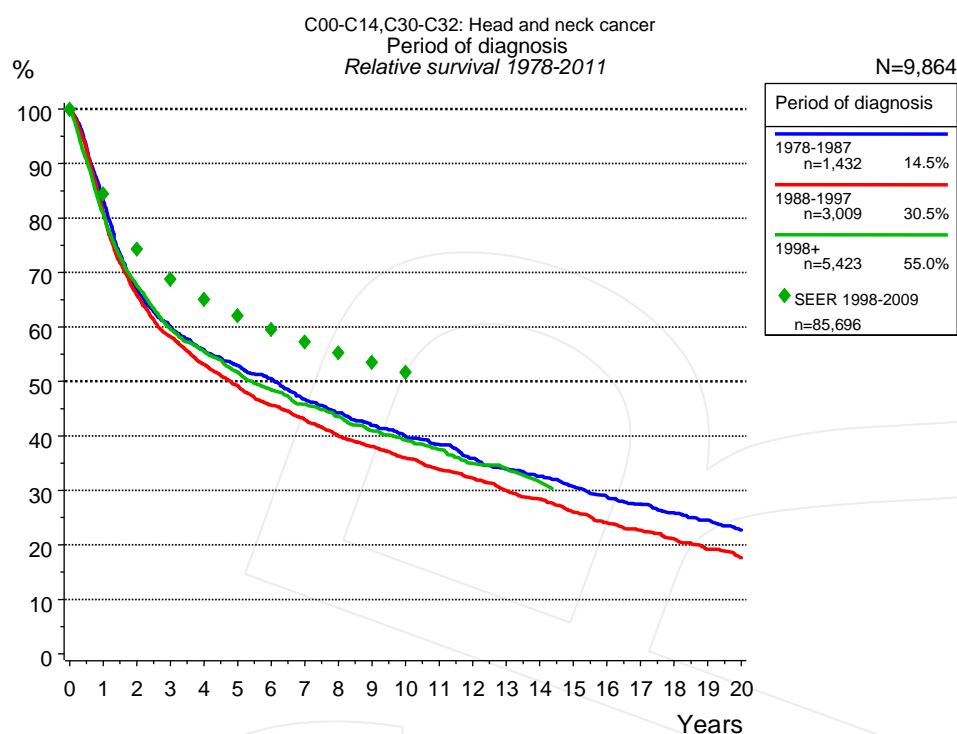
## Cancer statistics: Survival

### C00-C14,C30-C32: HN cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	1,593	3,428	9,339
Diseases	1,608	3,519	9,676
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C0032E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C0032E.pdf)



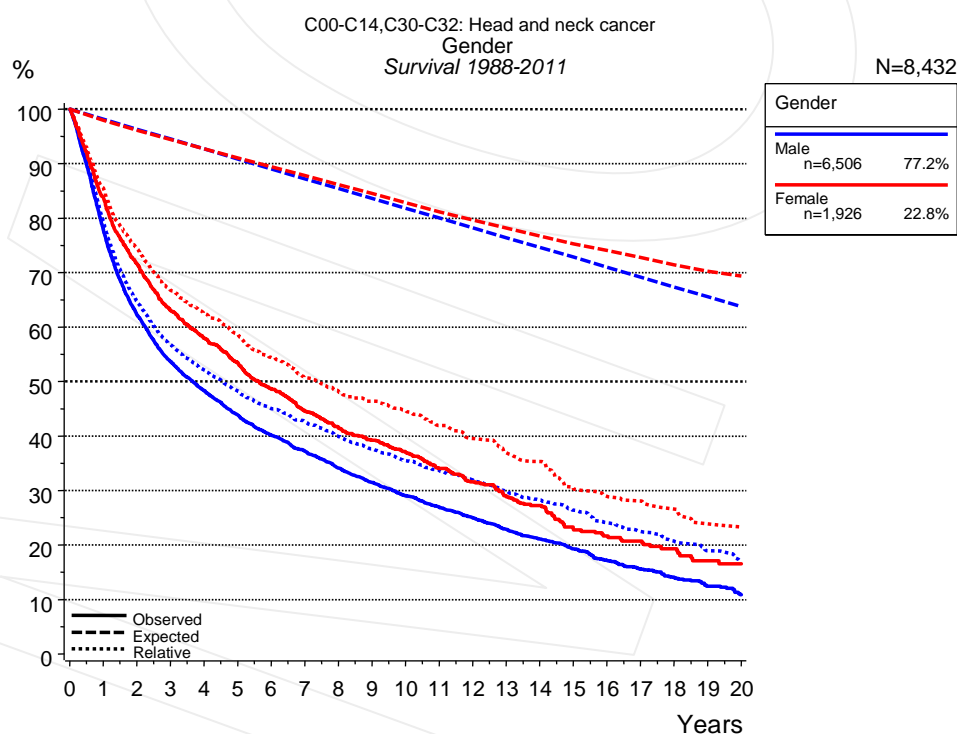
**Figure 1a.** Relative survival of patients with HN cancer by period of diagnosis. Included in the evaluation are 9,864 cases diagnosed between 1978 and 2011.

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=1,432		n=3,009		n=5,423	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	80.9	83.0	79.4	81.0	79.0	80.5
2	63.7	66.8	63.3	65.8	65.1	67.5
3	55.8	60.0	54.9	58.2	56.4	59.5
4	50.7	55.9	49.1	53.1	51.5	55.4
5	46.9	52.9	44.6	49.3	47.1	51.6
6	43.7	50.5	40.5	45.6	43.3	48.4
7	39.5	46.7	37.4	43.0	40.2	45.8
8	36.6	44.2	34.2	40.0	37.3	43.5
9	33.8	41.9	31.8	38.0	34.4	40.9
10	31.5	39.9	29.5	35.9	32.1	39.2
11	29.6	38.4	27.2	33.9	30.1	37.5
12	27.0	35.9	25.3	32.2	27.4	34.9
13	24.9	33.9	23.0	29.9	25.9	34.0
14	23.3	32.6	21.4	28.4	23.8	31.6
15	21.4	30.7	19.1	26.0		
16	19.6	28.8	17.3	24.0		
17	18.3	27.5	15.9	22.7		
18	16.7	25.8	14.4	21.1		
19	15.5	24.5	12.9	19.2		
20	13.9	22.7	11.6	17.6		

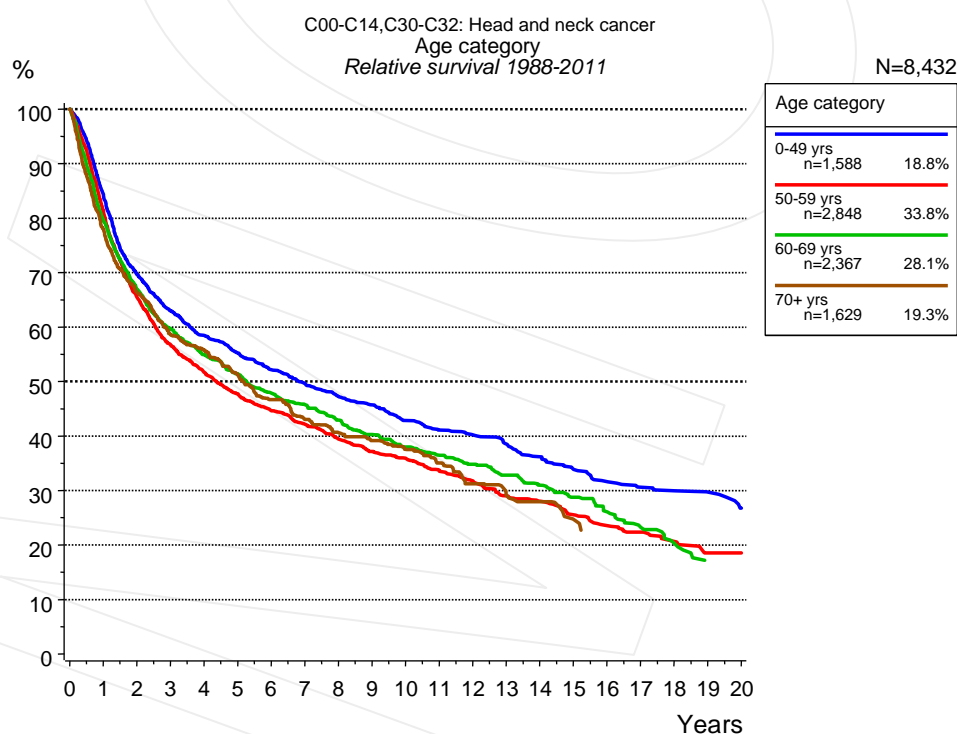
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with HN cancer by period of diagnosis for period 1978-2011 (N=9,864).



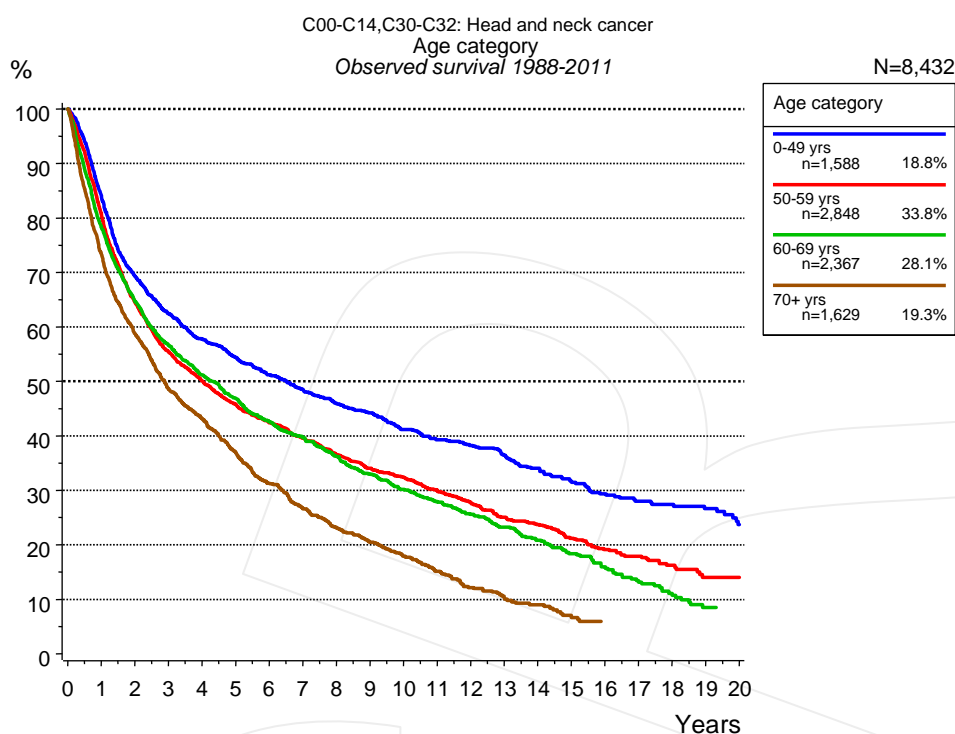
**Figure 2a.** Survival of patients with HN cancer by gender. Included in the evaluation are 8,432 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=6,506		Female n=1,926	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	77.8	79.2	83.7	85.5
2	62.3	64.6	71.6	74.4
3	53.7	56.8	63.0	66.7
4	48.3	52.1	58.0	62.5
5	43.9	48.3	53.5	58.7
6	40.1	45.1	48.7	54.4
7	37.3	42.7	44.6	50.7
8	34.1	39.9	41.6	48.2
9	31.5	37.6	39.2	46.4
10	29.1	35.5	37.0	44.7
11	27.0	33.7	34.1	41.9
12	25.0	31.9	31.6	39.5
13	22.9	29.9	28.9	36.9
14	21.1	28.2	27.2	35.3
15	19.3	26.4	22.8	30.2
16	17.2	24.1	21.6	28.9
17	15.5	22.5	20.7	28.1
18	14.0	20.7	19.3	26.6
19	12.4	19.0	17.1	23.9
20	10.9	16.9	16.5	23.3

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with HN cancer by gender for period 1988-2011 (N=8,432).



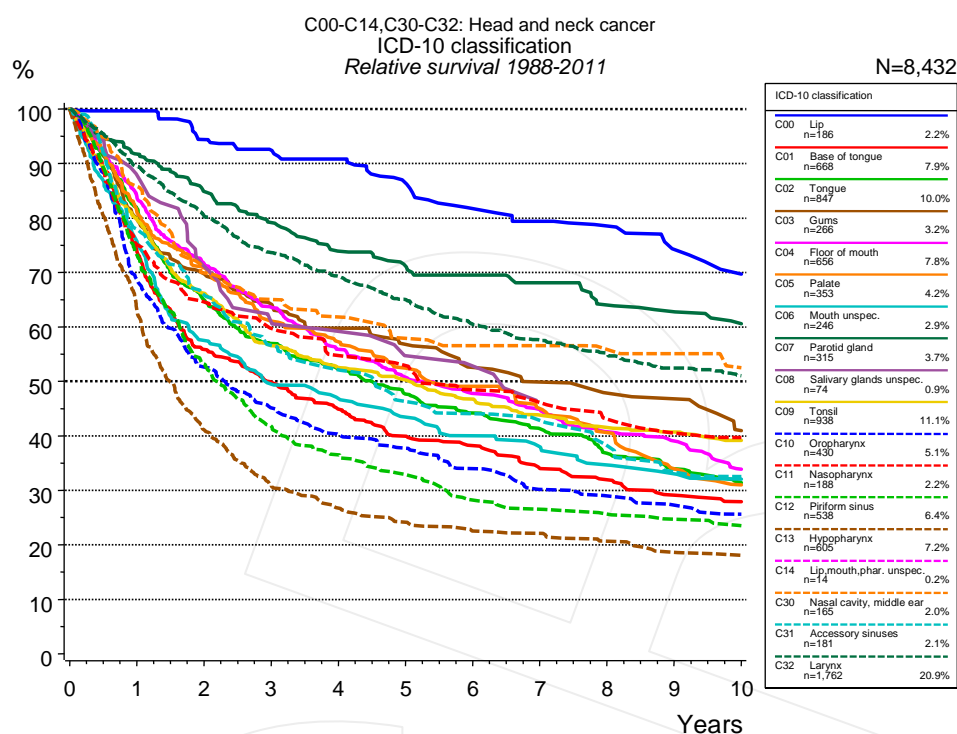
**Figure 3a.** Relative survival of patients with HN cancer by age category. Included in the evaluation are 8,432 cases diagnosed between 1988 and 2011.



**Figure 3b.** Observed survival of patients with HN cancer by age category. Included in the evaluation are 8,432 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=1,588		50-59 yrs n=2,848		60-69 yrs n=2,367		70+ yrs n=1,629	
	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	83.8	84.1	80.6	81.2	78.2	79.5	73.2	77.9
2	69.3	69.7	64.6	65.5	64.7	66.9	58.7	66.5
3	62.4	63.0	55.5	56.8	56.6	59.6	48.6	58.7
4	57.8	58.4	50.0	51.7	51.1	54.9	43.2	55.8
5	54.4	55.2	45.8	47.8	46.8	51.4	37.0	51.3
6	51.2	52.1	42.4	44.7	42.6	47.8	31.3	46.7
7	48.6	49.7	39.6	42.1	39.7	45.8	26.6	43.0
8	45.9	47.2	36.6	39.4	36.3	42.9	23.1	40.6
9	44.2	45.7	34.0	37.2	33.0	40.3	20.5	39.2
10	41.2	42.8	32.4	35.9	30.2	38.0	17.9	37.6
11	39.3	41.1	30.0	33.7	27.9	36.5	15.2	35.1
12	38.2	40.2	27.8	31.8	25.6	34.8	12.2	31.2
13	36.5	38.5	25.0	29.0	23.2	32.8	10.1	29.2
14	34.0	36.2	23.7	28.0	20.8	31.0	9.0	28.0
15	31.5	33.8	21.2	25.5	18.4	28.7	6.6	24.7
16	29.4	31.6	19.1	23.6	15.9	26.1	5.9	22.7
17	28.0	30.6	17.9	22.3	13.1	23.2		
18	27.4	29.9	16.2	20.6	10.7	20.3		
19	26.6	29.7	14.0	18.6	8.5	17.1		
20	23.7	26.7	14.0	18.5				

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with HN cancer by age category for period 1988-2011 (N=8,432).



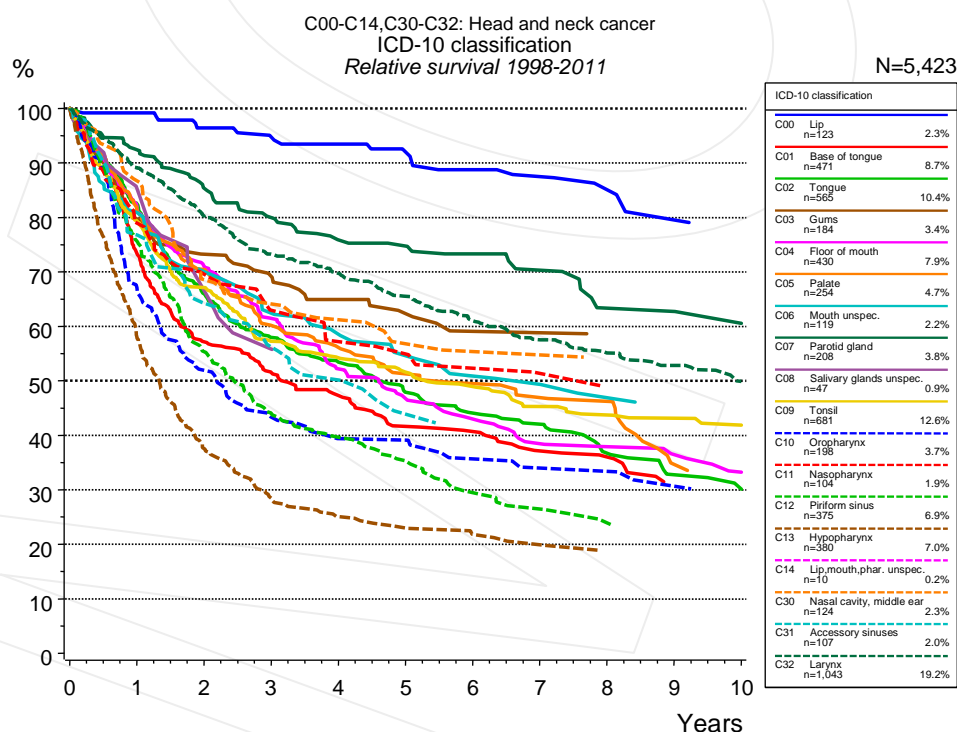
**Figure 4a.** Relative survival of patients with HN cancer by ICD-10 classification. Included in the evaluation are 8,432 cases diagnosed between 1988 and 2011. Subgroups with sample size <15 are dropped from the chart.

ICD-10 classification														
Years	C00 Lip n=186		C01 Base of tongue n=668		C02 Tongue n=847		C03 Gums n=266		C04 Floor of mouth n=656		C05 Palate n=353		C06 Mouth unspec. n=246	
	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	97.3	99.6	72.8	73.9	80.4	81.7	78.0	79.8	82.7	83.9	80.5	81.1	74.1	75.7
2	87.0	94.4	54.3	55.8	62.9	65.0	66.9	69.7	69.8	71.6	69.2	70.8	55.4	57.5
3	82.3	92.5	47.8	49.8	54.2	56.9	60.2	64.2	61.3	63.6	58.7	61.1	46.8	49.5
4	78.5	90.8	42.3	44.9	49.0	52.2	55.0	59.8	53.0	55.9	54.5	57.3	43.4	46.8
5	71.5	86.4	37.1	39.9	44.0	47.7	50.8	56.8	47.8	50.7	49.3	52.4	39.3	43.4
6	65.1	81.7	34.8	38.2	40.2	44.2	45.8	52.6	44.2	47.8	45.4	49.1	35.5	40.0
7	61.7	79.4	30.2	34.0	36.9	41.3	42.7	49.9	41.1	44.8	41.1	45.0	33.3	38.0
8	58.8	78.5	28.1	31.9	32.2	36.8	39.9	47.9	36.7	40.7	36.6	40.6	29.7	34.6
9	53.4	74.2	25.1	29.1	29.3	34.0	38.9	46.8	34.7	39.1	30.0	34.0	27.9	33.0
10	49.7	69.7	23.5	27.9	26.5	31.4	32.8	41.0	29.7	33.9	26.9	31.0	26.5	32.0

ICD-10 classification														
cont'd Years	C07 Parotid gland n=315		C08 Salivary glands unspec. n=74		C09 Tonsil n=938		C10 Oropharynx n=430		C11 Nasopharynx n=188		C12 Piriform sinus n=538		C13 Hypopharynx n=605	
	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	91.7	86.1	87.8	78.3	79.7	68.0	68.7	74.5	75.1	72.4	73.2	62.0	62.9
2	80.1	84.8	68.1	71.1	64.0	66.2	51.6	52.6	63.2	64.6	51.9	53.1	40.0	41.1
3	73.0	79.2	58.4	60.8	53.7	56.6	43.5	45.1	57.6	59.8	40.2	41.8	29.8	31.0
4	66.4	73.9	54.9	59.1	49.1	52.6	38.3	40.2	52.3	54.7	34.8	36.5	25.3	26.8
5	62.8	71.2	49.0	54.7	46.2	50.3	35.5	37.7	50.1	52.9	30.8	32.9	22.6	24.1
6	60.3	69.5	47.0	52.8	42.4	46.7	31.5	34.0	44.9	48.4	26.2	28.2	20.6	22.6
7	57.5	68.1	39.8	46.5	39.0	43.8	27.4	30.2	42.4	46.1	24.4	26.5	20.1	22.1
8	52.7	64.0	39.8	46.5	36.4	41.6	26.0	29.0	38.9	43.1	23.2	25.6	18.4	20.7
9	50.7	62.8	39.8	46.5	35.1	40.7	24.3	27.3	35.9	40.5	22.0	24.7	16.4	18.6
10	47.8	60.6	39.8	46.5	33.2	39.2	22.4	25.6	34.7	39.7	20.5	23.5	15.7	18.1

cont'd Years	ICD-10 classification							
	C14 Lip,mouth,pha r. unspec. n=14		C30 Nasal cavity, middle ear n=165		C31 Accessory sinuses n=181		C32 Larynx n=1,762	
	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			83.7	85.8	75.9	77.9	87.5	89.5
2			66.0	69.9	62.5	65.8	76.8	80.3
3			60.0	65.0	52.3	56.6	68.9	73.6
4			55.6	61.8	47.4	52.1	63.3	69.3
5			50.6	57.9	41.0	46.3	58.1	65.0
6			48.2	56.6	38.5	44.1	52.7	60.4
7			48.2	56.6	36.6	42.8	49.0	57.5
8			45.4	55.8	31.6	38.2	45.7	55.0
9			43.8	55.1	27.2	33.4	42.6	52.4
10			40.0	52.5	26.0	32.5	40.3	51.0

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with HN cancer by ICD-10 classification for period 1988-2011 (N=8,432).



**Figure 4c.** Relative survival of patients with HN cancer by ICD-10 classification. Included in the evaluation are 5,423 cases diagnosed between 1998 and 2011. Subgroups with sample size <15 are dropped from the chart.

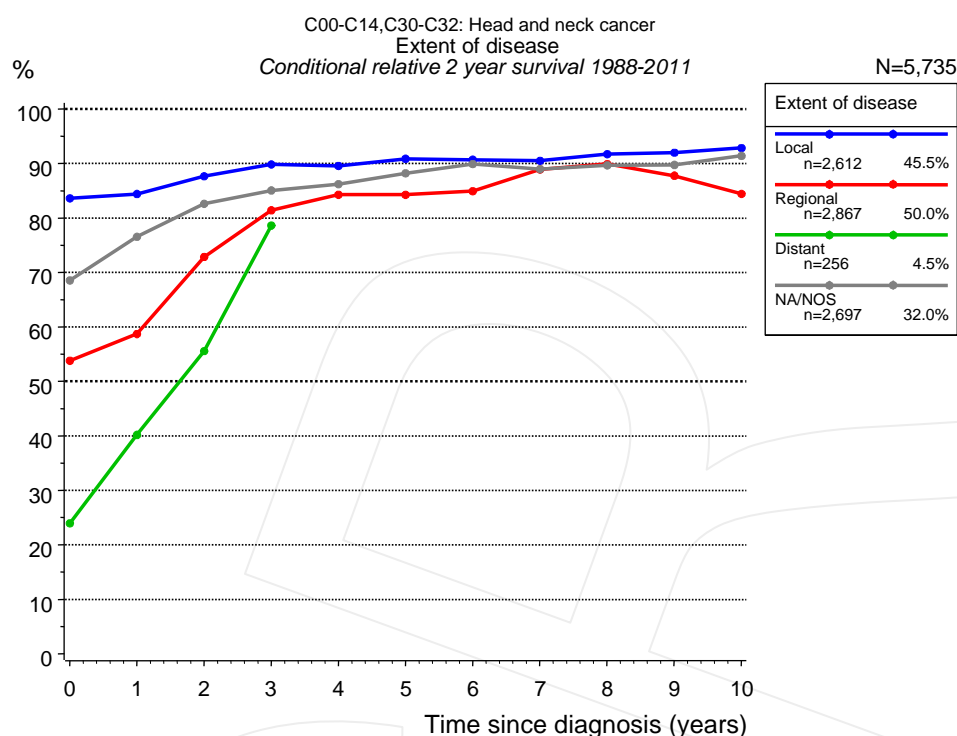
ICD-10 classification														
Years	C00 Lip n=123		C01 Base of tongue n=471		C02 Tongue n=565		C03 Gums n=184		C04 Floor of mouth n=430		C05 Palate n=254		C06 Mouth unspec. n=119	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	97.5	99.2	72.2	73.3	81.3	82.5	78.1	79.7	80.8	81.9	80.8	81.2	78.6	80.8
2	88.7	96.4	55.6	57.2	64.1	66.0	70.0	73.2	69.3	71.0	69.0	70.4	67.0	70.0
3	83.9	94.7	49.3	51.5	55.4	58.0	65.3	69.1	59.1	61.5	57.8	60.1	58.7	62.4
4	81.9	93.4	44.4	47.3	50.3	53.4	59.9	64.9	49.7	52.2	53.5	56.1	54.1	58.5
5	75.7	92.0	38.6	41.6	44.5	47.9	56.5	62.3	44.4	46.7	48.3	51.3	48.9	54.6
6	71.1	88.7	37.0	40.7	40.4	44.1	52.3	59.1	39.8	43.0	45.9	49.5	44.3	50.9
7	67.5	87.5	33.0	37.2	38.2	42.0	52.3	58.9	35.5	38.5	43.1	46.9	42.7	49.4
8	63.3	85.0	31.5	36.0	32.8	36.7	49.7	57.8	34.1	37.9	42.2	46.2	39.1	46.9
9	58.4	79.5	26.7	31.3	28.6	32.7	49.7	55.0	32.3	36.4	30.7	34.6	36.9	45.8
10			26.7	30.4	25.6	30.1			29.0	33.2	29.4	33.0	36.9	45.2

ICD-10 classification														
Years	C07 Parotid gland n=208		C08 Salivary glands unspec. n=47		C09 Tonsil n=681		C10 Oropharynx n=198		C11 Nasopharynx n=104		C12 Piriform sinus n=375		C13 Hypopharynx n=380	
	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	89.7	92.4	84.7	85.4	78.1	79.4	66.9	67.2	78.2	78.9	74.7	75.5	56.9	57.8
2	80.5	85.3	65.2	66.6	65.0	67.1	51.0	51.9	68.4	69.6	54.0	55.3	36.7	37.5
3	73.8	79.9	57.0	55.8	54.5	57.3	42.0	43.4	60.9	62.9	42.3	43.9	27.5	28.4
4	68.2	75.9	53.7	54.7	50.9	54.2	37.6	39.4	55.0	57.2	37.9	39.7	23.7	25.1
5	66.5	74.8	53.7	53.6	47.5	51.6	37.6	39.1	53.4	54.9	32.8	35.3	21.7	23.0
6	63.5	73.3			44.9	48.9	33.5	35.7	49.8	52.3	27.5	29.5	19.9	21.8
7	59.6	70.3			40.5	45.3	31.5	34.0	47.4	51.3	24.6	26.4	18.6	19.9
8	52.0	63.3			38.7	43.7	31.5	33.4	44.5	48.9	21.9	23.9	16.8	18.7
9	52.0	62.7			37.5	43.1	28.6	30.7	44.5	47.3	20.9	23.1		
10	49.8	60.6			35.9	41.9	26.8	29.0	44.5	45.6	20.9	22.7		

ICD-10 classification								
Years	C14 Lip, mouth, pharynx unspec. n=10		C30 Nasal cavity, middle ear n=124		C31 Accessory sinuses n=107		C32 Larynx n=1,043	
	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			84.8	86.7	75.2	76.8	87.3	89.1
2			65.0	68.6	60.8	64.2	76.9	80.2
3			59.5	64.1	52.2	56.2	68.8	73.2
4			55.6	61.2	46.5	50.1	64.1	69.7
5			50.4	56.8	39.1	43.9	58.9	65.5
6			48.2	55.4	36.7	41.7	53.7	61.1
7			48.2	54.8	36.7	40.5	49.6	57.5
8							46.1	55.1
9							43.1	52.8
10							39.5	49.9

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with HN cancer by ICD-10 classification for period 1998-2011 (N=5,423).



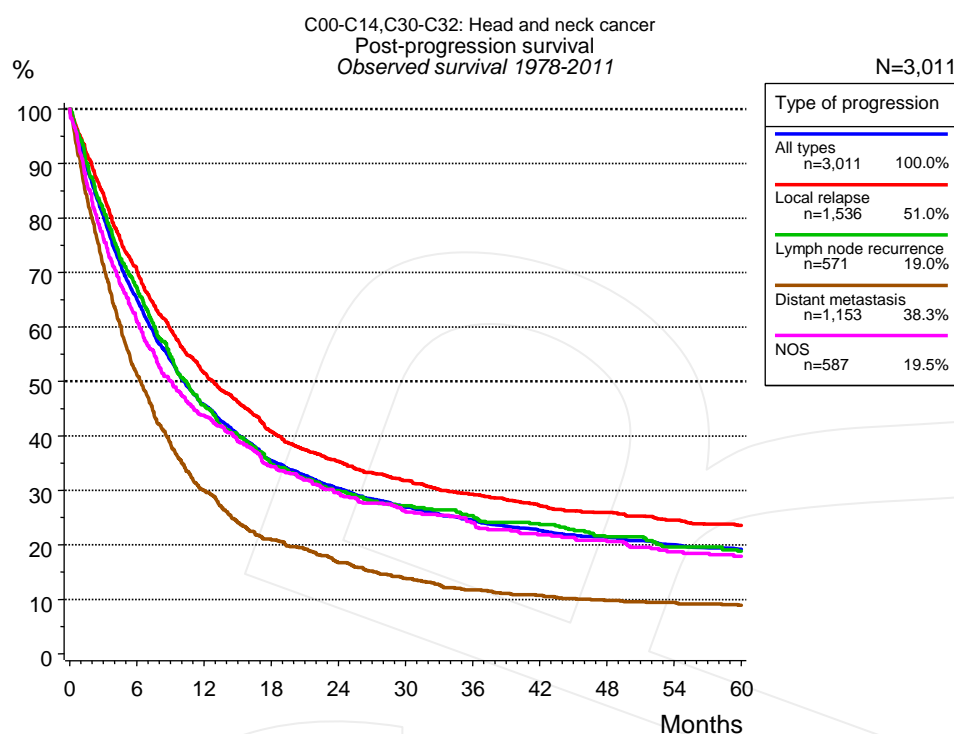


**Figure 4e.** Conditional relative 2-year survival of patients with HN cancer by extent of disease. For 7,700 of 8,432 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 5,735 cases an evaluable classification was established. The grey line represents the subgroup of 2,697 patients with missing values regarding extent of disease (32.0% of 8,432 patients, the percent values of all other categories are related to n=5,735).

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	2,612	83.6	2,867	53.8	256	24.0	2,697	68.5
1	2,263	84.4	2,005	58.7	88	40.2	2,022	76.5
2	1,897	87.7	1,317	72.8	54	55.6	1,570	82.6
3	1,605	89.8	969	81.4	30	78.6	1,272	85.1
4	1,375	89.6	785	84.3			1,011	86.2
5	1,178	90.9	643	84.3			809	88.2
6	1,002	90.7	518	84.9			661	89.9
7	897	90.5	419	88.9			556	89.0
8	783	91.7	353	89.9			462	89.7
9	689	92.0	304	87.8			365	89.8
10	582	92.8	255	84.4			286	91.4

**Table 4f.** Conditional relative 2-year survival of patients with HN cancer by extent of disease for period 1988-2011 (N=5,735).

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 89.8% (n=1,605).



**Figure 5a.** Observed post-progression survival of 3,011 patients with HN cancer diagnosed between 1978 and 2011 (incl. M1). These 3,011 patients with documented progression events during their course of disease represent 30.5% of the totally 9,864 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=1,125, 11.4%). 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=3,011 %	Local relapse n=1,536 %	Lymph node recurrence n=571 %	Distant metastasis n=1,153 %	NOS n=587 %
0	100.0	100.0	100.0	100.0	100.0
12	45.7	51.6	45.7	30.0	43.6
24	30.4	35.3	29.9	16.7	29.6
36	24.6	29.3	25.4	11.7	24.1
48	21.3	25.9	21.5	9.8	20.6
60	19.2	23.6	18.9	8.9	17.9

**Table 5b.** Observed post-progression survival of patients with HN cancer for period 1978-2011 (N=3,011).

**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 C00-C14,C30-C32: HN cancer [Internet]. 2013 [updated 2013 Apr 1; cited 2013 May 1]. Available from: [http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C0032E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C0032E.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
3a	Relative survival by age category (chart)	4
3b	Observed survival by age category (chart)	5
3c	Survival by age category (table)	5
4a	Relative survival by ICD-10 classification 1988+ (chart)	6
4b	Survival by ICD-10 classification 1988+ (table)	6
4c	Relative survival by ICD-10 classification 1998+ (chart)	7
4d	Survival by ICD-10 classification 1998+ (table)	8
4e	Conditional survival by extent of disease (chart)	9
4f	Conditional survival by extent of disease (table)	9
5a	Observed post-progression survival (chart)	10
5b	Observed post-progression survival (table)	10