Munich Cancer Registry

- Survival
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- Homepage

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

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

Cancer statistics: Baseline statistics

C02-C06: Oral cavity cancer

Year of diagnosis	1998-2011
Patients	2453
Diseases	2470
Creation date	04/02/2013
Export date	01/03/2013
Population	4.5 m

http://www.tumorregister-muenchen.de/en/facts/base/base_C0206E.pdf

Global Statements about the statistics on the Internet − Baseline Statistics (grey button), Survival (red button)

In these analyses, the clinics and physicians of Upper Bavaria and the city and county of Landshut[#], with a total of 4.5 million inhabitants, account for the frequency of cancer diseases[##] and the achieved long term results. Additionally, the long term survival evaluated by the Munich Cancer Registry (MCR) is compared with the results of the population-based registry in the USA (SEER), which is useful for checking the consistency of the data on an international level.

In comparing several tables, inconsistent figures may be detected. This is based on the fact that different patient cohorts are included in the base calculation, for example when proportions of multiple tumors or DCO-cases[###] are concerned. In other cases the individual tumor diagnosis is the basis for calculation, for example with incidence.

The foot notes describe the currentness of the data. The baseline statistics and survival data are updated annually. This yearly analysis comprises the Annual Report of the MCR. The time-delayed acquisition of data and the occasionally high DCO-rates indicate optimizing reserves, among others, because of current financial and legal conditions that hinder the analyses.

Clinics and physicians have access to essentially more detailed data, with which they can check, compare and in the best case optimize their own data and results.

We would be pleased to receive corrections, critique and useful suggestions. Just send an e-mail to tumor@ibe.med.uni-muenchen.de.

Munich Cancer Registry, April 2013

[#] Base data has been collected since 1998. An increase in new diseases is apparent, which is an effect of two extensions in the MCR catchment area (from a base population of 2.51 million to 3.96 in 2002, and to 4.52 million in 2007). Death certificates from 2011 are incorporated into these analyses.

[##] Due to the high frequency and good prognosis of non-malignant skin cancer (C44), no systematic ascertainment is performed for this diagnosis. C44 is not designated as a primary, but rather as a secondary tumor.

[###] DCO (death certificate only) identifies a cancer case that first becomes available to the MCR through the death certificate. A high proportion of DCO cases (≥5%) in particular cancer types indicate insufficient participation of specific cancer specializations.

Some remarks regarding this cancer type

As a general rule, these few results from the TRM form the basis of sophisticated analyses. For head and neck tumors this is not the case. Therefore the results for head and neck tumors should be interpreted with caution. In part this is due to problems of classification because of limited specific details of locality. Additionally, with advanced tumors in a close topographic location it is often not possible to determine the exact ICD localization of a tumor.

ICD-10 codes used for specifying cancer site

ICD-10	Description
C02	Other and unspecified parts of tongue
	excl. topography code C02.4 Lingual tonsil
C03	Gum
C04	Floor of mouth
C05	Palate
	excl. topography code C05.1 Soft palate
	C05.2 Uvula
C06	Other and unspecified parts of mouth

INCIDENCE

Table 1

Patient cohorts by year of diagnosis including DCO cases and multiple primaries, and with proportion of deaths and active follow-up

Year of diagnosis	Cases # n	DCO cases n	Prop. DCO %	Prop. mult. primaries %	Prop. deaths %	Prop. actively followed %
1998	122	5	4.1	32.0	78.7	98.4
1999	129	2	1.6	39.5	75.2	96.1
2000	131	4	3.1	30.5	73.3	99.2
2001	138	6	4.3	29.7	68.8	99.3
2002	191	12	6.3	32.5	67.5	98.4
2003	187	8	4.3	31.0	65.2	98.9
2004	193	6	3.1	33.2	63.7	96.9
2005	161	6	3.7	24.8	63.4	96.9
2006	194	3	1.5	27.8	58.8	96.4
2007	216	9	4.2	27.3	60.2	89.4 ##
2008	208	3	1.4	27.9	46.6	75.5
2009	219	4	1.8	27.9	44.7	80.4
2010	232	12	5.2	20.7	37.5	90.5
2011	149	5	3.4	20.8	22.8	71.8 ###
1998-2011	2470	85	3.4	28.6	57.5	91.4

The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.

Since 2007 the percentage of actively followed patients sharply declined compared to the previous years. This is a consequence of ambiguous data protection rules that currently forbid cancer registries in Bavaria to obtain the essential life status informations from competent registration offices.

Please be aware that data of recent annual patient cohorts may not yet be fully processed. Therefore, the presented figures and tables are potentially related to different time periods as pointed out in the respective headlines or legends.

Table 1a

Patient cohorts by year of diagnosis and gender
including DCO cases

Year of diagnosis	All n	Males n	Females n	Prop. males %
1998	122	87	35	71.3
1999	129	80	49	62.0
2000	131	104	27	79.4
2001	138	95	43	68.8
2002	191	127	64	66.5
2003	187	132	55	70.6
2004	193	139	54	72.0
2005	161	104	57	64.6
2006	194	127	67	65.5
2007	216	146	70	67.6
2008	208	135	73	64.9
2009	219	146	73	66.7
2010	232	160	72	69.0
2011	149	89	60	59.7
1998-2011	2470	1671	799	67.7

Table 2

Incidence measures by year of diagnosis and gender including DCO cases
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002,
and from 3.96 to 4.52 m as of 2007, respectively)

Year of diagnosis	Males n	Females n	Males Inc. raw	Fem. Inc. raw	Males Inc. WS	Fem. Inc. WS	Males Inc. ES	Fem. Inc. ES	Males Inc. BRD-S	Fem. Inc. BRD-S
1998	87	35	7.9	3.0	5.3	1.6	7.2	2.2	8.0	2.7
1999	80	49	7.1	4.1	4.7	2.4	6.5	3.3	7.1	3.7
2000	104	27	9.1	2.2	6.2	1.3	8.3	1.8	9.1	2.0
2001	95	43	8.2	3.5	5.3	1.9	7.2	2.7	8.1	3.0
2002	127	64	6.8	3.3	4.4	1.7	6.0	2.5	6.5	2.8
2003	132	55	7.0	2.8	4.6	1.6	6.4	2.1	6.9	2.5
2004	139	54	7.4	2.7	4.8	1.3	6.5	1.9	7.2	2.3
2005	104	57	5.5	2.9	3.4	1.6	4.6	2.2	5.2	2.5
2006	127	67	6.6	3.3	4.1	1.8	5.8	2.5	6.7	3.0
2007	146	70	6.6	3.0	4.2	1.6	5.7	2.2	6.3	2.6
2008	135	73	6.1	3.1	3.8	1.8	5.2	2.4	5.8	2.8
2009	146	73	6.5	3.1	3.9	1.6	5.5	2.3	6.1	2.7
2010	160	72	7.1	3.1	4.4	1.5	6.0	2.1	6.6	2.4
2011	89	60	3.9	2.6	2.5	1.3	3.4	1.8	3.7	2.1
1998-2011	1671	799	6.6	3.0	4.2	1.6	5.8	2.3	6.4	2.6

The computation of the incidence measures includes all primaries, irrespective of first or subsequent malignancy.

Table 3

Age distribution parameters by year of diagnosis (All)
(incl. DCO)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	122	59.0	12.3	0.9	91.4	46.4	51.8	57.6	65.7	76.3
1999	129	60.8	12.7	25.6	91.9	47.1	52.8	59.1	66.9	77.7
2000	131	58.7	11.4	33.5	85.8	45.0	50.1	58.1	66.6	73.1
2001	138	62.0	12.1	33.7	96.4	45.7	53.8	60.7	69.3	78.0
2002	191	61.2	12.4	26.4	99.0	45.5	53.0	60.9	68.3	78.6
2003	187	60.1	12.8	10.7	98.2	45.7	52.4	59.4	66.7	79.8
2004	193	61.8	12.8	29.5	97.9	45.5	53.4	61.5	70.3	79.7
2005	161	61.0	12.9	22.8	98.7	45.5	52.3	60.8	67.7	80.8
2006	194	62.7	13.0	22.6	96.2	47.5	54.9	61.4	71.6	81.2
2007	216	62.0	12.8	26.0	101	46.0	53.7	61.9	70.2	78.1
2008	208	62.2	11.8	21.8	100	48.8	53.6	62.2	69.5	78.1
2009	219	62.9	12.1	30.2	98.4	47.9	53.9	62.8	71.0	80.2
2010	232	62.2	13.3	21.9	92.8	46.3	52.2	62.0	70.7	81.5
2011	149	61.8	13.6	27.0	92.8	43.5	53.1	62.4	71.7	78.3
1998-2011	2470	61.5	12.6	0.9	101	46.2	53.2	60.7	69.5	78.7

Table 3a

Age distribution parameters by year of diagnosis (MALES)
(incl. DCO)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	87	57.0	11.5	0.9	81.3	45.5	51.1	56.2	62.3	72.0
1999	80	59.2	12.1	33.3	90.8	46.8	51.2	57.4	64.2	80.2
2000	104	58.0	10.1	35.8	85.5	45.1	50.0	58.1	65.3	72.0
2001	95	60.0	12.0	33.7	94.3	44.5	51.2	60.0	64.4	77.4
2002	127	59.1	10.7	26.4	92.2	45.2	52.3	60.2	64.7	72.1
2003	132	58.8	10.5	28.1	86.1	46.4	53.1	57.8	64.6	71.9
2004	139	59.3	11.5	29.7	88.7	44.9	51.9	59.6	65.4	75.0
2005	104	59.1	11.5	36.8	85.0	43.3	49.7	58.3	66.7	77.2
2006	127	61.5	12.2	23.9	92.0	46.9	53.8	59.6	69.4	78.2
2007	146	60.4	11.7	26.0	101	46.0	52.5	60.0	67.7	75.4
2008	135	61.1	11.3	21.8	100	48.5	52.6	60.7	68.3	75.1
2009	146	62.0	10.6	30.2	87.9	48.0	54.2	62.2	69.7	74.7
2010	160	60.2	12.5	24.5	92.8	45.3	51.7	59.6	69.1	75.7
2011	89	59.5	12.8	27.0	88.6	43.5	52.6	58.7	69.1	76.7
1998-2011	1671	59.8	11.5	0.9	101	45.7	52.2	59.2	67.1	74.9

Table 3b

Age distribution parameters by year of diagnosis (FEMALES)
(incl. DCO)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	35	64.0	12.9	32.0	91.4	49.6	55.2	61.8	75.8	79.5
1999	49	63.3	13.4	25.6	91.9	47.1	56.1	65.4	72.2	77.7
2000	27	61.3	15.4	33.5	85.8	39.8	50.6	59.6	76.3	84.8
2001	43	66.4	11.3	44.0	96.4	53.2	59.8	63.7	71.3	84.0
2002	64	65.3	14.3	35.8	99.0	47.0	54.5	62.5	76.2	82.9
2003	55	63.2	16.8	10.7	98.2	44.8	51.0	61.5	78.5	83.7
2004	54	68.1	13.8	29.5	97.9	48.9	58.2	68.7	78.4	83.1
2005	57	64.5	14.4	22.8	98.7	50.2	54.9	62.3	76.0	83.7
2006	67	64.9	14.1	22.6	96.2	47.6	55.9	63.0	77.0	84.2
2007	70	65.3	14.5	31.0	98.2	45.8	55.7	65.5	75.2	84.0
2008	73	64.2	12.5	26.7	91.5	49.7	55.4	64.1	72.5	79.4
2009	73	64.7	14.4	30.7	98.4	47.5	53.9	65.2	75.2	82.8
2010	72	66.8	14.0	21.9	91.8	49.9	56.3	67.2	74.6	87.0
2011	60	65.3	14.0	31.2	92.8	45.2	57.7	67.0	74.1	83.3
1998-2011	799	65.0	14.0	10.7	99.0	47.6	55.6	64.5	75.2	83.5

Table 4

Age distribution by 5-year age group and gender for period 1998-2011 (incl. DCO)

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
0-4	1	0.0	0.0	1	0.1	0.1			0.0
5-9	0	0.0	0.0			0.1			0.0
10-14	1	0.0	0.1			0.1	1	0.1	0.1
15-19	0	0.0	0.1			0.1			0.1
20-24	6	0.2	0.3	3	0.2	0.2	3	0.4	0.5
25-29	11	0.4	0.8	8	0.5	0.7	3	0.4	0.9
30-34	25	1.0	1.8	13	0.8	1.5	12	1.5	2.4
35-39	37	1.5	3.3	26	1.6	3.1	11	1.4	3.8
40-44	107	4.3	7.6	82	4.9	8.0	25	3.1	6.9
45-49	234	9.5	17.1	185	11.1	19.0	49	6.1	13.0
50-54	344	13.9	31.0	260	15.6	34.6	84	10.5	23.5
55-59	409	16.6	47.6	310	18.6	53.1	99	12.4	35.9
60-64	410	16.6	64.2	285	17.1	70.2	125	15.6	51.6
65-69	296	12.0	76.2	195	11.7	81.9	101	12.6	64.2
70-74	215	8.7	84.9	136	8.1	90.0	79	9.9	74.1
75-79	162	6.6	91.4	83	5.0	95.0	79	9.9	84.0
80-84	116	4.7	96.1	48	2.9	97.8	68	8.5	92.5
85+	96	3.9	100.0	36	2.2	100.0	60	7.5	100.0
All ages	2470	100.0		1671	100.0		799	100.0	

Included in the statistics are 37.3% multiple primaries in males and 31.7% in females.

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 1998-2011

Age at diagnosis Years	Males n	Females n	Males Age-spec. incid.	Females Age-spec. incid.	Males DCO rate n=57 %	Females DCO rate n=28 %	Males Prop.all cancers n=132509 %	Females Prop.all cancers n=129521 %
0- 4	1		0.1	0.0	100.0		0.4	
5- 9			0.0	0.0				
10-14		1	0.0	0.1				0.7
15-19			0.0	0.0				
20-24	3	3	0.2	0.2			0.6	0.7
25-29	8	3	0.5	0.2			1.0	0.3
30-34	13	12	0.7	0.6			1.0	0.7
35-39	26	11	1.2	0.5			1.3	0.3
40-44	82	25	3.7	1.2	1.2		3.0	0.5
45-49	185	49	9.5	2.6	1.1		4.1	0.7
50-54	259	84	15.5	4.9	1.5	1.2	3.6	0.9
55-59	309	99	19.8	6.0	2.6	2.0	2.5	0.8
60-64	285	125	18.7	7.8	3.5	2.4	1.5	0.8
65-69	195	101	14.3	6.8	3.1	2.0	0.8	0.6
70-74	135	78	13.1	6.3	5.9		0.6	0.5
75-79	83	79	12.3	7.9	6.0	2.5	0.5	0.5
80-84	47	67	11.6	8.4	10.6	6.0	0.4	0.5
85+	35	60	12.6	8.1	20.0	23.3	0.4	0.4
All ages	1666	797			3.4	3.5	1.3	0.6
Incidence								
Raw			6.6	3.0				
WS			4.2	1.6				
ES			5.8	2.3				
BRD-S			6.4	2.6				

The age-specific incidence characterizes the disease risk in a particular age group. The age distribution depends on the patient population frequency in each age group and reflects the tangible clinical picture of everyday patients care (see following chart).

Table 6a

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of second primaries for period 1998-2011
MALES

Diagnosis	Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03-C06 Oral cavity	5	0.6	7.9	2.6	18.3	#	10.2	
C09-C10 Oropharynx	25	0.8	30.2	19.5	44.5	#	56.6	4.0
C12-C13 Hypopharynx	28	0.5	58.8	39.1	84.9	#	64.5	14.3
C15 Oesophagus	28	1.0	27.4	18.2	39.5	#	63.2	7.1
C16 Stomach	5	1.9	2.7	0.9	6.2		7.3	20.0
C18 Colon	9	4.4	2.0	0.9	3.9		10.7	
C19-C20 Rectum	9	3.0	3.0	1.4	5.7	#	14.1	
C21 Anus/canal	2	0.1	17.2	2.1	62.1	#	4.4	
C22 Liver	10	1.3	7.5	3.6	13.8	#	20.3	20.0
C25 Pancreas	3	1.6	1.8	0.4	5.4		3.2	
C32 Larynx	16	0.7	23.9	13.7	38.9	#	35.9	12.5
C33-C34 Lung	56	6.1	9.2	7.0	12.0	#	117.0	17.9
C43 Malign. melanoma	4	2.1	1.9	0.5	4.9		4.5	
C61 Prostate	13	14.1	0.9	0.5	1.6		-2.5	7.7
C64 Kidney	8	1.9	4.3	1.9	8.5	#	14.4	
C67 Bladder	3	1.8	1.7	0.4	5.0		2.9	33.3
C76-C79 CUP	3	0.8	3.7	0.8	10.8		5.1	
C82-C85 NHL	7	1.9	3.8	1.5	7.8	#	12.0	28.6
C91-C96 Leukaemia	4	0.7	6.1	1.7	15.7	#	7.8	
Other primaries	11	2.8	3.9	2.0	7.0	#	19.2	9.1
Not observed	0	1.8	0.0	0.0	2.0		-4.2	
All mult. primaries	249	49.8	5.0	4.4	5.7	#	466.8	10.8

Patients	1288
Mean age at second malignancy (years)	62.9
Person-years	4268
Mean observation time (years)	3.3
Median observation time (years)	2.2

The occurrence of second malignancy is statistically significant.

Observed second primaries with count 1 are pooled in category "Other primaries".

Table 6b

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of second primaries for period 1998-2011
FEMALES

Diagnosis	Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03-C06 Oral cavity	6	0.1	41.0	15.1	89.3	#	26.3	
C07-C08 Salivary gland	2	0.0	55.5	6.7	200.5	#	8.8	
C09-C10 Oropharynx	10	0.1	93.7	44.9	172.2	#	44.5	
C12-C13 Hypopharynx	5	0.0	177.5	57.6	414.2	#	22.3	40.0
C15 Oesophagus	8	0.1	63.5	27.4	125.0	#	35.4	
C18 Colon	2	2.2	0.9	0.1	3.2		-1.1	
C22 Liver	5	0.2	20.6	6.7	48.0	#	21.4	20.0
C23-C24 Bile	2	0.3	6.3	0.8	22.8		7.6	
C30-C31 Sinuses	2	0.0	77.2	9.4	279.0	#	8.9	50.0
C32 Larynx	4	0.0	85.5	23.3	218.8	#	17.8	25.0
C33-C34 Lung	21	1.6	12.9	8.0	19.7	#	87.1	14.3
C43 Malign. melanoma	2	0.8	2.5	0.3	9.0		5.4	
C50 Breast	11	7.3	1.5	0.8	2.7		16.6	
C56 Ovary	2	1.0	2.0	0.2	7.3		4.6	
C67 Bladder	2	0.4	5.1	0.6	18.6		7.2	100.0
C73 Thyroid	3	0.5	6.3	1.3	18.5	#	11.4	
C82-C85 NHL	2	0.8	2.4	0.3	8.5		5.2	
Other primaries	5	3.0	1.7	0.5	3.9		9.1	40.0
Not observed	0	4.4	0.0	0.0	0.8	#	-20.0	
All mult. primaries	94	23.2	4.1	3.3	5.0	#	318.4	12.8

Patients	598
Mean age at second malignancy (years)	65.0
Person-years	2225
Mean observation time (years)	3.7
Median observation time (years)	2.7

The occurrence of second malignancy is statistically significant.

Observed second malignancy with count 1 are pooled in category "Other primaries".

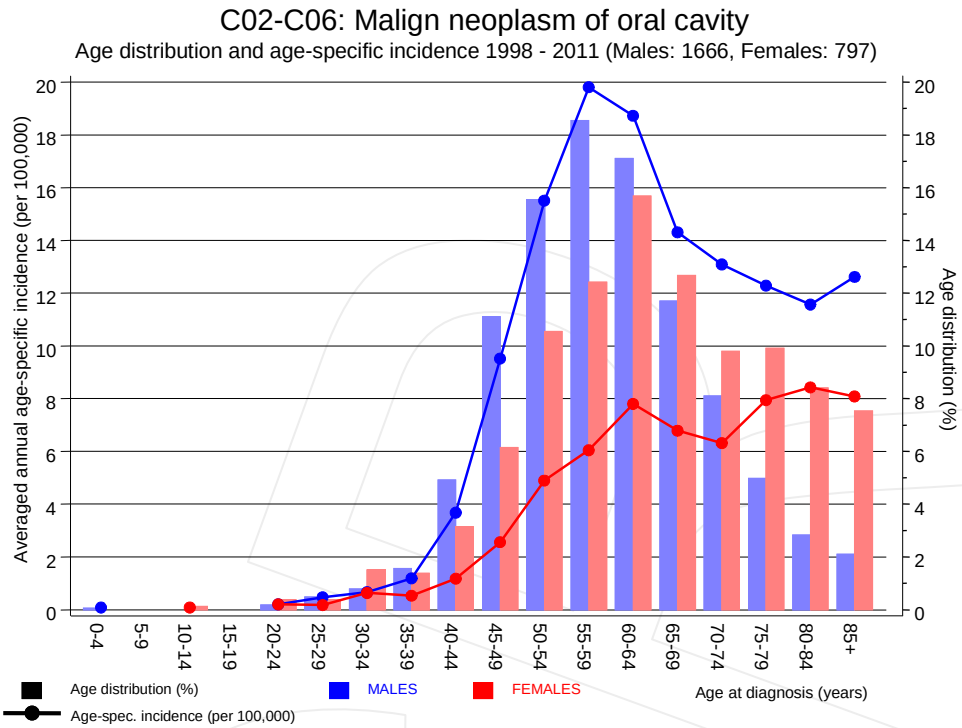


Figure 7. Age distribution and age-specific incidence

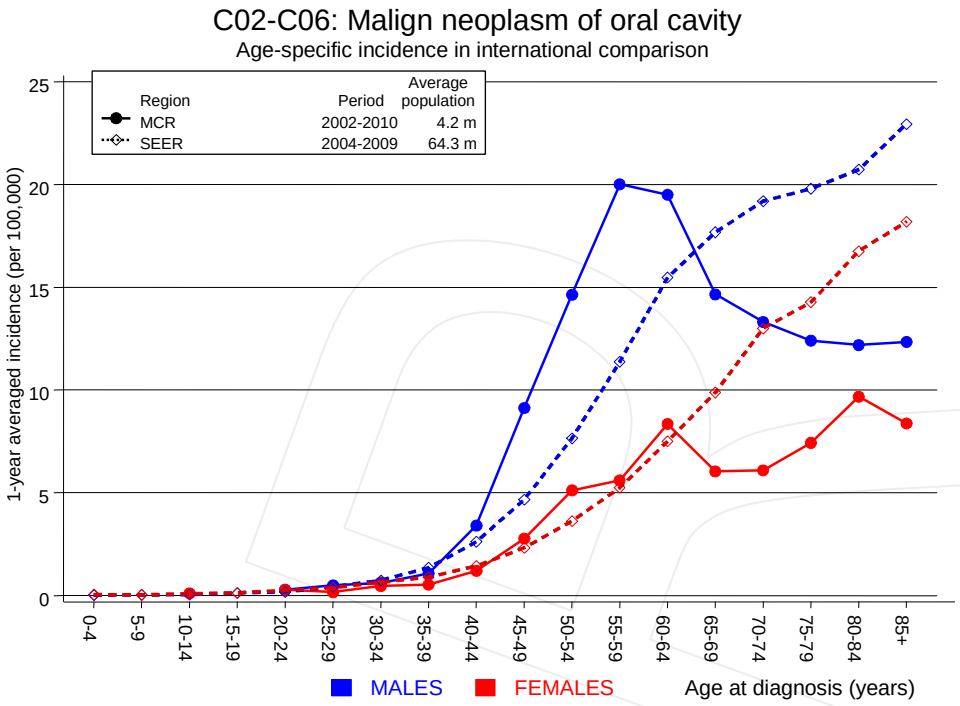


Figure 7a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 18 Regs Research Data, released April 2012, based on the November 2011 submission. http://www.seer.cancer.gov.

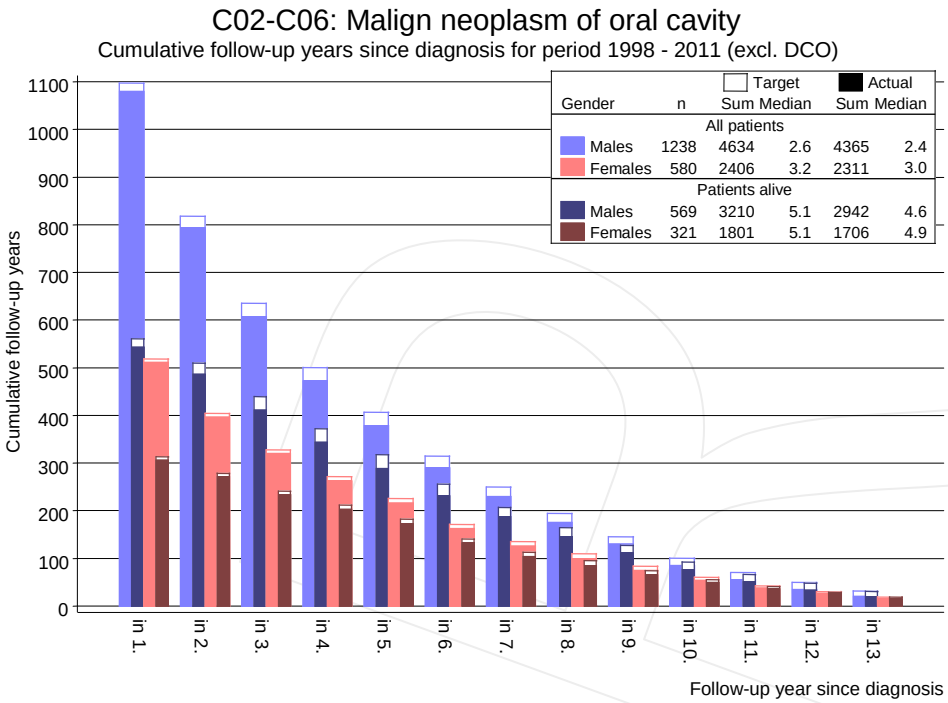
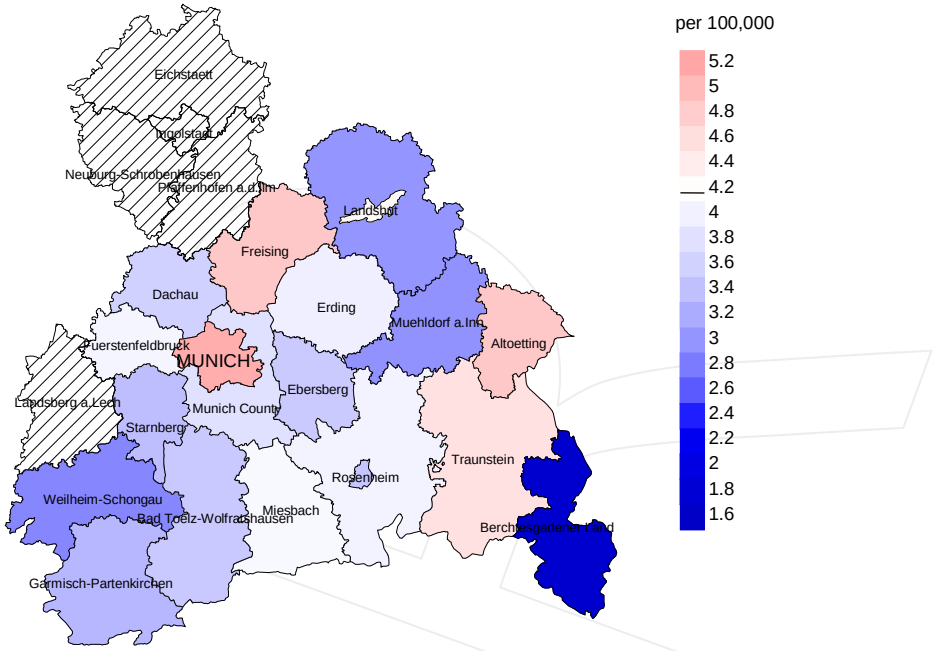


Figure 8. Cumulative follow-up years depending on time since diagnosis

The increase of the lost to follow-up rate can be interpreted as a consequence of a declining number of survivors over time.

Average incidence (world standard population) 2003 - 2008: Males



Average incidence (world standard population) 2003 - 2008: Females

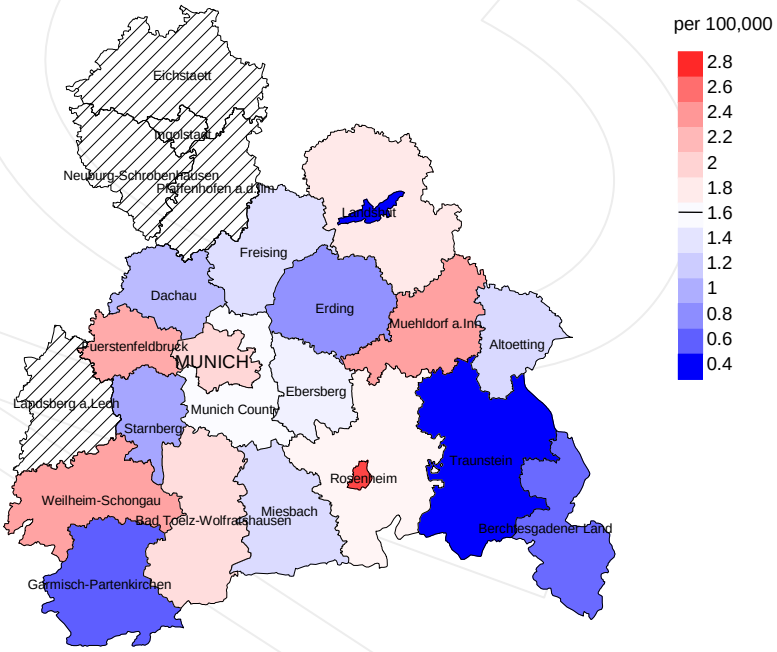
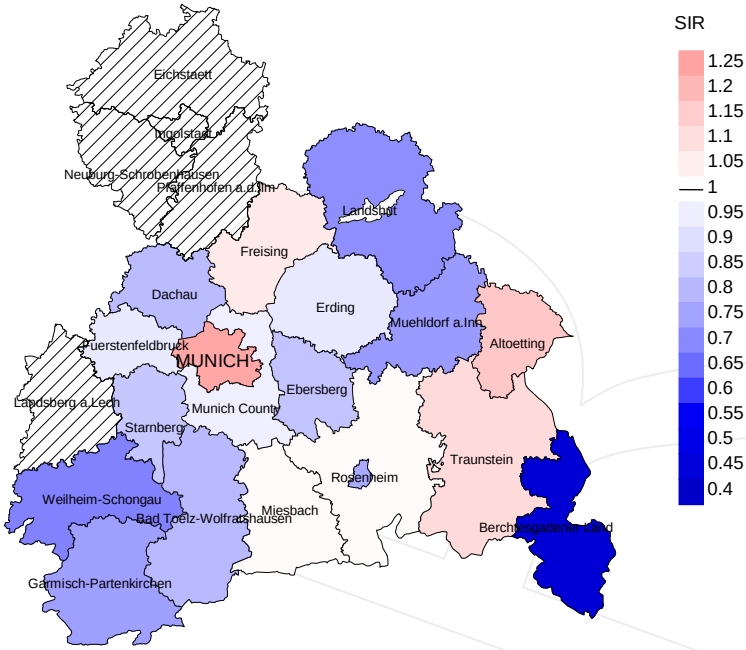


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2003 to 2008. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 4.2/100,000 WS N=752, females 1.6/100,000 WS N=365). Since cancer data are not available in some counties until 2007, the local incidence rates were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 10 women were identified with newly diagnosed oral cavity cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 1.5/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.5 and 3.5/100,000.

Standardized incidence ratio (SIR) 2003 - 2008: Males



Standardized incidence ratio (SIR) 2003 - 2008: Females

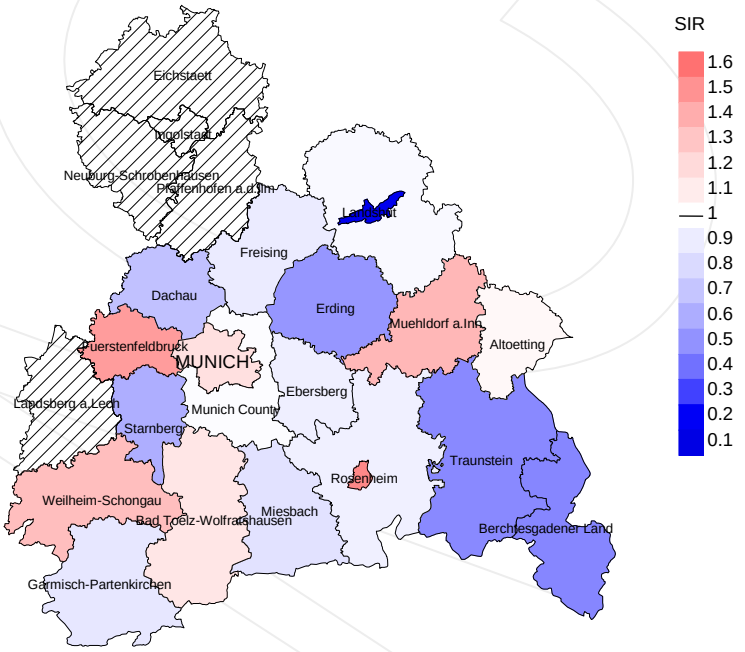


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2003 to 2008. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=752, females N=365). Since cancer data are not available in some counties until 2007, the local SIR values were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 10 women were identified with newly diagnosed oral cavity cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.92. Though, the value of this parameter may vary with an underlying probability of 99% between 0.34 and 1.96, and is therefore not statistically striking.

MORTALITY

Table 10a

Patient cohorts of incident cancers by year of diagnosis, follow-up status, proportion of DCO, deaths among the annual cohorts, and proportion of available death certificates (with respect to registry area expansion from 2.51 to 3.96 m as of 2002, and from 3.96 to 4.52 m as of 2007, respectively)

Year of diagnosis	Incident cases n	Prop. actively followed %	Prop. DCO %	Deaths n	Prop. deaths %	Prop. deaths with death certific. %
1998	122	98.4	4.1	96	78.7	94.8
1999	129	96.1	1.6	97	75.2	85.6
2000	131	99.2	3.1	96	73.3	95.8
2001	138	99.3	4.3	95	68.8	92.6
2002	191	98.4	6.3	129	67.5	96.9
2003	187	98.9	4.3	122	65.2	98.4
2004	193	96.9	3.1	123	63.7	95.9
2005	161	96.9	3.7	102	63.4	99.0
2006	194	96.4	1.5	114	58.8	98.2
2007	216	89.4	4.2	130	60.2	99.2
2008	208	75.5	1.4	97	46.6	96.9
2009	219	80.4	1.8	98	44.7	98.0
2010	232	90.5	5.2	87	37.5	98.9
2011	149	71.8	3.4	34	22.8	91.2
1998-2011	2470	91.4	3.4	1420	57.5	96.2

Table 10b

Annual cohorts of incident cancers and deaths, proportion of death certificates and cases deceased the same year of cancer diagnosis
(incl. DCO)
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002, and from 3.96 to 4.52 m as of 2007, respectively)

Year of diagnosis/ death	Incident cases n	Deaths n	Prop. deaths with death certific. %	Deaths in same year n	Prop. deaths in same year %
1998	122	74	93.2	16	13.1
1999	129	70	87.1	12	9.3
2000	131	87	89.7	17	13.0
2001	138	117	88.9	23	16.7
2002	191	149	98.0	33	17.3
2003	187	151	98.0	28	15.0
2004	193	147	98.0	37	19.2
2005	161	133	98.5	18	11.2
2006	194	150	94.7	24	12.4
2007	216	157	98.1	33	15.3
2008	208	147	97.3	21	10.1
2009	219	187	97.3	28	12.8
2010	232	172	99.4	31	13.4
2011	149	161	98.1	18	12.1
1998-2011	2470	1902	96.3	339	13.7

Table 10c

Annual cohorts of deaths, proportion of cancer-related and not cancer-related deaths, and cancer recorded on death certificates (incl. DCO)
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002, and from 3.96 to 4.52 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer-related %	Prop. not cancer-related %	Prop. cancer recorded on death certificate %
1998	74	71.6	28.4	88.4
1999	70	61.4	38.6	85.2
2000	87	64.4	35.6	88.5
2001	117	76.9	23.1	91.3
2002	149	75.2	24.8	89.7
2003	151	78.8	21.2	87.8
2004	147	76.9	23.1	88.9
2005	133	86.5	13.5	93.1
2006	150	71.3	28.7	85.2
2007	157	77.7	22.3	89.0
2008	147	77.6	22.4	90.2
2009	187	78.6	21.4	87.4
2010	172	79.1	20.9	92.4
2011	161	74.5	25.5	84.2
1998-2011	1902	76.1	23.9	88.7

Table 11a

Means of age at death according to the grouping in Table 10
MALES

Year of death	Deaths n	Age at death (all causes) Years	Age at death (cancer-related) Years	Age at death (not cancer-related) Years	Age at death (according to death certificate) Years
1998	56	61.9	61.1	64.0	62.2
1999	54	58.4	58.2	58.8	57.0
2000	69	64.7	64.6	65.0	65.7
2001	89	62.1	61.9	63.1	62.7
2002	107	63.9	63.2	66.0	62.5
2003	107	64.9	63.9	69.0	64.4
2004	104	62.8	61.3	68.0	62.3
2005	83	66.3	65.2	72.9	65.7
2006	109	63.6	62.1	67.6	63.1
2007	118	63.6	62.1	69.2	62.8
2008	104	65.0	64.2	68.7	64.4
2009	126	66.3	64.9	72.4	65.6
2010	125	65.7	64.5	70.0	65.2
2011	117	66.8	65.5	70.4	65.2
1998-2011	1368	64.3	63.3	67.6	63.8

Deaths of patients are considered to be cancer-related, in case that fact was recorded on the death certificate, or patients had suffered from metastasis or recurrence.

Table 11b

Means of age at death according to the grouping in Table 10
FEMALES

Year of death	Deaths n	Age at death (all causes) Years	Age at death (cancer-related) Years	Age at death (not cancer-related) Years	Age at death (according to death certificate) Years
1998	18	65.6	66.7	63.6	65.6
1999	16	72.7	68.3	77.2	69.4
2000	18	70.8	66.4	77.7	70.9
2001	28	69.6	70.0	67.9	69.1
2002	42	71.0	69.2	76.7	70.2
2003	44	70.2	67.5	77.6	68.9
2004	43	71.4	71.8	70.2	71.4
2005	50	71.0	69.4	82.4	70.3
2006	41	75.9	74.4	78.9	73.7
2007	39	74.1	72.8	77.6	73.4
2008	43	69.8	67.7	74.2	68.6
2009	61	72.4	69.6	80.2	70.7
2010	47	71.7	69.4	84.9	70.2
2011	44	72.7	72.4	73.9	71.9
1998-2011	534	71.6	70.0	76.3	70.6

By 2010, life expectancy for a newborn male in Germany is 77.5 years compared with 82.6 years for his female counterpart.

Deaths of patients are considered to be cancer-related, in case that fact was recorded on the death certificate, or patients had suffered from metastasis or recurrence.

Table 12a

Mortality measures (cancer-related death) and mortality-incidence-index
by year of death
MALES

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998	41	3.7	0.47	2.4	0.44	3.3	0.46	3.9	0.49
1999	35	3.1	0.44	2.0	0.43	2.8	0.44	3.1	0.44
2000	45	4.0	0.43	2.4	0.39	3.6	0.43	4.3	0.47
2001	68	5.9	0.72	3.8	0.72	5.3	0.74	6.1	0.77
2002	80	4.3	0.63	2.6	0.59	3.7	0.62	4.3	0.65
2003	87	4.6	0.66	2.8	0.61	4.0	0.62	4.6	0.66
2004	81	4.3	0.58	2.7	0.57	3.8	0.58	4.2	0.58
2005	71	3.7	0.68	2.1	0.62	3.1	0.67	3.8	0.72
2006	80	4.2	0.63	2.6	0.64	3.6	0.62	4.1	0.60
2007	93	4.2	0.64	2.6	0.62	3.6	0.63	4.0	0.64
2008	85	3.8	0.64	2.3	0.60	3.2	0.62	3.7	0.65
2009	102	4.6	0.70	2.6	0.67	3.7	0.68	4.3	0.70
2010	96	4.3	0.60	2.5	0.56	3.5	0.59	4.0	0.60
2011	86	3.8	0.97	2.1	0.87	3.1	0.91	3.6	0.99
1998-2011	1050	4.2	0.63	2.5	0.60	3.5	0.61	4.1	0.64

Table 12b

Mortality measures (cancer-related death) and mortality-incidence-index
by year of death
FEMALES

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998	12	1.0	0.34	0.5	0.34	0.8	0.34	0.9	0.34
1999	8	0.7	0.16	0.3	0.14	0.5	0.15	0.6	0.16
2000	11	0.9	0.41	0.5	0.40	0.7	0.41	0.8	0.39
2001	22	1.8	0.51	0.9	0.45	1.2	0.46	1.6	0.52
2002	32	1.6	0.50	0.8	0.45	1.2	0.47	1.4	0.48
2003	33	1.7	0.60	0.8	0.53	1.2	0.56	1.5	0.60
2004	32	1.6	0.59	0.7	0.52	1.0	0.54	1.3	0.56
2005	44	2.2	0.77	1.1	0.66	1.5	0.70	1.8	0.74
2006	27	1.3	0.40	0.5	0.26	0.8	0.30	1.0	0.34
2007	29	1.3	0.41	0.5	0.32	0.8	0.34	1.0	0.37
2008	29	1.2	0.40	0.6	0.34	0.9	0.35	1.0	0.37
2009	45	1.9	0.63	0.9	0.56	1.3	0.58	1.5	0.58
2010	40	1.7	0.56	0.8	0.51	1.1	0.53	1.3	0.55
2011	34	1.5	0.57	0.6	0.46	0.9	0.48	1.1	0.49
1998-2011	398	1.5	0.50	0.7	0.43	1.0	0.45	1.2	0.47

Table 13

Age distribution of age at death (cancer-related) for period 1998-2011
(**incl. multiple primaries**)

Age at death Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
0-4	1	0.1	0.1	1	0.1	0.1			0.0
5-9	0	0.0	0.1			0.1			0.0
10-14	0	0.0	0.1			0.1			0.0
15-19	0	0.0	0.1			0.1			0.0
20-24	2	0.1	0.2	2	0.2	0.3			0.0
25-29	1	0.1	0.3			0.3	1	0.2	0.2
30-34	0	0.0	0.3			0.3			0.2
35-39	10	0.7	0.9	7	0.7	0.9	3	0.7	1.0
40-44	29	2.0	2.9	22	2.1	3.0	7	1.7	2.7
45-49	78	5.3	8.2	66	6.2	9.2	12	2.9	5.6
50-54	169	11.4	19.6	136	12.8	22.0	33	8.0	13.6
55-59	228	15.4	35.1	183	17.2	39.2	45	10.9	24.5
60-64	259	17.5	52.6	202	19.0	58.1	57	13.8	38.3
65-69	226	15.3	67.9	172	16.2	74.3	54	13.1	51.5
70-74	167	11.3	79.2	122	11.5	85.7	45	10.9	62.4
75-79	124	8.4	87.6	82	7.7	93.4	42	10.2	72.6
80-84	97	6.6	94.2	44	4.1	97.6	53	12.9	85.4
85+	86	5.8	100.0	26	2.4	100.0	60	14.6	100.0
All ages	1477	100.0		1065	100.0		412	100.0	

Included in the statistics are 37.3% multiple primaries in males and 31.7% in females.

Table 14

Age-specific mortality (cancer-related) and proportion of all cancers
for period 1998-2011
(**incl. multiple primaries**)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	MI-index	Females Age-spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4	1		0.1	1.00	0.0		3.4	
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24	2		0.1	0.67	0.0		2.5	
25-29		1	0.0		0.1	0.33		1.0
30-34			0.0		0.0			
35-39	7	3	0.3	0.27	0.1	0.27	1.9	0.7
40-44	22	7	1.0	0.27	0.3	0.28	2.9	0.7
45-49	66	12	3.4	0.36	0.6	0.24	4.3	0.7
50-54	136	33	8.1	0.52	1.9	0.39	4.8	1.3
55-59	183	45	11.7	0.59	2.7	0.45	3.6	1.1
60-64	202	57	13.3	0.71	3.6	0.46	2.6	1.0
65-69	172	54	12.6	0.88	3.6	0.53	1.7	0.8
70-74	122	45	11.8	0.90	3.6	0.57	1.1	0.6
75-79	82	42	12.1	0.99	4.2	0.53	0.8	0.5
80-84	44	53	10.8	0.92	6.7	0.78	0.5	0.6
85+	26	60	9.4	0.72	8.1	1.00	0.4	0.5
All ages	1065	412					1.6	0.7
Mortality								
Raw			4.2	0.64	1.6	0.52		
WS			2.5	0.60	0.7	0.44		
ES			3.6	0.62	1.0	0.46		
BRD-S			4.1	0.64	1.3	0.48		
PYLL-70								
per 100,000			40.0		10.2			
ES			36.4		8.9			
AYLL-70			11.5		10.9			

The rates underestimate the prognosis if other synchronous cancers are prognostic unfavorable.

Table 15a

Multiple primaries in deaths in period 1998-2011
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	43	7.4			3	7.0	40	93.0
C09-C10 Oropharynx	41	7.0			11	26.8	30	73.2
C12-C13 Hypopharynx	46	7.9	16	34.8	5	10.9	25	54.3
C15 Oesophagus	52	8.9	7	13.5	8	15.4	37	71.2
C16 Stomach	11	1.9	2	18.2			9	81.8
C18 Colon	17	2.9	5	29.4	2	11.8	10	58.8
C19-C20 Rectum	24	4.1	4	16.7	1	4.2	19	79.2
C22 Liver	19	3.2	2	10.5	1	5.3	16	84.2
C25 Pancreas	6	1.0	1	16.7			5	83.3
C30-C31 Sinuses	5	0.9	1	20.0	1	20.0	3	60.0
C32 Larynx	37	6.3	20	54.1	6	16.2	11	29.7
C33-C34 Lung	137	23.4	16	11.7	9	6.6	112	81.8
C43 Malign. melanoma	11	1.9	7	63.6			4	36.4
C44 Skin others	30	5.1	13	43.3	3	10.0	14	46.7
C61 Prostate	26	4.4	16	61.5	1	3.8	9	34.6
C62 Testis	5	0.9	5	100.0				
C64 Kidney	7	1.2	2	28.6	1	14.3	4	57.1
C67 Bladder	20	3.4	12	60.0	1	5.0	7	35.0
C76-C79 CUP	9	1.5	5	55.6			4	44.4
C82-C85 NHL	12	2.1	6	50.0	2	16.7	4	33.3
C91-C96 Leukaemia	6	1.0	1	16.7	1	16.7	4	66.7
Other primaries	21	3.6	13	61.9			8	38.1
All mult. primaries	585	100.0	154	26.3	56	9.6	375	64.1

Multiple primaries with number of cases n<5 are pooled in category "Other primaries".

ICD-10 C44 (Other malignant neoplasms of skin) is not systematically recorded by MCR and therefore not considered for evaluation as a particular primary but at least as a multiple malignancy.

Table 15b

Multiple primaries in deaths in period 1998-2011
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	18	9.0			1	5.6	17	94.4
C09-C10 Oropharynx	20	10.1			3	15.0	17	85.0
C12-C13 Hypopharynx	5	2.5					5	100.0
C14 ENT cancer	2	1.0			1	50.0	1	50.0
C15 Oesophagus	12	6.0					12	100.0
C16 Stomach	3	1.5			1	33.3	2	66.7
C18 Colon	12	6.0	7	58.3			5	41.7
C19-C20 Rectum	1	0.5	1	100.0				
C21 Anus/canal	1	0.5					1	100.0
C22 Liver	4	2.0			1	25.0	3	75.0
C23-C24 Bile	3	1.5					3	100.0
C25 Pancreas	2	1.0	1	50.0			1	50.0
C26 GI cancer	1	0.5					1	100.0
C30-C31 Sinuses	3	1.5					3	100.0
C32 Larynx	6	3.0	3	50.0			3	50.0
C33-C34 Lung	31	15.6			1	3.2	30	96.8
C43 Malign. melanoma	1	0.5					1	100.0
C44 Skin others	7	3.5	3	42.9	1	14.3	3	42.9
C50 Breast	32	16.1	20	62.5			12	37.5
C51 Vulva	2	1.0	1	50.0			1	50.0
C52 Vagina	1	0.5	1	100.0				
C53 Cervix uteri	7	3.5	5	71.4			2	28.6
C54 Corpus uteri	3	1.5	2	66.7			1	33.3
C55,C57 Fem. genitals un	1	0.5	1	100.0				
C56 Ovary	4	2.0	2	50.0			2	50.0
C65 Renal pelvis	1	0.5					1	100.0
C67 Bladder	4	2.0	2	50.0			2	50.0
C68 Urethra	1	0.5	1	100.0				
C70-C72 CNS cancer	4	2.0					4	100.0
C76-C79 CUP	1	0.5					1	100.0
C82-C85 NHL	3	1.5			1	33.3	2	66.7
C90 Mult. myeloma	2	1.0	1	50.0			1	50.0
C91-C96 Leukaemia	1	0.5	1	100.0				
All mult. primaries	199	100.0	52	26.1	10	5.0	137	68.8

Multiple primaries with number of cases n<1 are pooled in category "Other primaries".

ICD-10 C44 (Other malignant neoplasms of skin) is not systematically recorded by MCR and therefore not considered for evaluation as a particular primary but at least as a multiple malignancy.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 1998-2011
(**Singular primaries only** *)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	MI-index	Females Age-spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24	2		0.1	0.67	0.0		2.7	
25-29		1	0.0		0.1	0.33		1.0
30-34			0.0		0.0			
35-39	7	3	0.3	0.29	0.1	0.27	2.1	0.7
40-44	20	7	0.9	0.25	0.3	0.29	2.9	0.8
45-49	62	11	3.2	0.36	0.6	0.24	4.4	0.7
50-54	111	29	6.6	0.54	1.7	0.40	4.5	1.3
55-59	142	37	9.1	0.57	2.3	0.44	3.2	1.1
60-64	162	46	10.6	0.66	2.9	0.43	2.5	1.0
65-69	138	41	10.1	0.89	2.8	0.50	1.6	0.7
70-74	97	36	9.4	0.95	2.9	0.61	1.1	0.6
75-79	58	38	8.6	0.95	3.8	0.58	0.7	0.5
80-84	31	41	7.6	0.89	5.2	0.76	0.5	0.5
85+	22	50	7.9	0.88	6.7	1.04	0.4	0.5
All ages	852	340					1.6	0.7
Mortality								
Raw			3.4	0.62	1.3	0.51		
WS			2.1	0.58	0.6	0.43		
ES			2.9	0.60	0.9	0.45		
BRD-S			3.3	0.63	1.1	0.48		
PYLL-70								
per 100,000			33.2		8.9			
ES			30.0		7.7			
AYLL-70			11.7		11.4			

* See corresponding tables with multiple primaries.

Table 17

Age-specific mortality (cancer-related) and proportion of all cancers
for period 1998-2011
(**Single primaries only** *)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	MI-index	Females Age-spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24	2		0.1	0.67	0.0		2.9	
25-29		1	0.0		0.1	1.00		1.1
30-34			0.0		0.0			
35-39	7	1	0.3	0.32	0.0	0.11	2.1	0.3
40-44	19	6	0.9	0.26	0.3	0.27	2.9	0.8
45-49	54	9	2.8	0.36	0.5	0.23	4.1	0.7
50-54	86	26	5.2	0.49	1.5	0.38	3.8	1.3
55-59	100	29	6.4	0.50	1.8	0.42	2.5	0.9
60-64	97	29	6.4	0.47	1.8	0.32	1.7	0.7
65-69	90	23	6.6	0.68	1.5	0.37	1.2	0.5
70-74	63	20	6.1	0.73	1.6	0.37	0.8	0.4
75-79	42	26	6.2	0.72	2.6	0.46	0.6	0.4
80-84	23	28	5.7	0.68	3.5	0.58	0.4	0.4
85+	18	39	6.5	0.86	5.3	0.89	0.4	0.5
All ages	601	237					1.3	0.6
Mortality								
Raw			2.4	0.51	0.9	0.41		
WS			1.5	0.48	0.4	0.35		
ES			2.0	0.50	0.6	0.37		
BRD-S			2.3	0.51	0.7	0.38		
PYLL-70								
per 100,000			25.4		6.8			
ES			23.0		6.0			
AYLL-70			12.7		12.4			

* See corresponding tables with multiple primaries.

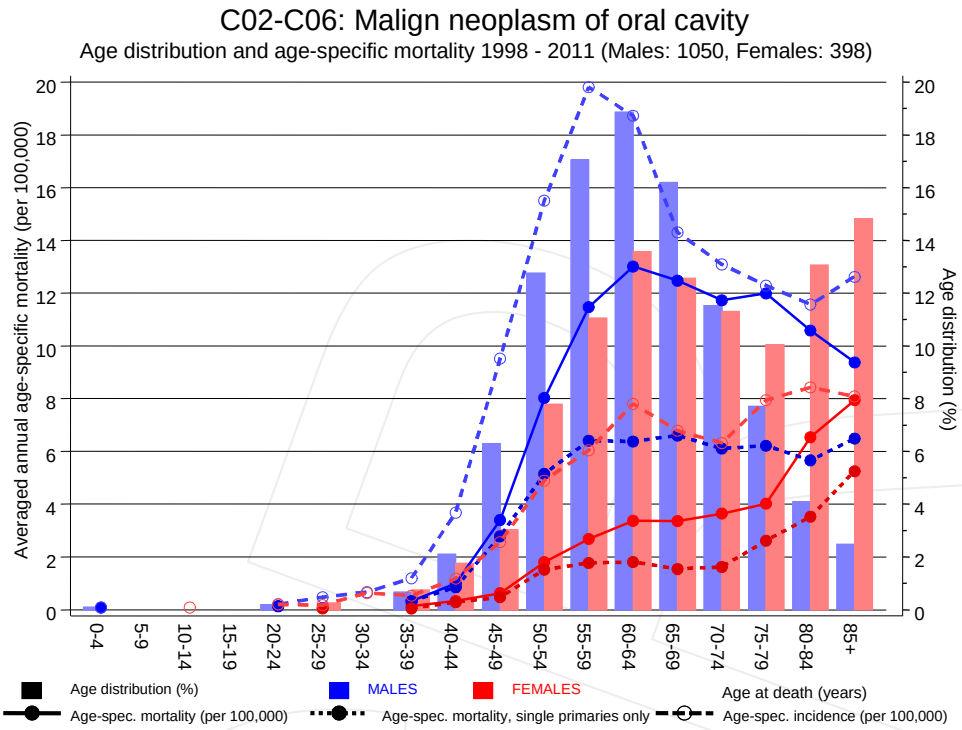
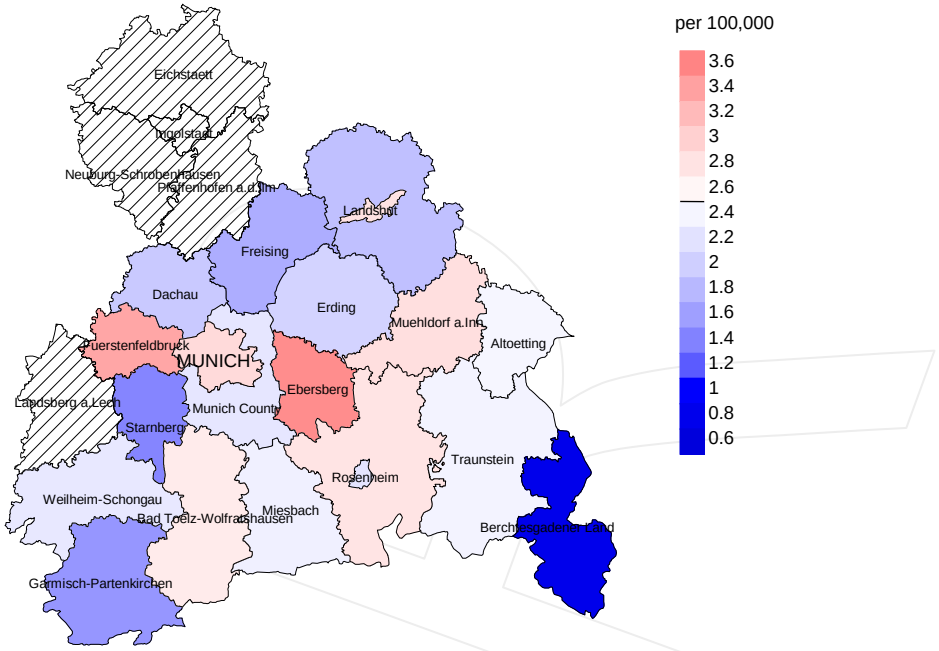


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at oral cavity cancer-related death (see Table 10) should be considered.

Average mortality (world standard population) 2003 - 2008: Males



Average mortality (world standard population) 2003 - 2008: Females

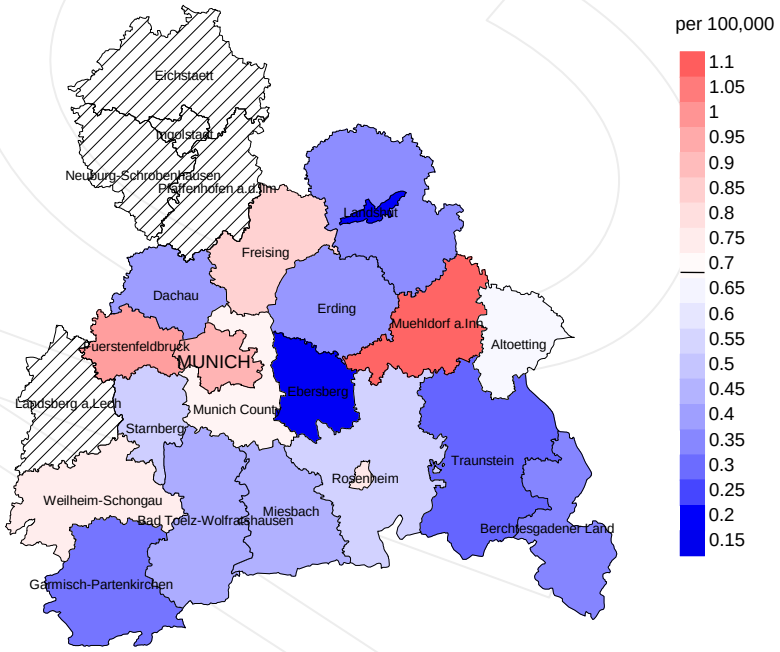
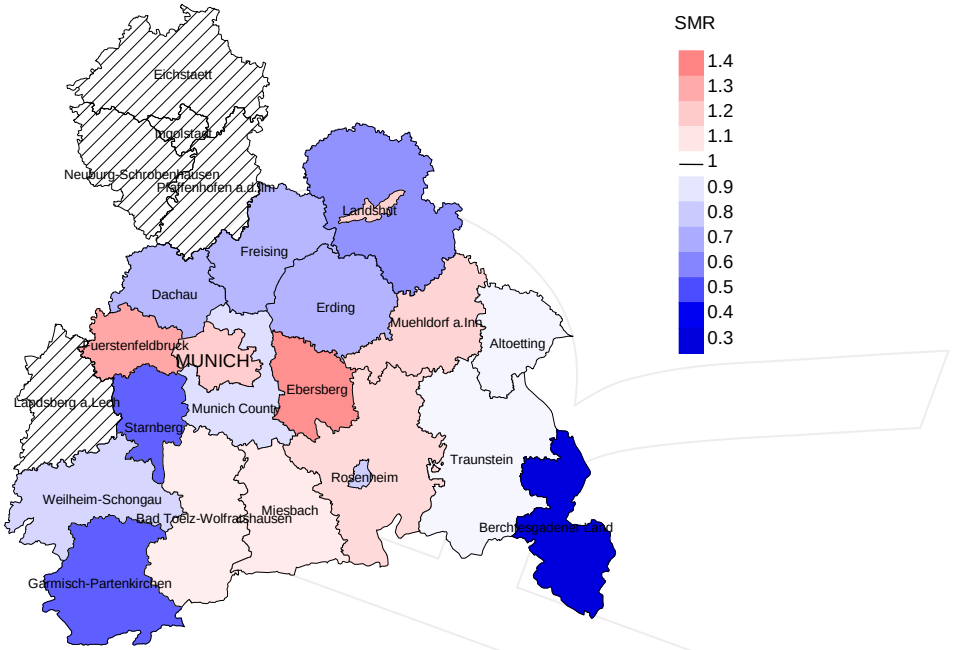


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2003 to 2008. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 2.5/100,000 WS N=474, females 0.7/100,000 WS N=187). Since cancer data are not available in some counties until 2007, the local mortality rates were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 1 women died from oral cavity cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.2/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.0 and 1.3/100,000.

Standardized mortality ratio (SMR) 2003 - 2008: Males



Standardized mortality ratio (SMR) 2003 - 2008: Females

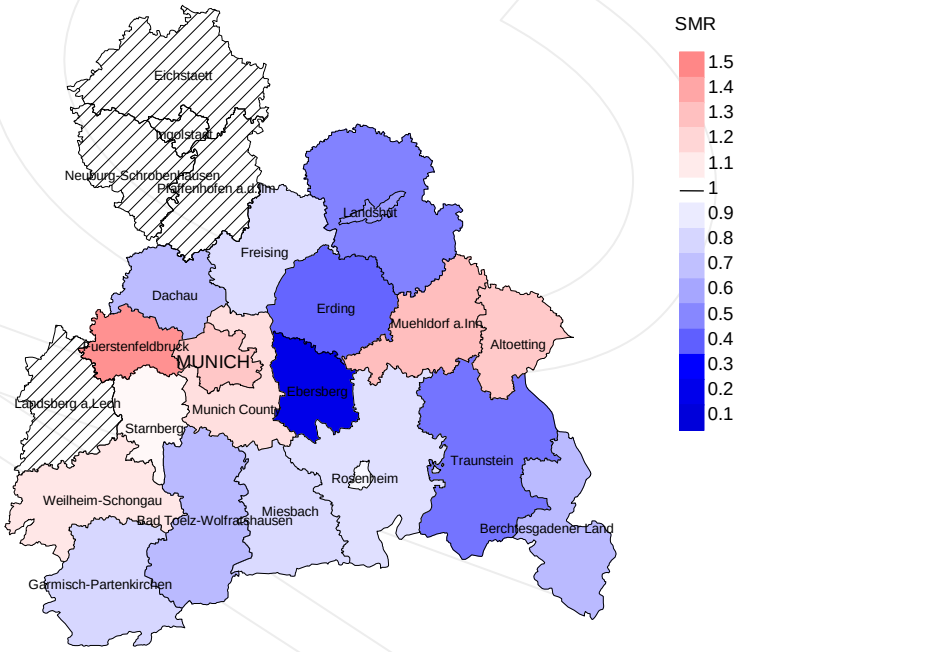


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2003 to 2008. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=474, females N=187). Since cancer data are not available in some counties until 2007, the local SMR values were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 1 women died from oral cavity cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.18. Though, the value of this parameter may vary with an underlying probability of 99% between 0.00 and 1.37, and is therefore not statistically striking.

Statistical Notes

In all tables and figures the respective reference values should be carefully considered. The incidence rates include diagnoses (with multiple primary), and death certificate only (DCO) cases. For mortality statistics patients, diagnoses and progressive course of disease are presented. In the calculations, all courses of disease are considered whereby progressions occurred and/or death certificate identified progressive cancers were ascertained. Additionally there are three groups of disease course to consider:

1. **All multiple primaries included**

   The mortality statistic describes the tumor-specific death, independent of any malignancy. The patient perspective, induced secondary malignancies, and the problem of multiple malignancies from the same primary tumor all have reasons for their inclusion.

2. **First singular primary** (no information about other prior or synchronous malignancy)

   The mortality statistic describes the tumor-related death for patients who have no therapeutic restrictions due to a previous or synchronous cancer. These statistics are comparable to studies that have exclusion criteria based on a second malignancy.

3. **Single primary** (no information about other prior, syn- or metachronous malignancy)

   The mortality statistic describes the tumor-specific death that occurs without any impact through secondary primaries, earlier, synchronous, later or induced. Precisely the difference between disease group 1 and 2 highlight the magnitude of the problem of secondary malignancies.

For this reason differences appear concerning official mono-causal mortality statistics. To judge the maximum deviation, 2 further tables are presented. In the first table the distribution of secondary malignancies before, at or after the described cancer are shown, that could be an alternative cause of death. In the second table, the age-specific mortality rates for all courses of disease, without designation of secondary malignancies are shown.

A previously minimally acknowledged statistic is the **age at death**, which allows for a good assessment of the quality of classification of the apparent tumor-specific death. For assumed tumor-independent deaths, the age of death should be estimated from the age of diagnosis and the normal life expectancy, whereas tumor-dependent deaths can be estimated from the age of diagnosis plus the average tumor-specific life expectancy. The comparison of different tumors demonstrates this association, if the causes of cancer and the competing cause of death are independent of each other (e.g. breast and colon versus head/neck and lung).

The index from mortality and incidence (Mortality-Incidence ratio, **MI-index**) is a statistic that allows for the evaluation of the quality of data. For diseases with poor prognoses, comparable values are obtained from all age groups, because to a large extent, the numerator and denominator contain the same cases. For tumors with a good prognosis, increasing and decreasing incidence and age-specific differences in prognosis can more strongly alter the MI- index. Additionally, attention should be paid to the confidence intervals where fewer cases are reported.

The complexity of problems identified here emphasizes the importance of relative survival data for the appropriate analysis of long term results.

As a measurement of the burden of disease, the number of potential life years loss due to premature deaths in a cohort can be calculated (**PYLL**, potential years of life lost, standardized per 100,000 persons or per European standard) as well as the average loss of life years per individual (**AYLL**, average years of life lost). Depending upon the analytic aim (health economy, prevention, health care research) different methods exist for the generation of these measurements. In the results presented here, the age for a premature death is considered to be before 70 years, according to the guidelines of the OECD and the WHO (as seen in the abbreviation PYLL-70 or AYLL-70).

Shortcuts

AYLL-70	Average years of life lost prior to age 70 given a person dies before that age
BRD-S	German standard population
DCO	Death certificate only
EAR	Excess absolute risk = excess cancer cases (O - E) per 10,000 person-years
ES	European standard population (old)
FRG	Federal Republic of Germany
GEKID	Association of Population-based Cancer Registries in Germany (Gesellschaft der epidemiologischen Krebsregister in Deutschland e.V.)
LCL	Lower confidence limit
MI-index	Ratio between mortality and incidence
MCR	Munich Cancer Registry (Tumorregister München)
PYLL-70	Potential years of life lost prior to age 70 given a person dies before that age
SEER	Surveillance, Epidemiology, and End Results (USA)
SIR	Standardized incidence ratio
SMR	Standardized mortality ratio
UCL	Upper confidence limit
WS	World standard population

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