

# Munich Cancer Registry



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

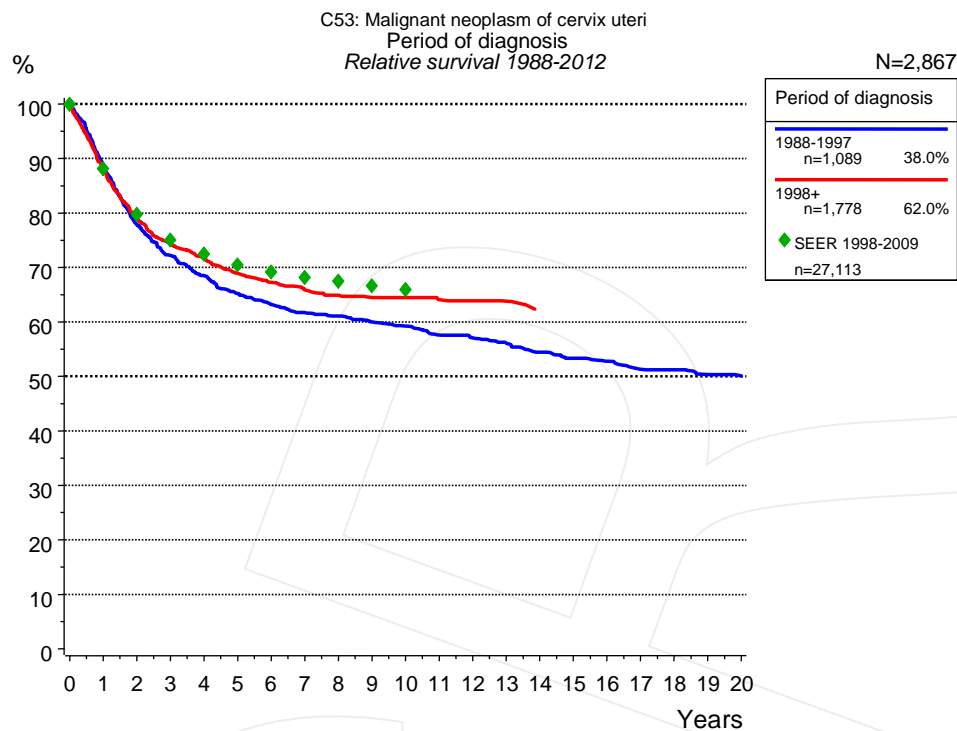
## Cancer statistics: Survival

### C53: Cervical cancer

Year of diagnosis	1988-2012
Patients	4,475
Diseases	4,479
Cases evaluated	2,867
Creation date	03/25/2014
Export date	02/12/2014
Population (females)	2.3 m



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C53\\_\\_E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C53__E.pdf)



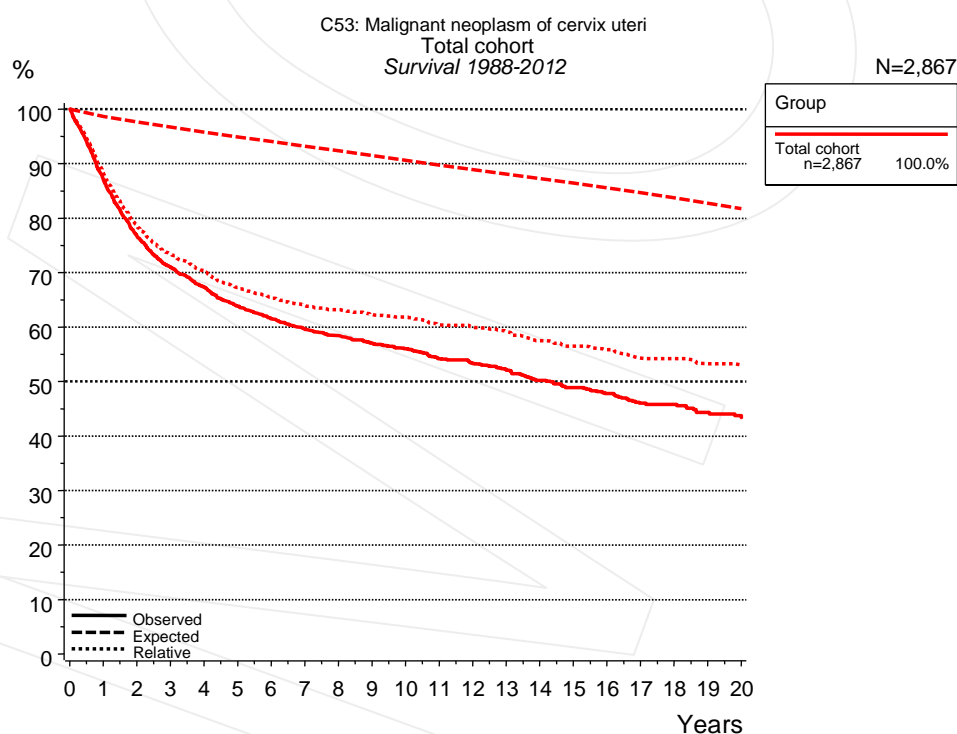
**Figure 1a.** Relative survival of patients with cervical cancer by period of diagnosis. Included in the evaluation are 2,867 cases diagnosed between 1988 and 2012.

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 1988, 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			
	1988-1997		1998+	
	n=1,089		n=1,778	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	87.4	88.7	86.8	87.8
2	75.7	77.9	77.4	79.0
3	69.2	72.2	72.3	74.3
4	65.0	68.5	69.3	71.7
5	61.1	65.2	66.1	68.9
6	58.4	63.1	64.1	67.2
7	56.5	61.7	62.4	65.9
8	55.3	61.1	61.2	64.9
9	53.7	60.0	60.4	64.5
10	52.4	59.2	60.2	64.5
11	50.5	57.6	58.9	64.1
12	49.5	57.0	58.5	63.9
13	48.2	56.1	58.0	63.8
14	46.4	54.4		
15	45.1	53.3		
16	44.0	52.8		
17	42.4	51.3		
18	42.2	51.2		
19	40.9	50.3		
20	39.9	50.1		

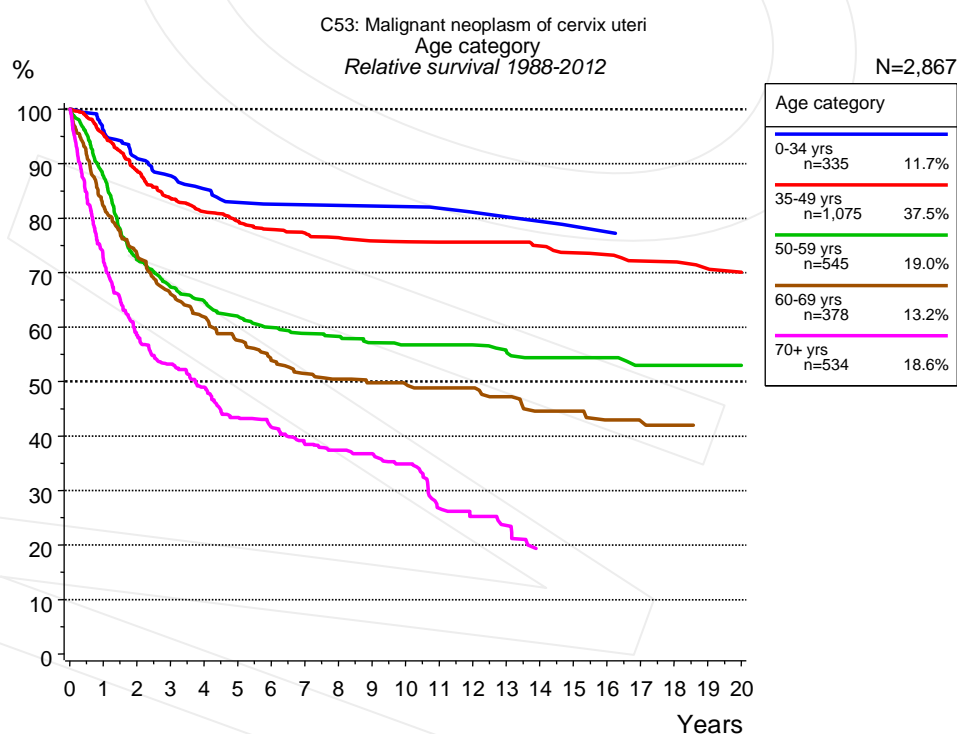
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with cervical cancer by period of diagnosis for period 1988-2012 (N=2,867).



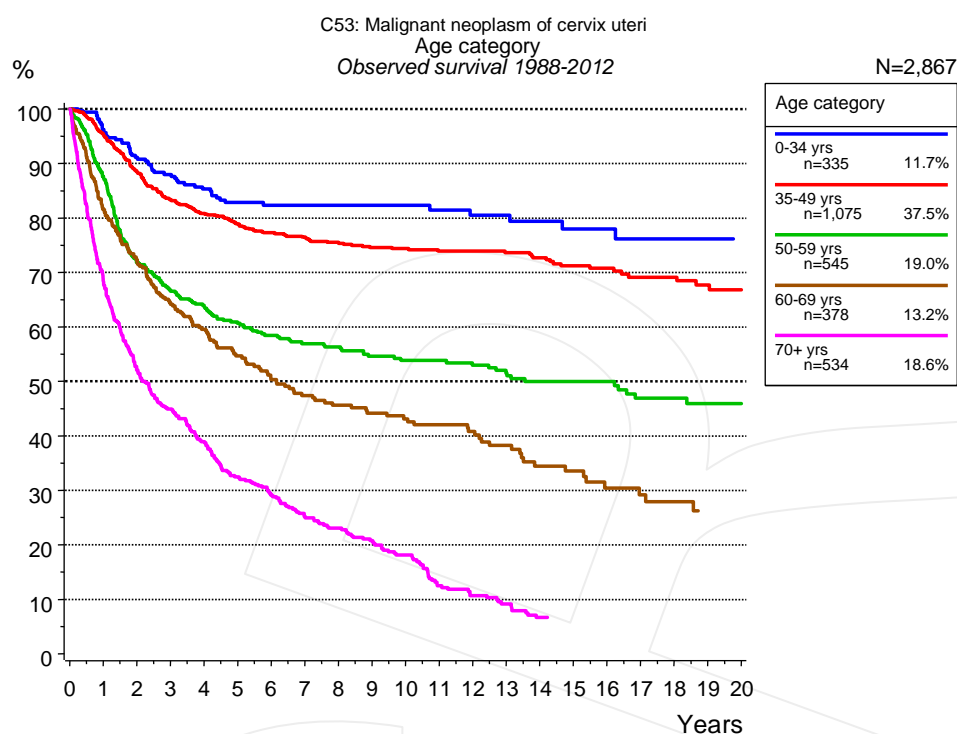
**Figure 2a.** Observed, expected and relative survival of the total cohort with cervical cancer. Included in the evaluation are 2,867 cases diagnosed between 1988 and 2012.

Years	Group	
	Total cohort n=2,867	
	obs. %	rel. %
0	100.0	100.0
1	87.0	88.2
2	76.7	78.6
3	71.0	73.4
4	67.4	70.3
5	63.9	67.3
6	61.5	65.3
7	59.7	64.0
8	58.4	63.2
9	57.0	62.3
10	56.0	61.8
11	54.2	60.4
12	53.3	60.0
13	52.2	59.2
14	50.2	57.5
15	48.9	56.5
16	47.8	55.8
17	46.0	54.3
18	45.8	54.2
19	44.4	53.3
20	43.4	53.0

**Table 2b.** Observed (obs.) and relative (rel.) survival of the total cohort with cervical cancer for period 1988-2012 (N=2,867).



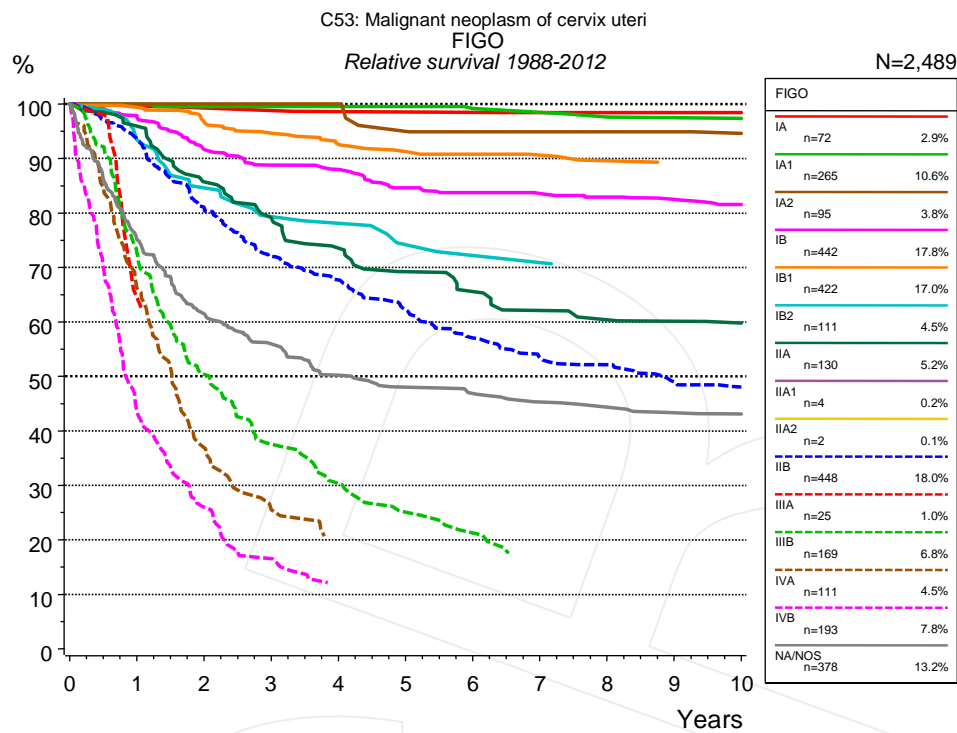
**Figure 3a.** Relative survival of patients with cervical cancer by age category. Included in the evaluation are 2,867 cases diagnosed between 1988 and 2012.



**Figure 3b.** Observed survival of patients with cervical cancer by age category. Included in the evaluation are 2,867 cases diagnosed between 1988 and 2012.

Years	Age category									
	0-34 yrs n=335		35-49 yrs n=1,075		50-59 yrs n=545		60-69 yrs n=378		70+ yrs n=534	
	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	96.3	96.1	95.3	95.4	87.4	87.7	81.5	82.2	68.0	72.2
2	91.1	91.0	88.5	88.7	71.8	72.3	72.3	73.3	52.1	58.5
3	88.0	87.8	83.4	83.7	66.5	67.4	64.1	66.1	44.9	53.2
4	85.3	85.4	80.8	81.2	63.9	64.8	59.6	61.9	38.9	49.0
5	82.8	82.9	78.9	79.4	60.6	62.0	54.6	57.6	32.5	43.4
6	82.3	82.6	77.3	77.9	58.4	59.9	50.3	53.9	29.1	41.6
7	82.3	82.4	76.5	77.2	56.9	58.8	47.4	51.5	25.2	38.5
8	82.3	82.3	75.5	76.4	56.3	58.3	45.6	50.4	23.1	37.4
9	82.3	82.2	74.6	75.8	54.6	57.1	44.2	49.8	20.8	36.8
10	82.3	82.1	74.4	75.6	53.8	56.7	43.1	49.5	18.2	34.9
11	81.5	81.8	73.9	75.6	53.8	56.7	42.0	48.9	12.5	26.7
12	80.5	81.1	73.9	75.6	53.0	56.7	40.8	48.9	10.7	25.3
13	80.5	80.2	73.7	75.6	51.5	55.5	38.2	47.2	9.2	23.6
14	79.4	79.4	72.7	74.9	50.0	54.4	34.4	44.5	6.7	19.3
15	78.0	78.5	71.2	73.6	50.0	54.4	33.5	44.5		
16	78.0	77.5	70.8	73.3	50.0	54.4	30.4	43.0		
17	76.2	76.1	69.1	72.1	46.9	53.0	29.2	42.8		
18	76.2	74.6	69.1	72.0	46.9	53.0	27.9	42.0		
19	76.2	73.1	67.7	70.7	45.9	53.0	26.3	42.0		
20	76.2	71.6	66.8	70.0	45.9	53.0				

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with cervical cancer by age category for period 1988-2012 (N=2,867).



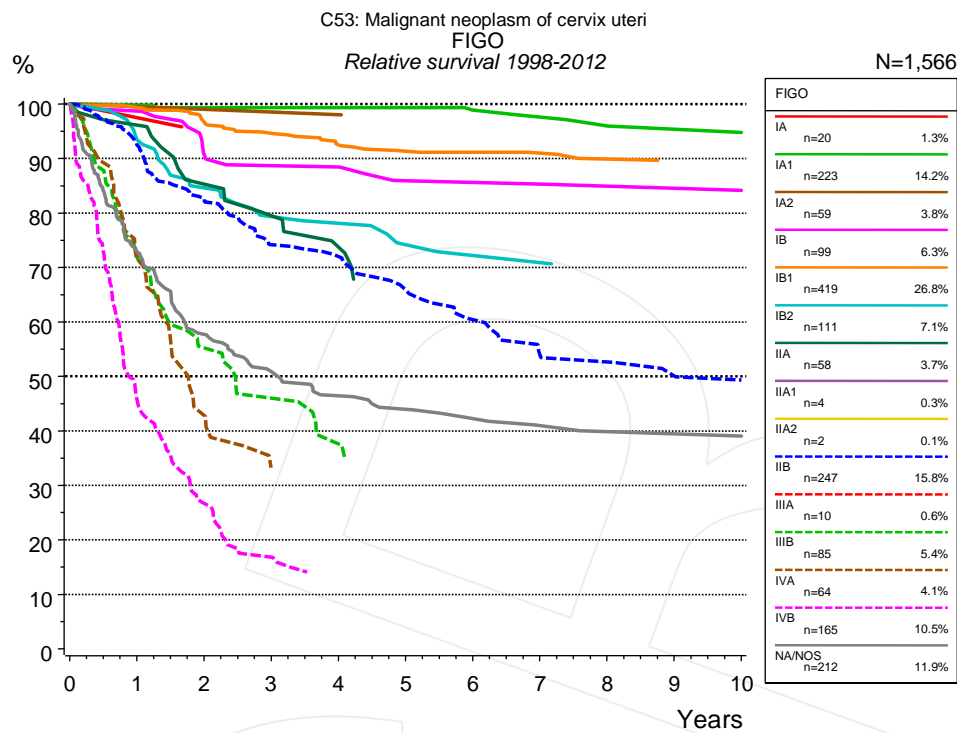
**Figure 4a.** Relative survival of patients with cervical cancer by FIGO. For 2,669 of 2,867 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 2,489 cases an evaluable classification was established. The grey line represents the subgroup of 378 patients with missing values regarding FIGO (13.2% of 2,867 patients, the percent values of all other categories are related to n=2,489). Subgroups with sample size <15 are dropped from the chart.

Years	FIGO													
	IA n=72		IA1 n=265		IA2 n=95		IB n=442		IB1 n=422		IB2 n=111		IIA n=130	
	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	100.0	99.6	100.0	99.9	100.0	100.0	97.0	97.8	99.3	99.3	92.5	93.4	94.5	95.9
2	98.6	99.2	99.2	99.5	100.0	100.0	90.3	91.7	95.9	96.7	83.5	84.6	83.1	85.7
3	98.6	98.8	99.2	99.5	100.0	100.0	86.7	88.8	93.8	94.7	77.5	79.3	75.5	79.1
4	97.1	98.6	99.2	99.5	100.0	100.0	85.4	88.0	91.3	92.6	76.1	78.1	69.4	73.5
5	97.1	98.5	98.6	99.5	94.1	95.0	81.5	84.6	89.8	91.2	71.2	74.1	64.0	69.2
6	97.1	98.5	97.3	99.2	92.6	94.9	79.9	83.7	88.9	90.8	69.4	72.2	60.0	65.5
7	95.4	98.4	96.5	98.5	92.6	94.9	79.4	83.6	88.2	90.6	69.4	70.9	55.9	62.1
8	95.4	98.4	95.7	97.6	92.6	94.9	78.1	82.9	86.7	89.6	66.7	69.3	53.6	60.4
9	95.4	98.4	94.8	97.5	92.6	94.9	76.9	82.5	85.6	89.2	66.7	67.7	52.5	60.1
10	95.4	98.4	94.8	97.4	90.3	94.6	75.5	81.5	85.6	88.7	66.7	66.0	51.3	59.8

<i>cont'd</i>	FIGO													
	IIA1 n=4		IIA2 n=2		IIB n=448		IIIA n=25		IIIB n=169		IVA n=111		IVB n=193	
Years	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					91.9	93.5	64.0	64.3	71.1	72.5	64.6	66.1	43.4	43.7
2					78.5	80.9			48.6	50.3	35.9	36.9	25.6	26.0
3					68.7	72.0			35.7	37.6	23.6	25.5	16.8	16.5
4					63.6	67.7			28.8	30.4	18.7	20.1	11.8	11.9
5					57.5	62.2			23.1	25.1				
6					51.8	57.1			19.6	21.2				
7					47.9	53.5			15.5	17.4				
8					46.1	52.1			15.5	17.1				
9					42.6	49.0			15.5	16.9				
10					40.9	48.0								

<i>cont'd</i>	FIGO NA/NOS n=378	
	obs. %	rel. %
Years	obs. %	rel. %
0	100.0	100.0
1	73.2	75.2
2	58.8	61.5
3	52.8	56.0
4	46.8	50.2
5	44.0	48.0
6	42.4	46.8
7	40.3	45.3
8	39.2	44.3
9	37.6	43.3
10	37.2	43.1

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with cervical cancer by FIGO for period 1988-2012 (N=2,489).



**Figure 4c.** Relative survival of patients with cervical cancer by FIGO. For 1,654 of 1,778 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 1,566 cases an evaluable classification was established. The grey line represents the subgroup of 212 patients with missing values regarding FIGO (11.9% of 1,778 patients, the percent values of all other categories are related to n=1,566). Subgroups with sample size <15 are dropped from the chart.

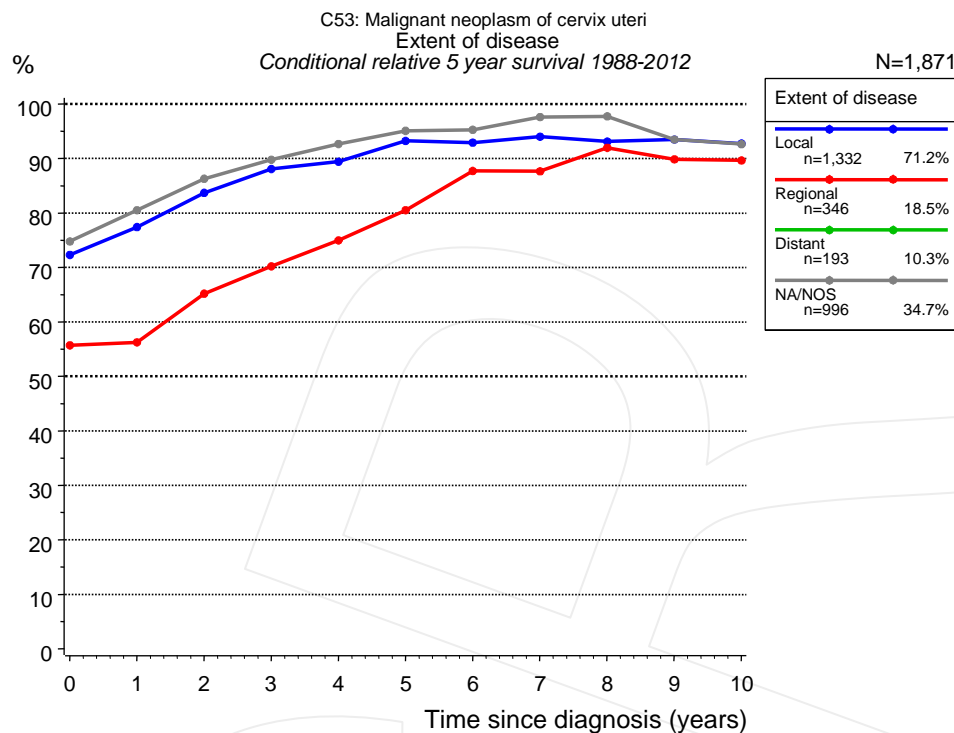
		FIGO													
		IA n=20		IA1 n=223		IA2 n=59		IB n=99		IB1 n=419		IB2 n=111		IIA n=58	
Years		obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1		100.0	97.4	100.0	99.8	100.0	99.5	99.0	98.7	99.3	99.3	92.5	93.4	96.6	96.1
2				99.0	99.3	100.0	99.0	89.9	90.7	95.9	96.6	83.5	84.6	84.6	85.3
3				99.0	99.3	100.0	98.5	87.5	88.7	93.8	94.6	77.5	79.3	78.3	79.5
4				99.0	99.3	100.0	98.1	87.5	88.5	91.3	92.5	76.1	78.1	71.7	73.7
5				99.0	99.3			83.1	85.9	89.7	91.3	71.2	74.1	64.7	67.5
6				97.2	98.9			83.1	85.6	89.2	91.1	69.4	72.2	64.7	67.1
7				96.1	97.6			83.1	85.3	88.5	91.0	69.4	70.9	64.7	66.6
8				94.9	95.9			81.0	84.9	87.0	89.9	66.7	69.3		
9				93.5	95.3			81.0	84.5	85.9	89.5	66.7	67.7		
10				93.5	94.8			81.0	84.2	85.9	89.0	66.7	66.0		



<i>cont'd</i>	FIGO													
	IIA1 n=4		IIA2 n=2		IIB n=247		IIIA n=10		IIIB n=85		IVA n=64		IVB n=165	
Years	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					91.0	92.5			71.3	72.3	70.1	71.6	45.4	45.7
2					80.7	82.6			53.8	55.2	42.6	42.8	26.3	26.7
3					71.3	74.2			45.1	46.0	31.0	33.2	17.2	16.8
4					68.8	72.0			37.3	37.6				
5					61.9	65.9								
6					56.4	60.4								
7					50.1	53.9								
8					48.9	52.6								
9					46.2	50.1								
10					44.7	49.3								

<i>cont'd</i>	FIGO NA/NOS n=212	
	obs. %	rel. %
Years	obs. %	rel. %
0	100.0	100.0
1	70.6	72.9
2	55.1	57.7
3	48.0	50.9
4	43.2	46.4
5	40.7	44.0
6	38.5	42.3
7	36.9	40.9
8	35.7	39.9
9	35.7	39.5
10	35.7	39.0

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with cervical cancer by FIGO for period 1998-2012 (N=1,566).

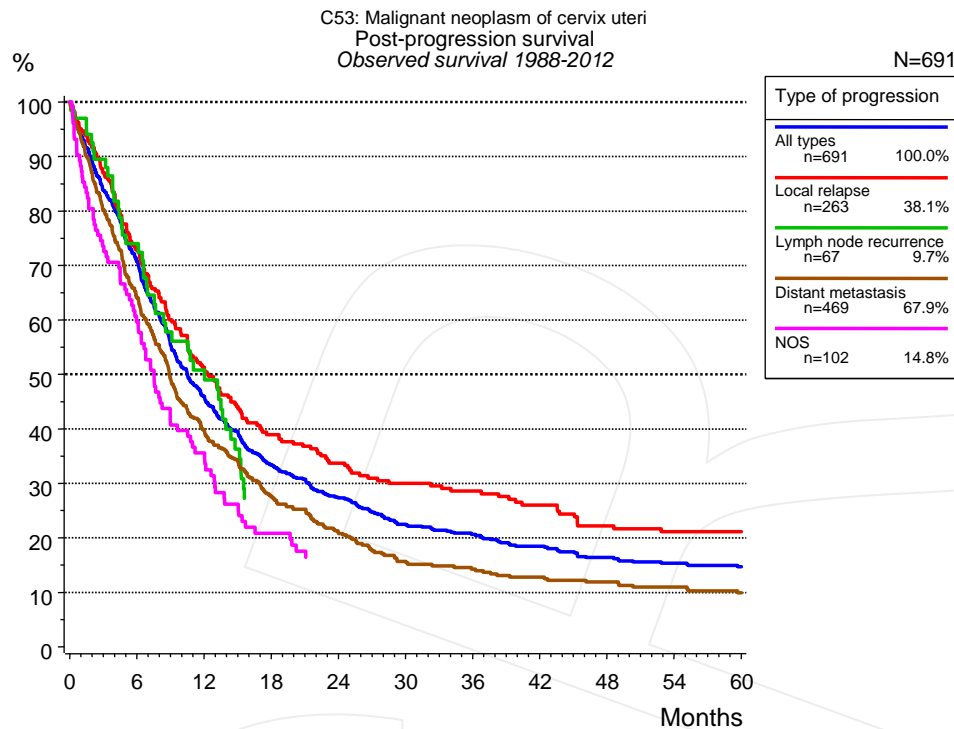


**Figure 4e.** Conditional relative 5-year survival of patients with cervical cancer by extent of disease. For 2,669 of 2,867 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 1,871 cases an evaluable classification was established. The grey line represents the subgroup of 996 patients with missing values regarding extent of disease (34.7% of 2,867 patients, the percent values of all other categories are related to n=1,871).

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	1,332	72.3	346	55.7	193		996	74.8
1	1,150	77.4	299	56.2			849	80.5
2	971	83.7	222	65.2			718	86.3
3	837	88.1	173	70.2			637	89.8
4	758	89.4	146	75.0			566	92.7
5	673	93.2	131	80.5			489	95.1
6	594	92.9	105	87.7			419	95.3
7	544	94.0	90	87.6			369	97.6
8	510	93.1	78	92.0			316	97.7
9	470	93.5	73	89.9			271	93.5
10	434	92.7	65	89.6			236	92.6

**Table 4f.** Conditional relative 5-year survival of patients with cervical cancer by extent of disease for period 1988-2012 (N=1,871).

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 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 5-year survival rate is 88.1% (n=837).



**Figure 5a.** Observed post-progression survival of 691 patients with cervical cancer diagnosed between 1988 and 2012 (incl. M1). These 691 patients with documented progression events during their course of disease represent 24.1% of the totally 2,867 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=162, 5.7%). 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=691 %	Local relapse n=263 %	Lymph node recurrence n=67 %	Distant metastasis n=469 %	NOS n=102 %
0	100.0	100.0	100.0	100.0	100.0
12	46.0	51.3	50.8	39.8	35.6
24	27.3	33.7		21.0	
36	20.6	28.6		14.3	
48	16.4	22.2		11.9	
60	14.7	21.1		9.9	

**Table 5b.** Observed post-progression survival of patients with cervical cancer for period 1988-2012 (N=691).

**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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