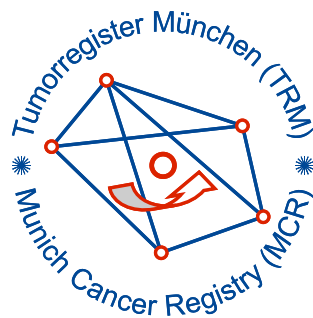


# Munich Cancer Registry



- ▶ Baseline statistics
- ▶ Selection Matrix
- ▶ Homepage

Munich Cancer Registry at Munich Cancer Center  
Marchioninstr. 15  
Munich, 81377  
Germany

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

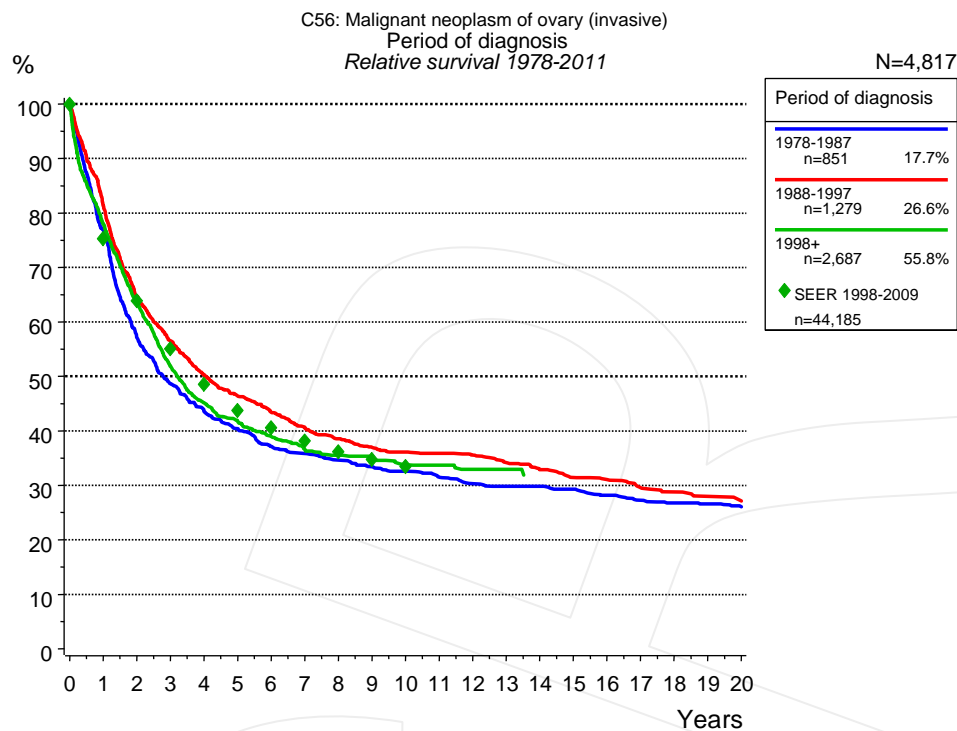
## Cancer statistics: Survival

### C56: Ovarian cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	976	1,539	5,244
Diseases	976	1,539	5,247
Creation date	04/01/2013		
Export date	01/03/2013		
Population (females)	2.3 m		



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C56\\_\\_E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C56__E.pdf)



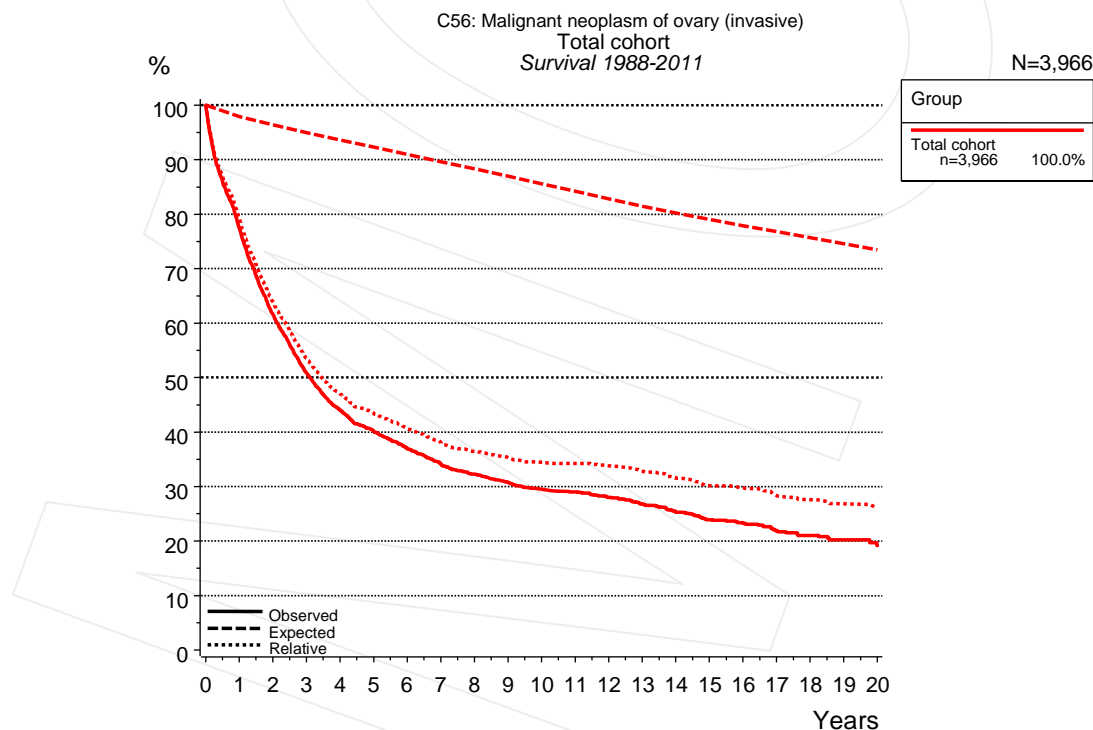
**Figure 1a.** Relative survival of patients with ovarian cancer by period of diagnosis. Included in the evaluation are 4,817 cases diagnosed between 1978 and 2011.

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=851		n=1,279		n=2,687	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	75.5	76.7	79.8	81.3	76.3	78.0
2	55.5	57.1	62.7	64.8	61.2	63.6
3	46.7	48.6	54.0	56.5	49.2	51.8
4	41.3	43.6	47.3	50.3	42.1	45.1
5	37.8	40.4	43.0	46.4	38.4	41.7
6	34.3	37.1	39.7	43.4	35.4	39.0
7	32.6	35.8	36.5	40.6	32.8	36.6
8	31.1	34.7	34.2	38.6	31.4	35.5
9	29.6	33.4	32.4	37.0	30.5	35.1
10	28.3	32.6	31.2	36.1	28.8	33.8
11	27.0	31.5	30.6	35.9	28.5	33.7
12	25.5	30.3	29.7	35.5	27.1	32.9
13	24.7	29.8	28.1	34.2	27.1	32.9
14	24.3	29.8	26.7	32.9		
15	23.5	29.3	25.2	31.4		
16	22.1	28.2	24.5	31.1		
17	21.0	27.3	23.1	29.5		
18	20.3	26.8	22.2	28.8		
19	19.8	26.6	21.3	28.0		
20	19.0	26.1	20.2	27.1		

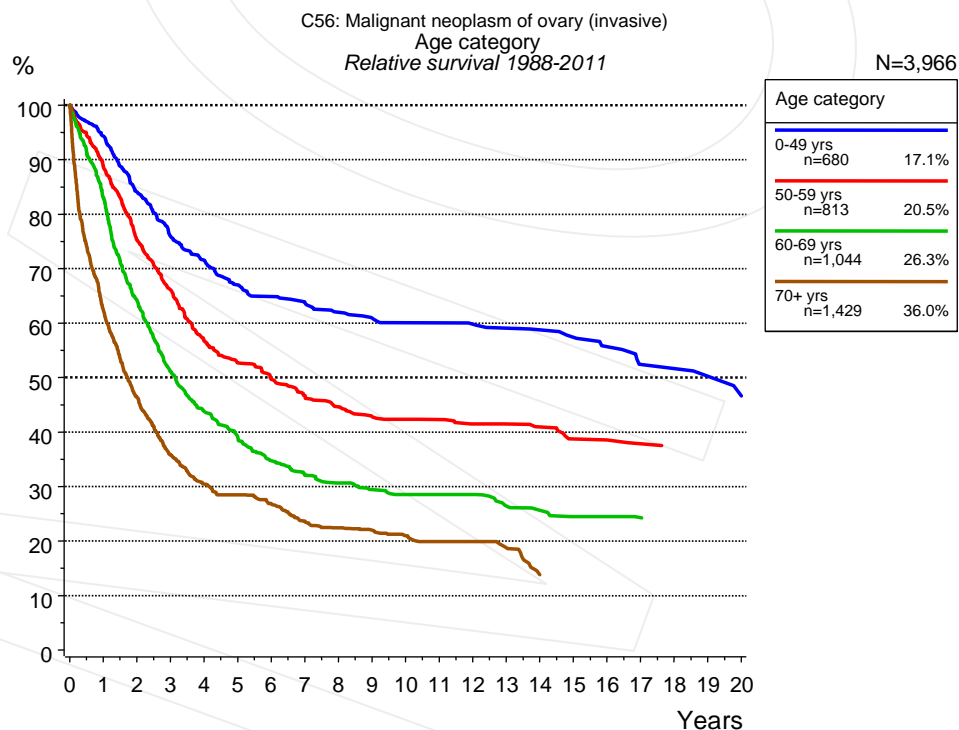
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by period of diagnosis for period 1978-2011 (N=4,817).



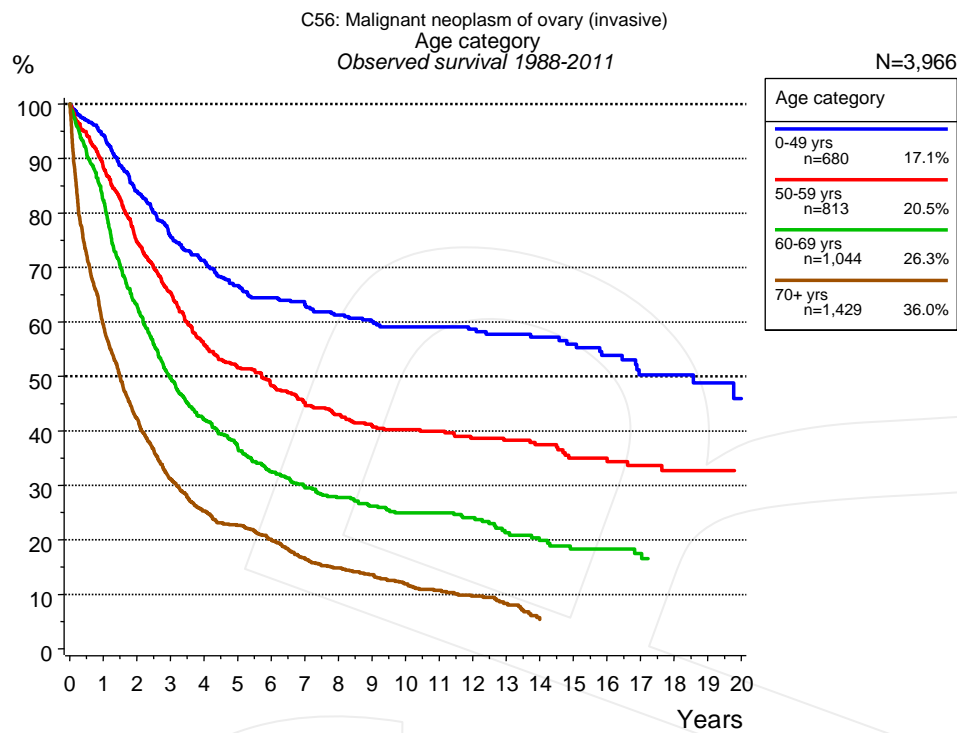
**Figure 2a.** Observed, expected and relative survival of the total cohort with ovarian cancer. Included in the evaluation are 3,966 cases diagnosed between 1988 and 2011.

Years	Group	
	Total cohort n=3,966	
	obs. %	rel. %
0	100.0	100.0
1	77.4	79.1
2	61.6	63.9
3	50.9	53.6
4	44.0	47.0
5	40.1	43.4
6	37.0	40.6
7	34.1	38.0
8	32.2	36.5
9	30.7	35.3
10	29.5	34.4
11	29.0	34.2
12	28.0	33.8
13	26.7	32.8
14	25.3	31.5
15	23.9	30.1
16	23.2	29.8
17	21.9	28.3
18	21.0	27.6
19	20.2	26.8
20	19.2	26.0

**Table 2b.** Observed (obs.) and relative (rel.) survival of the total cohort with ovarian cancer for period 1988-2011 (N=3,966).



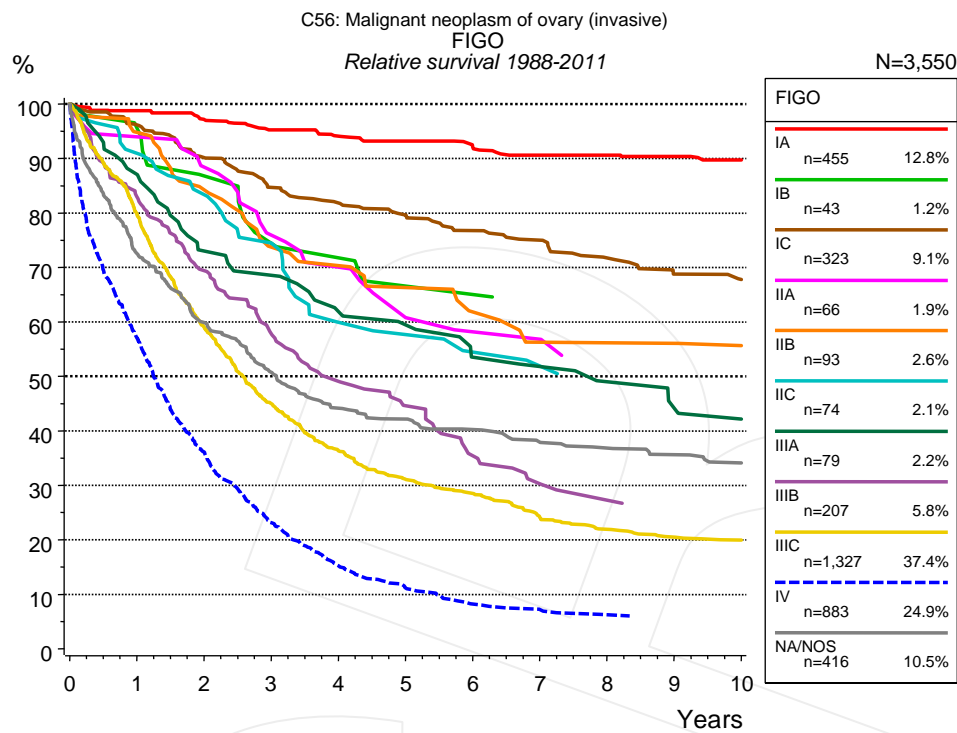
**Figure 3a.** Relative survival of patients with ovarian cancer by age category. Included in the evaluation are 3,966 cases diagnosed between 1988 and 2011.



**Figure 3b.** Observed survival of patients with ovarian cancer by age category. Included in the evaluation are 3,966 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=680		50-59 yrs n=813		60-69 yrs n=1,044		70+ yrs n=1,429	
	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	94.3	94.3	88.5	88.7	82.3	83.0	59.4	62.4
2	84.0	84.1	74.7	75.2	63.0	64.2	42.3	46.4
3	75.8	76.0	65.4	66.1	49.7	51.1	31.2	35.8
4	71.3	71.5	55.8	56.8	42.0	43.8	25.3	30.5
5	66.6	67.0	51.6	52.7	36.9	39.0	22.7	28.5
6	64.4	64.8	48.3	49.7	32.6	34.7	20.0	26.8
7	63.2	63.8	45.2	46.6	29.5	32.1	16.6	23.5
8	61.3	62.0	43.0	44.6	27.8	30.7	14.9	22.4
9	60.1	60.9	41.0	42.8	26.2	29.4	13.6	22.0
10	59.1	60.1	40.2	42.3	25.0	28.5	11.9	20.9
11	59.1	60.0	39.9	42.3	25.0	28.5	10.7	19.9
12	58.6	59.8	38.7	41.5	24.0	28.5	9.7	19.9
13	57.7	59.0	38.3	41.5	21.3	26.4	8.3	18.7
14	57.2	58.7	37.5	40.9	19.9	25.6	5.4	13.8
15	55.9	57.3	35.0	38.7	18.3	24.5		
16	53.8	55.7	34.4	38.6	18.3	24.5		
17	50.3	52.4	33.7	37.9	17.5	24.3		
18	50.3	51.6	32.7	37.3				
19	48.8	50.2	32.7	36.6				
20	45.9	46.6	32.7	35.9				

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by age category for period 1988-2011 (N=3,966).

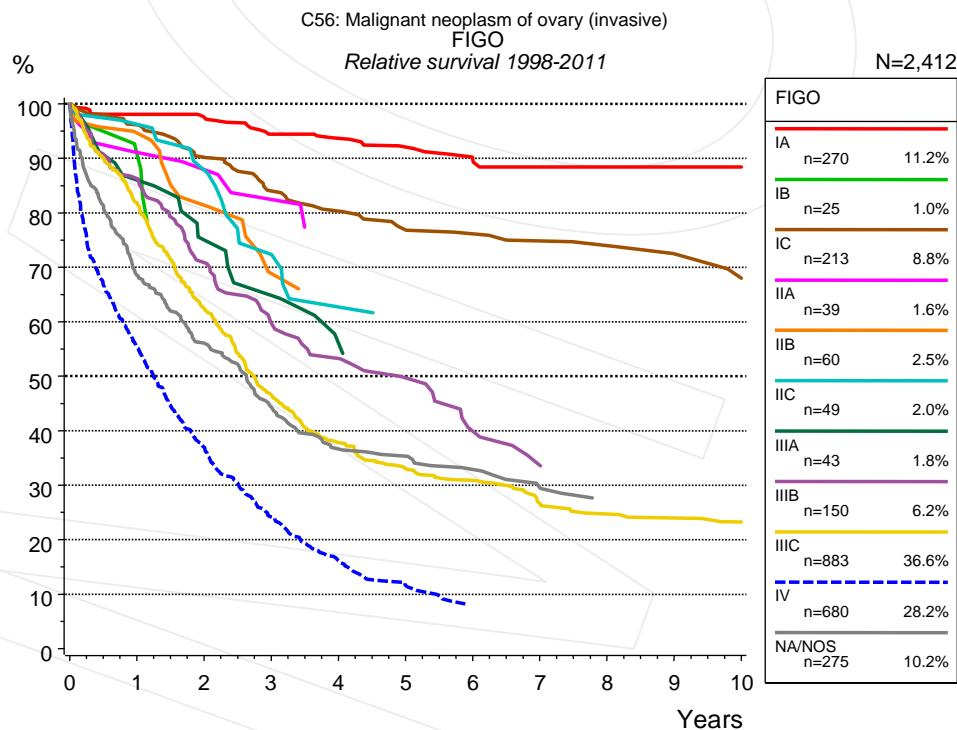


**Figure 4a.** Relative survival of patients with ovarian cancer by FIGO. For 3,694 of 3,966 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 3,550 cases an evaluable classification was established. The grey line represents the subgroup of 416 patients with missing values regarding FIGO (10.5% of 3,966 patients, the percent values of all other categories are related to n=3,550).

		FIGO													
		IA n=455		IB n=43		IC n=323		IIA n=66		IIB n=93		IIC n=74		IIIA n=79	
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		97.8	98.8	94.9	95.6	95.0	96.1	92.3	94.0	93.2	94.8	90.5	91.0	87.2	87.1
2		94.7	97.1	84.3	86.8	87.8	90.2	85.5	88.4	82.0	84.3	81.8	83.4	71.3	73.0
3		91.7	95.3	73.2	74.4	81.1	84.7	72.4	75.9	70.3	73.7	72.4	74.5	67.0	68.5
4		89.5	94.1	70.4	71.8	77.6	81.9	66.5	70.0	67.1	70.3	56.1	59.9	59.3	61.9
5		87.8	93.2	63.5	66.6	74.6	79.6	55.5	60.8	61.8	66.3	54.3	57.7	56.2	59.4
6		85.1	92.0	63.5	65.0	71.0	76.8	52.7	58.1	56.1	61.8	50.1	54.5	49.3	53.5
7		82.7	90.6	59.8	61.8	68.5	75.0	52.7	56.8	50.2	56.3	47.9	51.9	47.5	51.8
8		81.9	90.6			64.4	71.7	46.9	52.1	50.2	56.2	45.5	50.1	43.7	49.0
9		80.3	90.4			60.8	68.8			50.2	56.1	45.5	49.4	39.6	44.1
10		78.2	89.7			59.2	67.7			47.8	55.7	45.5	48.8	37.5	42.2

cont'd Years	FIGO							
	IIIB n=207		IIIC n=1,327		IV n=883		NA/NOS n=416	
	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	81.5	82.9	78.6	79.8	55.4	57.0	70.5	72.5
2	67.5	69.4	57.2	59.0	34.6	36.1	56.8	59.9
3	55.6	57.8	43.0	45.0	21.8	23.2	47.4	50.7
4	47.4	49.1	34.2	36.3	14.2	15.2	40.5	44.1
5	41.6	44.6	28.9	31.1	10.3	11.2	38.2	42.2
6	33.0	35.4	26.1	28.5	7.4	8.2	35.7	40.2
7	28.4	30.3	21.7	24.0	6.4	7.2	33.2	37.9
8	25.3	27.3	19.6	21.9	5.5	6.3	31.7	36.8
9			18.1	20.5	5.2	5.7	30.1	35.6
10			17.4	20.0			28.5	34.1

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by FIGO for period 1988-2011 (N=3,550).



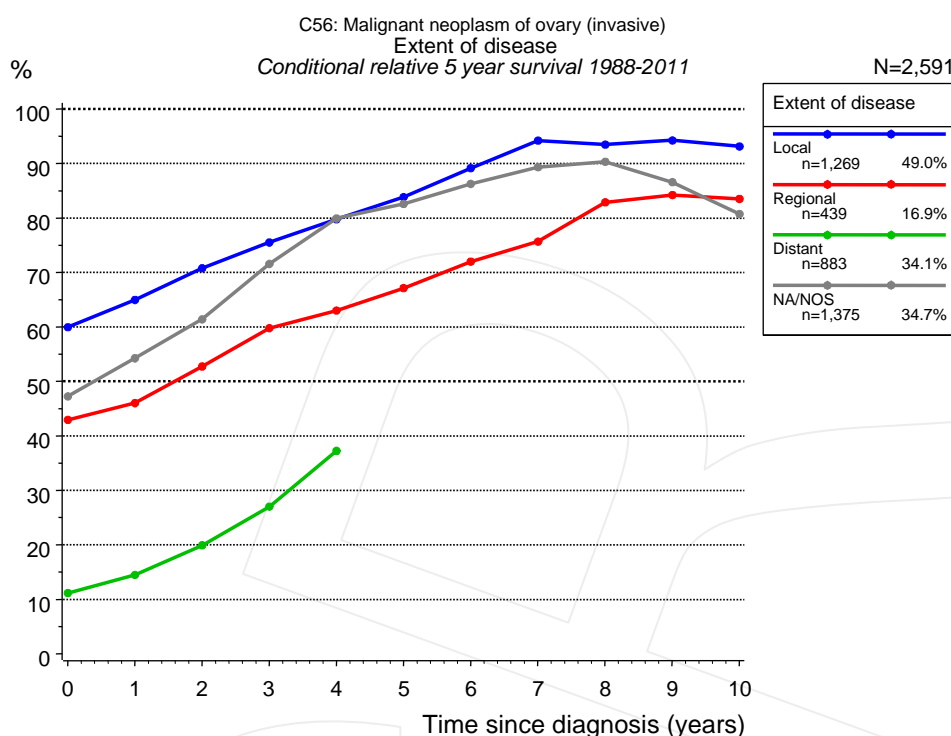
**Figure 4c.** Relative survival of patients with ovarian cancer by FIGO. For 2,496 of 2,687 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 2,412 cases an evaluable classification was established. The grey line represents the subgroup of 275 patients with missing values regarding FIGO (10.2% of 2,687 patients, the percent values of all other categories are related to n=2,412).

Years	FIGO													
	IA n=270		IB n=25		IC n=213		IIA n=39		IIB n=60		IIC n=49		IIIA n=43	
	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	97.4	98.1	91.0	90.8	95.2	96.1	89.5	91.1	93.0	94.7	95.9	96.2	86.0	86.0
2	95.2	97.5	76.7	75.7	88.2	90.2	86.4	87.9	80.4	81.4	86.9	87.8	73.7	75.0
3	91.1	94.4			80.8	84.0	79.6	82.4	65.7	68.9	71.4	72.3	65.1	64.8
4	89.5	93.7			76.6	80.3	71.7	76.1	62.2	65.7	60.8	62.7	55.1	56.1
5	87.0	92.0			72.8	76.8			62.2	65.0	57.5	60.4	51.7	51.4
6	83.9	89.6			71.0	76.1			62.2	64.3				
7	82.1	88.4			69.0	74.8			62.2	63.7				
8	82.1	88.4			67.8	73.9			62.2	63.0				
9	82.1	88.4			64.5	72.5			62.2	62.4				
10	79.9	88.4			61.1	68.0								

cont'd Years	FIGO							
	IIIB n=150		IIIC n=883		IV n=680		NA/NOS n=275	
	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	85.2	86.2	80.5	81.8	53.8	55.3	66.2	68.5
2	69.2	70.9	60.4	62.4	35.3	37.0	52.7	56.1
3	57.7	59.8	44.6	46.6	22.7	24.2	41.0	44.3
4	51.1	53.2	35.5	37.8	15.1	16.1	33.3	36.6
5	46.5	49.7	30.7	33.0	10.7	11.6	31.7	35.3
6	37.2	39.9	28.4	30.9	7.3	8.1	28.8	32.9
7	32.2	33.7	23.9	26.6			25.8	29.4
8	30.3	30.9	22.1	24.7				
9			21.2	24.0				
10			19.9	23.2				

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by FIGO for period 1998-2011 (N=2,412).



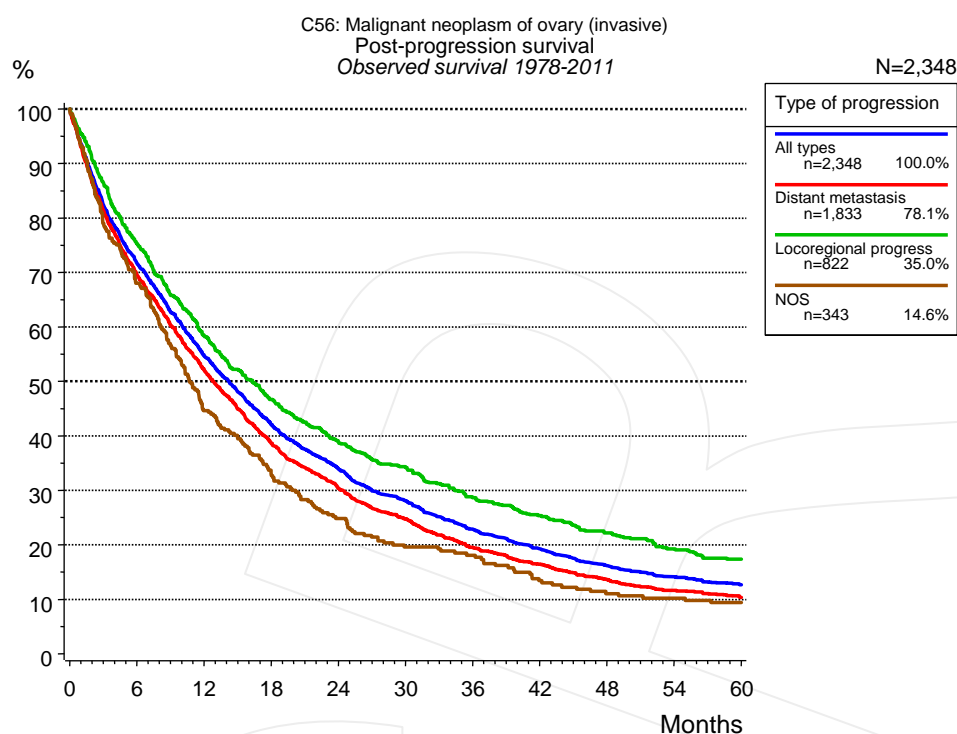


**Figure 4e.** Conditional relative 5-year survival of patients with ovarian cancer by extent of disease. For 3,694 of 3,966 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,591 cases an evaluable classification was established. The grey line represents the subgroup of 1,375 patients with missing values regarding extent of disease (34.7% of 3,966 patients, the percent values of all other categories are related to n=2,591).

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	1,269	60.0	439	42.9	883	11.2	1,375	47.2
1	1,029	64.9	348	46.0	457	14.5	1,067	54.3
2	833	70.8	232	52.8	255	19.9	823	61.4
3	700	75.5	164	59.8	145	27.0	615	71.6
4	604	79.8	135	63.0	82	37.3	470	79.9
5	517	83.8	110	67.1			381	82.6
6	446	89.1	93	72.0			315	86.3
7	394	94.2	79	75.7			262	89.3
8	345	93.5	68	82.9			222	90.3
9	305	94.2	57	84.2			188	86.6
10	268	93.1	51	83.5			156	80.7

**Table 4f.** Conditional relative 5-year survival of patients with ovarian cancer by extent of disease for period 1988-2011 (N=2,591).

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 75.5% (n=700).



**Figure 5a.** Observed post-progression survival of 2,348 patients with ovarian cancer diagnosed between 1978 and 2011 (incl. M1). These 2,348 patients with documented progression events during their course of disease represent 48.7% of the totally 4,817 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=557, 11.6%). 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=2,348	Distant metastasis n=1,833	Locoregional progress n=822	NOS n=343
	%	%	%	%
0	100.0	100.0	100.0	100.0
12	54.7	52.1	58.3	44.6
24	34.0	30.4	38.9	24.9
36	22.8	19.6	28.7	18.1
48	16.2	13.6	22.2	11.0
60	12.7	10.3	17.4	9.4

**Table 5b.** Observed post-progression survival of patients with ovarian cancer for period 1978-2011 (N=2,348).

**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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