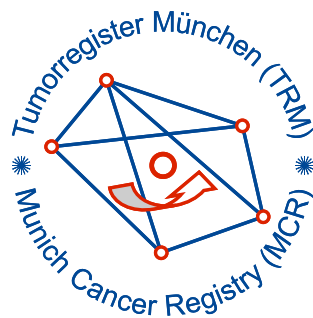


Munich Cancer Registry



- ▶ [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

C73: Thyroid cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	441	914	5,274
Diseases	441	918	5,308
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C73__E.pdf

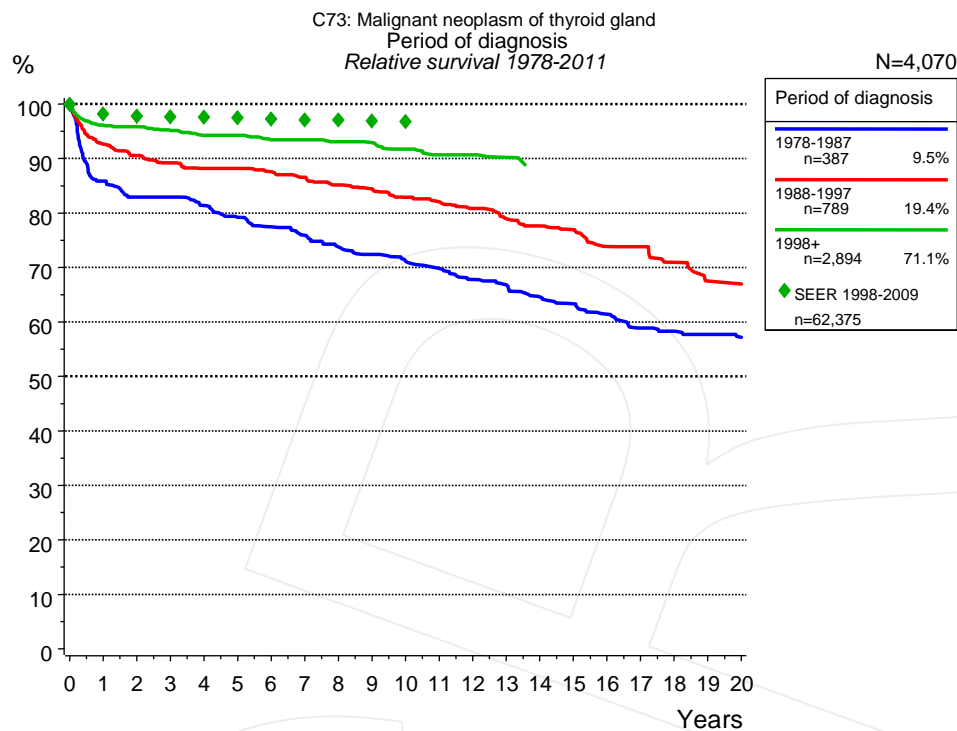


Figure 1a. Relative survival of patients with thyroid cancer by period of diagnosis. Included in the evaluation are 4,070 cases diagnosed between 1978 and 2011.

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=387		n=789		n=2,894	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	84.8	85.9	91.2	92.6	95.2	96.1
2	80.9	82.9	88.0	90.5	94.2	95.8
3	79.8	82.9	85.7	89.2	92.7	95.1
4	77.2	81.4	83.5	88.2	91.1	94.3
5	74.0	79.2	82.6	88.1	90.5	94.3
6	71.7	77.4	80.9	87.6	88.7	93.4
7	69.3	75.9	78.9	86.6	88.2	93.4
8	66.4	73.8	76.5	85.1	86.8	93.1
9	64.6	72.4	75.1	84.5	85.6	92.9
10	62.4	71.1	72.6	82.9	83.6	91.7
11	60.6	69.8	71.0	82.0	81.7	90.6
12	58.1	67.8	69.1	80.8	80.9	90.6
13	56.5	66.8	66.6	78.9	79.7	90.2
14	54.1	64.6	64.5	77.6		
15	52.4	63.3	63.2	76.9		
16	50.3	61.4	59.6	73.9		
17	47.6	58.9	59.0	73.8		
18	46.7	58.3	55.9	71.0		
19	45.6	57.7	52.3	67.5		
20	44.8	57.2	52.3	67.0		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with thyroid cancer by period of diagnosis for period 1978-2011 (N=4,070).

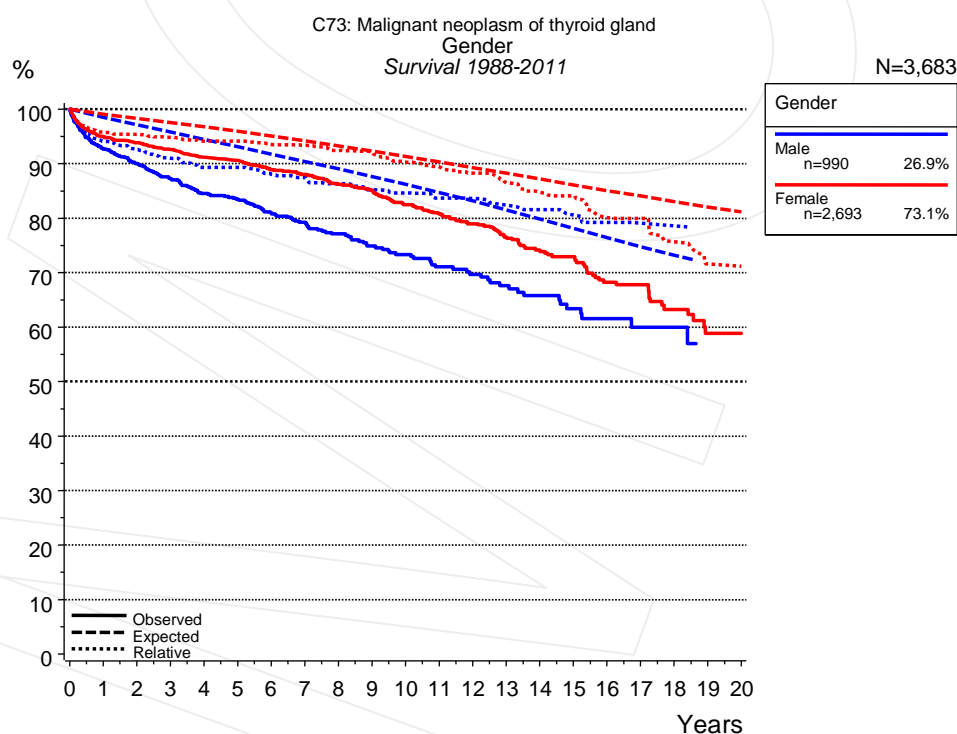


Figure 2a. Survival of patients with thyroid cancer by gender. Included in the evaluation are 3,683 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=990		Female n=2,693	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	92.7	94.1	95.0	95.8
2	90.0	92.6	93.8	95.4
3	87.2	91.0	92.6	94.8
4	84.5	89.3	91.1	94.1
5	83.5	89.3	90.5	94.1
6	81.0	88.0	88.9	93.5
7	79.2	87.4	88.1	93.4
8	77.1	86.3	86.2	92.4
9	74.8	85.2	85.1	92.1
10	73.3	84.6	82.4	90.2
11	71.0	83.7	80.8	89.4
12	69.7	83.6	78.9	88.3
13	67.6	82.4	76.5	86.5
14	65.7	81.5	73.9	84.7
15	63.4	80.6	73.0	84.1
16	61.5	79.2	68.2	80.1
17	59.9	79.1	67.7	79.9
18	59.9	78.6	63.2	75.7
19	56.9	75.9	58.8	71.6
20	56.9	71.8	58.8	71.2

Table 2b. Observed (obs.) and relative (rel.) survival of patients with thyroid cancer by gender for period 1988-2011 (N=3,683).

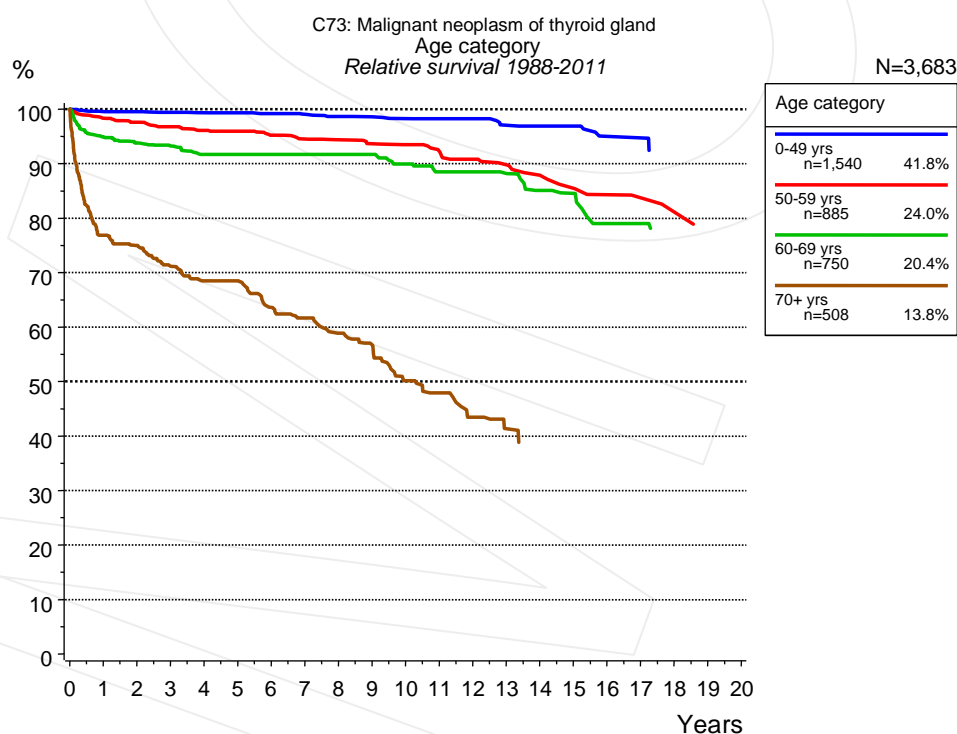


Figure 3a. Relative survival of patients with thyroid cancer by age category. Included in the evaluation are 3,683 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=1,540		50-59 yrs n=885		60-69 yrs n=750		70+ yrs n=508	
	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	99.5	99.5	97.9	98.4	93.9	94.9	73.2	76.9
2	99.3	99.5	96.7	97.6	91.6	93.8	68.2	75.0
3	99.1	99.4	95.5	96.8	89.9	93.2	61.5	71.2
4	98.8	99.3	94.1	96.1	87.2	91.7	56.2	68.4
5	98.7	99.3	93.7	95.9	86.4	91.7	53.5	68.4
6	98.3	99.2	91.9	95.2	85.4	91.7	46.6	63.6
7	98.0	99.1	90.7	94.5	84.9	91.7	42.8	61.7
8	97.4	98.7	89.9	94.4	81.7	91.7	37.7	58.9
9	97.2	98.6	88.3	93.6	80.1	91.7	33.9	56.7
10	96.5	98.2	87.2	93.5	76.6	89.9	27.5	50.2
11	96.3	98.2	85.4	92.3	73.0	88.5	24.5	47.9
12	95.9	98.2	83.4	90.8	71.8	88.5	20.0	43.5
13	94.3	97.0	81.4	89.8	68.9	88.2	17.0	41.3
14	93.9	96.9	78.1	87.8	63.7	85.1	15.2	38.8
15	93.9	96.9	76.0	85.5	61.5	84.5		
16	91.2	95.0	73.4	84.3	55.0	79.0		
17	91.2	94.7	71.6	83.7	55.0	79.0		
18			69.1	81.1				

Table 3b. Observed (obs.) and relative (rel.) survival of patients with thyroid cancer by age category for period 1988-2011 (N=3,683).

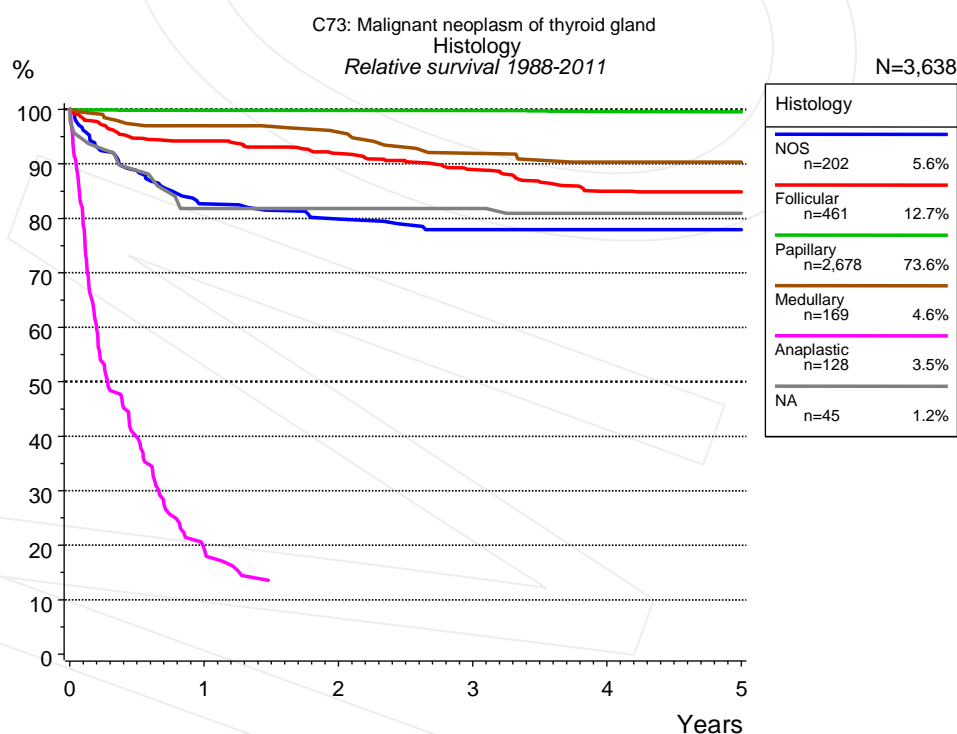


Figure 4a. Relative survival of patients with thyroid cancer by histology. For 3,638 of 3,683 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. The grey line represents the subgroup of 45 patients with missing values regarding histology (1.2% of 3,683 patients, the percent values of all other categories are related to n=3,638).

Years	Histology											
	NOS n=202		Follicular n=461		Papillary n=2,678		Medullary n=169		Anaplastic n=128		NA n=45	
	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
1	81.1	82.6	92.5	94.2	99.2	99.8	96.4	97.0	19.0	19.2	80.0	81.8
2	77.8	79.8	88.6	91.9	98.5	99.8	94.4	95.8			80.0	81.8
3	75.0	77.9	84.1	88.9	97.8	99.8	89.8	91.9			80.0	81.8
4	74.3	77.9	78.8	85.0	96.7	99.5	87.2	90.3			75.4	80.9
5	74.3	77.9	77.3	84.8	96.0	99.5	87.2	90.3			75.4	80.9

Table 4b. Observed (obs.) and relative (rel.) survival of patients with thyroid cancer by histology for period 1988-2011 (N=3,638).

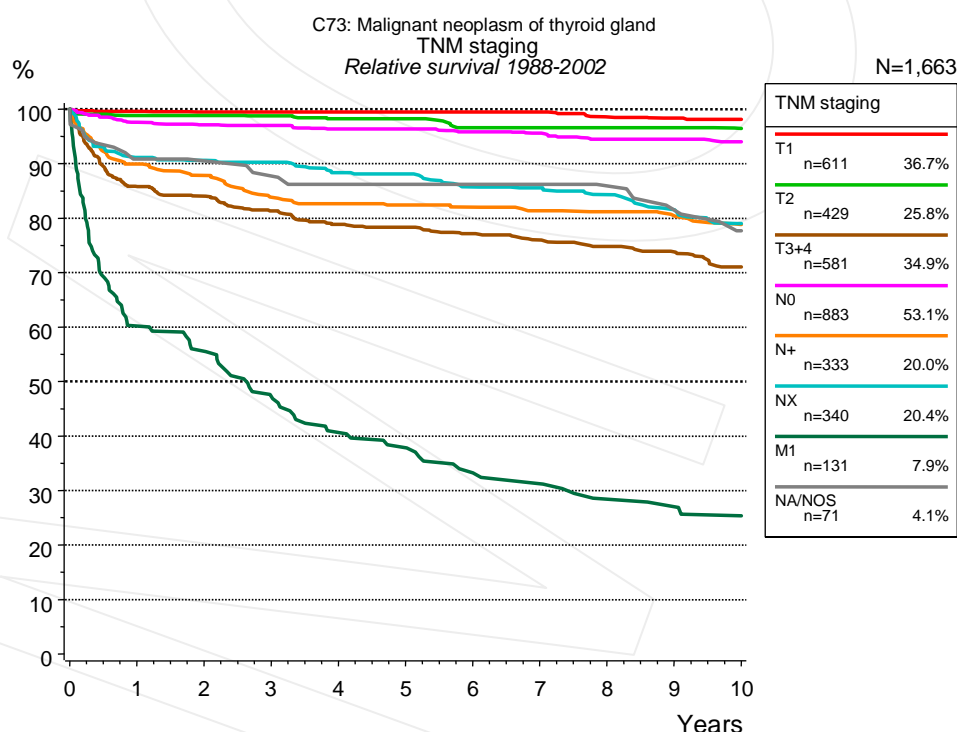


Figure 4c. Relative survival of patients with thyroid cancer by TNM staging. For 1,664 of 1,734 cases diagnosed between 1988 and 2002 valid data could be obtained for this item. For a total of 1,663 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 71 patients with missing values regarding TNM staging (4.1% of 1,734 patients, the percent values of all other categories are related to n=1,663).

Due to substantial changes in stage classification schemes long-term survival statistics over decades could not be created.

TNM staging														
Years	T1 n=611		T2 n=429		T3+4 n=581		N0 n=883		N+ n=333		NX n=340		M1 n=131	
	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	99.2	99.6	98.1	98.8	84.1	85.8	96.7	97.6	88.8	89.9	89.7	91.2	58.8	60.2
2	98.2	99.5	97.4	98.8	81.0	84.0	95.3	97.1	85.8	87.8	88.2	90.6	53.4	55.6
3	97.7	99.5	96.7	98.8	77.0	81.3	94.5	97.0	80.9	83.8	86.7	90.3	44.3	47.3
4	97.2	99.5	95.2	98.3	73.5	78.8	92.9	96.3	79.4	82.6	83.4	88.3	37.4	40.7
5	96.7	99.5	94.7	98.3	72.0	78.4	92.2	96.3	78.1	82.4	82.5	88.1	34.4	37.8
6	95.7	99.5	92.1	96.6	69.7	77.2	90.5	95.8	77.1	82.0	78.9	85.7	29.7	33.3
7	94.9	99.5	91.8	96.6	67.6	76.0	89.4	95.6	75.6	81.3	77.8	85.6	27.3	31.2
8	92.6	98.6	91.2	96.6	65.5	74.8	87.3	94.5	74.8	81.2	75.5	84.3	23.8	28.4
9	91.6	98.4	90.8	96.6	63.5	73.8	86.8	94.5	73.5	80.4	72.1	81.5	22.8	27.0
10	91.0	98.1	88.6	96.5	60.0	71.0	85.1	94.0	71.1	78.8	68.4	79.0	20.7	25.4

TNM staging cont'd		
NA/NOS n=71		
Years	obs. %	rel. %
0	100.0	100.0
1	88.7	90.8
2	87.3	90.5
3	83.1	87.7
4	80.3	86.2
5	80.3	86.2
6	77.4	86.2
7	77.4	86.2
8	74.3	85.9
9	69.5	81.5
10	64.4	77.7

Table 4d. Observed (obs.) and relative (rel.) survival of patients with thyroid cancer by TNM staging for period 1988-2002 (N=3,308).

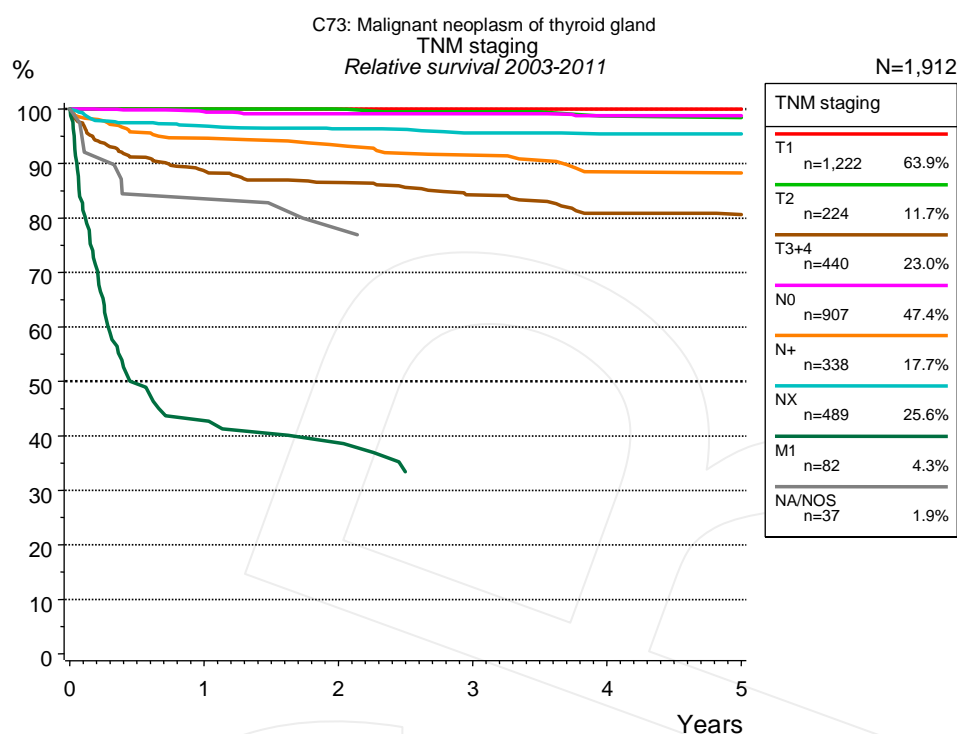


Figure 4e. Relative survival of patients with thyroid cancer by TNM staging. For 1,914 of 1,949 cases diagnosed between 2003 and 2011 valid data could be obtained for this item. For a total of 1,912 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 37 patients with missing values regarding TNM staging (1.9% of 1,949 patients, the percent values of all other categories are related to n=1,912).

Due to substantial changes in stage classification schemes long-term survival statistics over decades could not be created.

TNM staging														
Years	T1 n=1,222		T2 n=224		T3+4 n=440		N0 n=907		N+ n=338		NX n=489		M1 n=82	
	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	99.8	100.0	99.5	100.0	87.3	88.7	98.8	99.5	94.3	94.6	96.0	96.9	42.8	42.8
2	99.2	100.0	98.9	100.0	84.4	86.5	98.1	99.1	92.4	93.3	94.6	96.3	38.4	38.7
3	98.9	100.0	97.6	99.5	81.1	84.2	97.6	99.1	90.3	91.5	93.0	95.6	31.4	32.0
4	98.2	100.0	95.3	98.7	77.1	80.9	96.0	98.8	86.7	88.5	92.1	95.4		
5	98.0	100.0	95.3	98.4	76.4	80.6	95.6	98.8	86.7	88.2	92.1	95.4		

TNM staging		
cont'd	NA/NOS n=37	
Years	obs. %	rel. %
0	100.0	100.0
1	83.8	83.5
2	77.8	78.0
3	74.6	73.8
4	74.6	70.2
5	74.6	66.6

Table 4f. Observed (obs.) and relative (rel.) survival of patients with thyroid cancer by TNM staging for period 2003-2011 (N=3,702).

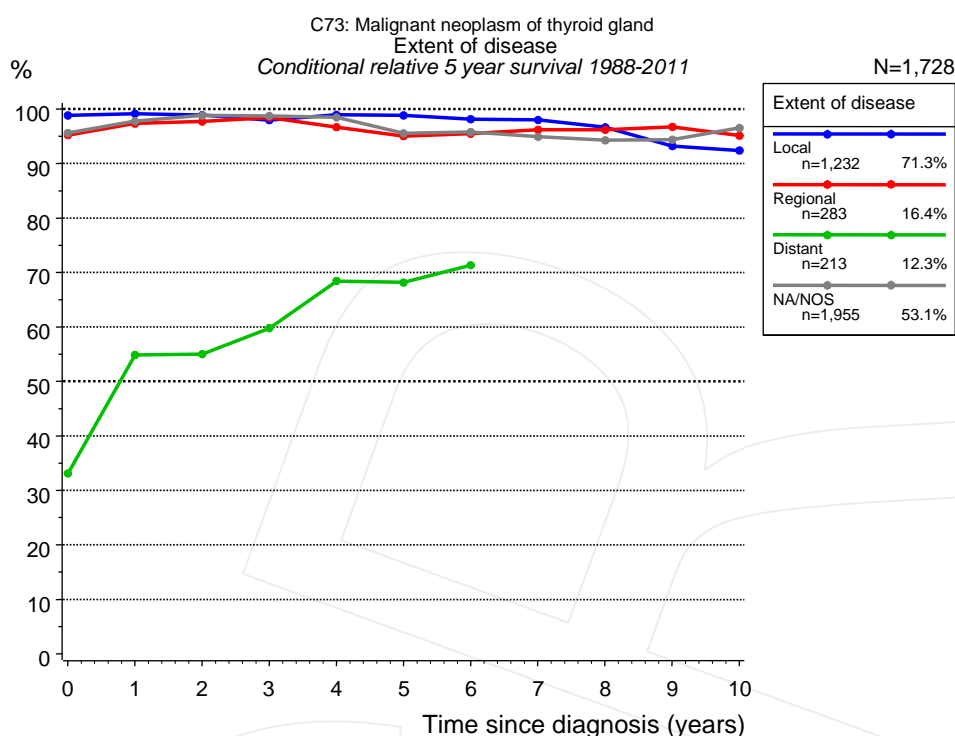


Figure 4g. Conditional relative 5-year survival of patients with thyroid cancer by extent of disease. For 3,578 of 3,683 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 1,728 cases an evaluable classification was established. The grey line represents the subgroup of 1,955 patients with missing values regarding extent of disease (53.1% of 3,683 patients, the percent values of all other categories are related to n=1,728).

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	1,232	98.8	283	95.2	213	33.1	1,955	95.6
1	1,135	99.2	257	97.3	108	54.9	1,779	97.8
2	1,009	98.9	224	97.7	92	55.0	1,587	98.8
3	917	98.0	203	98.4	74	59.8	1,391	98.7
4	799	98.9	176	96.7	59	68.4	1,158	98.5
5	682	98.8	159	95.0	52	68.2	982	95.5
6	583	98.1	134	95.5	44	71.3	822	95.8
7	498	98.0	118	96.2			709	94.9
8	434	96.6	100	96.2			616	94.3
9	357	93.2	85	96.7			518	94.4
10	296	92.4	75	95.1			432	96.5

Table 4h. Conditional relative 5-year survival of patients with thyroid cancer by extent of disease for period 1988-2011 (N=1,728).

Conditional relative survival rates refer to the relative survival probability, in this case for 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 4e). 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 5-year survival rate is 98.0% (n=917).

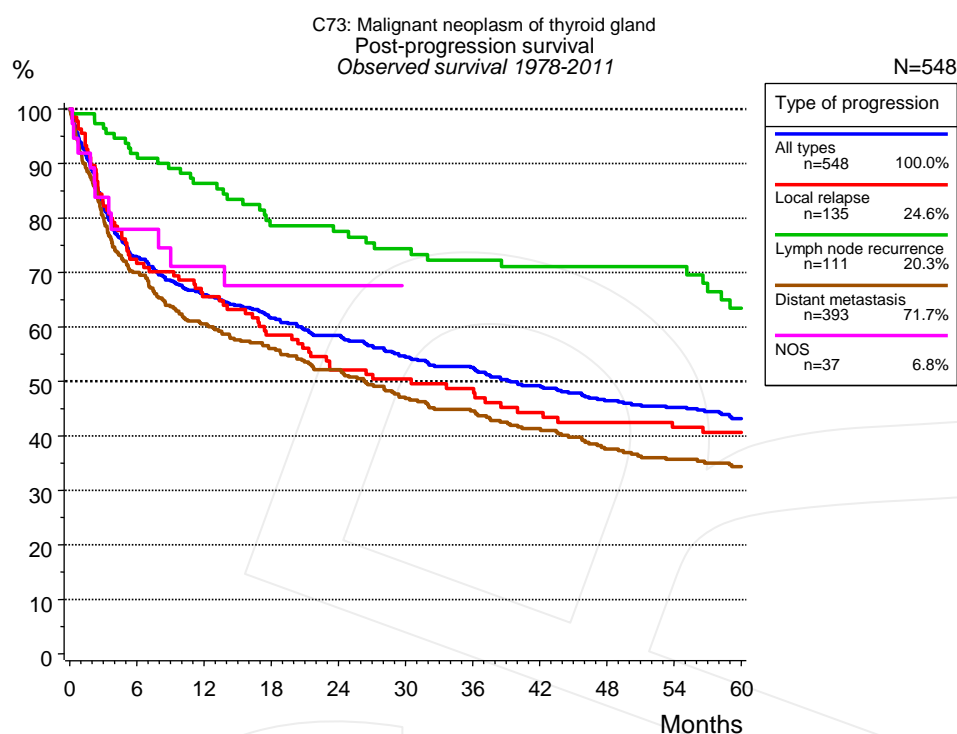


Figure 5a. Observed post-progression survival of 548 patients with thyroid cancer diagnosed between 1978 and 2011 (incl. M1). These 548 patients with documented progression events during their course of disease represent 13.5% of the totally 4,070 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=79, 1.9%). 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=548 %	Local relapse n=135 %	Lymph node recurrence n=111 %	Distant metastasis n=393 %	NOS n=37 %
0	100.0	100.0	100.0	100.0	100.0
12	65.9	65.5	86.3	60.5	71.1
24	58.4	52.1	77.5	52.2	67.6
36	52.5	48.7	72.2	44.6	67.6
48	46.4	42.5	71.0	37.6	67.6
60	43.2	40.6	63.4	34.4	

Table 5b. Observed post-progression survival of patients with thyroid cancer for period 1978-2011 (N=548).

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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