BELGIAN CANCER REGISTRY

Cancer Survival in Belgium

Belgium 2004-2008

Brussels-Capital Region 2004-2008

Walloon Region 2004-2008

Flemish Region 1999-2008

Belgian Cancer Registry

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Foreword

The Belgian Cancer Registry, founded in 2005, progressively achieves more results on population based cancer statistics. Data on cancer incidence are available for Belgium from 2004 on and for the Flemish Region from 1999 onwards. We gradually obtain more insight into cancer incidence trends and geographic variation in Belgium for recent years thanks to sustained registration efforts.

The analysis of survival data is a logical next step. The current publication gives a detailed overview of cancer survival results in Belgium, the Walloon Region, the Brussels-Capital Region (5-year survival estimates) and in the Flemish Region (10-year survival estimates). It is well known that survival rates differ strongly depending on the type of cancer, tumour stage and age at diagnosis. This is illustrated in the different chapters in our booklet.

Cancer survival is an emotionally charged expression for individuals and results can be very confronting for patients. However, the figures should be shown because of their relevance in different contexts. The data are used for the evaluation of treatment regimens and the quality of cancer care. For some tumour types, survival results show the progress made or indicate the difficulties encountered to improve the patients prognosis over time. Our results are hopeful and more patients do survive cancer. The growing cancer prevalence and the ageing of our population should therefore be taken into account when planning health care services. Cancer survivorship invites us more and more to listen carefully to the patient's voice and integrate quality of life aspects in clinical and population based research.

We hope that the increasing availability of information encourages the clinicians, researchers, authorities and others concerned to make optimal use of the data.

Liesbet Van Eycken
Director

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1 Introduction

1.1 THE BELGIAN CANCER REGISTRY

New legislation initiatives since 2003 and the foundation of a new Belgian Cancer Registry in 2005 by all Belgian authorities involved in public health have forced a breakthrough in cancer registration in Belgium. The history of the Belgian Cancer Registry has been described in detail in the previous publication 'Cancer Incidence in Belgium, 2004-2005' [1].

A firm legal basis for cancer registration in Belgium is provided, particularly by the Royal Decree on the oncological care programs in 2003 and the reimbursement of the multidisciplinary oncological consultations (MOC-CMO), and by the creation of the specific law on the Cancer Registry in 2006 [2;3]. This legislation makes cancer registration compulsory for oncological care programmes and pathological anatomy laboratories. The law authorises the Belgian Cancer Registry to use the national social security number (INSZ/NISS) as a unique patient identifier. The use of this unique number favours linkage with other available medical and/or administrative data. It should be made clear that such a linkage not only requires the authorisation of the Privacy Commission but also implies stringent measures and rules for privacy protection and confidentiality.

The authorities involved (Table 1) contribute financially to ensure the continuity of cancer registration. The Belgian Cancer Registry also receives financial support from the Foundation against Cancer (Stichting Tegen Kanker – Fondation Contre le Cancer), and the Flemish League against Cancer (Vlaamse Liga tegen Kanker).

Since its foundation, the Belgian Cancer Registry has been working on the qualitative and quantitative improvement of registration. Besides completeness of registration, quality of data appears to be a major element in allowing the reportage of reliable data on incidence, prevalence and survival. As a result of these efforts, data on 5-year cancer incidence in Belgium and 10-year evolution of incidence of cancer in the Flemish Region were recently published [4].

TABLE 1 - FINANCIAL CONTRIBUTORS TO THE BELGIAN CANCER REGISTRY

FOD Volksgezondheid, Veiligheid van de Voedselketen en Leefmilieu, Minister bevoegd voor Volksgezondheid
SPF Santé publique, Sécurité de la Chaîne alimentaire, Ministre de la Santé
Vlaams Agentschap Zorg en Gezondheid, Afdeling Informatie en Ondersteuning, Vlaams Minister van Welzijn, Volksgezondheid en Gezin
Communauté Française, Ministre de l'Enfance, de l'Aide à la Jeunesse et de la Santé
Gouvernement Wallon, Ministre de la Santé, de l'Action Sociale et de l'Egalité des Chances
Gemeenschappelijke Gemeenschapscommissie van Brussel-Hoofdstad
Commission Communautaire de Bruxelles-Capitale
RIZIV, Dienst geneeskundige verzorging
INAMI, Service des soins de santé
Minister der Deutschsprachigen Gemeinschaft für Ausbildung und Beschäftigung, Soziales und Tourismus
Stichting Tegen Kanker
Fondation Contre le Cancer
Vlaamse Liga tegen Kanker

Source: Belgian Cancer Registry

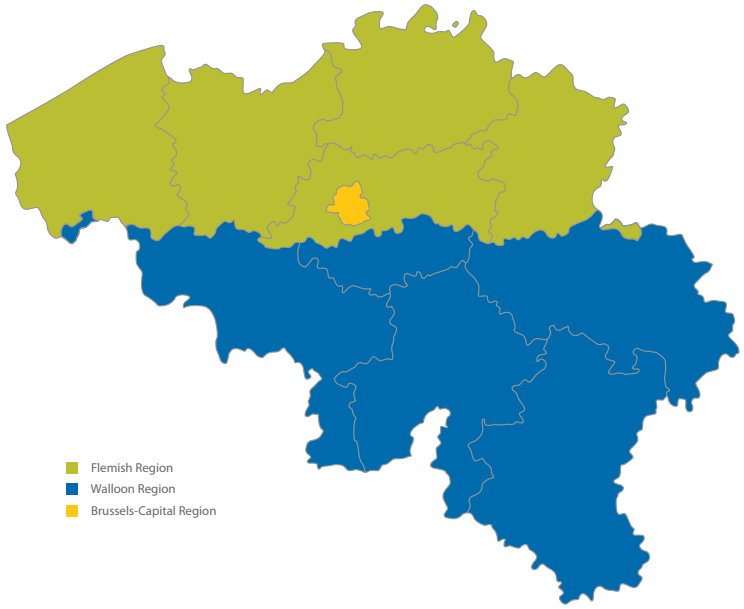
1.2 POPULATION AND REGION

Belgium (Figure 1) comprises an area of 30,528 square kilometres. On January 1 2008, Belgium had a population of 10,666,866 including 5,224,309 males and 5,442,557 females. The population is distributed over three regions: the Flemish Region (6,161,600), the Walloon Region (3,456,775) and the Brussels-Capital Region (1,048,491). Population density is 456 inhabitants per square kilometre for the Flemish Region, 205 for the Walloon Region and 6,497 for the Brussels-Capital Region.

The age structure of the Belgian population is shown in Figure 2. Seventeen per cent of the population is 65 years of age or older and 4.7% is 80 years of age or older.

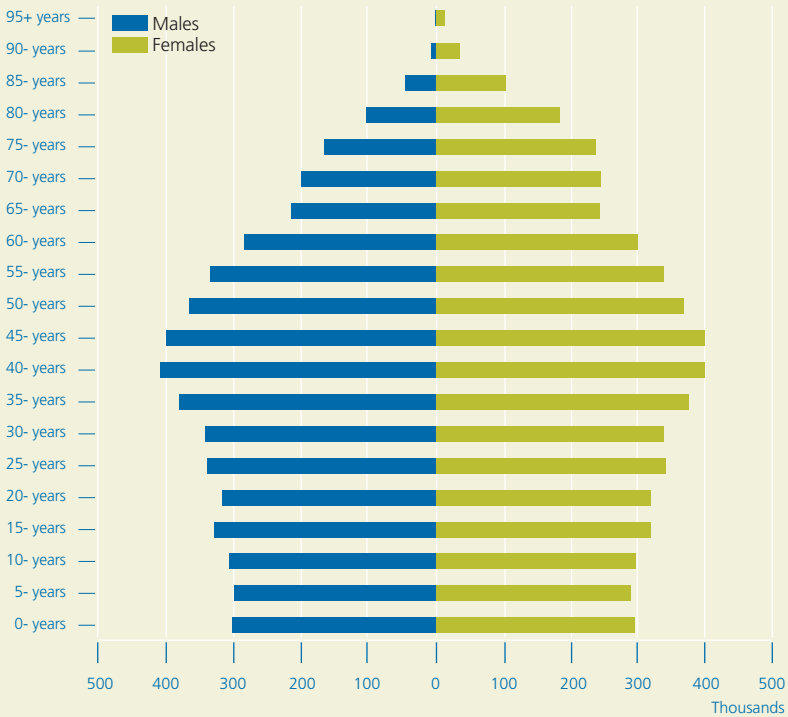
Life expectancy at birth is 83.5 years in females and 77.5 years in males. Due to increasing life expectancy, the Directorate-general Statistics and Economic Information estimates a threefold increase in the number of persons aged 85 years and older by 2060 [6].

FIGURE 1 - BELGIUM



Source: Belgian Cancer Registry

FIGURE 2 - AGE STRUCTURE OF THE BELGIAN POPULATION (2008) [5]



Source: Directorate-general Statistics and Economic Information

1.3 DATA COLLECTION

Notification and submission to the registry

This publication reports on the survival of patients diagnosed between January 1 2004 and December 31 2008 in Belgium. For the Flemish Region, 10 incidence years (1999-2008) are taken into account for survival analyses.

For the registration of cancer diagnoses, the data flow relies on all information (notifications) from the oncological care programs (clinical network), and from all pathological anatomy laboratories related to hospitals (pathology network).

- *Clinical network*

Hospitals must register all new cancer diagnoses, regardless of the fact that the diagnosis is discussed during a multidisciplinary oncological consultation. Each tumour must be recorded by means of a standard form including a confined set of variables. To code tumour characteristics, the International Classification of Diseases for Oncology (ICD-O), 2nd edition [7] is applied to this data set. Since the incidence year 2002, the ICD-O, 3rd edition has been used [8]. The stage of the tumour is defined according to the TNM Classification of Malignant Tumours, 5th edition (until 2002) [9] and 6th edition (from 2003 onwards) [10][1].

- *Pathology network*

The pathological anatomy laboratories encode the received specimens following classification rules approved by the Consilium Pathologicum Belgicum. Every (pre-)malignant diagnosis is encoded and transferred to the Belgian Cancer Registry annually, accompanied by the protocols as foreseen by law. After quality control, the specimen classification is converted to a tumour registration in ICD-O-3 at the registry.

Quality control and data linkage

Each tumour record is subjected to an automated quality control in which the format and the contents of each field are checked. In addition, the contents of the fields are checked for inconsistencies against the other fields. Relationships are checked between localisation and gender, localisation and histology, and age and tumour characteristics. These checking procedures are based on the IARC guidelines [11]. In addition, a number of manual interventions are carried out (e.g. all liver tumours are manually checked).

Subsequently, the individual tumour records from clinical sources and pathological anatomy laboratories are linked by means of the unique patient identifier. If these tumour records contain data on the same tumour, the data from the various sources are merged into a single, definitive tumour record; at this stage a determination is reached as to whether this concerns a second (third, etc.) primary tumour. The linkage of the data is largely an automated process; however, in less than 20% of the data links, manual intervention is necessary. In more complex cases, or in case of conflicting information, the data source is consulted to provide additional details.

Exclusion criteria

All invasive and in situ malignancies are registered, with the exception of basal cell carcinoma of the skin. Also, borderline malignant tumours of the ovary, non-invasive and borderline malignant tumours of the bladder, borderline malignant and benign tumours of the central nervous system, pituitary gland and craniopharyngeal duct are registered.

Chronic myeloproliferative diseases and myelodysplastic syndromes are registered as from 2004, when they were reclassified as malignant diseases [12].

Quality of the cancer registry data

The quality of the cancer registry data depends on different aspects defined at international level [11;13]. Accordingly, the quality of the Belgian Cancer Registry was discussed in detail in the previous publication, 'Cancer Incidence in Belgium, 2008' [4].

1 For a more detailed description, please consult "Cancer Incidence in Belgium, 2008, Belgian Cancer Registry, Brussels 2011."

2 Methodology

2.1 DATA SELECTION

General selection criteria

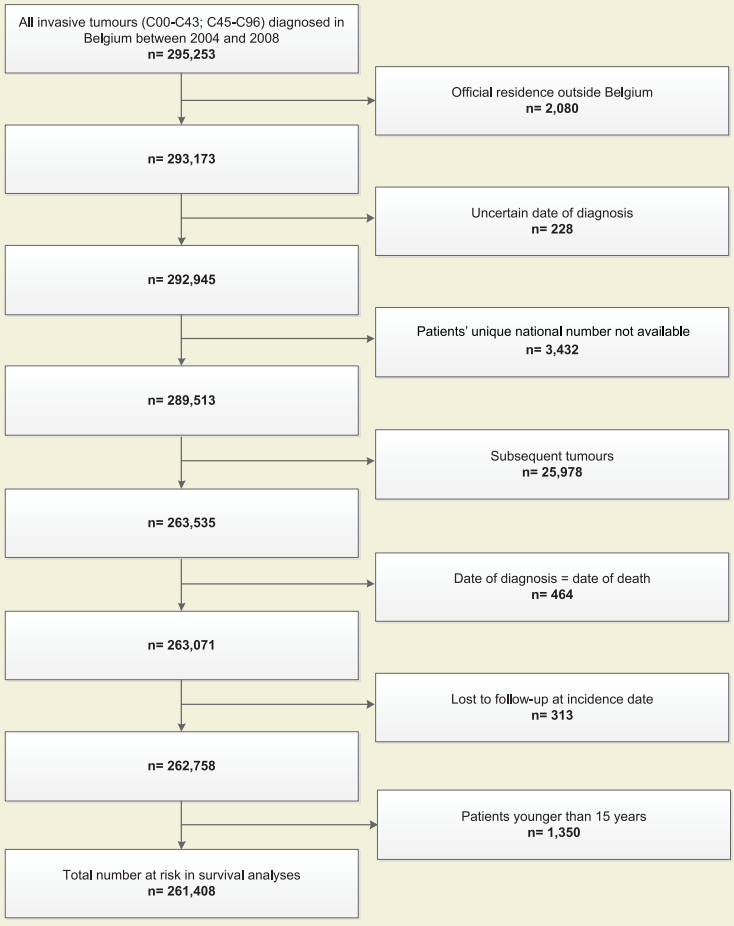
The survival analyses presented in this monograph include data on all primary malignant tumours (ICD-10 [14]: C00-C43, C45-C96) diagnosed in Belgium between 2004 and 2008. Non-melanoma skin cancers were excluded from the analyses. Results of survival analyses for cancer patients diagnosed in the Flemish Region in the years 1999-2008 are also reported.

The general selection flowchart (Figure 3) describes the selection procedure for Belgian data 2004-2008. Selection for the Flemish Region (1999-2008) was performed in the same way. The exclusion criteria were:

- patients officially residing outside Belgium
- cases with uncertain date of diagnosis
- cases without a unique national number. The vital status was retrieved from the Kruispuntbank van de Sociale Zekerheid/Banque Carrefour de la Sécurité Sociale based on the patients' unique social security number (INSZ/NISS). Using this active follow-up method, cancer patients were followed-up until 31 July 2011.
- second and subsequent tumours. For each person, only the first diagnosed cancer (known to the Belgian Cancer Registry) was considered for the analysis, consistent with other international cancer survival analyses [15;16]
- cases with a date of diagnosis equal to the date of death
- cases lost to follow-up at the date of incidence
- childhood cancer patients (0-14 years)

These factors explain why the numbers at risk included in the survival analyses are lower than the crude incidence numbers reported in a previous publication on cancer incidence in Belgium [4].

FIGURE 3 - GENERAL SELECTION FLOWCHART



Source: Belgian Cancer Registry

Additional criteria for particular tumour sites

• *Malignant melanoma of the skin*
Every case with a morphology code referring to melanoma and a localisation code referring to skin (C44) or unknown localisation (C80.9) according to ICD-O-3 is automatically converted to the ICD-10 code C43, corresponding to malignant melanoma of the skin. However, a detailed review of available pathology protocols at the Belgian Cancer Registry revealed that a considerable number of C80.9-cases represent melanoma originating outside the skin. As these lesions are likely to have other prognostic features than primary skin melanomas, they were excluded from the survival analyses (94 males and 75 females).

• *Gastric and oesophageal cancers*
For the survival analyses on gastric and oesophageal cancers, cancers of the gastro-oesophageal junction (ICD-10: C16.0) were taken together with oesophageal cancers (ICD-10: C15), and thus excluded from the analyses on gastric cancer (ICD-10: C16).

• *Non-invasive tumours*
Besides survival analyses for invasive cancers, non-invasive lesions were also investigated for ovary, bladder, breast and cervix.

For ovarian cancer, borderline malignant tumours were included in the survival analyses by stage, except for patients with any other diagnosis of an invasive cancer. In the latter case, only the invasive cancer diagnosis was considered in the analyses. Where a borderline ovarian cancer and an in situ bladder cancer (but no invasive cancer) were registered for the same patient, only the first non-invasive tumour was considered.

For bladder cancer, the first non-invasive papillary carcinoma (pTa) or in situ (pTis) cancer was included in the survival analyses by stage except for patients with any other diagnosis of invasive cancer. In the latter case, only the invasive cancer diagnosis was considered in the analyses. The non-invasive bladder cancers were represented as stage 0 cases. Where both a pTa and pTis lesion were diagnosed in the same patient, only the pTis lesion was taken into account because of its potential impact on survival. Where an in situ bladder cancer and a borderline ovarian cancer (but no invasive cancer) were registered for the same patient, only the first non-invasive tumour was considered.

For cervical and breast cancer, the first in situ cervical or breast cancer lesion was taken into account for the survival analyses by stage (stage 0). The in situ cancers were only included in the survival analyses if the patient had not been diagnosed with any invasive cancer, an in situ bladder cancer or a borderline ovarian tumour.

2.2 CALCULATION OF SURVIVAL

Censoring

Patients whose observation duration was shorter than the maximum time for which survival probability was calculated were censored at the date of the last information on vital status. Most of these censored cases survived beyond the end of the follow-up. A minority were lost to follow-up at some point before the end of the observation period (n=439; 0.19% of the total number of patients).

Observed survival

Observed survival was calculated with the Kaplan-Meier method [17] using a semi-complete analysis approach [18]. For calculation, the Lifetest Procedure of SAS was used.
Different thresholds for the minimal number of patients at risk at time of diagnosis were used in other population-based survival publications [16;19;20]. It was decided to restrict survival analyses in the current monograph to groups of 35 or more patients at the start of the observation period.

Median Survival

The median survival time is the point at which half the subjects have died, and half are still alive. Based on observed survival, calculations for median survival time in this publication were performed for all tumour types by ICD-10 for patients diagnosed in Belgium (2004-2008) and in the Flemish Region (1999-2008). The results are expressed in months and are presented in an overview table in Appendix 1. For cancer sites with a 5-year observed survival rate above 50%, median survival time could not be calculated. As displayed in the overview table, these tumour types have a median survival time of more than 5 years (or 60 months).

Relative Survival

Clinical studies mainly focus on death due to a particular disease, expressed as disease-specific survival. At the population level however, it is very difficult to establish the cause of death for each individual patient. To overcome this problem, the concept of relative survival has been set up as a proxy for disease-specific survival [21]. Relative survival can be used as a measure of cancer survival, excluding the effect arising from different background mortalities. This is calculated as the ratio of the observed survival in a group of patients to the expected survival in a comparable group of individuals from the general population. Relative survival is widely used for comparisons between different populations and countries.

The expected survival is calculated from life tables for an individual country. For the current monograph, expected survival calculations were based on sex-, age, region- and calendar-year-specific Belgian life tables (Source: Statistics Belgium [22]), according to the Ederer II method [23]. Relative survival rates were estimated using a SAS code written by Paul Dickman from the Karolinska Institute, Stockholm, Sweden [24] using a semi-complete analysis approach. In alignment with the observed survival calculations, it was decided to restrict survival analyses to groups of 35 patients or more at the start of the observation period. Standard errors of mean survival estimates were calculated with the Greenwood formula. To obtain 95% confidence intervals (CI) the data were logarithmically transformed so that the lower bound of the CI was always positive.

Relative survival rates close or equal to 100% do not mean that patients do not die, but that patients with this cancer type have a similar risk of dying than the general population, if stratified by sex, age and calendar year. Relative survival can exceed 100% or can increase from one interval to another, indicating that survival in the group of cancer patients is higher than survival in the matched group from the general population. Both phenomena can occur when information on death is missed, or by chance in small-size populations. However, they can also occur if patients have a healthier lifestyle or are more consistently treated for concomitant diseases than the reference population [25].

Age-standardisation

Age is a major determinant of cancer survival, and in international comparisons it is necessary to take the different age structures of the populations compared into account. Five-year relative survival estimates by sex (all ages combined) were age-standardised using the direct method and the International Cancer Survival Standard (ICSS) age distributions proposed by Corazziari et al [26]. According to the age pattern of incidence, the studied cancer types were divided in three standard cancer populations with different age distribution. A separate weight factor was attributed to each of the five age categories within each standard cancer population [26]. This age-adjustment was only performed for the tumour types studied in detail in the separate chapters.

Software

SAS package, Version 9.1 from SAS Institute, Cary, NC, USA was used for all the analyses.

2.3 PRESENTATION OF RESULTS

General results (chapter 3)

In addition to the results for all tumours taken together, this chapter provides some summary tables and figures on the obtained survival results. Because all survival analyses in this monograph start from 15 years of age, a truncated age-standardised rate (TWSR) is also reported in Figure 8 and Figure 9 (15-85+ years), showing the TWSR in function of the 5-year relative survival.

Results per tumour site (chapters 4 to 13)

For the selected tumour sites, detailed analyses are presented. Haematological tumours, sarcoma and childhood cancers were not analysed in detail as these cancer types will be considered in separate ongoing publications.
Each chapter starts with a brief overview of the specific tumour type concerning incidence, mortality and, in some cases, trends in incidence or mortality. The data mentioned in these introductory paragraphs are derived from a previous publication of the Belgian Cancer Registry [4].

Alongside the general results (Belgium 2004-2008 and the Flemish Region 1999-2008) and the results by region (2004-2008), different subgroup analyses were performed on the Belgian cohort (2004-2008). An overview of the subgroup analyses that were carried out is presented in Table 2.
For these chapters, observed survival results are only presented in the general results. All subgroup analyses per tumour type were limited to relative survival.

- *General results*

For each cancer site, tables with 1-, 3- and 5-year observed and relative survival by sex are presented for Belgium (2004-2008), in addition to charts for the whole observation period.
Tables with 1-, 3-, 5- and 10-year observed and relative survival by sex are presented for the Flemish Region (1999-2008), completed with charts for the whole observation period.
Five-year age-standardised relative survival is provided for Belgium (2004-2008).

- *Results by region*

For each tumour, 5-year relative survival was calculated by sex and region for the three Belgian regions (Brussels-Capital Region, Flemish Region and Walloon Region; 2004-2008).

- *Analyses by age group*

Relative survival analyses were performed for different age classes according to the age groups for which incidence rates were calculated in a previous publication of the Belgian Cancer Registry [4]. Minor differences compared with the previously published age groups are due to regrouping of age classes where the number at risk is too low.

- *Analyses by stage*

Relative survival estimates by stage were calculated according to the TNM classification as defined by the International Union Against Cancer (5th edition for incidence years 1999-2002 [9], 6th edition for incidence years 2003-2008 [10]). For most cancer sites, presented analyses are based on a combined stage, obtained from a compilation of pathological (pTNM) and clinical (cTNM) stage. If both pStage and cStage are available, pStage is used for the combined stage. An exception to this rule is a case with clinical metastases (cM=1): in this case, the combined stage is IV. If either the pathological or the clinical stage only is available, the combined stage is derived from the available stage. If both pStage and cStage are absent, the combined stage is considered unknown ("X"). For some tumours (e.g. colon and rectum), results are given by cStage and/or pStage (Table 2).

Note that in the current monograph, "stage" refers to combined stage, unless specified otherwise.
Clinical TNM stage information is overall quite low, but higher for sites with little surgical treatment where it is often not possible to determine the pathological TNM (e.g. lung cancer). Rather often, there is no clinical counterpart reported for the pathological TNM stage or vice versa, but together they result in a combined TNM in about 77% of the cases (Table 3).
The Belgian Cancer Registry explicitly choses to show results for stage X cases, rather than redistributing them among the known cases. Previous studies on Belgian registration data have, for instance, shown that stage X cases proportionally more occur in older patients [27].
For some tumour types, such as sarcomas, TNM stage is not applicable ("NA"). Unlike the cases with unknown stage, these NA cases were not included in survival analyses by stage, so the total number of subjects may be higher than the sum of the different stages.

- *Analyses by morphology and sublocalisation*

For some cancer sites, survival rates for different morphological groups are provided. Most subanalyses by

TABLE 2 - OVERVIEW OF THE SUBGROUP ANALYSES BY TUMOUR PRIMARY SITE

ICD-10		Age groups	Stage	Morphology*	Subocalisation*	Grade	Remark on selection criteria
C00-C14, C30-C32	Head and neck	15-49, 50-74, 75+	cStage		X		
C15-C16.0	Oesophagus	15-64, 65+	Combined stage	X			Oesophagus: C15.0-C15.9 Gastro-oesophageal junction: C16.0
C16.1-C16.9	Stomach	15-59, 60-74, 75+	Combined stage	X			
C18-C19	Colon	15-49, 50-64, 65+	cStage, pStage				
C20	Rectum	15-49, 50-64, 65+	cStage, pStage				
C22	Liver	15-59, 60+	Combined stage	X			
C23-C24	Gallbladder and biliary tract	15-59, 60+	Combined stage		X		Analysis by localisation: addition of C22.1 Intrahepatic bile ducts
C25	Pancreas	15-59, 60-74, 75+	Combined stage	X			
C34	Lung	15-49, 50-64, 65+	Combined stage	X			
C43	Malignant melanoma of skin	15-34, 35-64, 65+	Combined stage		X		C43 excluding melanoma of unknown localisation (ICD-O-3: C80.9)
C45	Mesothelioma	15-64, 65+	Combined stage	X			
C50	Breast	15-49, 50-69, 70+	cStage, pStage				Analysis by stage: addition of in situ tumours
C53	Cervix	15-44, 45-64, 65+	Combined stage				Analysis by stage: addition of in situ tumours
C54	Corpus uteri	15-54, 55-69, 70+	Combined stage	X		X	
C56	Ovary	15-44, 45-69, 70+	Combined stage	X			+ borderline tumours
C61	Prostate	15-59, 60-74, 75+	Combined stage				
C62	Testis	15-49, 50+	Combined stage	X			
C64	Kidney	15-44, 45-64, 65+	Combined stage				
C67	Bladder	15-59, 60-74, 75+	Combined stage				Analysis by stage: addition of non-invasive bladder cancer: papillary (pTa) and flat (pTis) urothelial carcinoma
C71-C72	Central nervous system	15-24, 25-59, 60+		X		X	
C73	Thyroid	15-39, 40-69, 70+	Combined stage	X			
C00-C43, C45-C96	All invasive tumours	15-49, 50-64, 65+					

*For more details on which groups of morphologies or sublocalisations were studied, see Appendix 3.

Source: Belgian Cancer Registry

TABLE 3 - AVAILABILITY OF INFORMATION ON TUMOUR STAGE (CLINICAL, PATHOLOGICAL AND COMBINED), BELGIUM 2004-2008

ICD-10	Primary site	N at risk	Only stageable tumours							
			Total	cTNM		pTNM		Combined TNM stage	
				N	%	N	%	N	%
C00-C14, C30-C32	Head and neck	10,927	9,441	6,299	66.7	3,117	33.0	7,071	74.9
C15-C16.0	Oesophagus	5,207	5,175	3,086	59.6	1,757	34.0	3,733	72.1
C16.1-C16.9	Stomach	4,706	4,468	1,673	37.4	2,144	48.0	2,936	65.7
C18-C19	Colon	24,367	24,338	7,364	30.3	19,394	79.7	20,863	85.7
C20	Rectum	10,255	10,222	5,698	55.7	6,873	67.2	8,673	84.8
C22	Liver	2,163	2,135	818	38.3	437	20.5	1,082	50.7
C23-C24	Gallbladder and biliary tract	1,496	1,326	448	33.8	675	50.9	926	69.8
C25	Pancreas	5,134	5,123	2,739	53.5	1,653	32.3	3,571	69.7
C34	Lung	31,317	31,109	20,415	65.6	6,562	21.1	22,049	70.9
C43	Malignant melanoma of skin	7,197	7,196	2,148	29.8	5,597	77.8	5,643	78.4
C45	Mesothelioma	1,111	1,029	459	44.6	104	10.1	493	47.9
C50	Breast	46,288	46,110	26,524	57.5	37,456	81.2	41,237	89.4
C53	Cervix uteri	3,065	3,052	1,064	34.9	1,516	49.7	2,042	66.9
C54	Corpus uteri	6,346	5,835	1,236	21.2	4,208	72.1	4,439	76.1
C56	Ovary	4,149	4,117	1,116	27.1	2,125	51.6	2,529	61.4
C61	Prostate	42,988	42,979	20,169	46.9	17,446	40.6	27,999	65.1
C62	Testis	1,356	1,317	773	58.7	1,100	83.5	1,137	86.3
C64	Kidney	5,855	5,799	2,465	42.5	4,272	73.7	4,840	83.5
C67	Bladder	8,981	8,951	2,886	32.2	6,977	77.9	7,462	83.4
C73	Thyroid	3,150	3,134	873	27.9	1,900	60.6	2,024	64.6

Source: Belgian Cancer Registry

morphology were based on the histological groups defined by IARC [28]. In other cases, clinical evidence of benefit for a certain morphology led to the exploration of survival probabilities for the concerned morphology type in comparison with other types (e.g. gastro-intestinal stromal tumours or GIST, in stomach cancer).
Similarly, results by sublocalisation are presented for some tumours. An example is malignant melanoma, for which separate survival rates for tumours originating from the head or trunk versus those originating from the arms or legs were calculated.
More detailed information on these analyses is provided in appendix 3.

• ***Other subgroup analyses***

For liver cancer, cases were divided according to the type of diagnosis (clinical versus pathological).
For endometrial carcinoma, survival analyses by histological tumour grade were performed [29].
Survival rates of astrocytomas of the central nervous system were calculated according to the WHO tumour grade [30].

• ***Appendices***

Appendix 1

Results for all tumour sites by ICD-10 are reported for patients diagnosed in Belgium (2004-2008) and in the Flemish Region (1999-2008) for males and females separately. The tables provide the numbers at risk at the start of the observation period, the median survival time, and observed and relative survival at 1, 3 and 5 years (10 years for the Flemish Region) after diagnosis.

Appendix 2

For the tumour types discussed in detail (chapters 4 to 13), the numbers at risk at the start of the observation period, the number of patient deaths after 5 years of follow-up, the crude 1-, 3- and 5-year relative survival rates, and the age-standardised 1-, 3- and 5-year relative survival rates, are presented. The used standard cancer populations per tumour type according to the method described by Corazziari et al [26] are also shown.

Appendix 3

Details on the subgroup analyses by morphology (morphology code according to ICD-O-3) or sublocalisation (according to ICD-10) are provided for the specific tumour types [8;14].

3 General survival results

3.1 ALL TUMOURS (ICD-10: C00-C43, C45-C96)

In 2008, 59,043 new invasive tumours (excluding non-melanoma skin cancers, myeloproliferative and myelodysplastic syndromes) were registered in Belgium, 54% in males and 46% in females. The mean age at diagnosis was 67 years in males and 65 years in females. In the same year, 26,647 patients died from cancer (57% males, 43% females).

Looking at the incidence years 2004-2008, 290,418 (males: 159,139 and females: 131,279) new diagnoses of cancer were registered in Belgium. Survival for a first invasive tumour occurring from the age of 15 years on could be calculated for 261,408 cases [31]. Five-year relative survival for all tumours together diagnosed between 2004 and 2008 shows a poorer outcome in males than in females (59.5% versus 67.8%; Table 4, Figure 4). Data from the Flemish Region (incidence 1999-2008) confirm this gender difference at the longer term, showing a 10-year relative survival of 52.3% in males and 60.2% in females (Table 4, Figure 5). This general female survival advantage reflects the fact that for most cancers, females have a better prognosis than males. In addition, males tend to be affected by cancers with less favourable prognosis than those affecting females [32;33].

Five-year relative survival rates are similar for the three different Belgian regions, resulting in 56.6% for males in the Brussels-Capital Region, 60.8% for the Flemish Region and 57.5% for the Walloon Region. In females, these rates are 66.7%, 68.0% and 67.8%, respectively (Table 5).

In both males and females, survival is inversely related to the age at diagnosis: the younger the patient, the better the survival. In males, 5-year relative survival is 67.6% in the age group 15-49 years compared with 57.4% for patients of 65 years and older. This age-dependent prognostic difference is even more important in females, where 5-year relative survival estimates are 84.4% in the 15-49 years age group, and only 57.3% in the 65+ years age group. The almost equal prognosis for both sexes in the oldest age group suggests that the female survival benefit disappears at older ages (Figure 6, Figure 7). A potential explanation may be that sex-hormone patterns have a role in women's superior ability to cope with cancer [33].

TABLE 4 - ALL TUMOURS: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	140,687	73.9	57.5	49.5		76.7	64.0	59.5		59.0
Females	120,721	81.1	68.1	60.7		83.2	72.7	67.8		65.7
Flemish Region										
Males	164,738	72.7	56.2	48.2	34.6	75.6	62.8	58.2	52.3	
Females	135,482	80.5	67.1	59.7	48.0	82.5	71.7	66.6	60.2	

*ASRS: Age-standardised relative survival

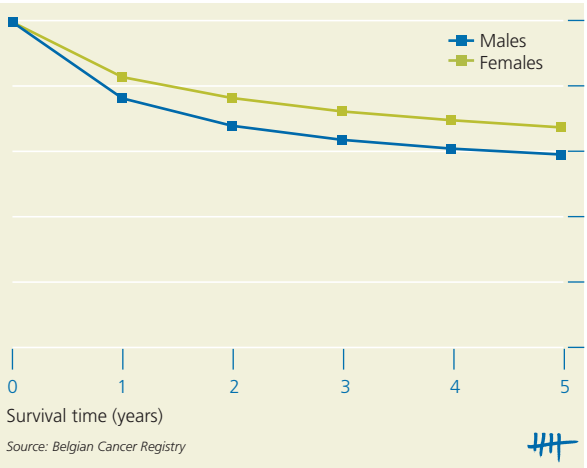
Source: Belgian Cancer Registry

TABLE 5 - ALL TUMOURS: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	10,483	7.5	74.6	61.0	56.6
Flemish Region	85,543	60.8	77.6	65.4	60.8
Walloon Region	44,661	31.7	75.4	62.0	57.5
Females					
Brussels-Capital Region	11,173	9.3	81.7	71.3	66.7
Flemish Region	69,790	57.8	83.7	73.1	68.0
Walloon Region	39,758	32.9	82.6	72.5	67.8

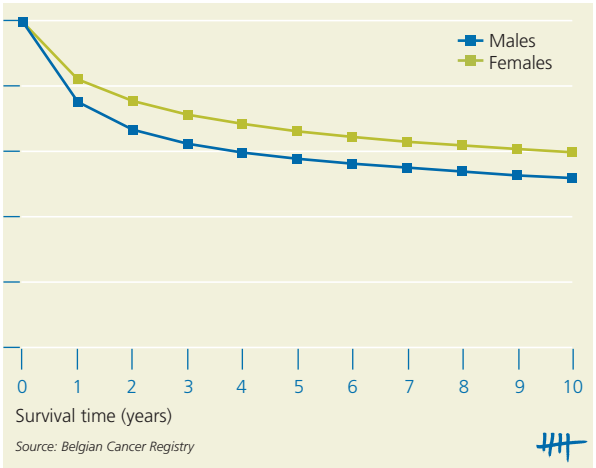
Source: Belgian Cancer Registry

FIGURE 4 - ALL TUMOURS: 5-YEAR RELATIVE SURVIVAL BY SEX (BELGIUM, 2004-2008)



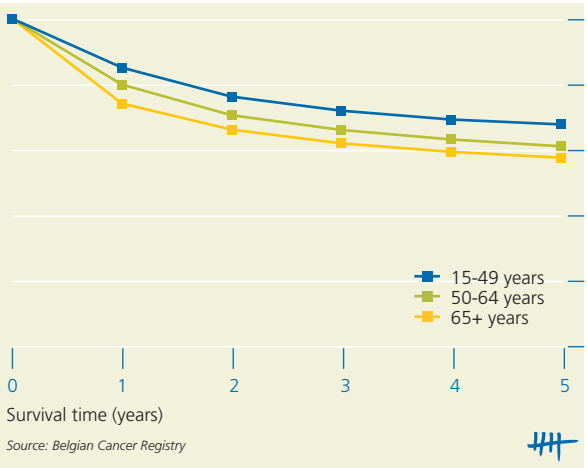
Source: Belgian Cancer Registry

FIGURE 5 - ALL TUMOURS: 10-YEAR RELATIVE SURVIVAL BY SEX (FLEMISH REGION, 1999-2008)



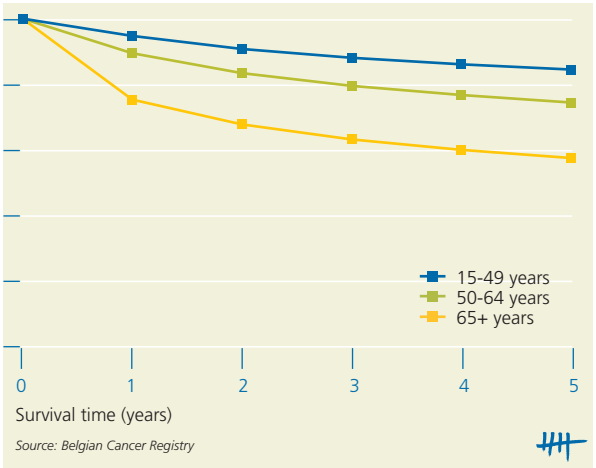
Source: Belgian Cancer Registry

FIGURE 6 - ALL TUMOURS: 5-YEAR RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 7 - ALL TUMOURS: 5-YEAR RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM 2004-2008)



Source: Belgian Cancer Registry

3.2 SUMMARY OF RESULTS

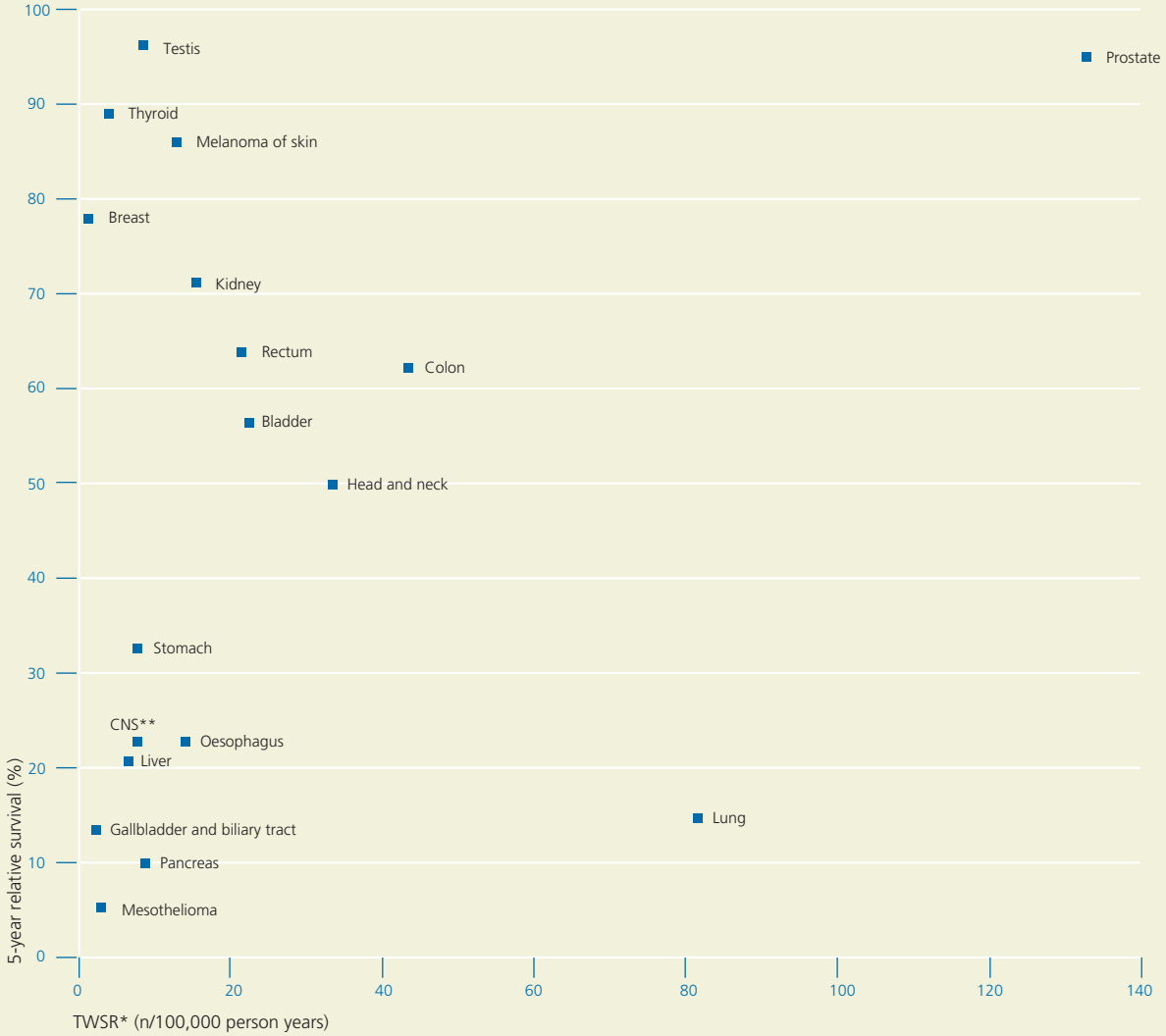
Figure 8 and Figure 9 compare age-standardised incidence rates (truncated world standardised rate for patients from the age of 15 years) for incidence year 2008, with 5-year relative survival for incidence years 2004-2008 in Belgium. Only those tumours for which detailed results are provided (chapter 4 to 13) were taken into account, resulting in 18 localisations in males and 19 in females.

In both males and females, the most frequently diagnosed tumour (respectively prostate and breast cancer) is associated with a very good 5-year relative survival.

Lung cancer, which is the 2nd most common cancer in males and the 3rd most common cancer in females, has a poor 5-year relative survival.

Cancers of the colon and rectum, which represent the 3rd most frequently occurring tumour in males and the 2nd most frequently occurring tumour in females, have an intermediate 5-year relative survival.

FIGURE 8 - 5-YEAR RELATIVE SURVIVAL (2004-2008) BY AGE-STANDARDISED INCIDENCE (2008) IN BELGIUM, MALES



*TWSR: Truncated (15+ years) age-standardised incidence rate according to the world population
**Central nervous system

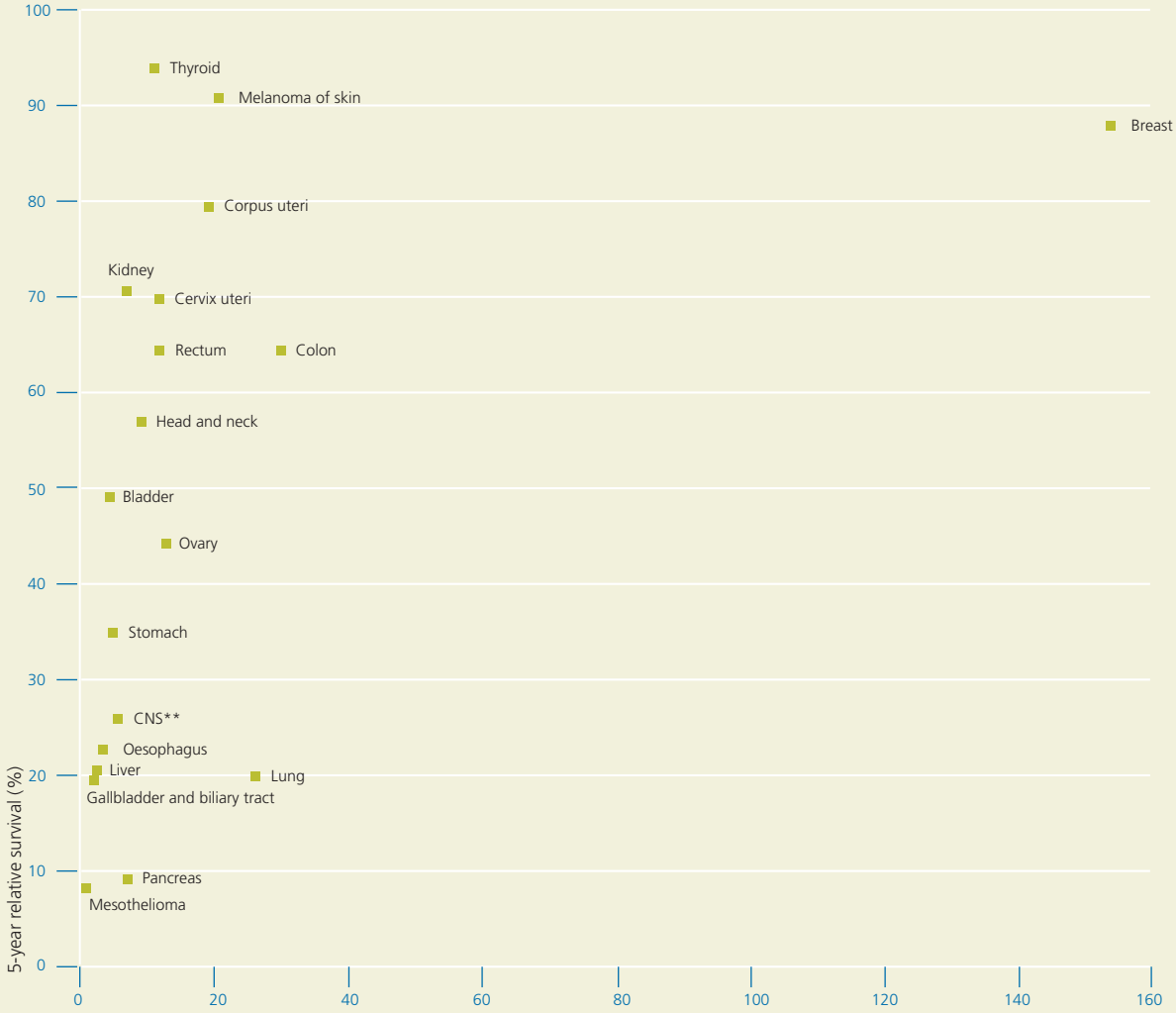
Source: Belgian Cancer Registry

Figure 10 and Figure 11 represent the ten tumours with the highest and lowest 5-year relative survival rates in males and females (Belgium, incidence years 2004-2008). Survival rates for all tumour types by ICD-10 were taken into account, as well as myeloproliferative disease (MPD) and myelodysplastic syndrome (MDS). Testicular, prostate and thyroid cancer are the three tumours with the best prognosis in males. Thyroid cancer, malignant melanoma of skin, and breast cancer have the highest 5-year relative-survival in females.

Mesothelioma and pancreatic cancer have the lowest 5-year relative survival rates in both sexes. Gallbladder is the site with the 3rd worst prognosis in males, while tumours of unknown primary site have the 3rd lowest 5-year relative survival in females.

Figure 12 and Figure 13 show the 5-year relative survival rates in males and females respectively, with a 95% confidence interval. Only those tumours for which detailed results are provided (chapter 4 to 13) were taken into account, resulting in 18 localisations in males and 19 in females. In addition to these tumours, results on all tumours together including MPD and MDS are presented.

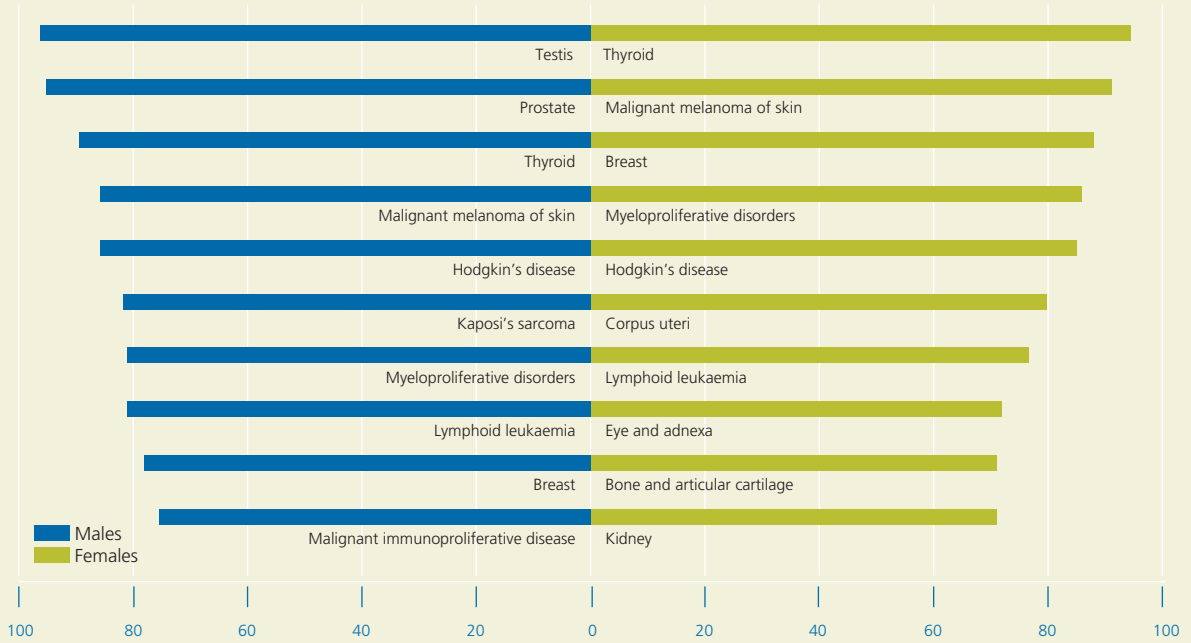
FIGURE 9 - 5-YEAR RELATIVE SURVIVAL (2004-2008) BY AGE-STANDARDISED INCIDENCE (2008) IN BELGIUM, FEMALES



*TWSR: Truncated (15+ years) age-standardised incidence rate according to the world population
**Central nervous system

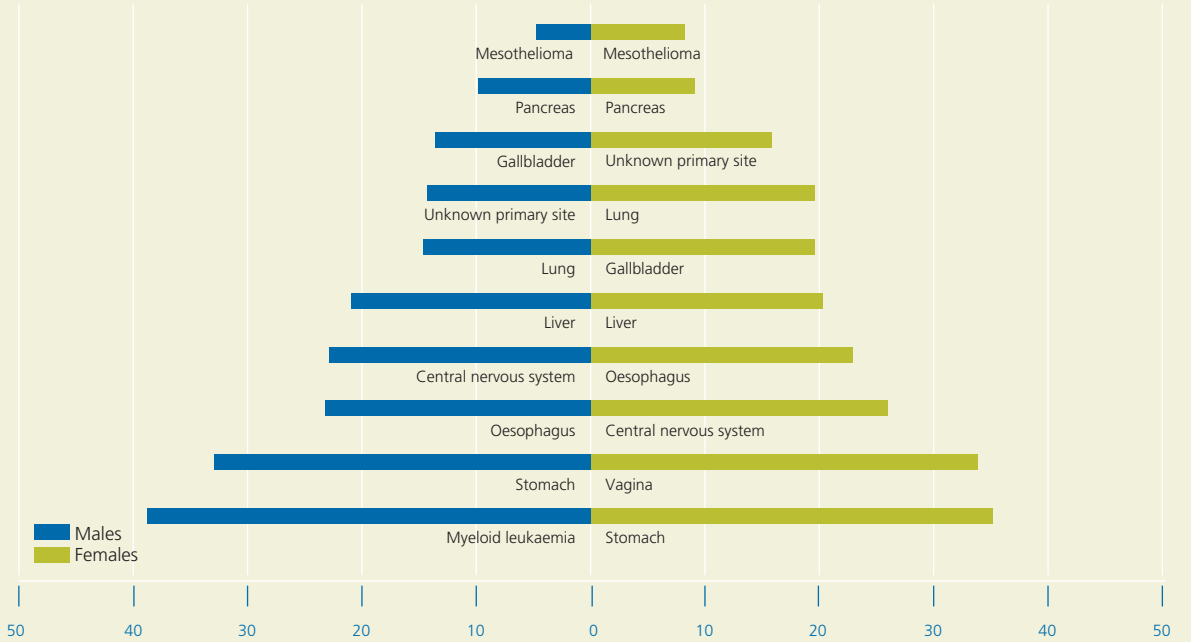
Source: Belgian Cancer Registry

FIGURE 10 - TUMOURS WITH THE HIGHEST 5-YEAR RELATIVE SURVIVAL BY SEX (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 11 - TUMOURS WITH THE LOWEST 5-YEAR RELATIVE SURVIVAL BY SEX (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 12 - 5-YEAR RELATIVE SURVIVAL POINT ESTIMATES AND 95% CONFIDENCE INTERVALS BY TUMOUR SITE IN MALES (BELGIUM 2004-2008)

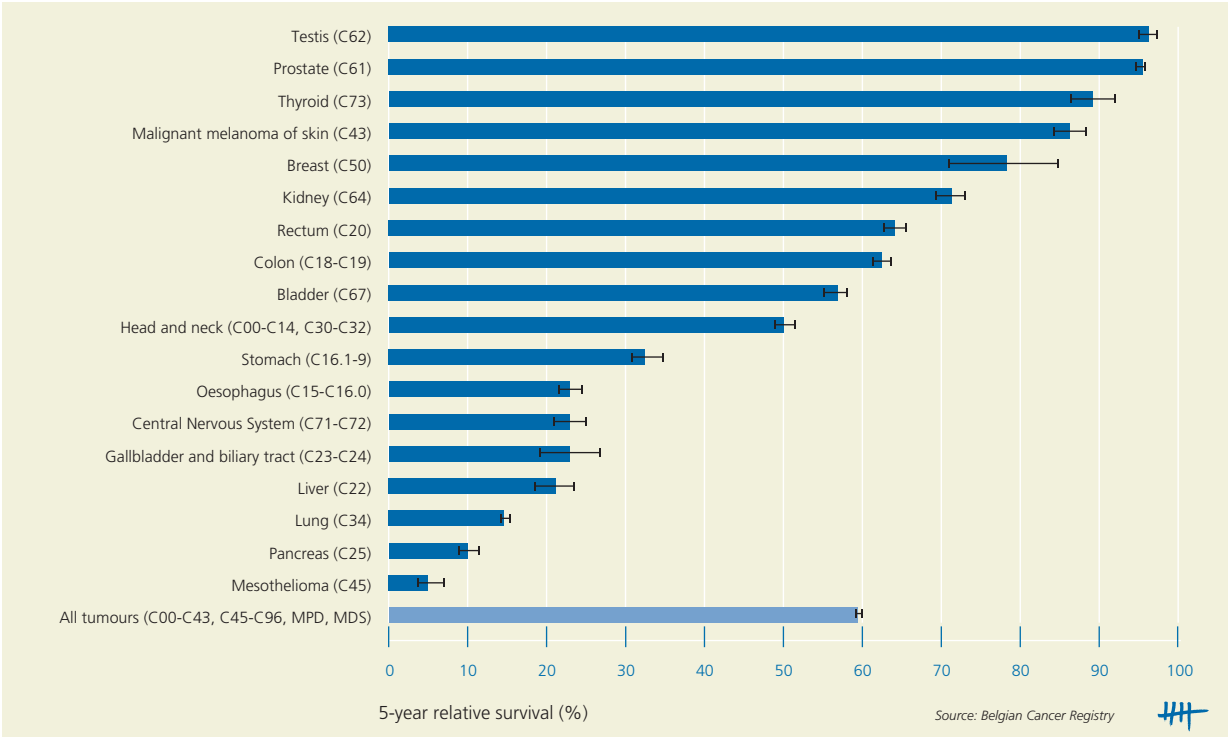
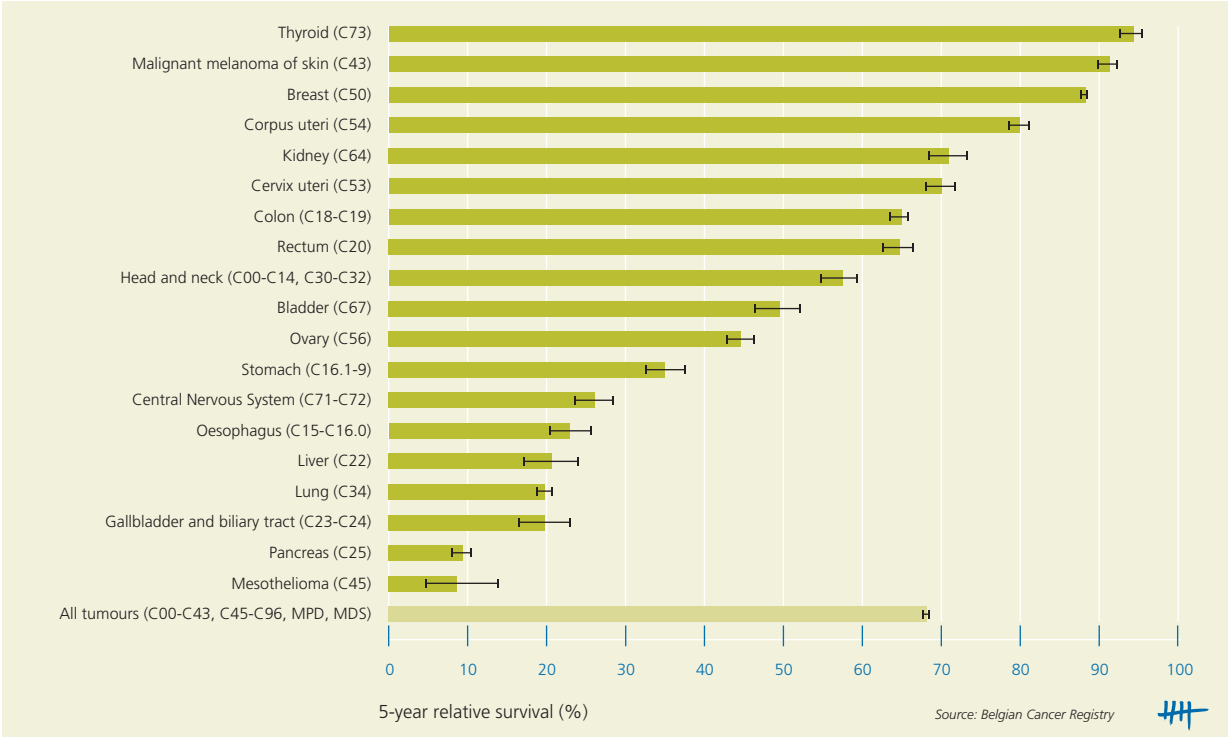


FIGURE 13 - 5-YEAR RELATIVE SURVIVAL POINT ESTIMATES AND 95% CONFIDENCE INTERVALS BY TUMOUR SITE IN FEMALES (BELGIUM 2004-2008)



4 Head and neck

(ICD-10: C00-C14, C30-C32)

Head and neck cancers encompass a broad range of sublocalisations, including lip, oral cavity, oropharynx, hypopharynx, nasopharynx, larynx, nasal cavity, paranasal sinuses and salivary glands. The vast majority of these tumours are squamous cell carcinoma and are associated with a history of smoking and alcohol use. This is not the case for cancers of the paranasal sinuses or salivary gland, which mostly consist of mixed cell types. In addition, tumours of the nose or paranasal sinuses have been linked with occupational and chemical exposures. Infection with human papilloma virus is now also accepted as a contributing risk factor for the development of oropharyngeal cancers [34].

Although incidence rates of head and neck cancer in females are increasing (Flemish Region 1999-2008), the disease still occurs preferentially in males (male/female ratio in 2008: 3.7). Head and neck cancers represent 6.0% of all cancers in males and 2.1% in females. Mortality from these malignancies is not negligible, especially in males where they represent the 5th most frequent cause of cancer death.

For newly diagnosed cases in 2004-2008, the 5-year relative survival rate is 50.0% and 57.0%, in males and females respectively. Most deaths related to head and neck cancer occur within the first three years after diagnosis (3-year relative survival of 58.7% in males and 63.7% in females; Table 6, Figure 14). However, beyond the 5-year period, relative survival for head and neck cancer patients further decreases to reach about 39.5% in males and 48.1% in females at 10 years after diagnosis (Flemish Region, incidence years 1999-2008; Table 6, Figure 15). It must be taken into account that patients diagnosed with head and neck cancer are at high risk of developing second primary tumours that can impair their chances of survival.

In both sexes, 5-year relative survival rates are the highest in the Flemish Region (53.7% in males, 58.5% in females), followed by the Walloon Region (46.4% in males, 56.4% in females) and the Brussels-Capital Region (44.6% in males, 52.2% in females) (Table 7).

In females, 5-year relative survival clearly decreases with age, resulting in 71.4% for the 15-49 years age group, 55.8% for the 50-74 years age group and 47.8% for the 75+ years age group. In contrast, no substantial differences in relative survival are observed for the different age groups in males (5-year relative survival of 52.2%, 49.2% and 50.5%, for the 15-49, 50-74, and 75+ age groups respectively; Figure 16, Figure 17).

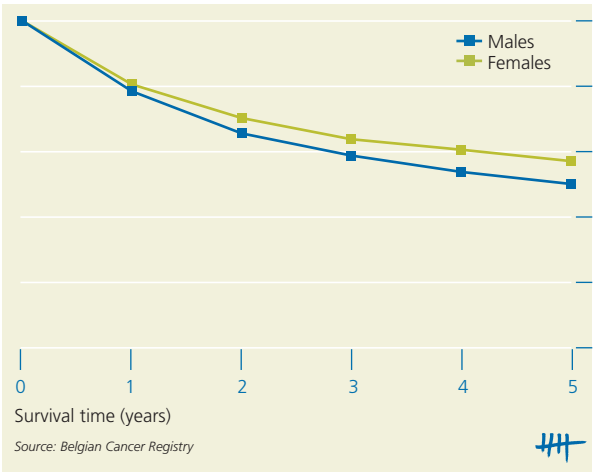
TABLE 6 - HEAD AND NECK CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	8,454	76.6	55.1	44.6		78.4	58.7	50.0		50.6
Females	2,473	78.8	60.4	52.0		80.5	63.7	57.0		54.8
Flemish Region										
Males	8,838	77.8	56.9	45.9	29.9	79.7	61.0	52.0	39.5	
Females	2,245	78.7	60.1	51.9	38.1	80.6	64.0	57.4	48.1	

*ASRS: Age-standardised relative survival

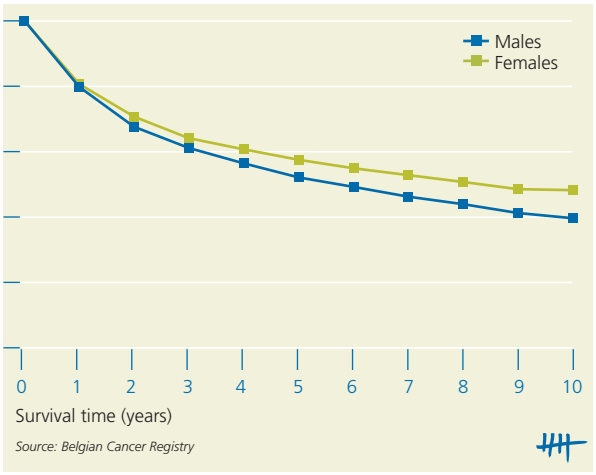
Source: Belgian Cancer Registry

FIGURE 14 - HEAD AND NECK CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)



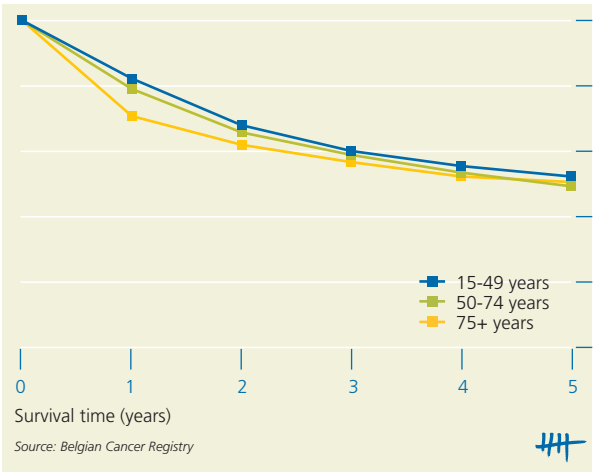
Source: Belgian Cancer Registry

FIGURE 15 - HEAD AND NECK CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)



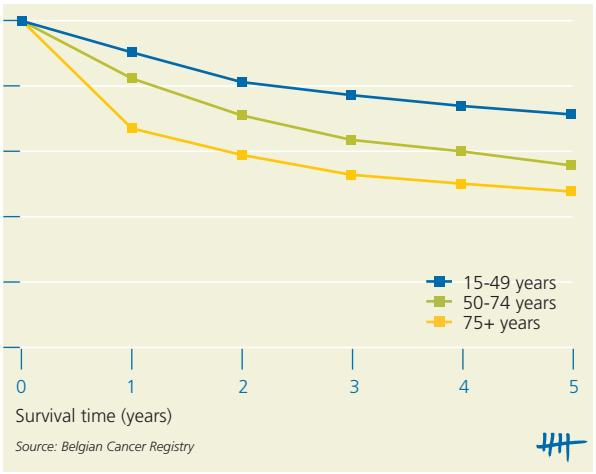
Source: Belgian Cancer Registry

FIGURE 16 - HEAD AND NECK CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



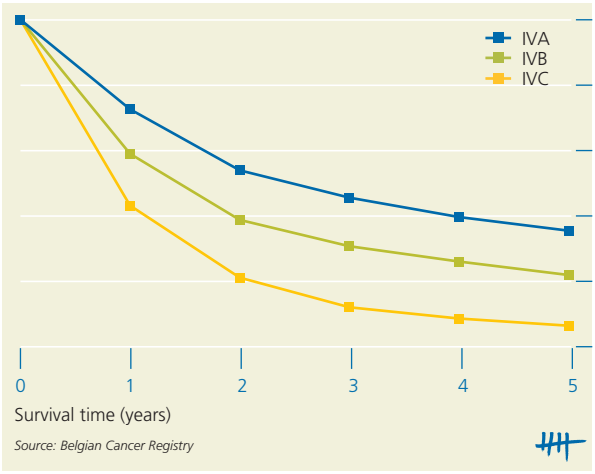
Source: Belgian Cancer Registry

FIGURE 17 - HEAD AND NECK CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



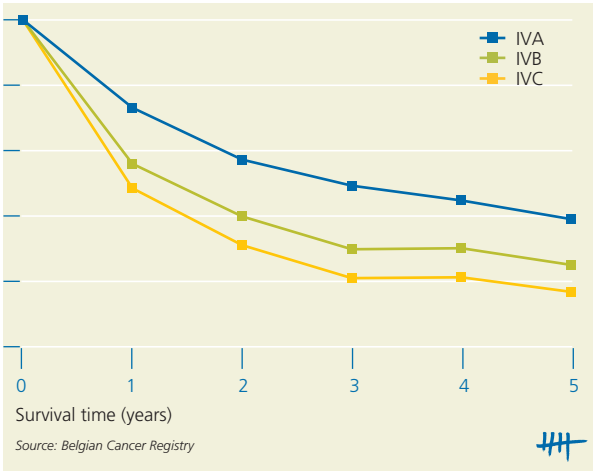
Source: Belgian Cancer Registry

FIGURE 18 - HEAD AND NECK CANCER (CLINICAL STAGE IV): RELATIVE SURVIVAL BY SUBSTAGE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 19 - HEAD AND NECK CANCER (CLINICAL STAGE IV): RELATIVE SURVIVAL BY SUBSTAGE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

These results show that the survival advantage in females when compared with males decreases with age.

Clinical stage of the disease is especially important to select initial treatment and can also serve as a prognostic factor for survival in head and neck cancer when pTNM is not available. Survival for small tumours without lymph node invasion (cStage I) is relatively good (82.4% in males and 77.5% in females). The more the disease is locally and/or regionally extended, the poorer the prognosis becomes (Table 8).

Head and neck cancer is a disease characterised by locoregional extension rather than distant metastasis. In contrast with other cancers, some locally or regionally advanced diseases are also categorised as stage IV (IVA or B). Stage IV disease is not always designated incurable, especially in the absence of distant metastases (stage IVC). Consequently, 5-year survival rates for stage IV disease may be somewhat higher than for other cancer types (31.0% in males and 36.1% in females). More detailed analyses by substage reveal that within stage IV, survival rates range from 35.4% and 38.9% in stage IVA to 6.3% and 16.6% in stage IVC, in males and females respectively (Figure 18, Figure 19). Stage IV cancers represent by far the most frequently diagnosed stage of head and neck cancers (47.2% of cases with known stage in males and 42.8% in females), and stage IVA is the most common substage (78.6% of stage IV in males and 84.3% in females). With reference to the sex-dependent differences in survival, males have a somewhat better prognosis for stage I and II head and neck cancer, while females perform better for stages III and IV.

Another important determinant for survival is the sublocalisation in which head and neck cancers originate (Table 9). Of all head and neck cancer sublocalisations, cancer of the lip has the best prognosis, reaching a 5-year relative survival of 86.6% in males and 99.6% in females.

Poorest survival is noted for cancers of the hypopharynx, with a 5-year relative survival of 25.6% in males and 34.7% in females. These cancers are characterised by a late onset of symptoms and are therefore often diagnosed in advanced stages; stage III and IV cancers account for 91.5% of cases with known stage in males and 83.3% in females.

TABLE 7 - HEAD AND NECK CANCER: RELATIVE SURVIVAL BY REGION AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	775	9.2	75.5	53.3	44.6
Flemish Region	4,439	52.5	80.3	62.4	53.7
Walloon Region	3,240	38.3	76.5	55.0	46.4
Females					
Brussels-Capital Region	259	10.5	77.4	59.9	52.2
Flemish Region	1,218	49.3	81.1	64.8	58.5
Walloon Region	996	40.3	80.7	63.5	56.4

Source: Belgian Cancer Registry

TABLE 8 - HEAD AND NECK CANCER: RELATIVE SURVIVAL BY CLINICAL STAGE AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Stage I	916	12.5	98.1	90.6	82.4
Stage II	802	11.0	92.6	73.1	63.9
Stage III	905	12.4	84.2	63.1	53.5
Stage IV	2,343	32.1	68.1	40.5	31.0
Stage X	2,337	32.0	78.6	63.2	55.2
Females					
Stage I	262	12.3	97.2	86.2	77.5
Stage II	249	11.7	86.4	69.3	63.6
Stage III	246	11.6	85.0	64.0	57.3
Stage IV	566	26.6	69.8	45.4	36.1
Stage X	805	37.8	82.7	71.6	67.4

Note: TNM stage was not applicable in 1,144 males and 342 females; 7 males and 3 females have a clinical stage 0. These data were excluded for the analysis.

Source: Belgian Cancer Registry

TABLE 9 - HEAD AND NECK CANCER: RELATIVE SURVIVAL BY SUBLOCALISATION AND SEX (BELGIUM, 2004-2008)

	Males				Females			
	N at risk	Relative Survival (%)			N at risk	Relative Survival (%)		
	n	1 year	3 year	5 year	n	1 year	3 year	5 year
Lip and oral cavity	2,217	78.2	59.4	51.5	920	80.6	65.5	60.2
Lip	224	96.7	94.1	86.6	81	98.4	93.0	99.6
Tongue	753	74.9	52.5	45.9	303	78.7	62.1	55.3
Gum	151	71.4	55.2	50.5	117	71.7	56.8	53.5
Floor of mouth	691	78.6	58.8	47.3	185	80.1	63.0	56.6
Hard palate and palate unspecified	96	76.8	56.7	50.2	72	90.8	79.1	77.7
Mouth, NOS	302	75.8	56.3	51.0	162	78.0	61.3	51.8
Pharynx	2,792	72.5	47.6	37.3	736	79.0	57.5	51.3
Oropharynx	1,752	74.2	50.8	40.9	548	79.9	60.2	53.5
Base of tongue	322	71.7	47.6	39.8	87	75.9	51.7	46.8
Soft palate and uvula	171	84.9	64.6	48.3	63	92.8	76.5	68.8
Tonsil	783	77.1	53.9	45.3	280	81.1	63.5	56.7
Oropharynx, other and unspecified	476	67.4	43.0	31.9	118	73.2	49.7	42.5
Nasopharynx	173	86.4	67.8	60.0	51	87.4	77.0	72.9
Hypopharynx	867	66.2	37.1	25.6	137	72.3	39.7	34.7
Pyriform sinus	591	68.8	38.7	26.3	78	77.8	35.6	30.6
Hypopharynx	276	60.7	33.6	23.9	59	65.1	45.2	40.0
Larynx	2,631	84.9	69.1	61.8	374	83.2	65.9	58.1
Glottis	1,438	93.2	82.2	76.2	152	92.2	84.2	81.4
Supraglottis	668	78.3	55.3	43.6	126	81.0	54.4	37.8
Nasal Cavity and Paranasal Sinuses	377	81.7	66.2	56.0	143	75.3	61.7	45.0
Nasal cavity and middle ear	102	88.3	75.8	64.0	67	83.9	71.4	53.4
Accesory sinuses	275	79.3	62.7	53.1	76	67.7	52.9	37.8
Salivary Glands	303	83.0	68.8	59.4	256	85.8	77.5	71.3
Parotid gland	225	82.9	69.0	59.6	183	85.4	75.8	69.9
Salivary glands, NOS	78	83.4	68.4	59.1	73	86.9	81.8	74.8
Lip, oral cavity and pharynx, NOS	134	57.0	33.8	26.2	44	67.4	41.3	30.2
Head and neck cancer	8,454	78.4	58.7	50.0	2,473	80.5	63.7	57.0

Source: Belgian Cancer Registry

Concerning laryngeal cancer, an important distinction needs to be made between glottic and supraglottic cancer. Cancer of the vocal cords (glottic cancer) usually causes hoarseness and is therefore often recognised in earlier stage (50.8% of cases with known clinical stage are stage I). In addition, the lymphatic network of the vocal cords is very limited, preventing the cancer from spreading to regional lymph nodes. These factors contribute to the good prognosis of glottic cancer, reaching a 5-year relative survival of 76.2% in males and 81.4% in females. In contrast to the glottis, the supraglottic region is drained by an abundant network of lymphatic vessels; cancers originating from this region often present with adenopathy (78.5% of cases with known clinical stage are stage III/IV), resulting in a 5-year relative survival rate of 43.6% in males and 37.8% in females.

As the oropharynx is extremely rich in lymphatics, cancers originating from this region also often present with affected lymph nodes. Of all oropharyngeal cancers with known

stage, stage III and IV disease are most common (83.7% in males and 76.1% in females). However, 5-year relative survival remains relatively good ranging from 64.2% in stage I to 37.9% in stage IV in males (Table 10). Survival rates for females are not mentioned because of too low numbers at risk for stage I.

TABLE 10 - OROPHARYNGEAL CANCER: RELATIVE SURVIVAL BY CLINICAL STAGE AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Stage I	56	4.0	90.4	77.7	64.2
Stage II	114	8.1	89.1	68.7	55.5
Stage III	227	16.2	84.9	61.3	51.0
Stage IV	643	45.9	71.3	45.9	37.9
Stage X	361	25.8	74.9	53.3	42.3
Females					
Stage I	28	6.3	*	*	*
Stage II	48	10.8	86.8	67.0	69.2
Stage III	81	18.2	87.7	62.8	60.0
Stage IV	161	36.3	72.3	49.7	41.3
Stage X	126	28.4	82.9	71.2	63.1

Note: TNM Stage was not applicable in 349 males and 103 females; 2 males and 1 female have a clinical stage 0. These data were excluded for the analysis.

*Results not displayed due to less than 35 cases

Source: Belgian Cancer Registry

5 Digestive tract

5.1 OESOPHAGUS (ICD-10: C15-C16.0[2])

Although the incidence of oesophageal cancer is rather low, ranking 11th in males and even lower in females in 2008, its aggressive behaviour is responsible for a substantial number of cancer deaths. In Belgium, 3.4% of all cancer deaths in males and 1.4% in females are caused by oesophageal cancer. This cancer type has been associated with alcohol, smoking, obesity and reflux disease. The mean age at diagnosis is 66 years in males and 70 years in females. In the remainder of this chapter, cancers originating from the gastro-oesophageal junction are included in the survival analyses as they are considered to be similar to cancers of the oesophagus from a clinical point of view.

For the incidence years 2004-2008, survival rapidly decreases after diagnosis; almost half of patients die within the first year (1-year relative survival of 55.1% in males and 51.1% in females). After one year, survival continues to decrease to reach a 5-year relative survival rate of 22.8% in males and 22.7% in females (Table 11, Figure 20). Data for the Flemish Region (incidence years 1999-2008) show a further decline until 10 years after diagnosis, with a 10-year relative survival of 17.3% in males and 18.8% in females (Figure 21). Throughout the follow-up period, only minor differences in survival are noticed between both sexes.

Five-year relative survival rates in males are 20.3% for the Brussels-Capital Region[3], 23.2% for the Flemish Region and 22.6% for the Walloon Region. Rates are similar in females: 18.8% for the Brussels-Capital Region[3], 24.5% for the Flemish Region, and 20.9% for the Walloon Region (Table 12).

The relative survival of oesophageal cancer is inversely related to the age of the patient. In both males and females, the 5-year relative survival is the poorest for patients of 65 years and older (19.4% in males and 19.8%

TABLE 11 - OESOPHAGEAL CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	3,905	53.4	26.5	19.9		55.1	28.7	22.8		22.4
Females	1,302	49.3	26.1	19.8		51.1	28.3	22.7		24.6
Flemish Region										
Males	4,333	51.9	26.0	19.6	12.7	53.7	28.2	22.4	17.3	
Females	1,339	47.3	26.9	20.3	13.7	49.2	29.4	23.5	18.8	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

2 Gastro-oesophageal junction was selected based on ICD-10 C16.0. For more details, see methodology section.
3 The survival rates for the Brussels-Capital Region should be interpreted with caution due to the low numbers at risk in this region after some years of follow-up.

in females), while younger patients (15-64 years old) have a better prognosis (5-year relative survival 26.2% in males and 28.0% in females; Figure 22, Figure 23).

Survival rates decrease with a higher stage at diagnosis. Five-year relative survival rates vary between 67.5% for stage I and 4.5% for stage IV in males, and between 76.5% for stage I and 4.9% for stage IV in females (Table 13). In both males and females, relative survival is much better for stage I than for other stages, but only a minority of patients are diagnosed with this stage (16.3% of all cases with known stage in males and 16.7% in females). The large proportion of patients with advanced stages (61.4% of cases with known stage are stage III and IV in males and 55.0% in females), may partially explain the poor overall survival for oesophageal cancer.

The histological subtype of oesophageal cancer can also influence the prognosis, in males more than in females (Figure 24, Figure 25). Adenocarcinoma in males have a clear survival benefit over squamous cell carcinoma (5-year relative survival rates of 26.8% versus 16.1%). This is not the case in females, where similar survival rates are observed for both histology groups (5-year relative survival rate of 21.6% for adenocarcinoma and 22.5% for squamous cell carcinoma). The resulting histology-dependent survival difference by sex (advantage in females for squamous cell carcinoma and in males for adenocarcinoma) has been studied in other publications [35]. In both sexes, cases with unknown or unspecified histology have the lowest 5-year relative survival rates (14.6% in males and 6.0% in females).

TABLE 12 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	268	6.9	51.8	27.5	20.3
Flemish Region	2,318	59.4	56.2	29.6	23.2
Walloon Region	1,319	33.8	54.1	27.4	22.6
Females					
Brussels-Capital Region	131	10.1	45.8	23.2	18.8
Flemish Region	713	54.8	51.5	30.8	24.5
Walloon Region	458	35.2	52.1	25.9	20.9

Source: Belgian Cancer Registry

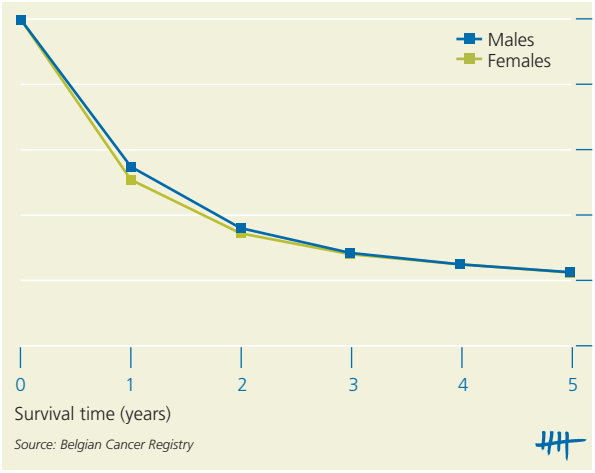
TABLE 13 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY STAGE AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Stage I	470	12.1	87.6	76.0	67.5
Stage II	640	16.5	70.9	42.3	34.8
Stage III	764	19.7	59.7	25.4	17.5
Stage IV	1,002	25.8	40.3	8.3	4.5
Stage X	1,010	26.0	41.0	20.3	16.0
Females					
Stage I	143	11.1	89.0	76.7	76.5
Stage II	243	18.9	64.3	36.1	28.5
Stage III	239	18.5	56.7	30.1	19.0
Stage IV	232	18.0	38.4	8.7	4.9
Stage X	432	33.5	33.1	15.6	11.9

Note: TNM stage was not applicable in 19 males and 13 females (data excluded).

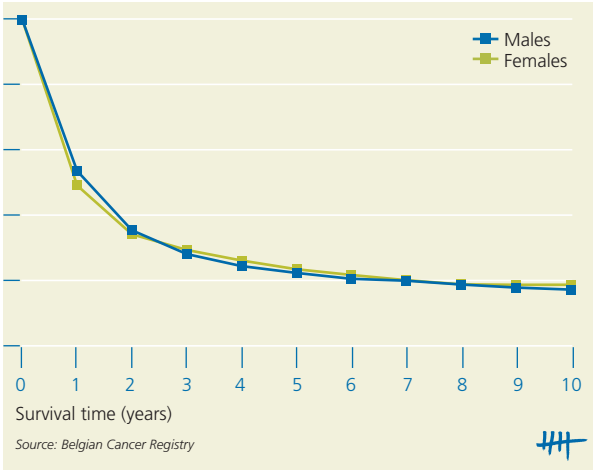
Source: Belgian Cancer Registry

FIGURE 20 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)



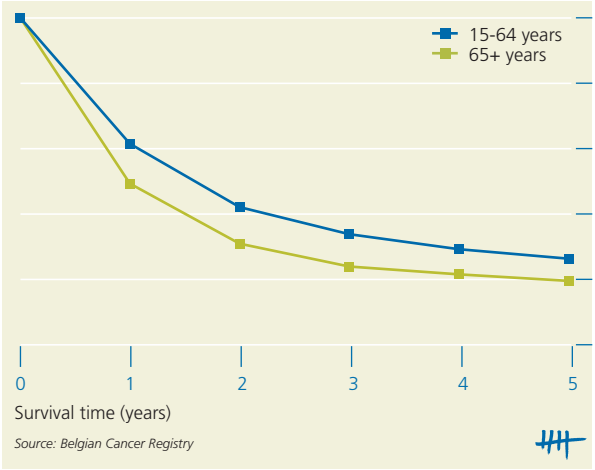
Source: Belgian Cancer Registry

FIGURE 21 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)



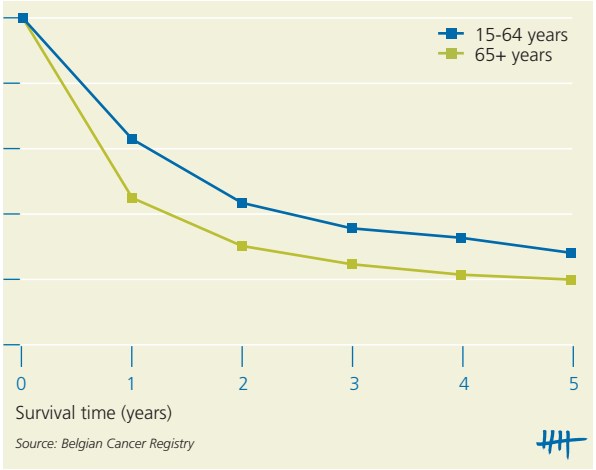
Source: Belgian Cancer Registry

FIGURE 22 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



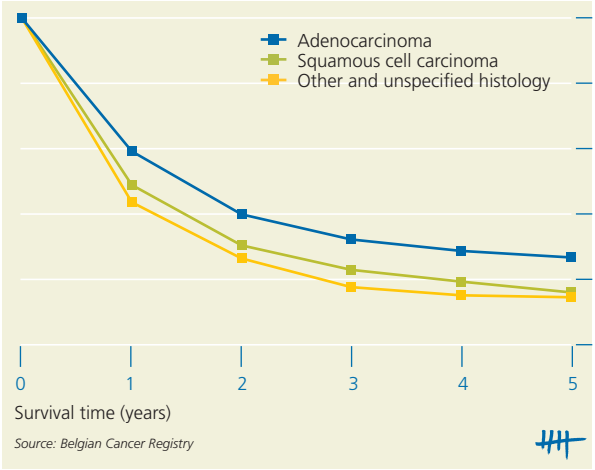
Source: Belgian Cancer Registry

FIGURE 23 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



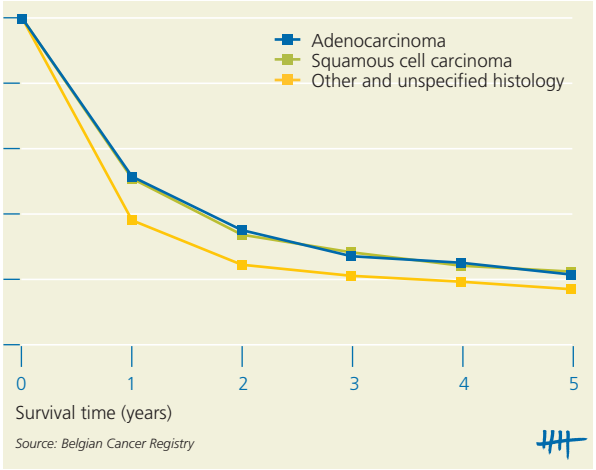
Source: Belgian Cancer Registry

FIGURE 24 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY MORPHOLOGY IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 25 - OESOPHAGEAL CANCER: RELATIVE SURVIVAL BY MORPHOLOGY IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

5.2 STOMACH (ICD-10: C16.1-9)

Stomach cancer is the 9th most frequent tumour in males (2.5% of all cancer diagnoses) and the 15th most frequent in females (1.8%) (Belgium, incidence year 2008). This disease has a male predominance (male/female ratio of 2.1), and mainly affects older people; the mean age at diagnosis is 70 years in males and 72 years in females. Looking at mortality in 2008, stomach cancer is the 9th most frequent cause of cancer death both in males (3.2%) and females (2.6%). In Belgium, a decreasing evolution in both mortality and incidence of stomach cancer is seen over the last decade. The descending trend is more pronounced for mortality than for incidence, also suggesting an improvement in therapeutic approaches to this cancer type. Much higher incidence rates for stomach cancer are noticed in other world regions such as Eastern Asia [36]. In the remainder of this chapter, survival analyses are presented for stomach cancer, excluding cancer of the gastro-oesophageal junction which is incorporated in the chapter on oesophageal cancer.

About two-thirds of patients diagnosed with stomach cancer die within the first three years after diagnosis, obtaining 3-year relative survival rates of 35.4% in males and 38.8% in females (Belgium, 2004-2008; Table 14, Figure 26). After this three-year follow-up period, survival declines slightly further, resulting in a 5-year relative survival of 32.6% and 34.8% (Belgium, 2004-2008), and a 10-year relative survival of 24.7% and 30.9% (Flemish Region, 1999-2008) in males and females respectively (Table 14, Figure 26, Figure 27).

Survival rates for stomach cancer are comparable between the three Belgian regions, both in males and in females (Table 15).

The survival rate is inversely related to age, with the lowest 5-year relative survival rates in patients of 75 years and older (24.4% in males and 26.2% in females) and the highest in the 15-59 years age group (42.2% in males and 48.2% in females). The survival rate of the 60-74 years age

FIGURE 26 - STOMACH CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

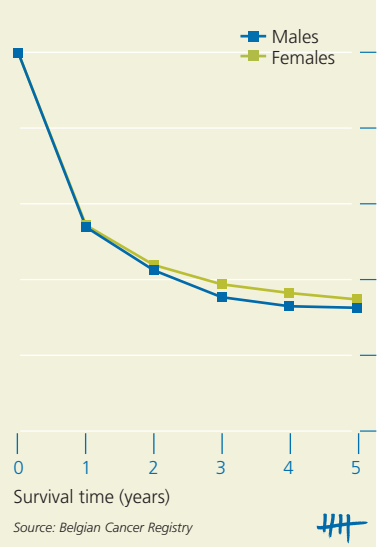


FIGURE 27 - STOMACH CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

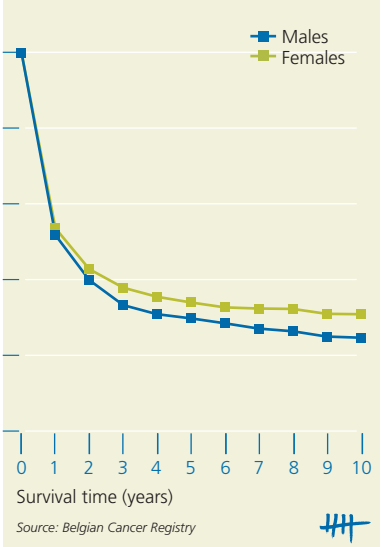


FIGURE 28 - STOMACH CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)

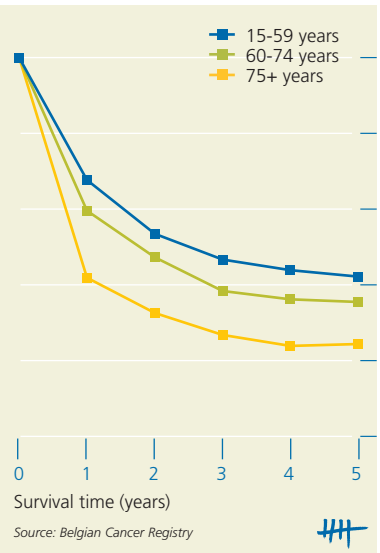


FIGURE 29 - STOMACH CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)

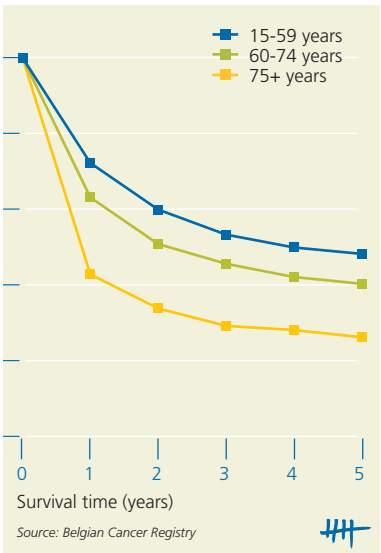


TABLE 14 - STOMACH CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	2,685	51.1	30.9	26.1		53.9	35.4	32.6		34.3
Females	2,021	51.7	34.2	28.4		54.4	38.8	34.8		38.3
Flemish Region										
Males	3,512	48.9	28.7	23.4	15.1	51.8	33.3	29.8	24.7	
Females	2,643	50.6	32.9	27.2	19.4	53.6	37.9	34.0	30.9	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

group is situated in between (35.5% in males and 40.3% in females). As can be observed from these rates, the female survival advantage is most apparent in the youngest age group (Figure 28, Figure 29).

Survival also highly depends on the tumour stage; the less advanced the stage, the better the survival rate. Five-year relative survival rates decrease from 76.7% for stage I to 22.5% for stage III in males, and from 72.2% for stage I to 20.0% for stage III in females. A large proportion of patients are diagnosed with disseminated disease (stage IV: 37.3% of cases with known stage in males and 34.6% in females), for which the prognosis is very poor with a 5-year relative survival of 5.1% in males and 3.2% in females. Males have a better outcome than females for all cases with known stage, indicating that the global survival advantage for females can be attributed to the cases with unknown stage. The largest sex difference is observed in stage II tumours, with a survival advantage of 10% in males compared with females (5-year relative survival of 54.6% in males and 43.9% in females; Table 16).

TABLE 15 - STOMACH CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	242	9.0	54.5	35.3	32.8
Flemish Region	1,644	61.2	54.2	36.2	33.3
Walloon Region	799	29.8	53.2	33.7	31.0
Females					
Brussels-Capital Region	159	7.9	51.8	39.6	34.4
Flemish Region	1,265	62.6	54.2	38.7	35.0
Walloon Region	597	29.5	55.4	38.8	34.5

Source: Belgian Cancer Registry

TABLE 16 - STOMACH CANCER: RELATIVE SURVIVAL BY STAGE AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Stage I	479	18.7	86.4	78.2	76.7
Stage II	271	10.6	86.1	64.2	54.6
Stage III	347	13.5	60.3	28.6	22.5
Stage IV	653	25.5	31.1	6.7	5.1
Stage X	811	31.7	33.0	19.0	17.6
Females					
Stage I	362	19.0	84.2	76.5	72.2
Stage II	198	10.4	72.7	53.7	43.9
Stage III	216	11.3	57.9	25.3	20.0
Stage IV	410	21.5	29.2	6.4	3.2
Stage X	721	37.8	41.5	30.4	28.3

Note: TNM stage was not applicable in 124 males and 114 females (data excluded).

Source: Belgian Cancer Registry

A minority of the tumours included in these survival analyses concern gastrointestinal stromal tumours, or GIST (4.0% in males and 5.1% in females), with a much better prognosis than the commonly diagnosed adenocarcinoma (5-year relative survival of 87.9% versus 30.1% in males and 93.5% versus 28.8% in females; Figure 30, Figure 31).

FIGURE 30 - STOMACH CANCER: RELATIVE SURVIVAL BY MORPHOLOGY IN MALES (BELGIUM, 2004-2008)

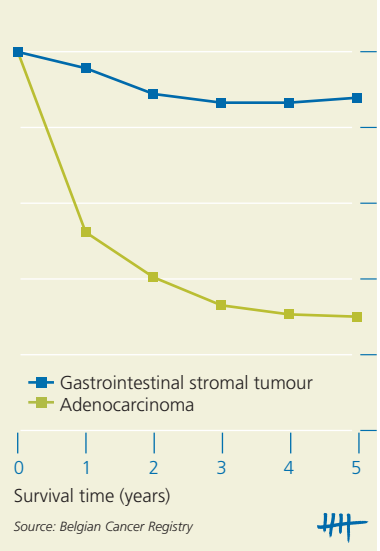
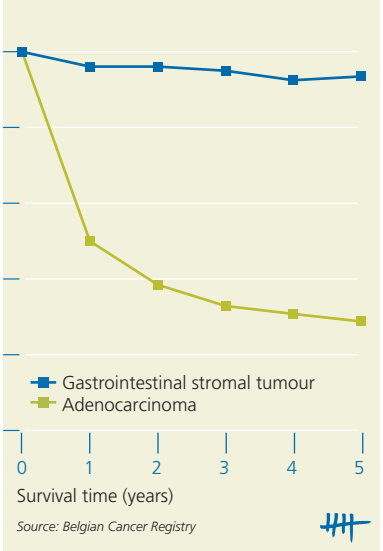


FIGURE 31 - STOMACH CANCER: RELATIVE SURVIVAL BY MORPHOLOGY IN FEMALES (BELGIUM, 2004-2008)



5.3 COLON AND RECTUM (ICD-10: C18-C20)

Colorectal cancer is the 3rd most frequent cancer in males and the 2nd in females. Meanwhile, this disease ranks as the 2nd most frequent cause of death by cancer in males and the 3rd in females (Belgium, 2008). Colorectal cancer preferentially affects men (male/female ratio: 1.56 in 2008), and occurs most commonly in patients of 65 years and older (69.5% in males and 72.9% in females in 2008). Given the ageing of the population, colorectal cancer is expected to remain an important health problem for our society in the upcoming years. This is reinforced by the increasing incidence rates over the last 10 years in the Flemish Region in both males and females [37].
Cancer of the colon and rectum are presented separately in this booklet.

COLON AND RECTOSIGMOID JUNCTION (ICD-10: C18-C19)

Cancers of the colon and rectosigmoid junction account for 68.2% of all colorectal cancers in males and 73.9% in females (Belgium, 2008). For newly diagnosed cancers in Belgium between 2004 and 2008, 5-year relative survival rates are 62.3% in males and 64.6% in females (Table 17, Figure 32), with little difference between the regions (Table 18). From about 3-4 years after diagnosis, females have a small survival advantage in comparison with males, resulting in 10-year relative survival rates (Flemish Region, 1999-2008) of 55.6% in males and 58.5% in females (Table 17, Figure 33).

In both sexes, an age-dependent survival gradient is noted, with the best survival rates for patients of 15-49 years (5-year relative survival: 71.0% in males and 74.7% in females), and the worst survival rates for patients of 65 years and older (5-year relative survival: 59.8% in males and 62.7% in females; Figure 34, Figure 35). The latter age group represents 70.9% of all patients in males and 76.1% in females.

Staging proves to be a very important prognostic factor for survival in colon cancer, both regarding the clinical and pathological stages, without major differences between the sexes. For clinical stage, 5-year relative survival rates range from 91.8% and 91.3% in stage I to 11.9% and 12.9% in stage IV in males and females respectively (Figure 36, Figure 37). For pathological stage, the 5-year relative survival estimates are 91.2% and 96.2% in stage I and 19.1% and 19.8% in stage IV, in males and females respectively (Figure 38, Figure 39).

Pathological staging performs better in separating survival results for stage III versus the lower stages: the 5-year relative survival for clinical stage III is 70.3% in males and 66.4% in females and for pathological stage III 56.5% in males and 58.1% in females. This finding reflects the difficulty of distinguishing lymph-node negative from lymph-node positive disease in the pre-operative setting. Accordingly, the higher proportion of stage III cases according to pathological (34.4% of cases with known stage in males and 34.6% in females) versus clinical (16.8% of cases with known stage in males and 18.5% in females) stage may be due to an upstaging of cases after pathological lymph node examination.

In comparison with the clinical stage, the pathological stage is much more available in the database of the Belgian Cancer Registry (30.1% of cases with known clinical stage and 79.6% with known pathological stage). This is not surprising, given the difficulties encountered in interpreting imaging for clinical staging of a colon cancer (for

FIGURE 32 - COLON CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

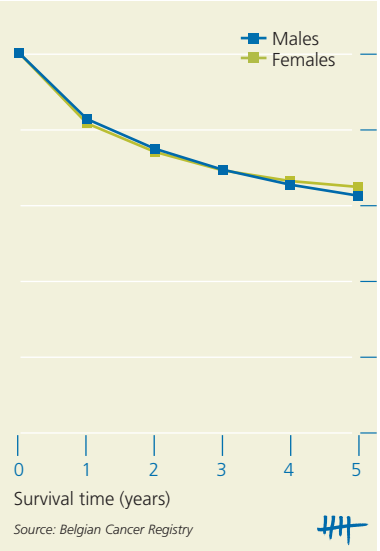


FIGURE 33 - COLON CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

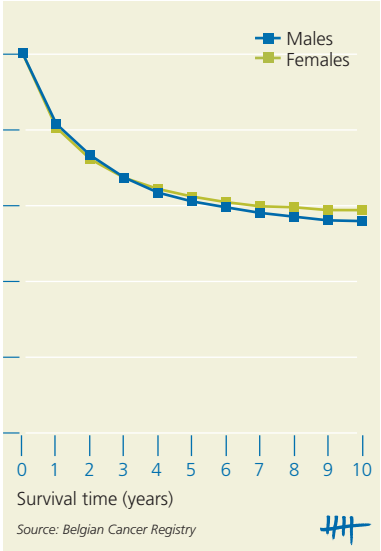


TABLE 17 - COLON CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	12,519	78.7	60.5	49.3		82.6	69.2	62.3		63.2
Females	11,848	78.0	61.2	52.3		81.4	69.0	64.6		66.5
Flemish Region										
Males	14,770	77.5	58.8	48.3	33.7	81.2	67.1	60.8	55.6	
Females	13,677	76.9	59.6	50.6	37.1	80.3	67.1	62.1	58.5	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

both T and N categories), and the high proportion of surgeries performed for colon cancer [38]. Cancers of the colon tend to present as frequently in early as in late stage. Of all cases with known pathological stage, 52.6% of males and 53.2% of females present with stage I-II vs. 47.4% and 46.8% with stage III-IV.

Survival analyses of colon cancer by sublocalisation show few differences for most subsites (data not shown). However, a better survival is noted for cancer of the appendix, with a 5-year relative survival of 80.7% in males and 90.5% in females. This high survival is due to the inclusion of neuroendocrine tumours (especially carcinoid tumours), which represent two-thirds of all appendicular cancers in our series. The opposite is true for cancers registered as originating from an unspecified sublocalisation in the colon: these have a 5-year relative survival rate of 53.7% in males and 53.9% in females. A possible explanation for this worse outcome may be that these cancers were diagnosed either at very advanced stage or in patients in poor general condition, leading to a less detailed diagnostic work-up, treatment and registration.

TABLE 18 - COLON CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	1,022	8.2	79.8	65.2	59.9
Flemish Region	7,824	62.5	83.0	69.5	62.5
Walloon Region	3,673	29.3	82.4	69.6	62.5
Females					
Brussels-Capital Region	1,114	9.4	81.3	68.0	64.3
Flemish Region	7,015	59.2	81.9	69.1	64.5
Walloon Region	3,719	31.4	80.5	69.2	64.9

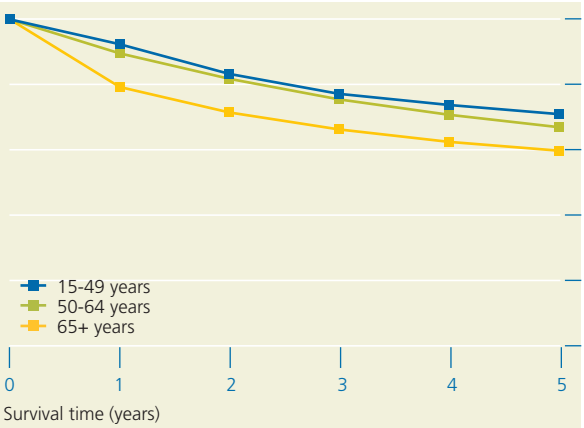
Source: Belgian Cancer Registry

RECTUM (ICD-10: C20)

Rectal cancers represent a quarter to one-third of all colorectal cancers (31.8% in males and 26.1% in females). The specific approach for rectal cancer is mainly due to the location of the rectum, making this region accessible for diagnostic and therapeutic goals. In comparison with colon cancers which are distributed more equally between males and females (male/female ratio: 1.4 in Belgium 2004-2008), rectal cancers occur preferentially in males (male/female ratio: 1.8 in Belgium 2004-2008). For all rectal cancers diagnosed in Belgian residents between 2004 and 2008, 5-year relative survival rates are 64.0% in males and 64.4% in females (Table 19, Figure 40). This equality in survival between both sexes continues until the 10-year follow-up point in the Flemish Region (1999-2008), where 54.9% of males and 55.8% of females are still alive (Table 19, Figure 41).

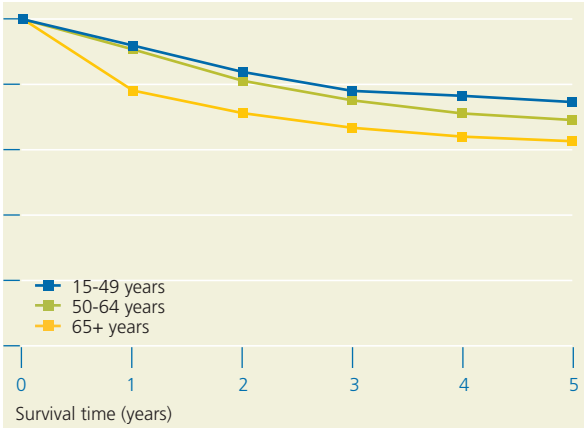
Survival analyses for both sexes by region show a somewhat better survival rate for the Flemish Region compared with the Brussels-Capital Region and the Walloon Region (Table 20). Similar to the situation in colon cancer, survival is inversely related to the age of the patient (Figure 42, Figure 43). Patients of 65 years and older, who account for 63.2% of all males and

FIGURE 34 - COLON CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



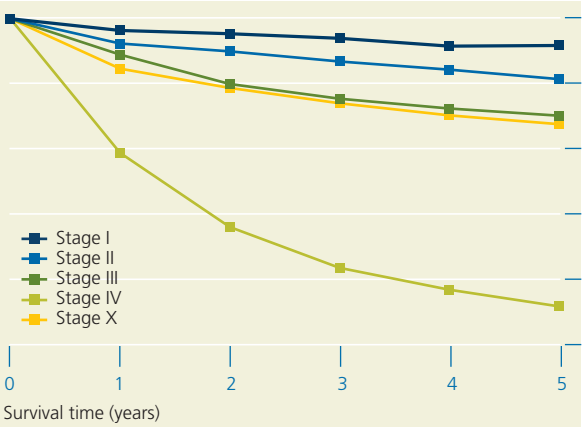
Source: Belgian Cancer Registry

FIGURE 35 - COLON CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



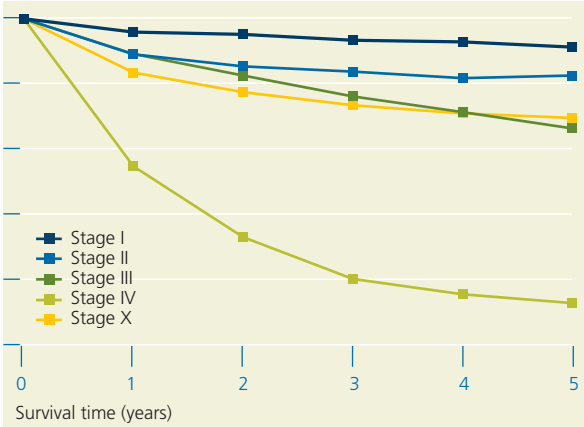
Source: Belgian Cancer Registry

FIGURE 36 - COLON CANCER: RELATIVE SURVIVAL BY CLINICAL STAGE IN MALES (BELGIUM, 2004-2008)



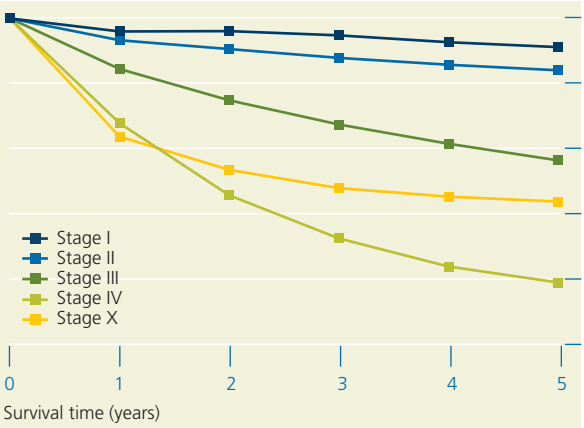
Source: Belgian Cancer Registry

FIGURE 37 - COLON CANCER: RELATIVE SURVIVAL BY CLINICAL STAGE IN FEMALES (BELGIUM, 2004-2008)



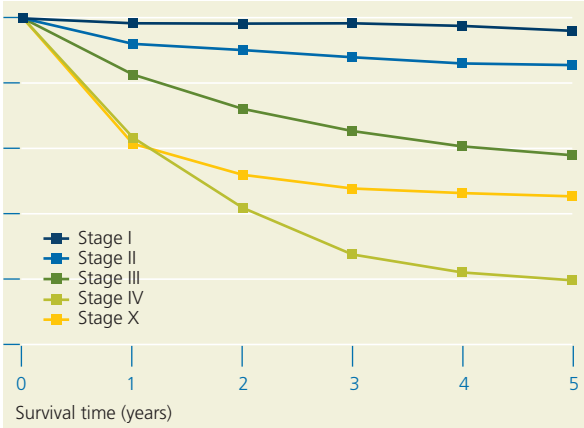
Source: Belgian Cancer Registry

FIGURE 38 - COLON CANCER: 5-YEAR RELATIVE SURVIVAL BY PATHOLOGICAL STAGE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 39 - COLON CANCER: 5-YEAR RELATIVE SURVIVAL BY PATHOLOGICAL STAGE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

67.5% of all females with rectal cancer, achieve a survival of around 60.0% in both sexes.

Stage has an important influence on survival. While the pathological stage shows a clear gradient with poorer prognosis for higher stages (Figure 44, Figure 45), this effect is somewhat less apparent in the analyses by clinical stage, where clinical stage II has a poorer outcome than clinical stage III: 73.8% vs. 78.7% in males and 66.8% vs. 73.5% in females (Figure 46, Figure 47). In common with colon cancer, this observation shows that the pathological stage is more accurate for estimating prognosis than the clinical stage which is initially used to guide treatment choice. Indeed, the judgment on lymph-node invasion enters as a diagnostic problem typically for colorectal cancer [38;39]. On the other hand, results for survival by pathological stage are also influenced by the frequent practice of pre-operative (neoadjuvant) therapy leading to down-staging of the resected cancer. While according to clinical stage, about 36.7% of males and 40.5% of females with known stage have stage I or II disease, this proportion rises to 57.2% and 55.6% of pathological stage I or II disease in males and females respectively.

FIGURE 40 - RECTAL CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

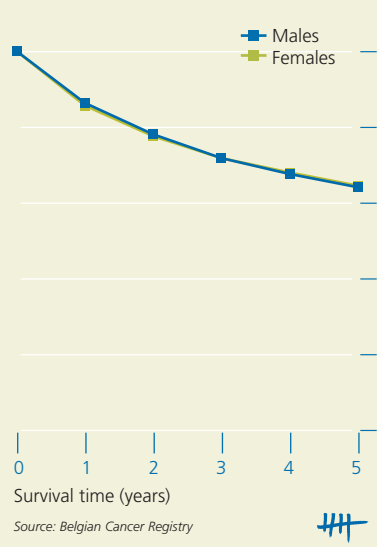


FIGURE 41 - RECTAL CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

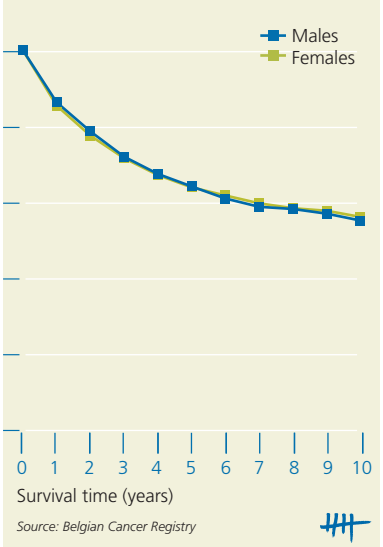


TABLE 20 - RECTAL CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	356	5.9	86.2	70.5	64.4
Flemish Region	3,924	65.5	86.9	73.9	66.0
Walloon Region	1,709	28.5	85.0	66.8	59.0
Females					
Brussels-Capital Region	315	7.4	81.6	67.0	59.2
Flemish Region	2,603	61.0	87.4	73.8	66.0
Walloon Region	1,348	31.6	83.2	68.7	62.5

Source: Belgian Cancer Registry

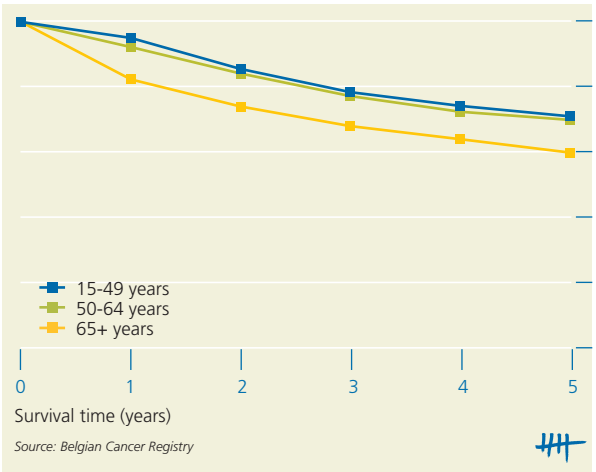
TABLE 19 - RECTAL CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	5,989	82.9	64.1	52.7		86.3	71.7	64.0		63.7
Females	4,266	82.7	65.3	54.9		85.6	71.7	64.4		66.2
Flemish Region										
Males	7,537	82.8	64.1	52.8	36.6	86.2	71.8	63.9	54.9	
Females	5,023	82.4	64.9	54.2	39.3	85.3	71.4	63.6	55.8	

*ASRS: Age-standardised relative survival

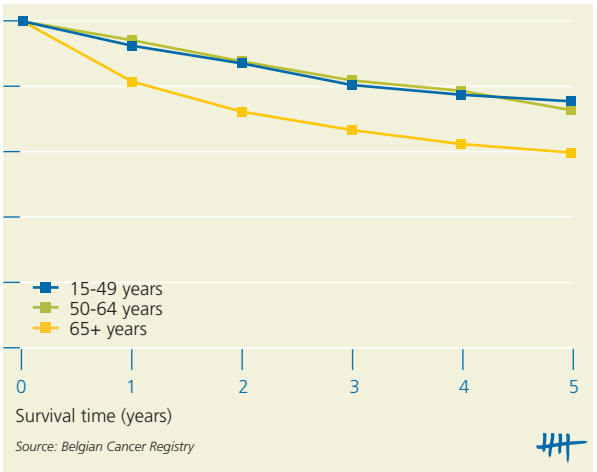
Source: Belgian Cancer Registry

FIGURE 42 - RECTAL CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



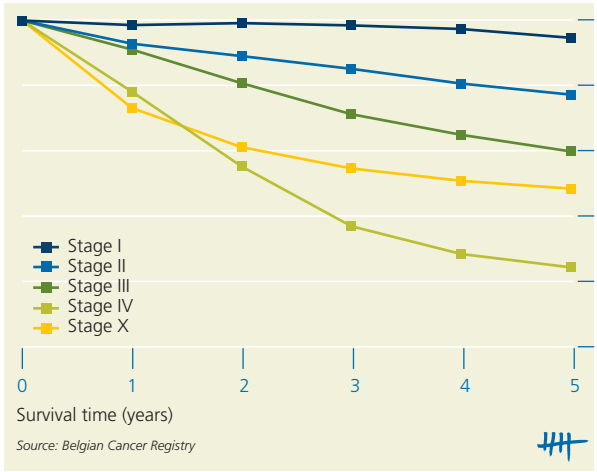
Source: Belgian Cancer Registry

FIGURE 43 - RECTAL CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



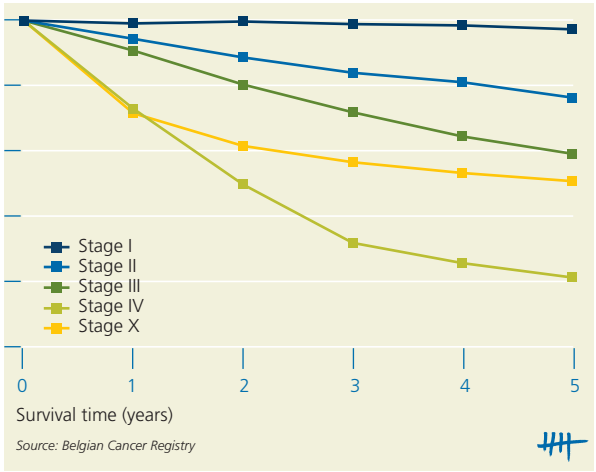
Source: Belgian Cancer Registry

FIGURE 44 - RECTAL CANCER: RELATIVE SURVIVAL BY PATHOLOGICAL STAGE IN MALES (BELGIUM, 2004-2008)



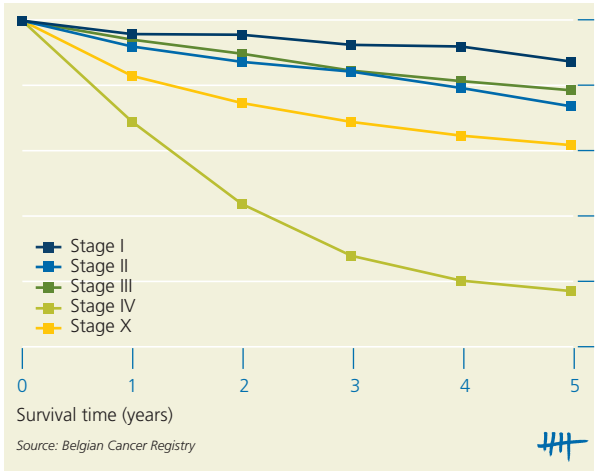
Source: Belgian Cancer Registry

FIGURE 45 - RECTAL CANCER: RELATIVE SURVIVAL BY PATHOLOGICAL STAGE IN FEMALES (BELGIUM, 2004-2008)



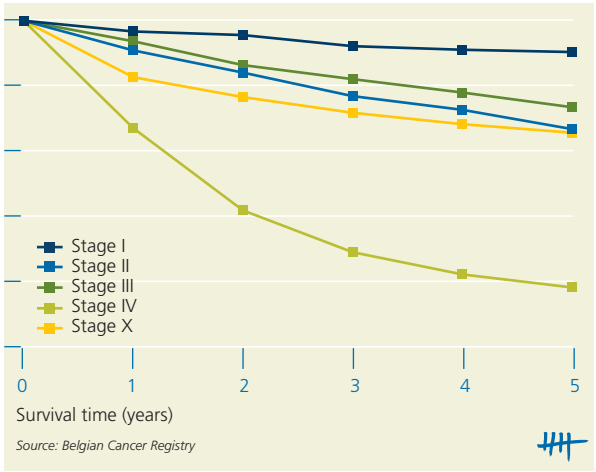
Source: Belgian Cancer Registry

FIGURE 46 - RECTAL CANCER: RELATIVE SURVIVAL BY CLINICAL STAGE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 47 - RECTAL CANCER: RELATIVE SURVIVAL BY CLINICAL STAGE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

5.4 LIVER (ICD-10: C22)

In Belgium, liver cancer is a rare disease, occurring more frequently in males than in females (male/female ratio in 2008: 2.2), with a mean age at diagnosis of 66 years in males and 68 years in females. In 2008, death from liver cancer was the 10th most frequent cause of death from cancer in males, and the 8th in females. However, as the liver is a frequent site of metastasis, mortality statistics in Belgium may partly suffer from over-reporting on primary liver cancers that are in fact metastasised diseases from other primary locations.

General results by sex show no difference in survival between males and females. The prognosis of liver cancer is extremely poor. In newly diagnosed cases for the incidence years 2004-2008, survival rapidly decreases after diagnosis; more than half of the patients die within the first year, reaching a 1-year relative survival rate of 46.3% in males and 47.2% in females. Afterwards, survival further decreases to reach a 5-year relative survival rate of 20.7% in males and 20.2% in females (Table 21, Figure 48). The median observed survival time is 290 days in males and 313 days in females. These survival rates are rather high compared with rates in other countries [40-42]. A different stage distribution pattern might explain this phenomenon.

The 10-year relative survival analyses in the Flemish Region (1999-2008) suggest that even after five years, survival rates of these patients further decrease (Table 21, Figure 49). However, these results should be interpreted with caution due to the low number of patients still alive five years after the diagnosis. The results for the Flemish Region suggest lower survival rates for patients between 1999 and 2003 (data not shown) than for more recent diagnoses (2004-2008). This may be due to progression in diagnostic and therapeutic approaches for this cancer type.

For the period 2004-2008, survival rates are approximately the same for all three Belgian regions (Table 23)[4].

Survival rates are inversely related to age (Table 24). In both males and females, patients of 60 years and older have the poorest 5-year relative survival (17.4% in males and 14.8% in females). For younger patients (15-59 years), relative survival is better in females compared with males

FIGURE 48 - LIVER CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

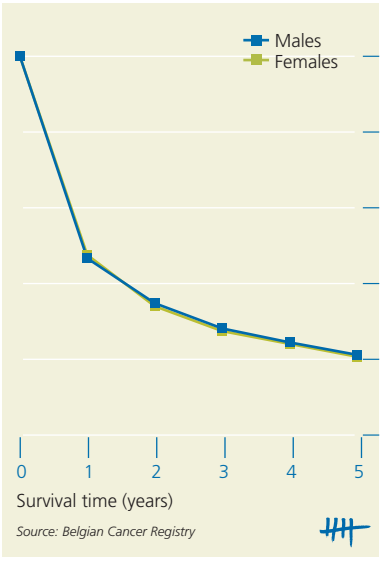


FIGURE 49 - LIVER CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

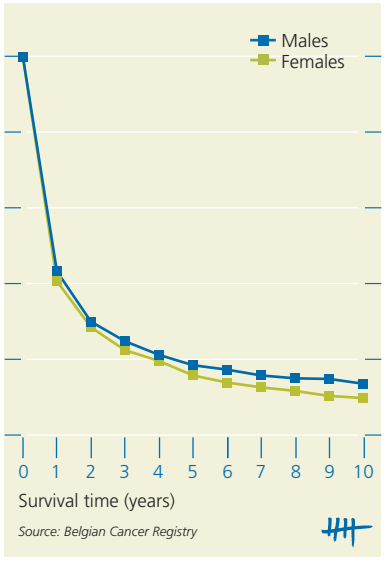
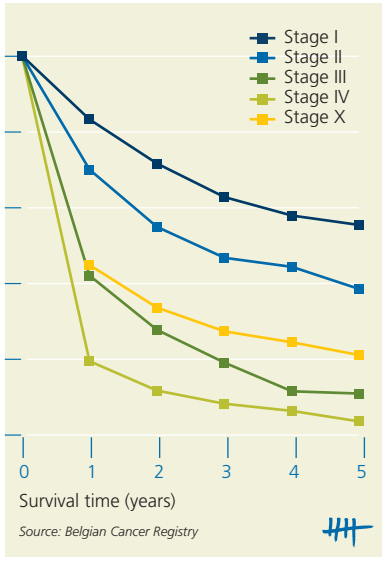


FIGURE 50 - LIVER CANCER: RELATIVE SURVIVAL BY STAGE IN MALES (BELGIUM, 2004-2008)



4 The 5-year relative survival rates for the Brussels-Capital Region need to be interpreted with caution due to the low number of patients.

(5-year relative survival in males: 29.2%; in females: 37.7%).

As for other tumour types, stage is a good prognostic indicator of survival. While relative survival for stage I disease is relatively good (5-year survival of 55.1% in males, 60.4% in females), survival decreases rapidly from stage II onwards and reaches a 5-year relative survival rate for stage IV of 3.0% in males and 5.4% in females (Figure 50, Figure 51)[5]. Most liver cancers are diagnosed at an advanced stage; stage III or IV disease represent 61.3% of all cases with known stage in males and 68.6% in females. This repartition of cases in more advanced stages partly explains the poor prognosis of liver cancer.

The histological subtype of liver cancer also influences survival (Figure 52, Figure 53). Within carcinoma cases, cholangiocarcinoma have the worst prognosis, independent of sex (5-year relative survival rate of 12.5%

TABLE 21 - LIVER CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	1,479	45.0	25.7	18.2		46.3	27.7	20.7		19.4
Females	684	45.9	25.3	18.2		47.2	27.0	20.2		22.2
Flemish Region										
Males	1,319	42.2	23.2	16.5	10.5	43.6	25.2	18.8	14.0	
Females	795	39.5	21.1	14.2	8.3	41.0	22.8	16.2	10.2	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

FIGURE 51 - LIVER CANCER: RELATIVE SURVIVAL BY STAGE IN FEMALES (BELGIUM, 2004-2008)

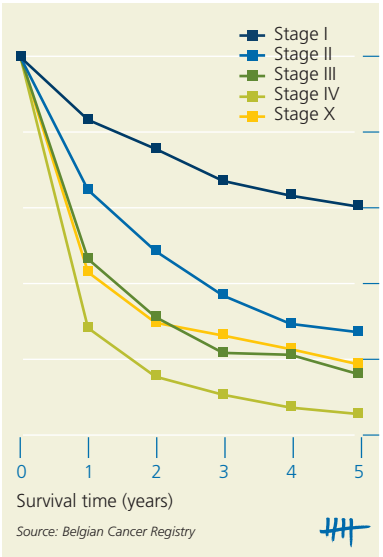


FIGURE 52 - LIVER CANCER: RELATIVE SURVIVAL BY MORPHOLOGY IN MALES (BELGIUM, 2004-2008)

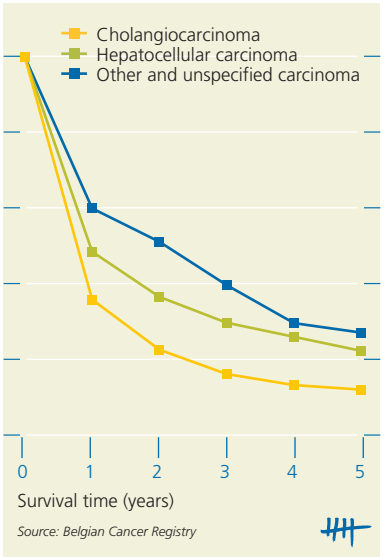
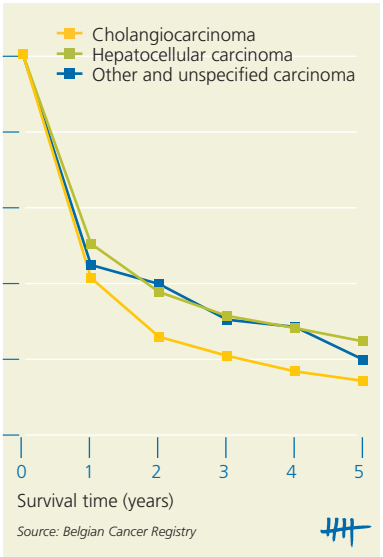


FIGURE 53 - LIVER CANCER: RELATIVE SURVIVAL BY MORPHOLOGY IN FEMALES (BELGIUM, 2004-2008)



5 The number of patients who survive more than one year is very low; the results must be interpreted with caution.

in males and 14.1% in females), while hepatocellular carcinoma have a better relative survival in both sexes: 22.7% of males and 24.5% of females are alive 5 years after diagnosis. The hepatocellular carcinoma subtype is the most frequently occurring carcinoma of the liver, representing 78.5% of all carcinoma cases in males and 59.9% in females.

TABLE 23 - LIVER CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	137	9.3	46.0	28.4	20.0
Flemish Region	765	51.7	46.4	27.5	20.5
Walloon Region	577	39.0	46.4	27.8	21.3
Females					
Brussels-Capital Region	76	11.1	51.6	25.5	17.6
Flemish Region	394	57.6	45.9	26.5	20.1
Walloon Region	214	31.3	48.1	28.5	21.6

Source: Belgian Cancer Registry

TABLE 24 - LIVER CANCER: RELATIVE SURVIVAL BY AGE GROUP AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
15-59 years	394	26.6	56.4	37.1	29.2
60+ years	1,085	73.4	42.5	24.1	17.4
Females					
15-59 years	152	22.2	65.3	46.8	37.7
60+ years	532	77.8	41.8	21.0	14.8

Source: Belgian Cancer Registry

5.5 GALLBLADDER AND BILIARY TRACT (ICD-10: C23-C24)

Cancers of the gallbladder and the biliary tract are uncommon. In 2008, 157 males and 185 females were diagnosed with this cancer type, and a mortality/incidence ratio of 0.45 in males and 0.48 in females was recorded. The mean age at diagnosis is 70 years in males and 74 years in females. While tumours of the gallbladder are predominantly found in females (male/female ratio 0.51), tumours of the biliary tract are more frequent in males (male/female ratio 1.75).

For newly diagnosed cases between 2004-2008, 1-year relative survival is only 53.6% in males and 43.8% in females. The 5-year relative survival is 22.5% in males and 19.5% in females (Table 25, Figure 54). In contrast to most cancers, males have a somewhat better prognosis than females for this cancer type. Looking at the 10-year relative survival rates in the Flemish Region (incidence years 1999-2008), it appears that the survival rate remains stable after 5 years, as only few patients die from this cancer type at later times after diagnosis (Table 25, Figure 55).

Looking at the relative survival rates in the three Belgian regions, the 5-year relative survival is 25.0% in males and 20.7% in females in the Flemish Region, 21.9% in males and 16.2% in females in the Brussels-Capital Region[6] and 18.3% in males and 17.3% in females in the Walloon Region (Table 26). These numbers show that the difference in the relative survival between males and females is smaller in the Walloon Region than in the other regions.

Survival rates decrease somewhat with the age of the patient; rates are higher for patients in the 15-59 years group than for patients of 60 years and older, both in males and in females (Figure 56, Figure 57). Although a survival advantage in the younger age group compared with the older age group is apparent until four years after diagnosis, it is less pronounced after five years in both males and females. The survival advantage in males, described earlier, is noticed in the eldest age group (5-year relative survival of 21.7% vs. 18.6% in males and females respectively), whereas in younger patients, relative survival rates are equal for both sexes (5-year relative survival of 26.0% in both males and females).

As for other cancer types, survival also depends on the stage of the disease. Five-year relative survival decreases with each stage in both males and females (Figure 58, Figure 59). While 5-year relative survival of patients diagnosed with a stage I disease is relatively high (58.3% in males and 49.6% in females), relative survival rapidly decreases from stage II onwards. For patients diagnosed with stage IV, almost all patients die within the first three years, which results in a poorly interpretable 5-year relative survival rate. Results for stage III are somewhat remarkable: on the one hand, this stage is rare in comparison with the other stages (10.1% of all cases with known stage in males and 10.0% in females);

TABLE 25 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

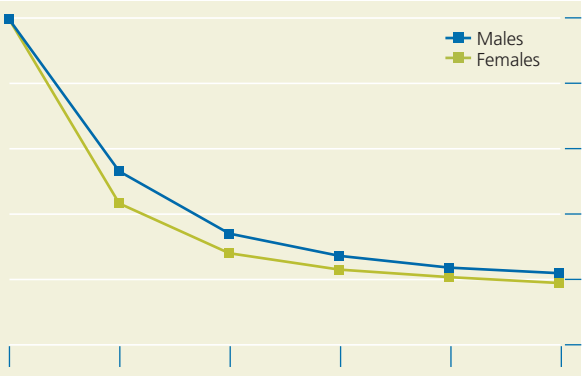
	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	687	51.2	24.8	18.7		53.6	27.8	22.5		23.4
Females	809	42.0	21.3	16.5		43.8	23.6	19.5		22.8
Flemish Region										
Males	708	51.6	26.1	20.9	16.8	54.0	29.2	25.0	25.0	
Females	938	41.1	22.0	17.5	12.9	42.9	24.6	20.8	18.6	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

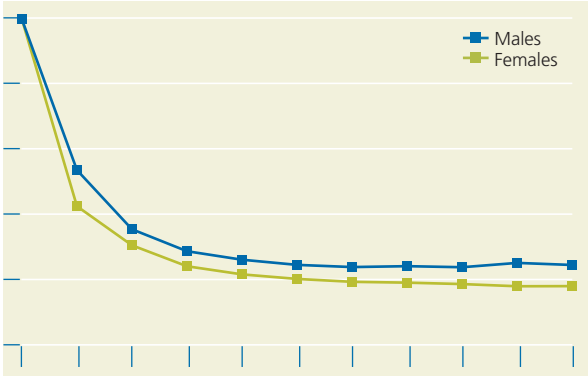
6 The results for the Brussels-Capital Region should be interpreted cautiously because of low numbers at risk for this region.

FIGURE 54 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)



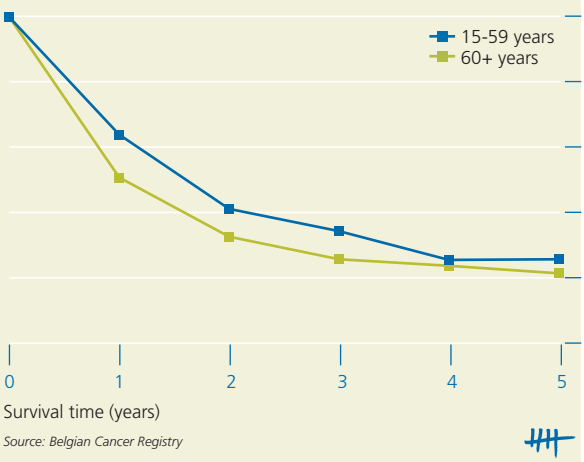
Source: Belgian Cancer Registry

FIGURE 55 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)



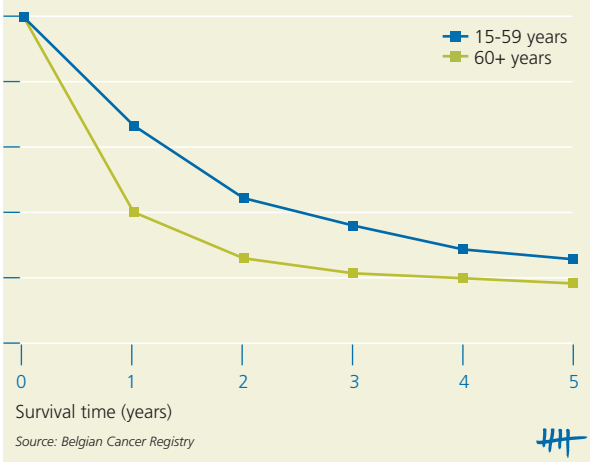
Source: Belgian Cancer Registry

FIGURE 56 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



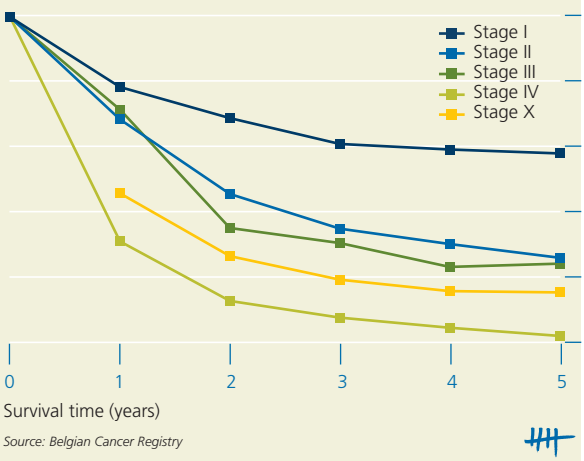
Source: Belgian Cancer Registry

FIGURE 57 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



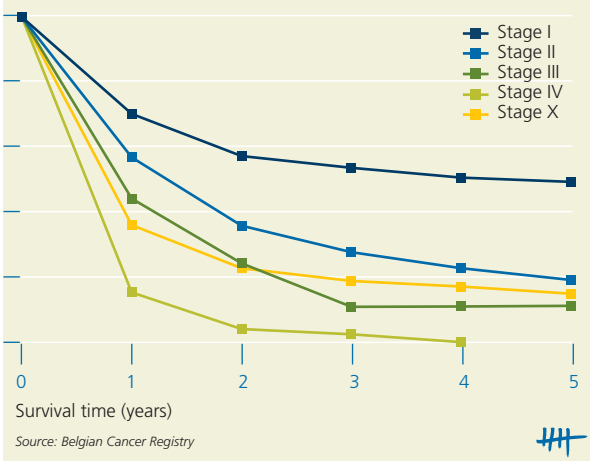
Source: Belgian Cancer Registry

FIGURE 58 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY STAGE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 59 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY STAGE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 60 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY SUBLOCALISATION IN MALES (BELGIUM, 2004-2008)

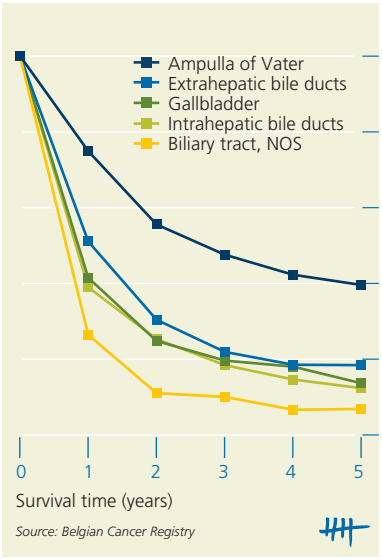


FIGURE 61 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY SUBLOCALISATION IN FEMALES (BELGIUM, 2004-2008)

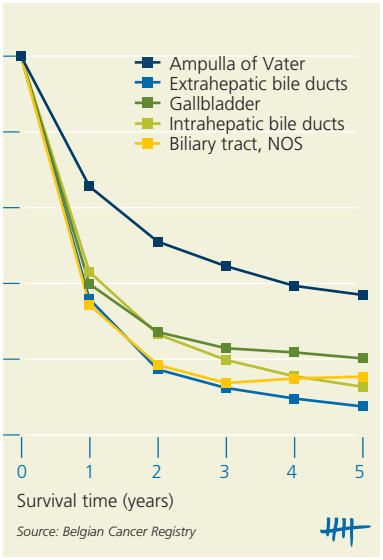


TABLE 26 - CANCER OF THE GALLBLADDER AND BILIARY TRACT: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	52	7.6	45.1	22.6	21.9
Flemish Region	422	61.4	53.7	29.4	25.0
Walloon Region	213	31.0	55.5	25.8	18.3
Females					
Brussels-Capital Region	61	7.5	40.7	21.4	16.2
Flemish Region	523	64.6	44.2	24.5	20.7
Walloon Region	225	27.8	43.5	22.0	17.3

Source: Belgian Cancer Registry

and on the other hand, survival rates for stage III are very close to those for stage II disease, especially in males (5-year relative survival rate is 24.6% for stage III and 26.4% for stage II). The recent changes in the TNM classification and the related debates on these changes for this type of cancer may be associated with these observations [43].

Survival analysis for cancer of the gallbladder and the biliary tract by sublocalisation shows higher 5-year relative survival rates for cancers of the ampulla of Vater (males: 39.4%, females: 36.9%), compared with cancers of other sublocalisations where 5-year relative survival is only 20% or less. For most sublocalisations, survival rates are comparable between males and females (Figure 60, Figure 61), except for cancers of the extrahepatic biliary tract, which have a 5-year relative survival of 18.2% in males and only 7.4% in females. Knowing that cancers of the extrahepatic biliary tract represent approximately one-third of all cancers of the gallbladder and the biliary tract (37.8% in males and 30.3% in females), this finding may contribute to understanding the worse overall survival rate for cancers of the gallbladder and the biliary tract in females compared with males.

5.6 PANCREAS (ICD-10: C25)

Although pancreatic cancer is not a very common disease, ranking 13th in males and 10th in females, its fatal character renders this cancer type responsible for 5.0% of all cancer deaths in males and 6.3% in females (Belgium, 2008). The mortality/incidence ratio is higher than 1 in both males and females, which is most probably due to an under-registration of clinically diagnosed patients with pancreatic cancer. The mean age at diagnosis is 68 years in males and 70 years in females.

Relative survival (incidence years 2004-2008) declines steeply after diagnosis to reach a 1-year relative survival of 34.1% and 34.7%, and a 5-year relative survival of 9.9% and 9.0% in males and females respectively (Table 27, Figure 62). Data for the Flemish Region (1999-2008) show a small further decrease after 5 years of survival, obtaining 10-year relative sur-

TABLE 28 - PANCREATIC CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	219	8.3	34.1	10.6	7.8
Flemish Region	1,514	57.5	33.6	13.9	10.1
Walloon Region	901	34.2	34.9	13.8	10.1
Females					
Brussels-Capital Region	216	8.6	30.6	7.9	6.7
Flemish Region	1,416	56.6	35.0	12.7	9.4
Walloon Region	868	34.7	35.2	11.3	8.9

Source: Belgian Cancer Registry

TABLE 29 - PANCREATIC CANCER: RELATIVE SURVIVAL BY AGE GROUP AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
15-59 years	671	25.5	45.3	22.0	16.5
60-74 years	1,221	46.4	34.8	13.1	9.2
75+ years	742	28.2	22.0	5.8	4.0
Females					
15-59 years	455	18.2	55.3	28.1	22.5
60-74 years	1,015	40.6	38.8	10.5	7.0
75+ years	1,030	41.2	20.6	5.3	4.6

Source: Belgian Cancer Registry

TABLE 27 - PANCREATIC CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	2,634	32.9	12.6	8.7		34.1	13.6	9.9		10.1
Females	2,500	33.6	11.1	8.1		34.7	11.8	9.0		11.3
Flemish Region										
Males	2,844	30.1	11.4	8.0	6.0	31.3	12.5	9.1	8.0	
Females	2,756	29.8	10.6	7.7	5.5	30.9	11.5	8.7	7.4	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

vival rates of 8.0% in males and 7.4% in females (Table 27, Figure 63). Relative survival is highly similar in males and females at each time interval.

Five-year relative survival is very poor in all Belgian regions, without substantial inter-regional difference[7] (Table 28).

Relative survival is inversely related to the age of the patient, and is much better for the age group 15-59 (males: 16.5%, females: 22.5%), than for other age groups (60-74 years age group: males: 9.2%, females: 7.0%; 75+ years age group: males: 4.0%, females: 4.6%) (Table 29).

Survival is inversely related to stage at diagnosis. Five-year relative survival is highest for stage I (males: 39.5%, females: 30.3%) and lowest for stage IV (males: 2.9%, females: 2.6%). Unfortunately, most of the patients are diagnosed in the latter stage, i.e. 54.2% of known stages in males and 49.6% in females (Figure 64, Figure 65).

Significant differences in survival have been described between tumours of the exocrine components and tumours of the endocrine components of the pancreas, the latter having a better prognosis but representing a minority of the diagnoses [44;45]. Accordingly, the present data result in a 5-year

FIGURE 62 - PANCREATIC CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

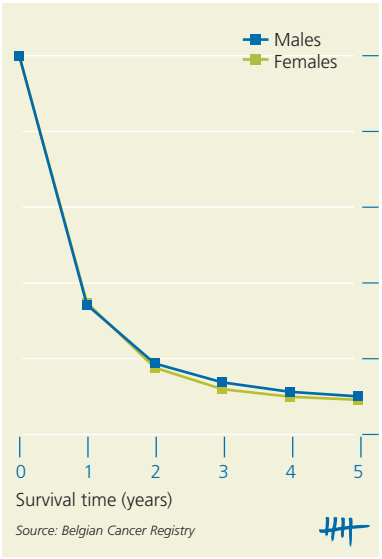


FIGURE 63 - PANCREATIC CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

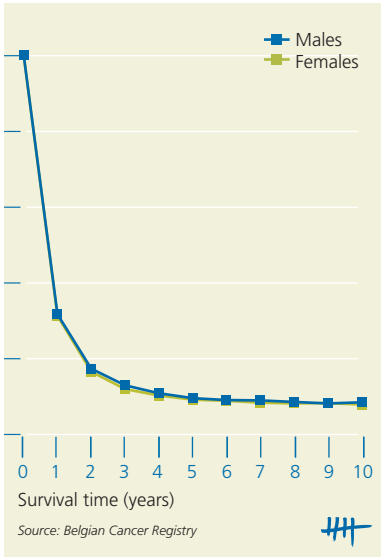


FIGURE 64 - PANCREATIC CANCER: RELATIVE SURVIVAL BY STAGE IN MALES (BELGIUM, 2004-2008)

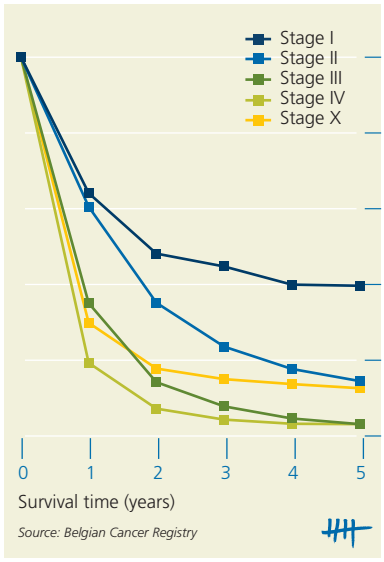
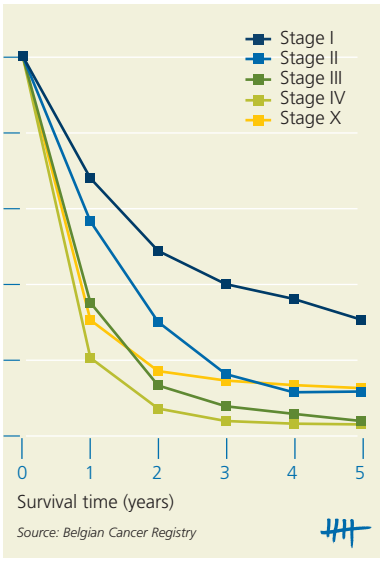


FIGURE 65 - PANCREATIC CANCER: RELATIVE SURVIVAL BY STAGE IN FEMALES (BELGIUM, 2004-2008)



7 Survival rates in the Brussels-Capital Region should be interpreted with caution given the low number of patients at risk in this region after some years of follow-up

relative survival rate of 61.4% in males and 66.4% in females for neuroendocrine tumours (representing less than 5% of the pancreatic cancers), compared with 6.3% in males and 5.6% in females for exocrine carcinoma (Table 30). The inclusion of endocrine tumours in the survival analyses in this chapter may partly explain the higher general survival rates in comparison with other publications [32;46].

TABLE 30 - PANCREATIC CANCER: RELATIVE SURVIVAL BY MORPHOLOGY AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Neuroendocrine tumour	125	4.7	82.6	72.4	61.4
Carcinoma	2,064	78.5	33.1	10.1	6.3
Unspecified carcinoma	440	16.7	24.2	13.0	11.8
Females					
Neuroendocrine tumour	119	4.8	84.7	71.9	66.4
Carcinoma	1,879	75.2	35.6	8.8	5.6
Unspecified carcinoma	499	20.0	18.4	8.7	7.7

Note: 5 males and 3 females not included due to other morphology.

Source: Belgian Cancer Registry

6 Respiratory tract

6.1 LUNG (ICD-10: C34)

Lung cancer is the most common cancer in the world, with about 1.6 million new cases diagnosed in 2008. Due to its high mortality rate, it was also the most frequent cause of death by cancer in the same year [47]. Tobacco smoking is well known as the most important cause of lung cancer. Over the last ten years, the incidence rate for this disease is decreasing in males, but is rising steeply in females. In Belgium, this cancer is the 2nd most frequent malignancy in males and the 3rd most frequent in females. As for mortality, it is the leading cause of cancer death in males and the second in females.

For newly diagnosed cases in 2004-2008 in Belgium, survival for lung cancer steeply decreases after diagnosis: more than half of the patients die within the first year, and after 3 years the survival decreases again by half. From the third year on, relative survival declines more slowly, to reach a 5-year relative survival of 14.6% in males and 19.5% in females. At all observed time points, females have a better survival than males (Table 31, Figure 66). For the Flemish Region (incidence years 1999-2008), the 10-year relative survival shows that even after five years, survival rates of these patients continue to decrease. Long-term survivors of lung cancer are rare, with relative survival rates of 13.2% in females and 9.5% in males after 10 years (Table 31, Figure 67).

No difference in survival is marked between the three Belgian regions in males or in females (Table 32).

Survival rates are inversely related to age. In both males and females, patients of 65 years and older have the poorest 5-year relative survival, reaching 12.2% and 15.8%, respectively. For the other age groups (15-49 years and 50-64 years), the survival rate is better for patients of 15-49 years, and the difference is more pronounced in females than in males. In all age categories, females have a better prognosis than males (Figure 68, Figure 69). Additional analyses showed no gender differences in the stage distribution for the different age groups (data not shown).

The stage of the disease is a very important prognostic factor for survival of lung cancer. The 5-year relative survival rates range from 51.6% for stage I to 2.3% for stage IV in males, and from 65.5% to 4.9 % in females. In both males and females, lung cancer presents most often in advanced stages when curative treatment is no

TABLE 31 - LUNG CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	23,757	41.5	17.6	12.5		43.1	19.3	14.6		14.8
Females	7,560	47.3	23.9	18.0		48.2	25.0	19.5		19.2
Flemish Region										
Males	28,010	39.8	16.7	11.9	6,6	41.3	18.5	14.0	9.5	
Females	6,968	46.8	22.7	16.9	11.1	47.7	23.8	18.4	13.2	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

longer possible. The high proportion of stage III and particularly stage IV disease (27.7% of cases with known stage are stage III and 46.0% stage IV in males; 24.7% stage III and 49.9% stage IV in females), may partially explain the poor survival rates (Figure 70, Figure 71).

Finally, the histological subtype of lung cancer influences prognosis [48]. Small cell carcinoma have the worst prognosis, independent of sex (5-year relative survival of 4.6% in males and 8.7% in females). On the other hand, squamous cell carcinoma and adenocarcinoma have the highest 5-year relative survival rates in both sexes (19.2% and 15.3% in males; 20.2% and 21.8% in females). In males, a small survival advantage for squamous cell carcinoma is noted in comparison with adenocarcinoma. In contrast, adenocarcinoma show a better survival than squamous cell carcinoma in females (Table 33). The distribution of morphology types differs between sexes. While in males, adenocarcinoma and squamous cell carcinoma are the most frequent (about 30% of cases with defined morphology each), adenocarcinoma outnumbers all other histological types in females (43.5% of cases with defined morphology).

TABLE 32 - LUNG CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	1,669	7.0	41.7	19.0	14.5
Flemish Region	14,087	59.3	42.6	19.2	14.5
Walloon Region	8,001	33.7	44.2	19.6	14.8
Females					
Brussels-Capital Region	768	10.2	44.9	25.2	21.5
Flemish Region	4,036	53.4	49.6	24.5	19.0
Walloon Region	2,756	36.5	47.0	25.6	19.6

Source: Belgian Cancer Registry

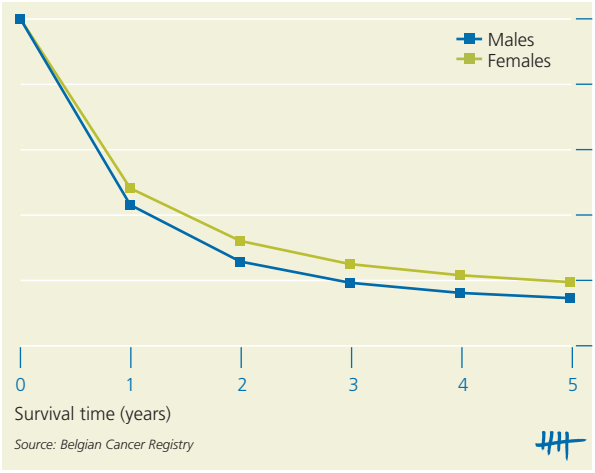
TABLE 33 - LUNG CANCER: RELATIVE SURVIVAL BY MORPHOLOGY AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Squamous cell carcinoma	7,715	34.5	50.2	24.3	19.2
Adenocarcinoma	7,148	32.0	45.4	21.5	15.3
Small cell carcinoma	3,732	16.7	32.6	6.8	4.6
Large cell carcinoma	1,554	6.9	30.7	12.8	10.2
Other and unspecified histology	2,222	9.9	40.0	19.1	15.8
Females					
Squamous cell carcinoma	1,205	16.9	46.8	25.8	20.2
Adenocarcinoma	3,286	46.1	52.8	28.8	21.8
Small cell carcinoma	1,372	19.3	40.4	11.9	8.7
Large cell carcinoma	440	6.2	38.3	17.8	13.7
Other and unspecified histology	818	11.5	51.7	31.8	28.3

Note: Morphology is undefined for 1,386 males and 439 females (excluded data).

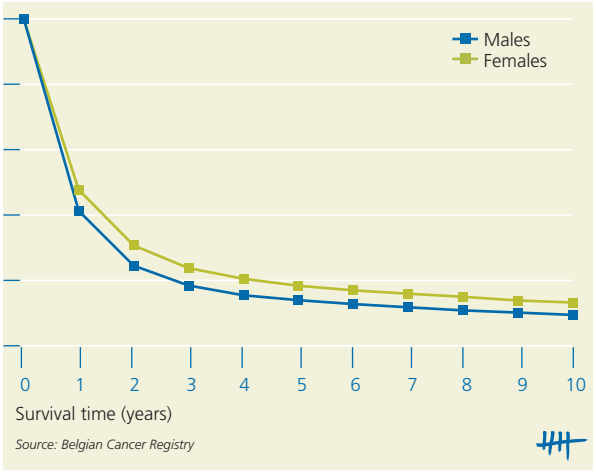
Source: Belgian Cancer Registry

FIGURE 66 - LUNG CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)



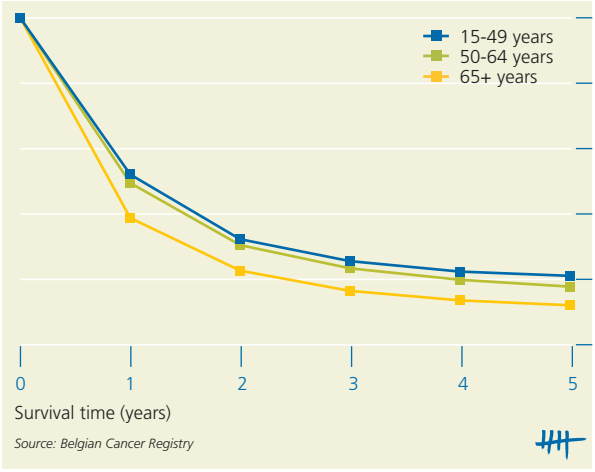
Source: Belgian Cancer Registry

FIGURE 67 - LUNG CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)



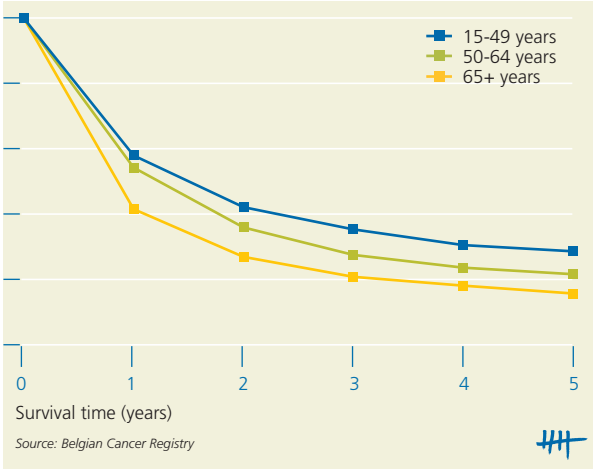
Source: Belgian Cancer Registry

FIGURE 68 - LUNG CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



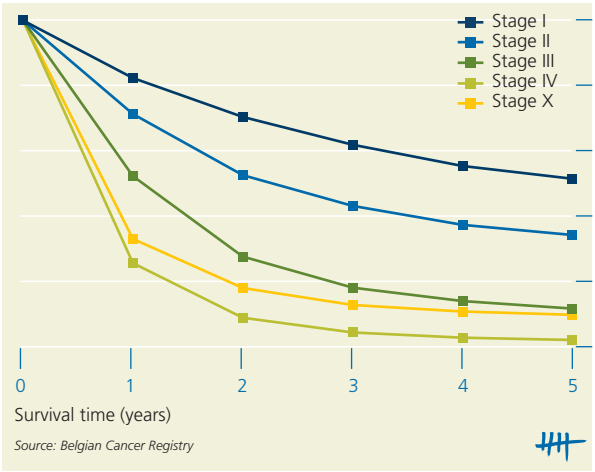
Source: Belgian Cancer Registry

FIGURE 69 - LUNG CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



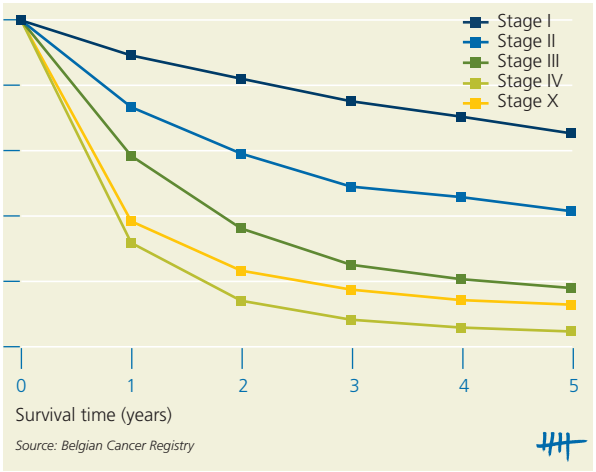
Source: Belgian Cancer Registry

FIGURE 70 - LUNG CANCER: RELATIVE SURVIVAL BY STAGE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 71 - LUNG CANCER: RELATIVE SURVIVAL BY STAGE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

6.2 MESOTHELIOMA (ICD-10: C45)

Mesothelioma is a rare cancer related to asbestos exposure and most commonly originating from the pleura. This disease accounts only for 0.6% of cancers in males and 0.2% of cancers in females, with a male/female ratio of 5.3 (Belgium, 2008). The mean age at diagnosis is 69 years in males and 71 years in females. A usual delay of 20-30 years exists between exposure to asbestos and the diagnosis of mesothelioma. Considering the recent ban on asbestos exposure, a deceleration in the increasing incidence has been observed in some countries. [49].

Most of the patients diagnosed with this disease die rapidly, resulting in a 1-year relative survival of 46.3% in males and 50.7% in females. Five-year relative survival is very poor in both sexes: 4.9% in males and 8.3% in females (Table 34, Figure 72). Data for the Flemish Region show almost no long-term survivors of mesothelioma. Throughout the whole follow-up period, survival in females is slightly better than in males (Table 34, Figure 73).

Survival analyses by region reveal no major differences between the Flemish and the Walloon Region. Due to the very few patients at risk in the Brussels-Capital Region, survival rates cannot be estimated accurately for this area (Table 35).

Patients of 65 years and older have a poorer outcome than younger patients: while the younger age group achieves 5-year relative survival rates of 7.0% in males and 13.0% in females, these rates decrease to 3.7% in males and 6.0% in females for the 65+ years age group (Figure 74, Figure 75).

The extent of the disease at diagnosis is another factor influencing survival. Five-year relative survival in males affected by mesothelioma is highest for stage I (13.3%), and lowest for stage IV (3.8%). Results in females are considered difficult to interpret due to the low number of cases involved (Table 36).

Despite the lethal character of mesothelioma, small differences in survival

TABLE 35 - MESOTHELIOMA: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	34	3.7	*	*	*
Flemish Region	630	69.0	46.8	10.6	4.8
Walloon Region	249	27.3	44.4	11.5	4.5
Females					
Brussels-Capital Region	10	5.1	*	*	*
Flemish Region	136	68.7	49.6	14.5	7.3
Walloon Region	52	26.3	49.4	22.2	9.0

* Statistic not displayed due to less than 35 cases.

Source: Belgian Cancer Registry

TABLE 34 - MESOTHELIOMA: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	913	44.5	10.3	4.1		46.3	11.2	4.9		5.8
Females	198	49.5	17.1	7.6		50.7	17.9	8.3		10.3
Flemish Region										
Males	1,147	42.2	8.8	3.9	0.9	43.7	9.6	4.4	1.4	
Females	229	44.5	14.0	6.4	0.0	45.6	14.6	6.8	6.8	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

FIGURE 72 - MESOTHELIOMA: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

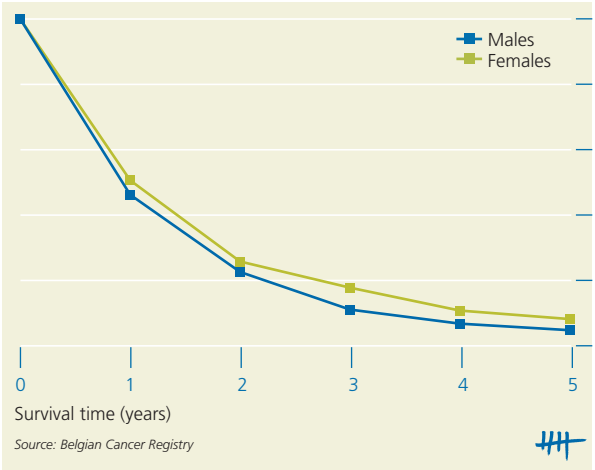


FIGURE 73 - MESOTHELIOMA: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

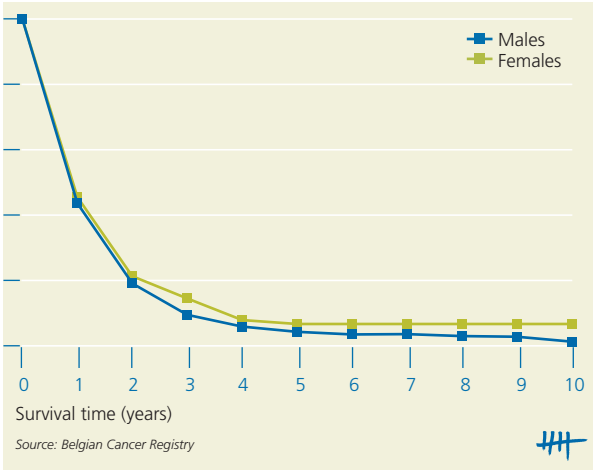


FIGURE 74 - MESOTHELIOMA: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)

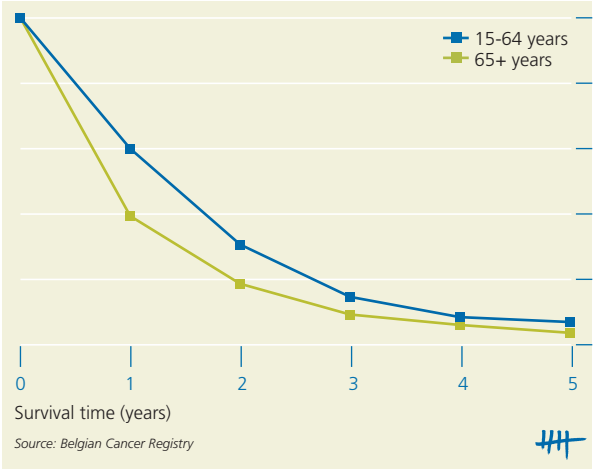


FIGURE 75 - MESOTHELIOMA: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)

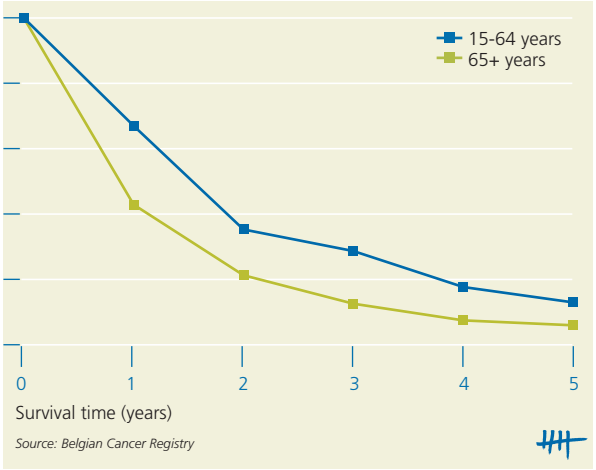


FIGURE 76 - MESOTHELIOMA: RELATIVE SURVIVAL BY MORPHOLOGY IN MALES (BELGIUM, 2004-2008)

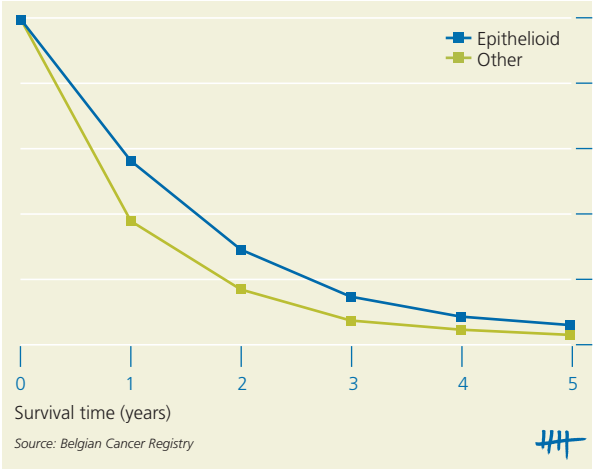
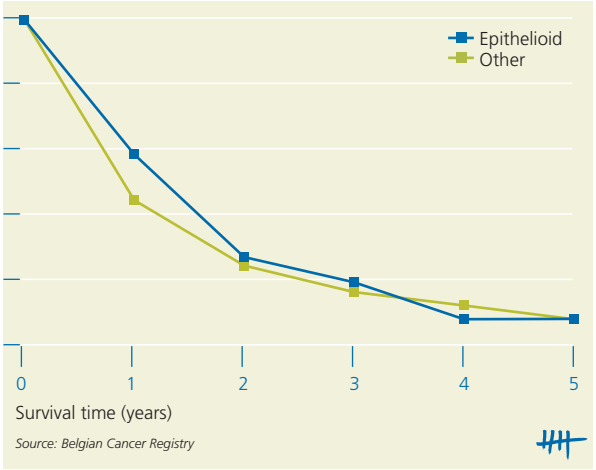


FIGURE 77 - MESOTHELIOMA: RELATIVE SURVIVAL BY MORPHOLOGY IN FEMALES (BELGIUM, 2004-2008)



have been reported depending on the histological subtype. Survival estimates in males diagnosed with an epithelioid mesothelioma, representing 42.5% of all male cases, are slightly better than for the other subtypes (5-year relative survival of 6.6% versus 3.6%; Figure 76). In females, the survival advantage for epithelioid mesothelioma is less clearly demonstrated due to the low numbers of patients after 2 years of follow-up (Figure 77).

TABLE 36 - MESOTHELIOMA: RELATIVE SURVIVAL BY STAGE AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Stage I	76	8.9	72.0	19.5	13.3
Stage II	95	11.2	53.3	11.9	1.0
Stage III	117	13.7	54.6	14.2	8.8
Stage IV	133	15.6	43.7	8.2	3.8
Stage X	431	50.6	39.1	8.8	3.2
Females					
Stage I	9	5.1	*	*	*
Stage II	22	12.4	*	*	*
Stage III	16	9.0	*	*	*
Stage IV	25	14.1	*	*	*
Stage X	105	59.3	48.1	15.4	5.1

Note: TNM Stage was not applicable in 61 males and 21 females (data excluded).

*Results not displayed due to less than 35 cases.

Source: Belgian Cancer Registry

7 Malignant melanoma of skin

(ICD-10: C43)[8]

Ten per cent of all skin cancers are malignant melanoma that arise from pigmented cells. These cancers have a more aggressive behaviour than other skin cancers, but are curable if diagnosed at an early stage. In Belgium, malignant melanoma is the 10th most frequent cancer in males and the 5th most frequent in females. The incidence of malignant melanoma increases worldwide, and this trend is also observed in our country. The most important explanation is the change in sun-exposure habits. Other factors, such as a growing public awareness and, to a lesser extent, the set-up of (non-systematic) screening measures for this disease can also contribute to the increase of incidence. Malignant melanoma typically affects young patients, with cases from 15-20 years on in both sexes.

For newly diagnosed cases in 2004-2008, the 5-year survival rates are 86.2% in males and 91.0% in females (Table 37, Figure 78). For the Flemish Region (incidence years 1999-2008), the 10-year survival rates reach 76.4% in males and 85.7% in females (Table 37, Figure 79). This good prognosis for malignant melanoma can partly be attributed to its clinical presentation. Indeed, malignant melanoma is rather easily recognisable and therefore often diagnosed at an early stage: 63.3% of cancers with known stage are classified as stage I in males, and 73.3% in females.

In males, the survival rates are 93.6% in the Brussels-Capital Region, 84.1% in the Flemish Region and 88.4% in the Walloon Region. In females, these rates are 89.1%, 90.9% and 91.5% respectively (Table 38).

In males, survival rates for malignant melanoma hardly differ between the different age groups (15-34, 35-64, 65+ years; Figure 80). In contrast, age is inversely related to survival for women diagnosed with this disease. Young females (15-34 years) affected by malignant melanoma have about 97.3% chance of surviving 5 years after diagnosis, while this is only 84.5% for patients of 65 years and older (Figure 81).

Stage as determined by the pathologist is the most important prognostic factor for malignant melanoma. While a stage I disease has a 5-year survival rate of 99.0% in males and 99.8% in females, the presence of lymph-

TABLE 37 - MALIGNANT MELANOMA OF SKIN: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	2,826	94.2	82.8	76.0		96.6	89.2	86.2		86.0
Females	4,371	95.6	88.9	84.0		97.2	93.3	91.0		90.3
Flemish Region										
Males	2,905	92.7	80.5	72.7	60.8	94.9	86.0	81.1	76.4	
Females	4,513	95.2	88.2	82.7	73.6	96.7	92.3	89.2	85.7	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

8 Analyses for malignant melanoma of the skin were based on ICD-10 classification C43. Tumours with an unknown primary site (C80.9 according to ICD-O-3).

node invasion (stage III) reduces these percentages to 55.4% and 68.6%, respectively (Table 39, Figure 82, Figure 83).

In agreement with the scientific literature [50], malignant melanoma presenting on the arms or legs have a slightly better prognosis than those arising from the skin of head or trunk (Table 40). Considering melanoma of known point of origin, females present more often with malignant melanoma on the arms or legs (63.5% in females and 37.0% in males), while males develop malignant melanoma preferentially on the head or trunk (36.5% in females and 63.0% in males). This difference could partly explain the difference in survival between males and females.

TABLE 38 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY REGION AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	259	9.2	95.6	90.9	93.6
Flemish Region	1,665	58.9	96.3	88.2	84.1
Walloon Region	902	31.9	97.6	90.7	88.4
Females					
Brussels-Capital Region	371	8.5	98.5	92.7	89.1
Flemish Region	2,567	58.7	97.0	93.1	90.9
Walloon Region	1,433	32.8	97.1	93.9	91.5

Source: Belgian Cancer Registry

TABLE 39 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY STAGE AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Stage I	1,412	50.0	100.4	99.9	99.0
Stage II	544	19.2	98.1	78.9	73.6
Stage III	182	6.4	84.5	62.5	55.4
Stage IV	94	3.3	56.6	24.1	19.2
Stage X	593	21.0	96.2	91.3	87.5
Females					
Stage I	2,501	57.2	100.2	100.0	99.8
Stage II	632	14.5	95.3	82.7	75.3
Stage III	187	4.3	93.3	76.8	68.6
Stage IV	91	2.1	57.3	36.0	27.8
Stage X	960	22.0	95.0	90.9	88.1

Source: Belgian Cancer Registry

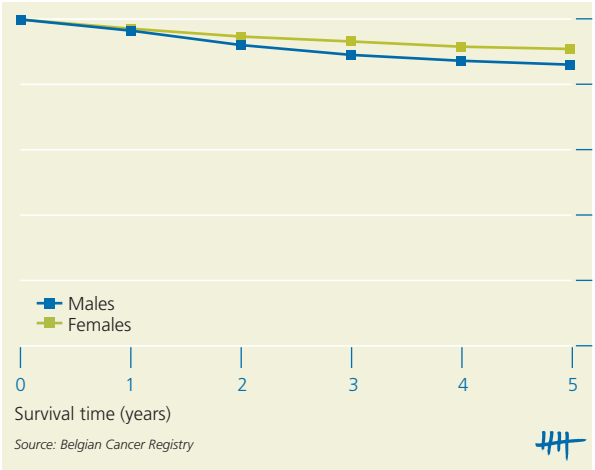
TABLE 40 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY SUBLOCALISATION AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Head and trunk	1,537	63.0	96.8	88.2	84.5
Arms and legs	901	37.0	98.2	91.3	88.2
Females					
Head and trunk	1,369	36.5	96.7	91.4	87.9
Arms and legs	2,381	63.5	98.1	95.0	93.2

Note: in 388 males and 681 females, the localisation is defined as "overlapping lesion of skin" or "not specified" (data excluded).

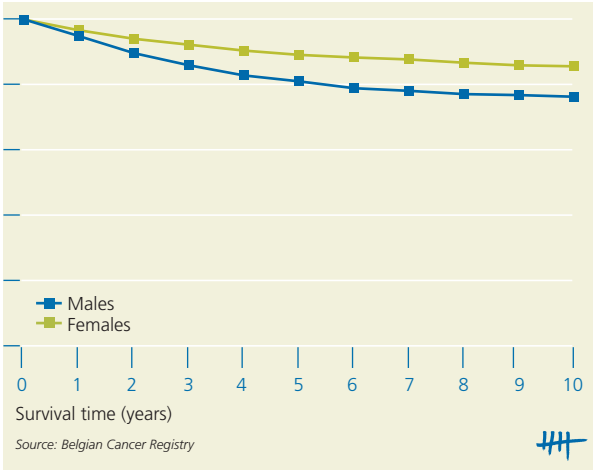
Source: Belgian Cancer Registry

FIGURE 78 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)



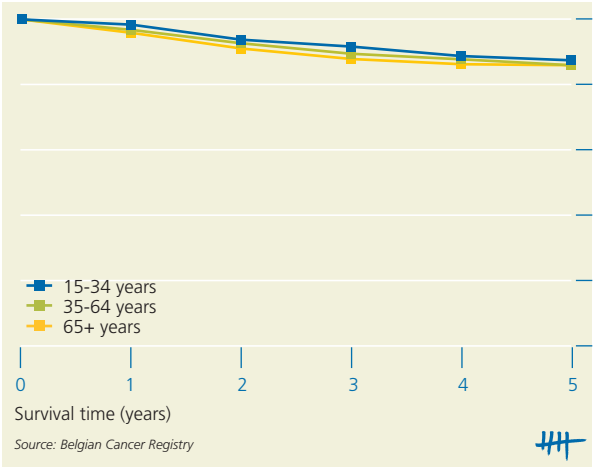
Source: Belgian Cancer Registry

FIGURE 79 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)



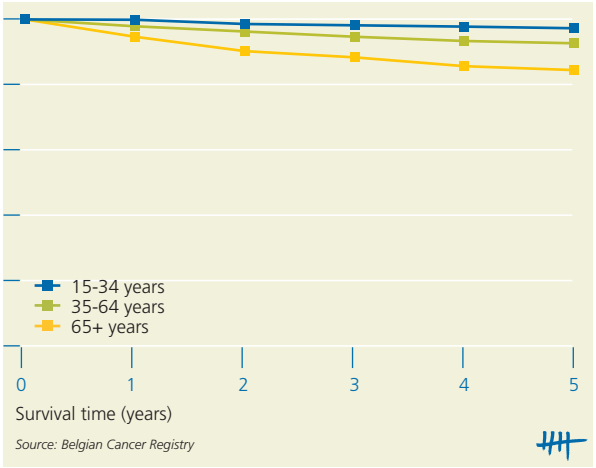
Source: Belgian Cancer Registry

FIGURE 80 - MALIGNANT MELANOMA OF SKIN: 5-YEAR RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



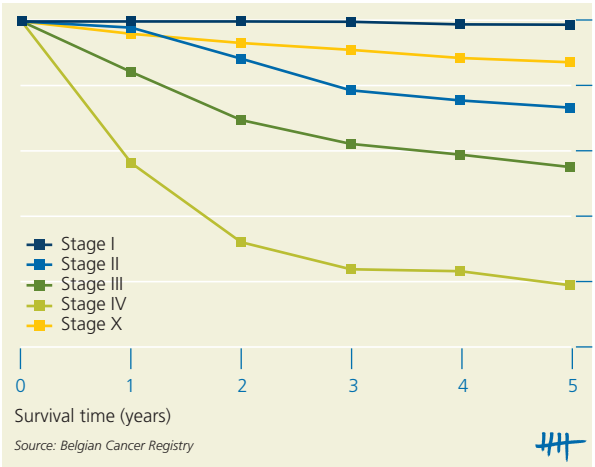
Source: Belgian Cancer Registry

FIGURE 81 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



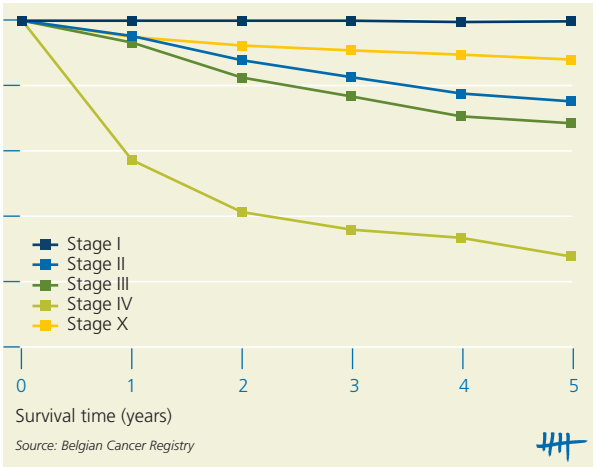
Source: Belgian Cancer Registry

FIGURE 82 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY STAGE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 83 - MALIGNANT MELANOMA OF SKIN: RELATIVE SURVIVAL BY STAGE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

8 Breast

(ICD-10:C50)

Breast cancer is the most frequent cancer in females (35.3% of cancer cases), occurring at a mean age of 62 years (incidence year 2008, Belgium). It is also the most important cause of cancer death in females (20.2%). In contrast, males develop breast cancer only exceptionally (0.3% of all cancer cases), and at higher ages (mean age of 68 years). Death from breast cancer in males is very uncommon (0.2% of cancer deaths).

Breast cancer has a relatively good prognosis, with 5-year relative survival rates of 88.0% in females and 78.2% in males (Belgium, 2004-2008; Table 41, Figure 84). Typically for breast cancer, which is known for the occurrence of late relapses and related deaths, survival further declines at the long-term follow-up period, reaching a 10-year relative survival of 78.9% in females and 61.9% in males (Flemish Region, 1999-2008; Table 41, Figure 85) [51]. Given the low number of males diagnosed with breast cancer, the remainder of this chapter is limited to females.

Five-year relative survival rates for breast cancer in females show no difference between the three Belgian regions (88.0% in the Brussels-Capital Region, 87.6% in the Flemish Region and 88.8% in the Walloon Region; Table 42).

FIGURE 84 - BREAST CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

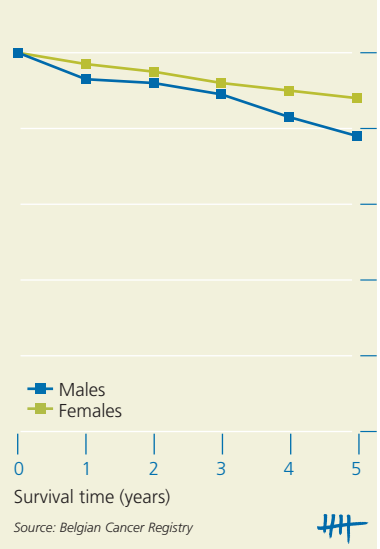


FIGURE 85 - BREAST CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

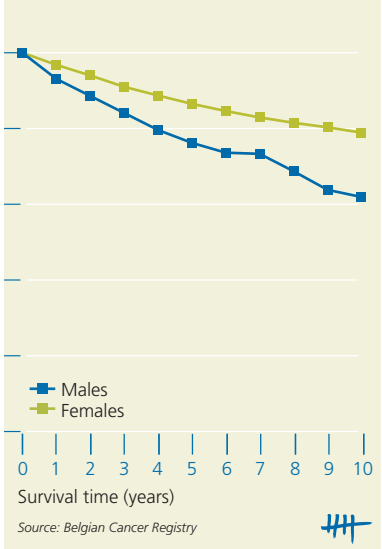


FIGURE 86 - BREAST CANCER: RELATIVE SURVIVAL BY CLINICAL STAGE IN FEMALES (BELGIUM, 2004-2008)

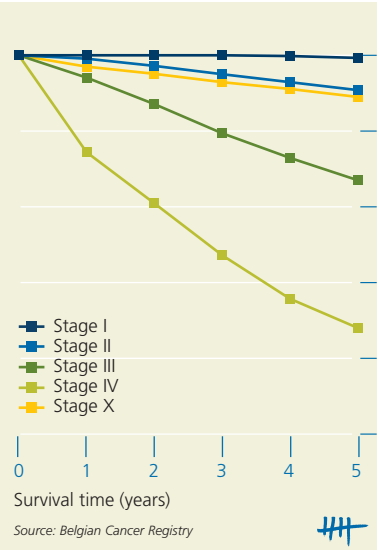
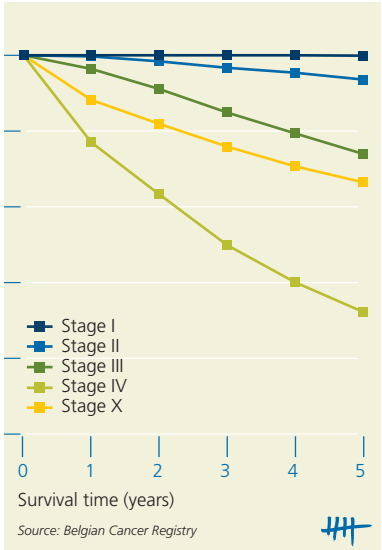


FIGURE 87 - BREAST CANCER: RELATIVE SURVIVAL BY PATHOLOGICAL STAGE IN FEMALES (BELGIUM, 2004-2008)



Relative survival estimates for breast cancer in females aged 70 years or older are lower than in younger females (5-year relative survival of 79.2% in the 70+ years age group compared with 91.7% and 90.7% in the 15-49 years and 50-69 years age groups respectively; Table 43). The poorer survival rate in the 70+ years age group is partly explained by the prevalence of more advanced stages in these patients. In this age group, 20.7% of all cases with known stage are stage III or IV, while this is only the case for 13.0% in the younger patients.

A considerable number of breast lesions are discovered in a pre-invasive phase and diagnosed as in situ breast cancer (9.1% of all breast tumours). These lesions do not have the potential to disseminate to distant organs and therefore do not impair the prognosis of the patients concerned. Indeed, females diagnosed with in situ breast cancer have a 5-year relative survival equal to that of females from general population and for the same age, (5-year relative survival in cStage 0 and pStage 0: 100.0%).

Clinical stage for breast cancer allows selection of the type of treatment and mainly the surgical intervention, which is often the initial treatment for this disease. The extent of the disease will most accurately be determined by the pathological staging, which is therefore a more reliable estimator of prognosis. One should be aware that part of the pathological staging data consist of ypTNM stages (in the cases in which classification is performed during or after initial multimodality therapy, pTNM category is identified by a 'y' prefix) that may reflect downstaging induced by pre-operative therapy.

Survival analyses by cStage show 5-year relative survival rates ranging from 99.4% in stage I to 28.0% in stage IV (Figure 86). Five-year relative survival estimates based on pathological staging are somewhat higher and range from 99.9% in stage I to 32.3% in stage IV. The vast majority of patients are diagnosed with pStage I or II (85.0% of patients with known stage) and have a 5-year relative survival above 90% (Figure 87).

Cases with unknown pathological stage (stage X) have a lower 5-year survival rate compared to patients with unknown clinical stage (66.5% for pathological stage X versus 90.7% for clinical stage X; Figure 86, Figure 87).

TABLE 41 - BREAST CANCER: OBSERVED AND RELATIVE SURVIVAL IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	342	89.5	79.2	64.2		93.2	89.3	78.2		76.8
Females	45,946	95.4	87.5	80.3		97.1	92.4	88.0		85.5
Flemish Region										
Males	443	89.4	74.7	62.7	42.4	93.1	84.1	76.2	61.9	
Females	51,572	95.1	86.6	79.4	65.9	96.8	91.0	86.5	78.9	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

Unknown pathological stage can either reflect missing data at the registration level, or females for whom surgery is not considered to be a treatment option. The decision to avoid surgical intervention may be taken for oncological reasons (extended disease) or other medical reasons, such as co-morbidity or age. Indeed, the proportion of pathological stage X (who can be considered for the majority as non-surgical patients) in the 70+ years age group is higher than in patients aged 15-69 years (26.6% versus 15.5% respectively).

TABLE 42 - BREAST CANCER: RELATIVE SURVIVAL BY REGION IN FEMALES (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
Brussels-Capital Region	4,290	9.3	97.1	92.1	88.0
Flemish Region	26,539	57.8	97.2	92.2	87.6
Walloon Region	15,117	32.9	97.1	92.7	88.8

Source: Belgian Cancer Registry

TABLE 43 - BREAST CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
15-49 years	10,726	23.3	99.0	95.2	91.7
50-69 years	21,624	47.1	98.3	94.8	90.7
70+ years	13,596	29.6	93.8	85.6	79.2

Source: Belgian Cancer Registry

9 Female genital organs

9.1 GYNAECOLOGICAL TUMOURS: SUMMARY

TABLE 44 - GYNAECOLOGICAL INVASIVE TUMOURS: INCIDENCE AND MORTALITY (2008) AND 5-YEAR RELATIVE SURVIVAL IN BELGIUM (2004-2008)

	Incidence				Mortality				5-year RS*** (%)
	n	CR*	TESR**	TWSR**	N	CR*	TESR**	TWSR**	
C53 Cervix uteri	643	14.1	13.2	11.8	186	4.1	3.2	2.6	69.8
C54 Corpus uteri	1,450	31.8	24.3	19.1	214	4.7	2.8	2.0	79.6
C56 Ovary	869	19.0	15.3	12.5	653	14.3	9.7	7.3	54.1

*CR: Crude rate (15+ years) (n/100,000 person years)

**TESR/TWSR: Truncated (15+ years) age-standardised incidence rate, using European or World Standard Population (ESR/WSR) (n/100,000 person years)

***RS: Relative survival

Source: Belgian Cancer Registry

9.2 CERVIX (ICD-10: C53)

Cervical cancer is the 8th most frequent tumour (2.3% of all cancer cases in females), and the 3rd most frequently occurring gynaecological tumour (Belgium, incidence year 2008). Infection with a sexually transmitted human papilloma virus (HPV) is the major aetiological factor [52]. Mortality due to cervical cancer is very low in Belgium, representing only 1.6% of yearly cancer deaths. The mean age at diagnosis is 54 years.

For newly diagnosed cases from 2004 to 2008, relative survival rates range from 88.4% at one year to 69.8% at five years after diagnosis (Table 45, Figure 88). Beyond this 5-year follow-up period, survival rates remain stable, reaching a 10-year relative survival of 66.2% (Flemish Region, 1999-2008; Table 45, Figure 89).

Five-year relative survival rates are comparable between the Belgian regions: 67.7%, 70.6% and 69.1% for the Brussels-Capital, the Flemish and the Walloon Region respectively (Table 46).

In line with most cancer types, survival decreases as the age of the patient at incidence increases. Women in the 15-44 years age group have a 5-year relative survival of 85.7%, decreasing to 70.1% for patients aged 45-64 years. For women of 65+ years, a major decline in survival is noted; 5-year relative survival rate is 44.4% (Figure 90).

In comparison with invasive cervical cancer, about three times more women are diagnosed with an in situ cervical cancer, which is considered as a precursor cancer lesion. These in situ lesions do not influence survival (5-year survival rate of 99.8%, represented as stage 0 in survival analyses by stage; Figure 91), and should be treated in time to prevent an evolution to an invasive cancer [53]. Concerning invasive cervical cancers, highest survival rates are noted for diseases limited to the uterus (stage I: 5-year relative survival of 92.2%). Spreading of the cancer beyond the uterus has significant implications for survival, resulting in 5-year relative survival rates of 63.6% for stage II to 17.0% for stage IV (Figure 91). The rather high general survival rates for cervical cancer (relative survival of 69.8% at 5 years) may at least partly be explained by the large proportion of patients diagnosed with stage I disease (53.9% of patients with known stage).

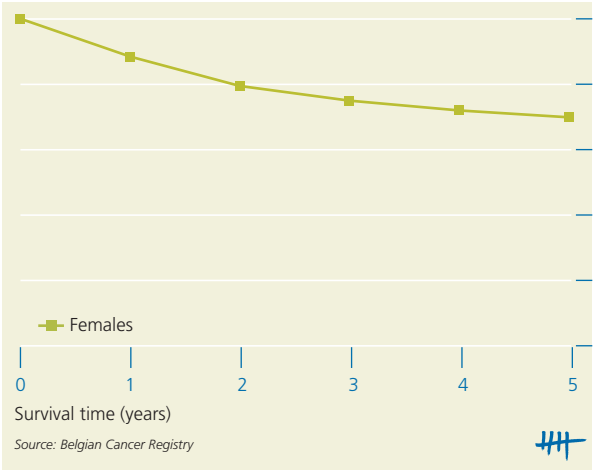
TABLE 45 - CERVICAL CANCER (INVASIVE): OBSERVED AND RELATIVE SURVIVAL IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Females	3,065	87.3	72.7	66.6		88.4	74.9	69.8		65.6
Flemish Region										
Females	3,585	87.5	73.3	67.4	60.4	88.6	75.5	70.6	66.2	

*ASRS: Age-standardised relative survival

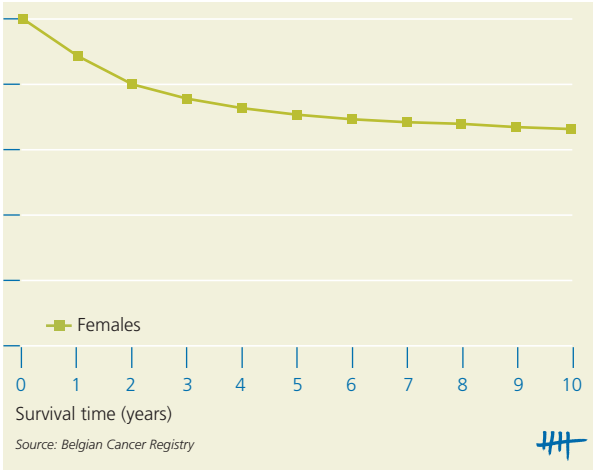
Source: Belgian Cancer Registry

FIGURE 88 - CERVICAL CANCER (INVASIVE): RELATIVE SURVIVAL IN BELGIUM (2004-2008)



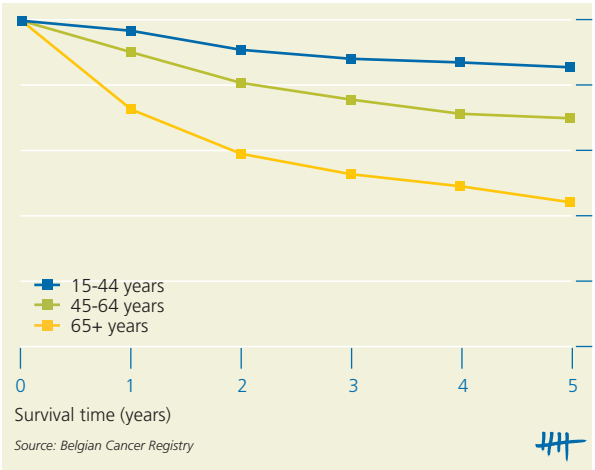
Source: Belgian Cancer Registry

FIGURE 89 - CERVICAL CANCER (INVASIVE): RELATIVE SURVIVAL IN THE FLEMISH REGION (1999-2008)



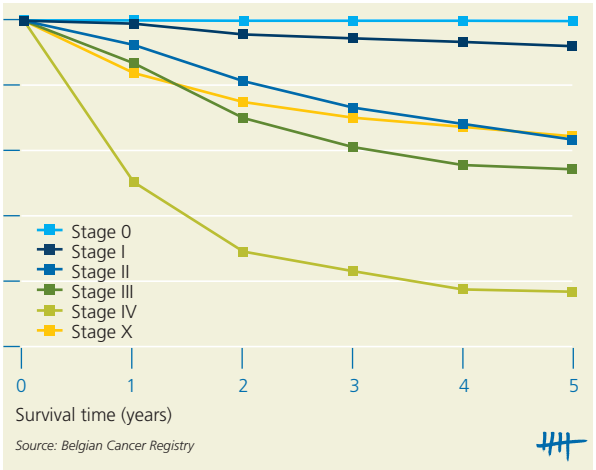
Source: Belgian Cancer Registry

FIGURE 90 - CERVICAL CANCER (INVASIVE): RELATIVE SURVIVAL BY AGE GROUP (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 91 - CERVICAL CANCER (IN SITU AND INVASIVE): RELATIVE SURVIVAL BY STAGE (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

TABLE 46 - CERVICAL CANCER (INVASIVE): RELATIVE SURVIVAL BY REGION (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
Brussels-Capital Region	308	10.0	85.2	73.5	67.7
Flemish Region	1,796	58.6	88.8	75.8	70.6
Walloon Region	961	31.4	88.7	73.6	69.1

Source: Belgian Cancer Registry

9.3 CORPUS UTERI (ICD-10: C54)

Corpus uteri cancer is the fourth most frequent tumour in females and the most frequent gynaecological cancer (Belgium, incidence year 2008). Mean age at diagnosis is 68 years. It is the gynaecological cancer with the best prognosis (Table 44).

For the incident cases 2004-2008 in Belgium, the 1-year relative survival rate is 92.6% and the 5-year relative survival rate is 79.6% (Table 47, Figure 92). Beyond the 5-year period, survival decreases less steeply to reach 76.6% at 10 years after diagnosis (Flemish Region, incidence years 1999-2008) (Table 47, Figure 93).

Relative survival rates are slightly better in the Flemish and the Walloon Region (5-year survival rate: 80.1% and 79.5% respectively) than in the Brussels-Capital Region (75.1%) (Table 48)[9].

In comparison with other tumour types, the negative effect of age on survival is rather limited. In females of 70+ years

TABLE 48 - CORPUS UTERI CANCER: RELATIVE SURVIVAL BY REGION (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
Brussels-Capital Region	462	7.3	90.6	80.4	75.1
Flemish Region	3,912	61.6	93.1	84.2	80.1
Walloon Region	1,972	31.1	92.2	83.9	79.5

Source: Belgian Cancer Registry

TABLE 49 - CORPUS UTERI CANCER: RELATIVE SURVIVAL BY AGE GROUP (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
15-54 years	717	11.3	96.3	90.8	87.8
55-69 years	2,679	42.2	95.4	88.0	83.9
70+ years	2,950	46.5	89.1	78.0	72.6

Source: Belgian Cancer Registry

TABLE 50 - CORPUS UTERI CANCER: RELATIVE SURVIVAL BY HISTOPATHOLOGICAL GRADE WITHIN CARCINOMA (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
Grade 1	2,005	41.5	99.5	97.4	95.3
Grade 2	1,695	35.1	95.2	87.9	82.3
Grade 3	1,129	23.4	84.3	64.1	56.6

Note: grade is unknown in 1,390 cases (excluded data).

Source: Belgian Cancer Registry

TABLE 47 - CORPUS UTERI CANCER: OBSERVED AND RELATIVE SURVIVAL IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Females	6,346	90.4	78.1	70.3		92.6	83.9	79.6		79.4
Flemish Region										
Females	7,489	90.1	78.3	71.8	59.9	92.2	83.5	80.2	76.6	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

9 Survival rates in the Brussels-Capital Region should be interpreted with caution given the low number of patients at risk in this region after some years of follow-up.

of age, 5-year relative survival rate is lower (72.6%) compared with patients of 15-54 years (87.8%) and patients of 55-69 years (83.9%) (Table 49).

The extent of the disease is a strong prognostic factor for survival in corpus uteri cancer. The 5-year relative survival rates range from 94.5% for stage I to 19.5% for stage IV. Within cases with known stage, 72.6% of cases are stage I, which could explain the relatively good general prognosis at 5 years after diagnosis for this cancer (Figure 94).

Besides disease stage, another important determinant for survival is the histological subtype. A distinction needs to be made between carcinoma and sarcoma of the corpus uteri [54]. Carcinomas represent almost 94.7% of all corpus uteri cancers. They have a clear survival advantage on sarcomas: 5-year relative survival rate is 80.7 % in carcinomas whereas it reaches only 59.2% in sarcomas (Figure 95). Sarcomas are more frequent in younger patients (42.2% in 15-54 years, 26.3% in 55-69 years and 31.3% in 70+ years) while carcinomas occur mostly in older patients (9.7% in 15-54 years, 43.2% in 55-69 years and 47.2% in 70+ years). This age-dependent distribution of morphological types may contribute to the relatively small difference observed in survival between younger and older patients.

Besides the important distinction between carcinoma and sarcoma, two morphological entities may be distinguished within the carcinoma group: the endometrioid and the non-endometrioid subtype [55].

The endometrioid subtype is the most frequent (87.7% of all carcinoma cases) and has a better prognosis (5-year relative survival: 85.2%) than the non-endometrioid subtype (5-year relative survival: 49.4%; Figure 96).

Endometrioid carcinomas have a more indolent behaviour than the non-endometrioid subtype; for endometrioid carcinoma, 75.7% of patients with known stage have stage I compared with 45.4% for non-endometrioid cancer. Moreover, the non-endometrioid carcinomas tend to occur at an older age, representing 15% of all carcinoma cases in patients of 70 years and older versus 10.7% in 55-69 years and 8.7% in 15-54 years. The higher survival rates for patients with endometrioid uterine carcinoma may be partially explained both by the younger age of the patient and the lesser extent of the disease at presentation.

Additional survival analyses for carcinoma by tumour grade show that relative survival decreases as grade increases [56]. The best 5-year relative survival is observed in grade 1 tumours (95.3%). The 5-year relative survival decreases to 56.6% in grade 3 tumours (Table 50).

FIGURE 92 - CORPUS UTERI CANCER: RELATIVE SURVIVAL IN BELGIUM (2004-2008)

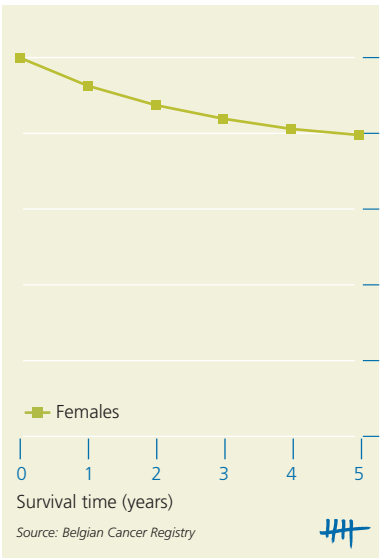


FIGURE 93 - CORPUS UTERI CANCER: RELATIVE SURVIVAL IN THE FLEMISH REGION (1999-2008)

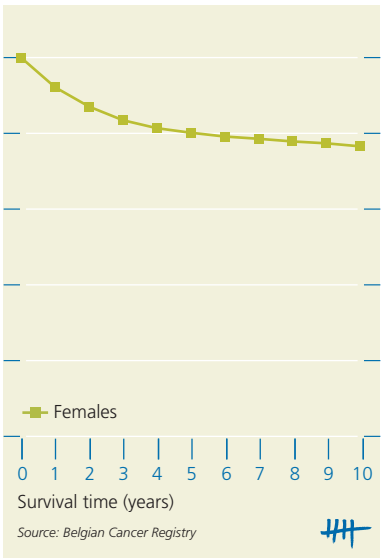


FIGURE 94 - CORPUS UTERI CANCER: RELATIVE SURVIVAL BY STAGE (BELGIUM, 2004-2008)

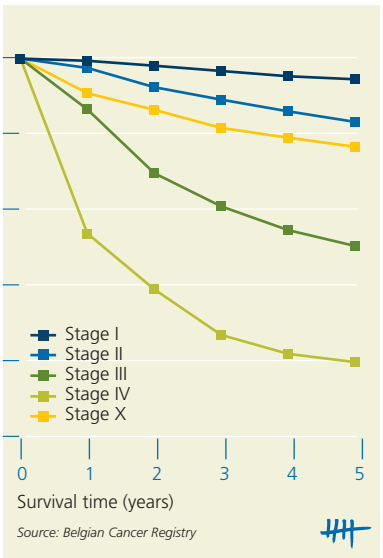
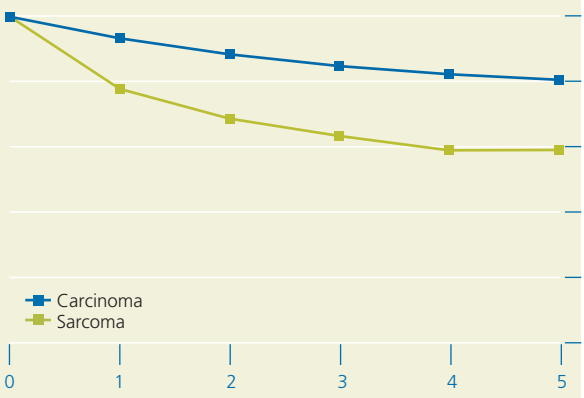
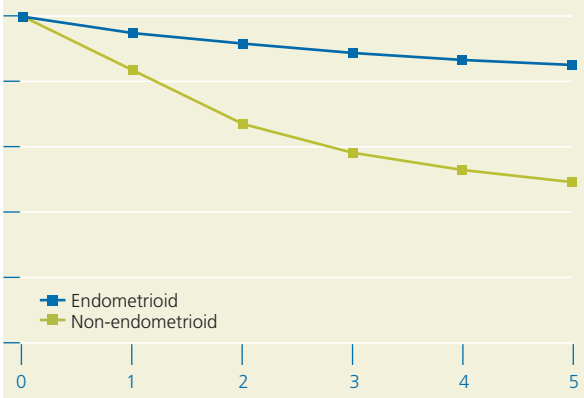


FIGURE 95 - CORPUS UTERI CANCER: RELATIVE SURVIVAL BY MORPHOLOGY (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 96 - CORPUS UTERI CANCER: RELATIVE SURVIVAL BY MORPHOLOGY WITHIN CARCINOMA (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

9.4 OVARY (ICD10: C56)

Ovarian cancer is the 7th most frequent tumour in females (3.2% of all cancer diagnoses in Belgium in 2008) and the 2nd most frequent gynaecological tumour. This cancer is the 5th most frequent cause of cancer death in 2008 (5.7%). The mean age at diagnosis is 65 years.

For the newly diagnosed cases in 2004-2008, more than half of the patients has deceased from ovarian cancer at five years after diagnosis (5-year relative survival: 44.4%) (Table 51, Figure 97). This survival rate further decreases to a 10-year relative survival of 35.2% (incidence years 1999-2008, Flemish Region; Table 51, Figure 98).

Five-year relative survival is 46.9% in the Brussels-Capital Region, 43.5% in the Flemish Region and 45.5% in the Walloon Region (Table 52).
Survival from ovarian cancer is strongly related to the age of the patient at time of diagnosis: the older the patient, the worse the 5-year relative survival (15-44 years: 71.0%, 45-69 years: 52.7%, 70+ years: 28.0%; Figure 99).

Another important factor in patient's prognosis is the behaviour of the tumour. Around 15% of all ovarian cancers (17.8% in our data) are of low malignant potential and are called "borderline malignant". These tumours were classified as malignant (/3) in the second ICD-O edition [7] but are considered as borderline malignant (/1) in the third ICD-O edition [8]. Five-year relative survival is very high (98.8%) for patients diagnosed with a borderline malignant tumour (Figure 100).

For the invasive ovarian cancers, survival is highly dependent on the stage of the disease. Five-year relative survival is 91.0% for patients diagnosed with stage I, but decreases to 19.1% for patients diagnosed with stage IV (Figure 100). Due to the late occurrence of symptoms and the aggressive biology of most ovarian cancer subtypes, it is difficult to diagnose this cancer at an early and more curable stage. As a consequence, 65.4% of all invasive ovarian cancers with known stage are classified as stage III or IV. This high proportion of advanced stages contributes to the rather low overall survival.

Most ovarian cancers can be classified as carcinoma (91.9%) with a 5-year relative survival rate of 44.4%. A much better prognosis is observed for sex-cord and germ cell tumours (5-year relative survival of 76.3% and 89.0% respectively) which represent 1.0% and 1.6% of all morphology types, respectively (Table 53) [57].

TABLE 52 - OVARIAN CANCER (INVASIVE): RELATIVE SURVIVAL BY REGION (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
Brussels-Capital Region	331	8.0	77.8	53.2	46.9
Flemish Region	2,529	61.0	77.9	55.8	43.5
Walloon Region	1,289	31.1	78.3	58.7	45.5

Source: Belgian Cancer Registry

TABLE 51 - OVARIAN CANCER (INVASIVE): OBSERVED AND RELATIVE SURVIVAL IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Females	4,149	76.3	53.5	40.6		78.1	56.5	44.4		42.6
Flemish Region										
Females	5,344	76.1	52.8	41.1	29.7	77.8	55.6	44.6	35.2	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

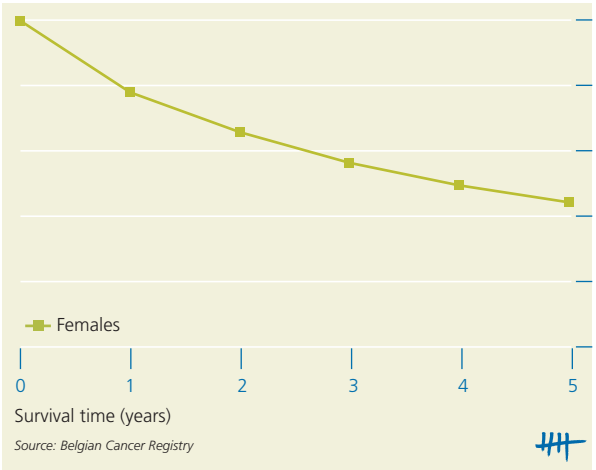
TABLE 53 - OVARIAN CANCER (INVASIVE): RELATIVE SURVIVAL BY MORPHOLOGY (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Females					
Carcinoma	3,814	91.9	79.4	57.3	44.4
Sex cord-stromal tumour	42	1.0	94.3	79.4	76.3
Germ cell tumour	67	1.6	94.4	90.6	89.0
Other specified malignant neoplasm*	108	2.6	60.6	31.1	26.9
Unspecified malignant neoplasm	118	2.8	32.0	23.1	20.4

*include 31 Müllerian mixed tumours and 49 carcinosarcoma

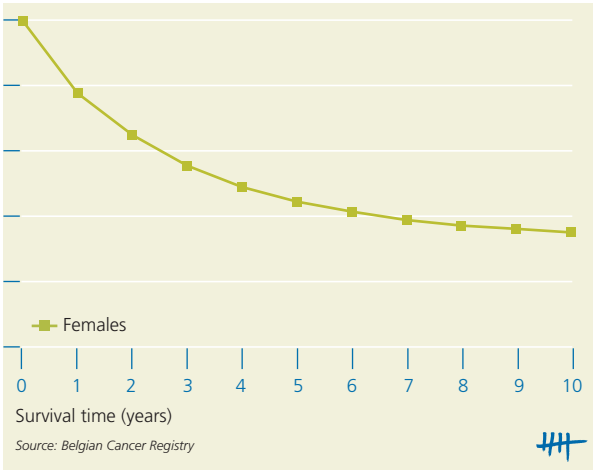
Source: Belgian Cancer Registry

FIGURE 97 - OVARIAN CANCER (INVASIVE): RELATIVE SURVIVAL IN BELGIUM (2004-2008)



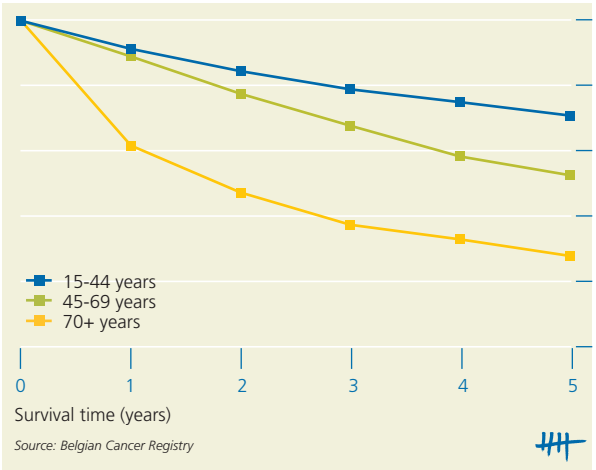
Source: Belgian Cancer Registry

FIGURE 98 - OVARIAN CANCER (INVASIVE): RELATIVE SURVIVAL IN THE FLEMISH REGION (1999-2008)



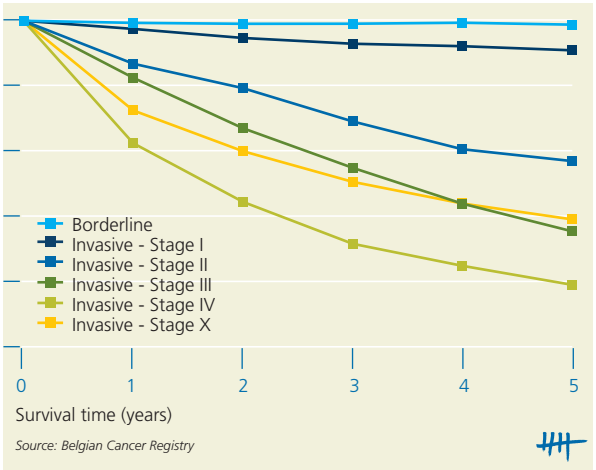
Source: Belgian Cancer Registry

FIGURE 99 - OVARIAN CANCER (INVASIVE): RELATIVE SURVIVAL BY AGE GROUP (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 100 - OVARIAN CANCER (BORDERLINE AND INVASIVE): RELATIVE SURVIVAL BY STAGE (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

10 Male genital organs

10.1 PROSTATE (ICD-10: C61)

Prostate cancer is the most frequent tumour in males (27% of newly diagnosed cases of cancer in 2008 in Belgium). This cancer is generally considered non-aggressive and the mortality/incidence ratio for this disease is rather low (0.2). Nevertheless, prostate cancer is the 3rd most frequent cause of cancer death in males (9.3% in 2008) because of the frequent occurrence. Age is one of the most important risk factors associated with prostate cancer; the mean age at diagnosis is 69 years.

In the first years following the introduction of Prostate-Specific Antigen (PSA) testing, incidence rates did increase internationally as well as in Belgium (Flemish Region, 1999-2005). Although this effect has recently attenuated, prostate cancers are still predominantly discovered after PSA screening. Accordingly, the risk of being diagnosed with a prostate cancer in younger patients (aged less than 75 years) increased.

Prostate cancer is associated with high survival rates. International literature mentions a possible side-effect of PSA-testing on survival. Detection of asymptomatic and probably non-lethal tumours tends to inflate the denominator in survival estimates, with numerous males having an excellent prognosis [58;59]. This theory might be illustrated by the decline of the mortality rate for prostate cancer between 1999 and 2008 (Flemish Region). Moreover, an earlier detection of the lesion can improve survival, as an advanced stage is associated with a poorer prognosis (see below).

For the incident cases from 2004 to 2008, the 5-year observed survival rate is 77.6% and the 5-year relative survival rate is 95.3% (Table 54, Figure 101). For the Flemish Region (incidence years 1999-2008), the 10-year observed and relative survival rates are 55.8% and 89.2% respectively (Table 54, Figure 102). This important difference between observed and relative survival reflects the fact that males with prostate cancer often die from other causes.

Survival rates for the three different Belgian regions were 91.7% in the Brussels-Capital Region, 95.3% in the Flemish Region, and 95.7% in the Walloon Region (Table 55).

The effect of age on survival is observed in patients of 75+ years who have a poorer five-year survival rate (89.0%) than younger patients. Below 75 years, survival does not seem to depend on age (5-year relative survival of 96.4% in 15-59 years and 96.1% in 60-74 years; Table 56).

The extent of the disease influences survival of prostate cancer patients. Stage I tumours are rare, since every prostate cancer that is pathologically staged is at minimum a stage II tumour due to the TNM classification rules [10]. Most tumours with known stage are classified as stage II or III (86.9%, of which more than three quarters are

TABLE 54 - PROSTATE CANCER: OBSERVED AND RELATIVE SURVIVAL IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	42,988	95.1	86.0	77.6		98.9	96.8	95.3		93.0
Flemish Region										
Males	51,554	93.9	84.0	75.4	55.8	97.8	94.9	93.0	89.2	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

stage II) and have a very good prognosis, with a 5-year relative survival close or equal to 100% (stage II: 103.7%; stage III: 98.4%). Stage IV tumours have a much poorer prognosis after 5 years of follow-up, with a 5-year relative survival of 53.2% (Figure 103).

Additional analyses were performed to evaluate the influence of age on the survival by stage. For stage I and II, all age groups have a 5-year relative survival rate of around 100%. In stage III, a difference is noticed between 15-74 years and 75+ years (5-year relative survival of almost 100% and 89.4%, respectively). Stage IV is, as expected, associated with the worst prognosis in all age groups, and a decreasing 5-year survival rate with age (15-59 years: 63.6%; 60-74 years: 58.6%; 75+ years: 40.4%).

TABLE 55 - PROSTATE CANCER: RELATIVE SURVIVAL BY REGION (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	2,723	6.3	98.1	94.1	91.7
Flemish Region	27,450	63.9	99.0	96.9	95.3
Walloon Region	12,815	29.8	98.6	96.9	95.7

Source: Belgian Cancer Registry

TABLE 56 - PROSTATE CANCER: RELATIVE SURVIVAL BY AGE GROUP (BELGIUM, 2004-2008)

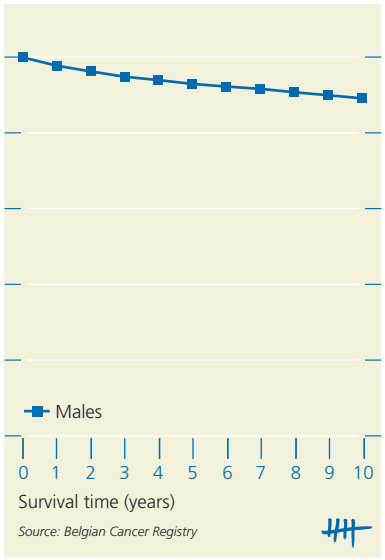
	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
15-59 years	7,165	16.7	99.4	98.0	96.4
60-74 years	23,052	53.6	99.9	98.2	96.1
75+ years	12,771	29.7	96.6	92.2	89.0

Source: Belgian Cancer Registry

FIGURE 101 - PROSTATE CANCER: RELATIVE SURVIVAL IN BELGIUM (2004-2008)

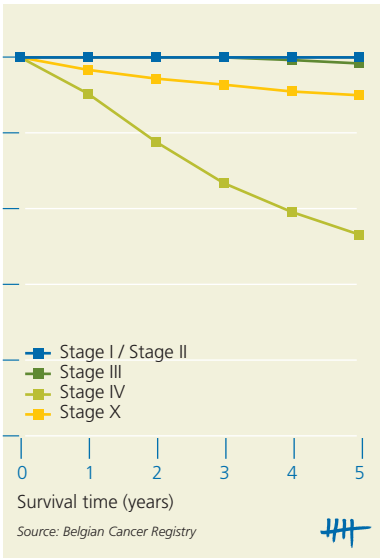
Source: Belgian Cancer Registry

FIGURE 102 - PROSTATE CANCER: RELATIVE SURVIVAL IN THE FLEMISH REGION (1999-2008)



Source: Belgian Cancer Registry

FIGURE 103 - PROSTATE CANCER: RELATIVE SURVIVAL BY STAGE (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

10.2 TESTIS (ICD-10: C62)

Testicular cancer is a rare disease that particularly affects younger patients: the incidence rate in males of 50 years and older is 7 times lower compared with the 15-49 age group (Belgium, 2008). Cryptorchidism has been identified as one of the risk factors for the development of testicular cancer. This cancer has a very good prognosis and is therefore an uncommon cause of cancer death in males (0.1% of all cancer deaths). Indeed, testicular cancer is known as one of the most curable malignant neoplasms [60-62]. In 2008, 318 new cases and 16 deaths were registered in Belgium. For unknown reasons, the incidence of testicular cancer is globally rising [63;64]. This phenomenon is also observed in Belgium, with a substantial yearly increase in incidence in the Flemish Region between 1999 and 2008.

For newly diagnosed cancers in 2004-2008, 5-year relative survival is 96.2% (Table 57). No more patients are lost after this follow-up period: 10-year relative survival in patients diagnosed between 1999 and 2008 (Flemish Region) is 96.3% (Table 57, Figure 105).

No marked differences in survival are observed between the Belgian regions (Table 58).

A somewhat better survival rate is observed in patients between 15 and 49 years compared with males of 50 years and older, with 5-year relative survival of 96.5% for 15-49 years and 93.1% for 50+ years (Table 59).

The extent of the disease at diagnosis helps to estimate survival chances. Stage I is the most frequent stage at diagnosis (84.0% of cases with known stage), and is associated with a 5-year relative survival of 98.7%. The poorest prognosis is, as expected, associated with stage III tumours (5-year relative survival of 77.2%). According to the TNM classification rules, stage IV does not exist in testicular cancer [10] (Figure 106).

Histological subtypes are also associated with variations in survival rates. Germ-cell carcinoma comprise almost all cases of testicular carcinoma (97.1%). These are divided into two groups: seminoma and non-seminoma. Seminoma have a better prognosis than non-seminoma and other or unspecified histology, with 5-year

FIGURE 104 - TESTICULAR CANCER: RELATIVE SURVIVAL IN BELGIUM (2004-2008)

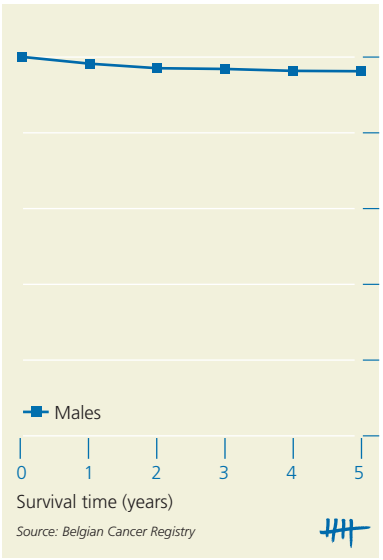


FIGURE 105 - TESTICULAR CANCER: RELATIVE SURVIVAL IN THE FLEMISH REGION (1999-2008)

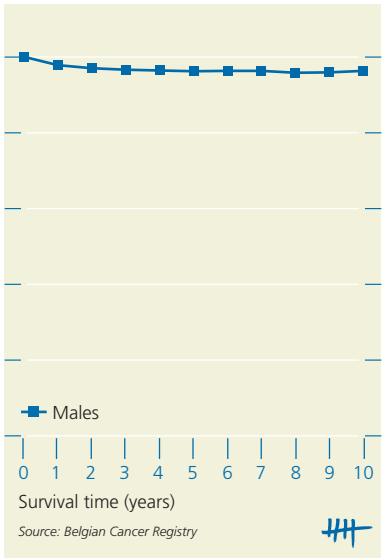


FIGURE 106 - TESTICULAR CANCER: RELATIVE SURVIVAL BY STAGE (BELGIUM, 2004-2008)

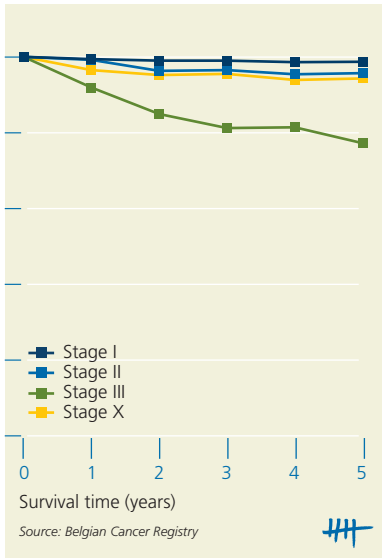


TABLE 57 - TESTICULAR CANCER: OBSERVED AND RELATIVE SURVIVAL IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	1,356	97.9	96.0	94.8		98.2	96.8	96.2		94.2
Flemish Region										
Males	1,315	97.5	95.8	94.8	93.3	97.8	96.6	96.2	96.3	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

relative survival rates of 98.4%, 94.2% and 84.4% respectively (Table 60). Non-seminoma have a clinically more aggressive behaviour, as reflected by a different stage distribution compared with seminoma. Of all cases with known stage, stage I represents 78.6% in non-seminoma and 88.3% in seminoma. In contrast, stage III cases are more frequent in non-seminoma (12.8% versus 3.0% in seminoma).

TABLE 58 - TESTICULAR CANCER: RELATIVE SURVIVAL BY REGION (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	110	8.1	99.4	97.3	95.5
Flemish Region	732	54.0	98.5	97.5	97.0
Walloon Region	514	37.9	97.7	95.8	95.5

Source: Belgian Cancer Registry

TABLE 59 - TESTICULAR CANCER: RELATIVE SURVIVAL BY AGE GROUP (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
15-49 years	1,220	90.0	98.8	97.4	96.5
50+ years	136	10.0	93.0	91.4	93.1

Source: Belgian Cancer Registry

TABLE 60 - TESTICULAR CANCER: RELATIVE SURVIVAL BY MORPHOLOGY (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Non-seminoma	590	43.5	98.6	96.1	94.2
Seminoma	727	53.6	98.4	98.0	98.4
Other and unspecified	39	2.9	89.8	84.4	84.4

Source: Belgian Cancer Registry

11 Urinary tract

11.1 KIDNEY (ICD-10: C64)

Data on incidence of kidney cancer in Belgium for the incidence year 2008 show that this type of cancer is the 7th most frequent tumour in males (2.9% of cancer diagnoses) and the 14th most frequent tumour in females (2.0%). Renal cancer has a male predominance and is diagnosed at a mean age of 64 years in males and 66 years in females. Mortality from this cancer type is limited, representing the 12th most frequent cause of cancer death in males, and the 13th most frequent cause of cancer death in females.

Data for the Flemish Region show an increase in incidence combined with a decrease in mortality of kidney cancer over the last decade (incidence years 1999-2008). These trends mainly reflect an earlier diagnosis of renal cancer lesions, as is confirmed by the large significant increase in stage I tumours [65;66].

For the incidence years 2004-2008, kidney cancer in Belgium reaches a 5-year relative survival rate of 71% in both males and females (Table 61, Figure 107). Long-term survival data for the Flemish Region (incidence years 1999-2008) show a 10-year relative survival rate of 60.6% in males and 60.5% in females (Table 61, Figure 108). Throughout the whole length of the observation period, hardly any difference in survival between males and females is observed.

FIGURE 107 - KIDNEY CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

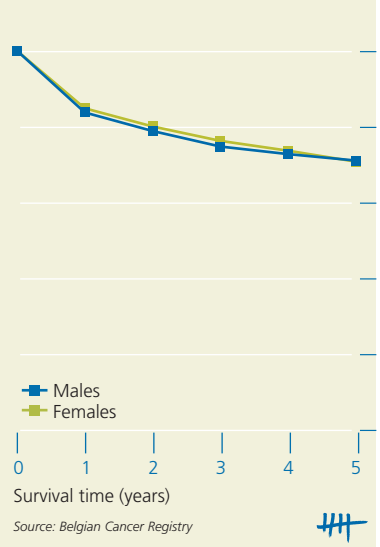


FIGURE 108 - KIDNEY CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

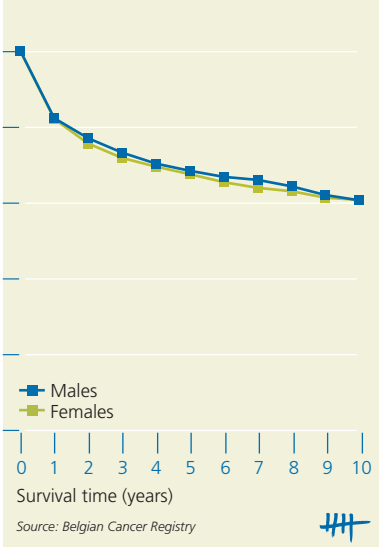


FIGURE 109 - KIDNEY CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)

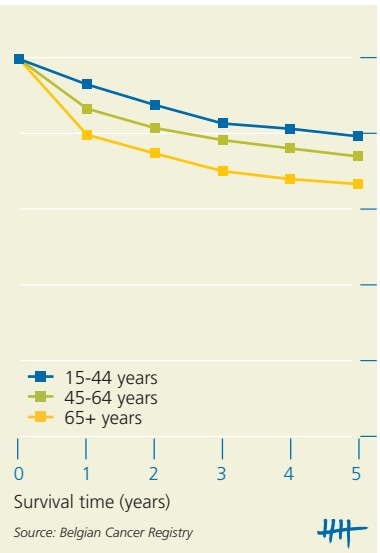


FIGURE 110 - KIDNEY CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)

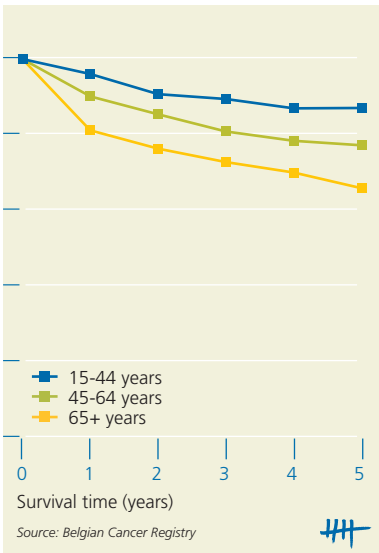


TABLE 61 - KIDNEY CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	3,595	81.3	68.8	61.5		83.7	74.7	71.0		69.5
Females	2,260	82.8	71.1	62.4		84.8	76.2	70.7		70.4
Flemish Region										
Males	4,156	79.5	65.8	58.2	43.6	82.0	71.7	67.4	60.6	
Females	2,726	80.2	68.0	60.2	45.8	82.2	73.1	68.3	60.5	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

Small differences in 5-year relative survival are observed between the three Belgian regions. In males, survival rates are higher in the Brussels-Capital (75.5%) and in the Walloon Region (73.1%) in comparison to the Flemish Region (69.5%). In females, 5-year relative survival is higher in the Walloon Region (74.2%) than in the Brussels-Capital (68.1%) and the Flemish Region (69.3%) (Table 62).

Survival is inversely related to the age of the patient. The best outcome is noticed for the youngest age group (5-year relative survival of 79.6% in males and 86.9% in females) followed by the 45-64 years age group (74.4% in males and 76.9% in females) and the 65+ years age group (67.0% in males and 65.4% in females; Figure 109, Figure 110).

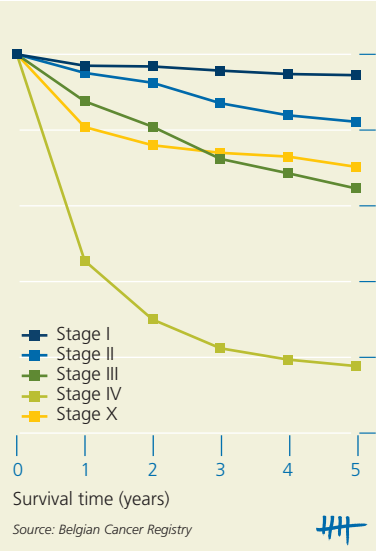
Five-year relative survival for kidney cancer is highly dependent on the extent of the disease, ranging from 94.5% (stage I) to 17.7% (stage IV) in males, and from 91.2% (stage I) to 15.0% (stage IV) in females. More than half of the patients is diagnosed with stage I or II (60.1% of cases with known stage in males and 63.6% in females) and have a 5-year relative survival rate of more than 80% (Figure 111, Figure 112).

TABLE 62 - KIDNEY CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	247	6.9	85.2	78.9	75.5
Flemish Region	2,216	61.6	82.5	73.1	69.5
Walloon Region	1,132	31.5	85.9	77.0	73.1
Females					
Brussels-Capital Region	134	5.9	84.9	76.7	68.1
Flemish Region	1,449	64.1	83.8	75.4	69.3
Walloon Region	677	30.0	86.9	77.6	74.2

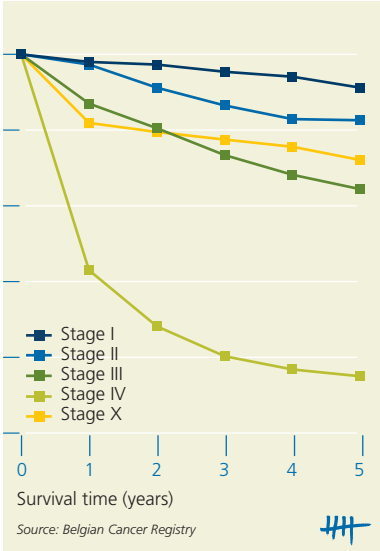
Source: Belgian Cancer Registry

FIGURE 111 - KIDNEY CANCER: RELATIVE SURVIVAL BY STAGE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 112 - KIDNEY CANCER: RELATIVE SURVIVAL BY STAGE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

11.2 BLADDER (ICD-10: C67)

Invasive bladder cancer is the 5th most frequent cancer in males (5.2% of all cancers in 2008), but is much less frequent in females, leading to a male/female ratio of 4.7. In terms of cancer deaths, this disease is responsible for the sixth-highest mortality rate in males (4.7/100,000 person years) and the 12th most frequent cancer death in females (1.2/100,000 person years). The mean age at diagnosis is 73 years in males and 74 years in females (Belgium, 2008).

Invasive bladder cancer has a rather aggressive behaviour, yielding 5-year relative survival rates of 56.6% in males and 49.2% in females (Belgium, 2004-2008; Table 63, Figure 113). Thereafter, relative survival decreases to 49.6% in males and 44.6% in females after 10 years (Flemish Region, incidence years 1999-2008; Table 63, Figure 114).

While bladder cancer presents more often in males, females are diagnosed at more advanced stages and have a poorer outcome [32]. Remarkably, this survival disadvantage is independent of stage. Several hypotheses have been put forward to explain the gender difference in bladder cancer survival, ranging from genetic to anatomical, hormonal and societal reasons [67]. For example, metastatic spread and lymphatic flow may be obstructed by higher pressure within the male bladder due to the presence of the prostate gland and a stronger detrusor muscle [68]. On the other hand, hematuria in females may be less likely to be regarded as an alarm symptom warranting further clinical investigations compared with males [69].

Looking at the different Belgian regions, 5-year relative survival in males is 51.9% in the Brussels-Capital Region, 58.6% in the Flemish Region, and 54.1% in the Walloon Region. In females, these survival rates are 41.9%, 51.4%, and 46.5% in the three regions respectively (Table 64).

Five-year relative survival for invasive bladder cancer is lowest in patients of 75 years and older (45.9% in males and 41.5% in females), and highest in patients of 15-59 years (67.2% in males and 59.2% in females). The 5-year relative survival rates of the

FIGURE 113 - BLADDER CANCER (INVASIVE): RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)

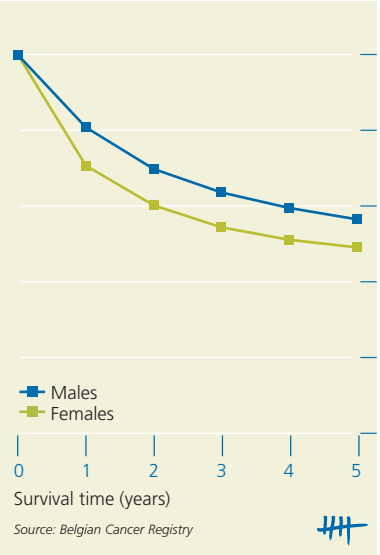


FIGURE 114 - BLADDER CANCER (INVASIVE): RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)

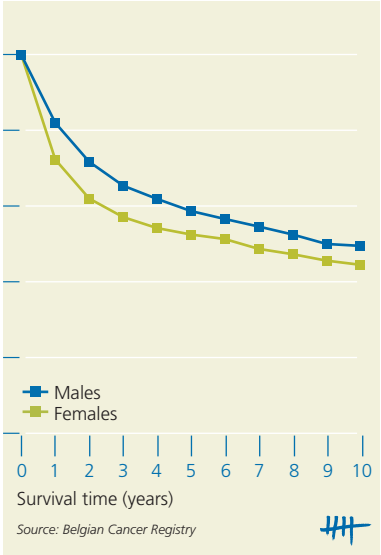


TABLE 63 - BLADDER CANCER (INVASIVE): OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	7,087	76.7	54.9	44.0		80.9	63.7	56.6		59.0
Females	1,894	67.4	47.8	39.1		70.8	54.5	49.2		52.8
Flemish Region										
Males	8,324	77.9	56.5	45.9	29.7	82.1	65.5	58.8	49.6	
Females	2,238	68.9	49.9	41.8	27.2	72.4	57.2	52.6	44.6	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

middle age group (60-74 years) lies in between (61.1% in males and 56.5% in females). Most invasive bladder cancers are diagnosed in patients of 75 years of age or more: 44.4% in males and 55.5% in females (Table 65).

Two non-invasive bladder cancer types also exist: papillary (pTa) and flat (pTis) urothelial carcinoma. While pTa lesions hardly influence prognosis (stage 0a: 5-year relative survival of 97.5% in males and 99.8% in females), pTis lesions are associated with a more aggressive behaviour, especially in males (stage 0is: 5-year relative survival of 90.0% in males and 98.0% in females). Contrary to the observations for invasive bladder cancer, survival rates for the non-invasive lesions are higher in females than in males (Figure 115, Figure 116). pTis lesions represent 1.8% of all bladder cancers (invasive and non-invasive) in males and 1.4% in females (Belgium, 2004-2008). Papillary pTa lesions are much more frequent, covering 34.7% of all bladder cancer cases in males and 36.1% in females.

Once the cancer is invasive, survival rates are considerably lower, ranging from 77.9% to 20.2% in males and from 74.1% to 12.2% in females, for stage I to stage IV respectively (Figure 115, Figure 116).

Note that misclassification in the bladder cancer data involving separation of in situ/non-invasive and superficially invasive carcinomas, as well as papillary and flat lesions, must be taken into account. This phenomenon is shared amongst cancer registries and hampers international comparisons of data on bladder cancer incidence and survival.

FIGURE 115 - BLADDER CANCER (INVASIVE, pTis AND pTa): RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)

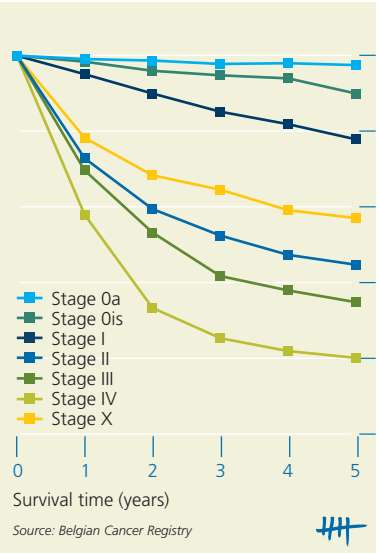


FIGURE 116 - BLADDER CANCER (INVASIVE, pTis AND pTa): RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)

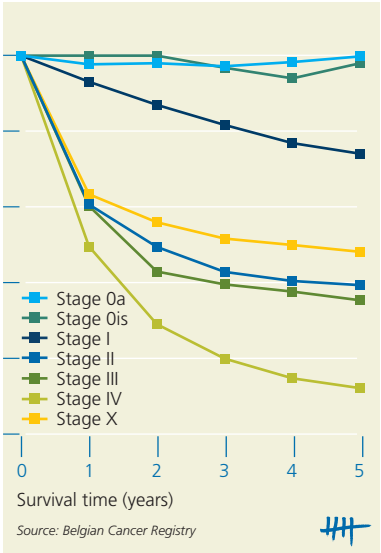


TABLE 64 - BLADDER CANCER (INVASIVE): RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	570	8.0	79.8	59.1	51.9
Flemish Region	4,235	59.8	82.4	65.1	58.6
Walloon Region	2,282	32.2	78.3	62.3	54.1
Females					
Brussels-Capital Region	166	8.8	67.4	47.8	41.9
Flemish Region	1,158	61.1	72.1	56.1	51.4
Walloon Region	570	30.1	69.0	53.2	46.5

Source: Belgian Cancer Registry

TABLE 65 - BLADDER CANCER (INVASIVE): RELATIVE SURVIVAL BY AGE GROUP AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
15-59 years	1,037	14.6	89.7	73.9	67.2
60-74 years	2,901	40.9	85.7	68.7	61.1
75+ years	3,149	44.4	72.9	54.3	45.9
Females					
15-59 years	229	12.1	82.8	64.6	59.2
60-74 years	614	32.4	78.9	63.4	56.5
75+ years	1,051	55.5	62.9	46.2	41.5

Source: Belgian Cancer Registry

12 Central Nervous System

(ICD-10: C71-C72)

Tumours of the central nervous system (CNS) are rare both in males (2008: 1.4% of all cancer diagnoses in Belgium) and females (2008: 1.2%). The mean age at diagnosis is 56 years in males and 54 in females. Despite its infrequent occurrence, tumours of the CNS are the 11th most frequent cause of death in both males (2.4%) and females (2.3%). Tumours arising from the central nervous system may have a different behaviour, ranging from benign to malignant. Only malignant tumours are considered in the present booklet.

Survival of CNS tumours rapidly decreases after diagnosis: 1-year relative survival is only 51.1% in males and 52.6% in females. About half of the one-year survivors are still alive at the 5-year follow-up point: 5-year relative survival rates are 22.7% in males and 25.8% in females (Belgium, 2004-2008; Table 66, Figure 117). Long-term survivors of this disease are

TABLE 67 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	130	6.8	53.6	37.1	26.2
Flemish Region	1,199	62.4	51.0	27.3	21.7
Walloon Region	593	30.9	50.7	30.5	24.1
Females					
Brussels-Capital Region	118	8.4	53.2	29.1	25.4
Flemish Region	832	59.3	53.1	30.2	25.3
Walloon Region	453	32.3	51.6	31.8	27.1

Source: Belgian Cancer Registry

TABLE 68 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM: RELATIVE SURVIVAL BY AGE GROUP AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
15-24 years	81	4.2	87.6	73.7	65.9
25-59 years	905	47.1	67.0	41.0	33.6
60+ years	936	48.7	31.8	12.7	7.6
Females					
15-24 years	55	3.9	90.9	77.7	71.5
25-59 years	617	44.0	73.9	48.9	42.2
60+ years	731	52.1	31.3	11.0	8.0

Source: Belgian Cancer Registry

TABLE 66 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	1,922	50.0	27.8	21.4		51.1	28.9	22.7		25.0
Females	1,403	51.9	30.0	25.0		52.6	30.6	25.8		28.5
Flemish Region										
Males	2,312	49.0	25.5	20.9	14.7	50.0	26.4	22.0	16.0	
Females	1,718	48.8	27.6	23.6	17.9	49.5	28.3	24.6	19.2	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

TABLE 69 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM: RELATIVE SURVIVAL BY MORPHOLOGY AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Astrocytic tumour	1,460	79.9	43.6	17.8	12.3
Oligodendroglial tumour and mixed glioma	224	12.3	82.8	68.6	57.7
Ependymal tumour	61	3.3	88.0	88.9	80.3
Glioma, other	63	3.4	64.6	47.4	48.2
Medulloblastoma	12	0.7	*	*	*
Embryonal tumour, other	7	0.4	*	*	*
Females					
Astrocytic tumour	1,049	79.2	45.3	20.5	16.2
Oligodendroglial tumour and mixed glioma	165	12.5	84.7	64.8	53.8
Ependymal tumour	53	4.0	81.8	73.5	71.9
Glioma, other	41	3.1	57.2	55.5	56.1
Medulloblastoma	10	0.8	*	*	*
Embryonal tumour, other	7	0.5	*	*	*

Note: 138 males and 137 females with other or undefined morphology (excluded data).

* Results not displayed due to less than 35 cases.

Source: Belgian Cancer Registry

relatively rare resulting in 10-year relative survival rates of 16.0% in males and 19.2% in females (Flemish Region, 1999-2008; Table 66, Figure 118). The slightly better prognosis in females in comparison with males becomes apparent after one year of follow-up.

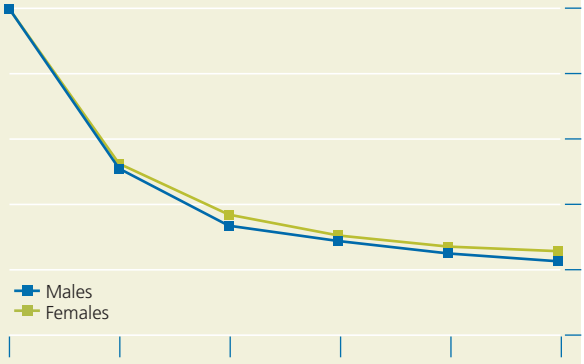
Survival rates are comparable between the three Belgian regions, in both males and females (Table 67).

The age of the patients at time of diagnosis appears to be an important prognostic factor. Highest 5-year relative survival estimates are noted in patients aged 15-24 years (males: 65.9%, females: 71.5%) who represent less than 5% of all cases. Patients between 25-59 years of age have an intermediate 5-year relative survival of 33.6% in males and 42.2% in females. Tumours of the CNS diagnosed in patients of 60 years and older have a very poor prognosis (5-year relative survival of 7.6% in males and 8.0% in females; Table 68).

Astrocytic tumours have a much worse prognosis than the other histological subtypes: 5-year relative survival for astrocytic tumours is 12.3% in males and 16.2% in females compared with 59.1% in males and 57.5% in females for the other subtypes (Table 69). These tumours are by large the most frequently occurring CNS tumours (around 75%). However, even within the astrocytic tumours, a prognostic distinction can be made according to the WHO tumour grade [30;70][9]. Astrocytic tumours with WHO grade II have 5-year relative survival rates of 52.8% in males and 55.8% in females. WHO grade III tumours do worse, with 5-year relative survival rates of 20.9% in males and 28.9% in females. The largest group of astrocytic tumours are grade IV (glioblastoma, 79.3% of astrocytic tumours in males, 75.1% in females), and have very poor 5-year survival rates of 4.7% in males and 6.2% in females (Figure 119, Figure 120).

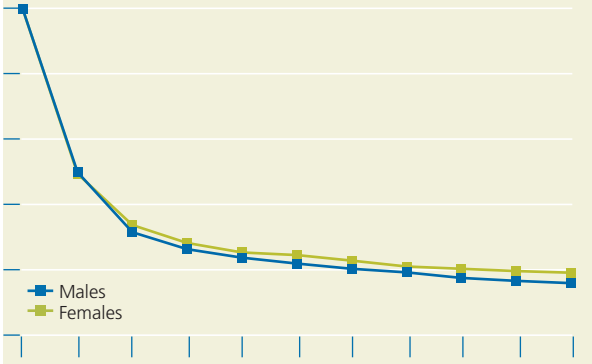
9 Astrocytic tumours with WHO grade I are classified as benign and are not discussed in this booklet.

FIGURE 117 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)



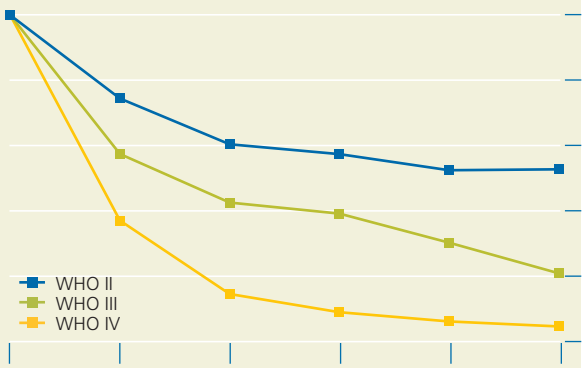
Source: Belgian Cancer Registry

FIGURE 118 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)



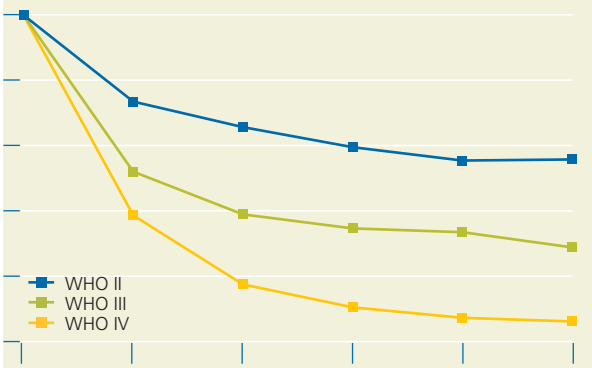
Source: Belgian Cancer Registry

FIGURE 119 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM, ASTROCYTIC TUMOURS: RELATIVE SURVIVAL BY WHO GRADE IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 120 - TUMOURS OF THE CENTRAL NERVOUS SYSTEM, ASTROCYTIC TUMOURS: RELATIVE SURVIVAL BY WHO GRADE IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

13 Thyroid

(ICD-10: C73)

Thyroid cancer is an uncommon cancer in males (0.6% of all cancer cases in Belgium 2008) but ranks 13th in females (2.0% in Belgium 2008). The mortality rates for this cancer type are very low, representing 0.2% and 0.4% of cancer deaths in males and females respectively. Thyroid cancer is known as a cancer with one of the highest survival rates, confirmed by its mortality/incidence ratio of 0.1 [71].

Over recent decades, an increase in incidence rates has been observed worldwide, while mortality seems to remain stable or even appears to decrease [72]. In Belgium (2004-2008) and over a longer period in Flemish Region (1999-2008), a rise in incidence and a decrease in mortality in both sexes are noted. A partial explanation of the increasing incidence may be the use of more intensive and sensitive diagnostic/therapeutic procedures, as suggested by literature [73]. However, this intensification of clinical practice cannot fully explain the observed increase [74;75].

In Belgium (incidence 2004-2008), females have a better survival rate than males, with a 5-year relative survival of 89.3% in males and 94.1% in females (Table 70, Figure 121). After 10 years of follow-up (Flemish Region, 1999-2008), this sex discrepancy is even more evident, with a relative survival of 71.8% in males and 84.6% in females (Table 70, Figure 122).

For the period 2004-2008, the Flemish Region shows a poorer survival rate than the two other Belgian regions, in both sexes (Table 71). This is partly due to a difference in the distribution of morphological types which show different prognosis (see below). There is a higher proportion of papillary carcinoma with good prognosis in the Brussels-Capital (73.1% in males, 83.9% in females) and Walloon Region (73.5% in males, 84.3% in females) as compared with the Flemish Region (53.6% in males, 66.6% in females).

In both sexes, survival for thyroid cancer decreases with age. Patients of 70 years and older have the lowest survival rates (5-year relative survival: 58.8% in males and 72.9% in females), compared with the other age groups for whom higher survival rates are observed (Figure 123, Figure 124). This can at least partly be explained by a higher proportion of stage IV tumours in 70+ years patients (32.6% compared with 7.7% in 40-69 years and 1.6% in 15-39 years), and a higher proportion of stage I tumours in younger patients (66.4% in 15-39 years and 34.3% in 40-69 years compared with 16.6% in 70+ years).

Early stage tumours (stage I and II) are characterized by an extremely good outcome, since 5-year relative survival

TABLE 70 - THYROID CANCER: OBSERVED AND RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008) AND IN THE FLEMISH REGION (1999-2008)

	N at risk	Observed Survival (%)				Relative Survival (%)				ASRS*(%)
		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	5 year
Belgium										
Males	798	92.1	87.7	83.5		93.5	91.3	89.3		85.2
Females	2,352	95.0	92.9	90.6		95.8	94.9	94.1		90.3
Flemish Region										
Males	590	86.1	80.1	75.7	60.4	87.6	83.9	81.4	71.8	
Females	1,624	90.6	87.0	84.1	77.1	91.6	89.2	87.7	84.6	

*ASRS: Age-standardised relative survival

Source: Belgian Cancer Registry

is around 100% in both sexes. Thyroid cancer is more frequently diagnosed as stage I (47.9% of cases with known stage in males and 66.1% in females) while stage II tumours are less common (10.6% of cases with known stage in males and 10.0% in females). Stage III tumours also have a good prognosis with a 5-year relative survival rate of 92.3% in males and 94.4% in females. Survival rates for stage IV are lower, with a steep decrease during the first year of follow-up and a 5-year relative survival rate of 47.8% in males and 38.1% in females (Table 72). In comparison with other cancers, stage IV thyroid cancer has a relatively good outcome. Given the fact that the aggressive anaplastic carcinoma with a poor survival (see below) are all stage IV, this observation points to a high survival rate for stage IV tumours of other histological subtypes (5-year relative survival in stage IV tumours of other histology: 65.3% in males and 56.3% in females).

Within carcinoma, differences are observed in relative survival according to morphological groups. Five-year survival rates remain above 90% in both males and females for papillary and follicular carcinoma, and at around 80% in both males and females for medullary carcinoma. Conversely, anaplastic carcinoma shows a very poor survival. This morphology is particularly aggressive, with a 1-year relative survival of only 15.5% in males and 17.9% in females and a 5-year survival of 6.8% in females, and no survivors in males (Table 73). Papillary carcinoma is the most frequent morphology (64.7% in males and 76.8% in females), whereas anaplastic carcinoma (4.3% in males and 3.0% in females) is less frequent. This large proportion of patients with papillary carcinoma partly explains the good overall survival for thyroid cancer.

TABLE 71 - THYROID CANCER: RELATIVE SURVIVAL BY REGION AND SEX (2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Brussels-Capital Region	104	13.0	97.4	99.1	99.1
Flemish Region	335	42.0	90.9	87.2	84.5
Walloon Region	359	45.0	94.9	93.1	91.6
Females					
Brussels-Capital Region	317	13.5	97.2	97.5	96.6
Flemish Region	958	40.7	92.4	91.0	89.6
Walloon Region	1,077	45.8	98.3	97.7	97.5

Source: Belgian Cancer Registry

TABLE 72 - THYROID CANCER: RELATIVE SURVIVAL BY STAGE AND SEX (BELGIUM, 2004-2008)

	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Stage I	257	32.5	100.3	100.1	101.1
Stage II	57	7.2	101.1	103.6	104.5
Stage III	102	12.9	99.9	97.4	92.3
Stage IV	120	15.2	65.7	54.7	47.8
Stage X	255	32.2	95.7	94.1	91.7
Females					
Stage I	983	42.0	100.1	100.2	99.9
Stage II	149	6.4	100.8	99.9	102.2
Stage III	171	7.3	97.7	96.4	94.4
Stage IV	185	7.9	57.4	48.7	38.1
Stage X	855	36.5	98.2	98.2	98.3

Note: TNM Stage was not applicable in 7 males and 9 females (excluded data).

Source: Belgian Cancer Registry

TABLE 73 - THYROID CANCER: RELATIVE SURVIVAL BY MORPHOLOGY AND SEX (BELGIUM, 2004-2008)

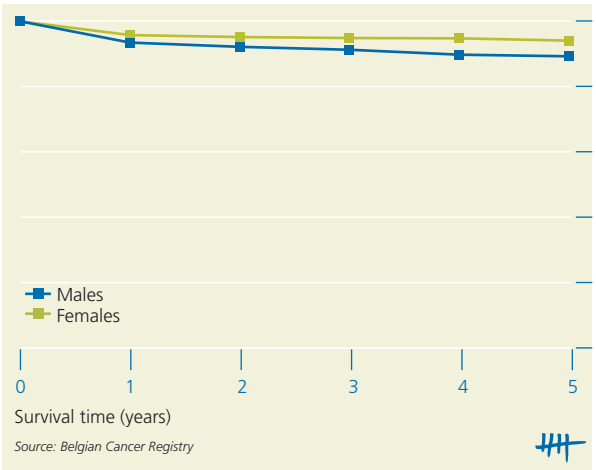
	N at risk		Relative Survival (%)		
	n	%	1 year	3 year	5 year
Males					
Follicular carcinoma	148	18.7	99.6	95.8	90.9
Papillary carcinoma	516	65.2	98.0	96.7	97.0
Medullar carcinoma	68	8.6	94.0	90.8	79.4
Anaplastic carcinoma	34	4.3	15.5	9.8	0.0
Other and unspecified carcinoma	26	3.3	*	*	*
Females					
Follicular carcinoma	331	14.1	97.1	95.7	93.3
Papillary carcinoma	1,806	77.1	99.3	99.2	99.1
Medullar carcinoma	92	3.9	91.0	90.5	81.3
Anaplastic carcinoma	70	3.0	17.9	9.3	6.8
Other and unspecified carcinoma	44	1.9	78.7	64.0	63.0

Note: 6 males and 9 females have another or an unspecified morphology (excluded data).

* Results not displayed due to less than 35 cases. Given the relevance of the results for anaplastic carcinoma in males, the relative survival rates are yet reported.

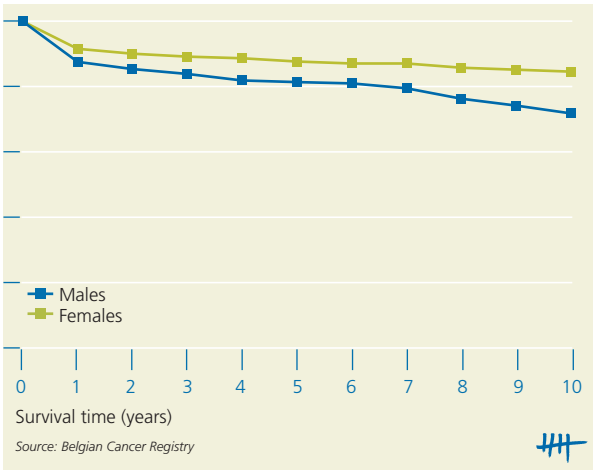
Source: Belgian Cancer Registry

FIGURE 121 - THYROID CANCER: RELATIVE SURVIVAL BY SEX IN BELGIUM (2004-2008)



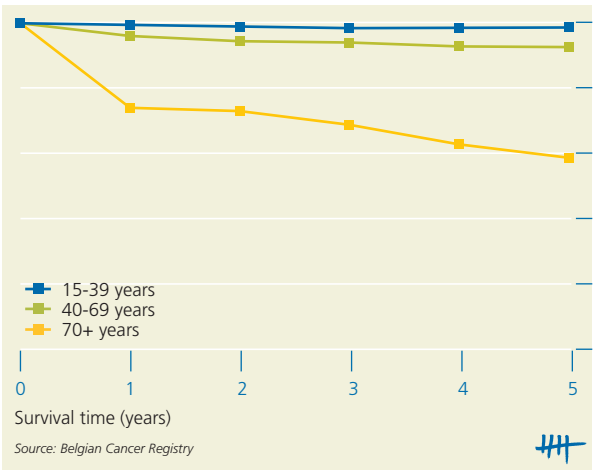
Source: Belgian Cancer Registry

FIGURE 122 - THYROID CANCER: RELATIVE SURVIVAL BY SEX IN THE FLEMISH REGION (1999-2008)



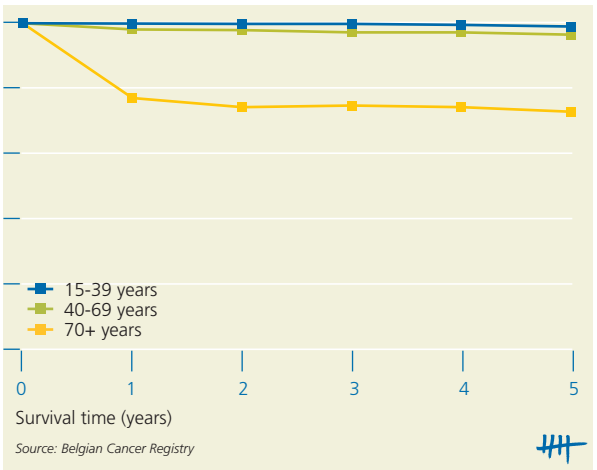
Source: Belgian Cancer Registry

FIGURE 123 - THYROID CANCER: RELATIVE SURVIVAL BY AGE GROUP IN MALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

FIGURE 124 - THYROID CANCER: RELATIVE SURVIVAL BY AGE GROUP IN FEMALES (BELGIUM, 2004-2008)



Source: Belgian Cancer Registry

Appendices

APPENDIX 1 – OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL

TABLE 74 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN MALES, BELGIUM (2004-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)					Relative survival (%)				
		n	%		1 year	2 year	3 year	4 year	5 year	1 year	2 year	3 year	4 year	5 year
C00	Lip	224	0.16	>60	92.9	87.1	83.0	75.3	69.7	96.7	94.5	94.1	89.6	86.6
C01	Base of tongue	322	0.23	28	70.5	52.8	45.4	37.6	36.2	71.7	54.6	47.6	40.2	39.8
C02	Tongue	753	0.53	36	73.5	57.8	49.9	46.0	41.9	74.9	60.0	52.5	49.4	45.9
C03	Gum	151	0.11	42	69.5	56.3	51.7	49.4	45.2	71.4	59.0	55.2	54.0	50.5
C04	Floor of mouth	691	0.48	45	77.4	63.8	56.5	48.3	44.1	78.6	65.7	58.8	50.9	47.3
C05	Palate	267	0.19	50	80.5	68.4	58.5	52.5	44.6	82.0	71.1	61.8	56.5	48.9
C06	Mouth, NOS	302	0.21	43	73.8	59.9	52.6	48.3	45.4	75.8	63.1	56.3	52.9	51.0
C07	Parotid gland	225	0.16	55	79.6	68.4	61.7	53.8	49.4	82.9	74.0	69.0	62.7	59.6
C08	Salivary glands, NOS	78	0.05	>60	80.8	71.8	62.7	55.0	50.2	83.4	76.2	68.4	61.5	59.1
C09	Tonsil	783	0.55	39	75.7	59.7	51.5	45.8	41.9	77.1	61.8	53.9	48.9	45.3
C10	Oropharynx	476	0.33	22	66.3	48.2	41.4	35.3	29.6	67.4	49.7	43.0	37.5	31.9
C11	Nasopharynx	173	0.12	>60	85.0	69.9	65.2	60.3	56.6	86.4	72.1	67.8	63.3	60.0
C12	Pyriform sinus	591	0.41	22	67.7	47.5	37.0	28.2	24.3	68.8	49.1	38.7	30.1	26.3
C13	Hypopharynx	276	0.19	17	59.6	40.7	32.2	27.6	22.6	60.7	42.1	33.6	29.1	23.9
C14	Lip, oral cavity and pharynx, NOS	134	0.09	15	56.0	40.3	32.0	25.1	24.1	57.0	41.9	33.8	26.9	26.2
C15	Oesophagus	2,854	2.00	13	52.6	34.4	26.8	22.9	20.1	54.2	36.4	28.9	25.3	22.9
C16	Stomach	3,736	2.62	13	52.4	37.3	29.4	26.0	24.2	55.0	40.7	33.3	30.6	29.6
C17	Small intestine	422	0.30	>60	77.7	69.0	63.4	58.4	53.2	80.3	73.3	69.3	66.1	62.0
C18	Colon	11,657	8.17	58	78.5	68.0	60.3	54.1	49.2	82.3	74.6	69.0	65.0	62.2
C19	Rectosigmoid junction	862	0.60	>60	82.5	71.0	63.8	57.1	51.3	86.1	77.1	72.2	67.7	63.9
C20	Rectum	5,989	4.20	>60	82.9	72.2	64.1	58.0	52.7	86.3	78.0	71.7	67.5	64.0
C21	Anus and anal canal	224	0.16	>60	79.5	68.8	60.1	55.2	51.2	82.6	73.9	66.8	63.8	62.1

TABLE 74 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN MALES, BELGIUM (2004-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)					Relative survival (%)				
		n	%		1 year	2 year	3 year	4 year	5 year	1 year	2 year	3 year	4 year	5 year
C22	Liver and intrahepatic bile ducts	1,479	1.04	9	45.0	32.6	25.7	21.7	18.2	46.3	34.4	27.7	24.0	20.7
C23	Gallbladder	130	0.09	7	39.2	22.3	16.9	15.0	10.0	41.3	24.6	19.4	17.8	13.4
C24	Biliary tract, NOS	557	0.39	14	54.0	34.1	26.6	22.2	20.6	56.4	36.9	29.7	25.7	24.6
C25	Pancreas	2,634	1.85	7	32.9	17.4	12.6	10.1	8.7	34.1	18.6	13.6	11.1	9.9
C26	Other ill-defined digestive organs	47	0.03	4	27.7	14.9	8.5	8.5	8.5	29.0	16.1	9.4	9.6	9.7
C30	Nasal cavity and middle ear	102	0.07	>60	85.3	73.5	68.6	59.4	54.0	88.3	78.6	75.8	67.5	64.0
C31	Accessory sinuses	275	0.19	55	77.0	67.9	58.0	52.1	46.2	79.3	71.7	62.7	57.8	53.1
C32	Larynx	2,631	1.84	>60	82.6	71.1	63.9	58.8	53.8	84.9	74.9	69.1	65.5	61.8
C33	Trachea	37	0.03	5	27.0	16.2	13.5	8.1	5.4	28.1	17.3	14.7	9.0	6.2
C34	Bronchus and lung	23,757	16.66	9	41.5	24.1	17.6	14.4	12.5	43.1	25.8	19.3	16.2	14.6
C37	Thymus	74	0.05	>60	82.4	66.2	62.1	57.9	56.3	84.3	69.5	66.9	64.0	64.0
C38	Heart, mediastinum and pleura	49	0.03	22	63.3	49.0	49.0	46.8	42.5	64.6	51.1	52.1	50.8	48.3
C39	Respiratory system and intra-thoracic organs, NOS	1	0.00	*	*	*	*	*	*	*	*	*	*	*
C40	Bone and articular cartilage of limbs	139	0.10	>60	89.9	79.9	74.0	70.5	69.4	90.9	81.3	75.7	72.9	72.4
C41	Bone and articular cartilage, NOS	148	0.10	>60	83.8	70.9	62.7	58.0	57.0	85.3	73.4	65.9	61.9	62.0
C43	Malignant melanoma of skin**	2,826	1.98	>60	94.2	87.7	82.8	79.1	76.0	96.6	92.2	89.2	87.4	86.2
C45	Mesothelioma	913	0.64	10	44.5	21.1	10.3	6.1	4.1	46.3	22.7	11.2	6.9	4.9
C46	Kaposi's sarcoma	113	0.08	>60	87.6	83.2	79.6	77.2	74.1	89.5	86.7	84.5	83.6	81.9
C47,C49	Soft tissues	761	0.53	44	83.3	73.7	67.1	62.8	59.9	86.2	78.7	73.8	71.4	70.4
C48	Retroperitoneum and perito-neum	99	0.07	41	72.7	59.6	53.5	46.9	43.6	74.9	62.8	57.4	51.6	48.9
C50	Breast	342	0.24	>60	89.5	84.8	79.2	70.8	64.2	93.2	91.9	89.3	83.2	78.2
C60	Penis	300	0.21	>60	82.7	71.7	65.3	60.2	51.9	86.3	78.1	73.9	71.0	64.0
C61	Prostate	42,988	30.14	>60	95.1	90.4	86.0	81.7	77.6	98.9	97.7	96.8	95.9	95.3
C62	Testis	1,356	0.95	>60	97.9	96.5	96.0	95.2	94.8	98.2	97.0	96.8	96.3	96.2
C63	Male genital organs, NOS	47	0.03	>60	87.2	85.1	80.9	78.2	70.4	90.0	90.1	87.8	87.2	81.0
C64	Kidney	3,595	2.52	>60	81.3	74.4	68.8	64.9	61.5	83.7	78.8	74.7	72.7	71.0
C65	Renal pelvis	389	0.27	28	68.9	54.2	43.0	38.6	34.4	71.9	59.2	49.1	46.1	43.0
C66	Ureter	285	0.20	37	78.6	61.8	51.4	43.8	39.4	82.3	67.5	58.3	51.9	48.7

TABLE 74 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN MALES, BELGIUM (2004-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)					Relative survival (%)				
		n	%		1 year	2 year	3 year	4 year	5 year	1 year	2 year	3 year	4 year	5 year
C67	Bladder	7,087	4.97	45	76.7	63.1	54.9	48.8	44.0	80.9	69.9	63.7	59.6	56.6
C68	Urinary organs, NOS	74	0.05	32	71.6	56.8	46.9	41.5	37.2	74.8	61.9	53.1	49.6	46.9
C69	Eye and adnexa	178	0.12	>60	90.4	80.3	74.1	66.5	60.9	93.2	85.3	81.1	75.2	72.0
C70	Meninges	26	0.02	*	*	*	*	*	*	*	*	*	*	*
C71	Brain	1,871	1.31	12	49.3	31.4	26.6	22.7	20.2	50.4	32.5	27.7	23.8	21.5
C72	Spinal cord, cranial nerves and CNS, NOS	51	0.04	>60	74.5	70.6	70.6	66.0	62.8	75.6	72.3	73.2	69.3	67.3
C73	Thyroid gland	798	0.56	>60	92.1	89.7	87.7	85.1	83.5	93.5	92.2	91.3	89.8	89.3
C74	Adrenal gland	43	0.03	47	69.8	60.5	53.2	47.3	47.3	71.1	62.8	56.4	51.3	51.9
C75	Endocrine glands, NOS	35	0.02	>60	97.1	91.4	91.4	87.8	87.8	98.2	93.4	94.6	92.0	93.2
C81	Hodgkin's disease	755	0.53	>60	89.9	87.1	85.0	83.8	82.7	90.9	88.7	87.2	86.6	86.1
C82-C85	Non-Hodgkin-lymphoma	4,555	3.19	51	78.6	71.6	67.0	61.9	57.3	81.3	76.4	73.5	70.1	67.0
C88	Malignant immunoproliferative diseases	189	0.13	>60	87.8	79.4	73.4	67.9	62.6	91.8	86.4	83.0	79.4	75.5
C90	Multiple myeloma	1,715	1.20	49	80.2	69.2	59.3	51.0	44.2	83.5	74.7	66.1	59.0	53.2
C91	Lymphoid leukaemia	1,675	1.17	>60	90.4	83.8	77.7	72.9	68.7	93.4	89.4	85.6	83.2	81.3
C92	Myeloid leukaemia	1,284	0.90	18	58.5	44.9	39.3	35.6	33.9	60.6	47.7	42.7	39.6	38.5
C93	Monocytic leukaemia	64	0.04	11	46.9	40.6	34.2	34.2	34.2	48.0	42.2	35.9	36.3	36.8
C94-C95	Leukaemia other	88	0.06	12	47.7	35.2	27.3	22.0	20.4	49.9	37.8	29.9	24.7	23.2
C96	Lymphoid. haematopoietic and related tissue, NOS	31	0.02	*	*	*	*	*	*	*	*	*	*	*
C76	Other and ill-defined sites	48	0.03	22	66.7	47.9	45.8	41.7	41.7	69.8	52.6	52.9	50.0	51.5
C80	Unknown primary site	2,762	1.94	4	30.1	19.7	15.6	13.5	12.1	31.4	21.2	17.3	15.4	14.2
MPD	Myeloproliferative Disorders	829	0.58	>60	91.8	85.8	79.8	72.9	67.6	95.2	92.2	88.8	84.3	81.3
MDS	Myelodysplastic Syndromes	1,112	0.78	30	71.2	56.7	45.9	36.8	30.5	75.4	63.4	54.1	46.2	40.2
Total excl. Non-melanoma		**142,628**	**100.00**	**58**	**74.0**	**63.6**	**57.5**	**53.0**	**49.4**	**76.8**	**68.4**	**64.0**	**61.3**	**59.5**
Total excl. Non-melanoma, MPD and MDS		**140,687**	**98.64**	**58**	**73.9**	**63.5**	**57.5**	**53.0**	**49.5**	**76.7**	**68.3**	**64.0**	**61.3**	**59.5**

*Statistic not displayed due to less than 35 cases.
**Analyses for malignant melanoma of the skin were based on ICD-10 classification C43. Tumours with an unknown primary site (C80.9 according to ICD-O-3) were excluded. For more information, see section Methodology.

Source: Belgian Cancer Registry

TABLE 75 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN FEMALES, BELGIUM (2004-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)					Relative survival (%)				
		n	%		1 year	2 year	3 year	4 year	5 year	1 year	2 year	3 year	4 year	5 year
C00	Lip	81	0.07	>60	93.8	90.1	80.1	78.6	77.0	98.4	99.8	93.0	96.1	99.6
C01	Base of tongue	87	0.07	36	74.7	60.9	49.9	49.9	45.1	75.9	62.5	51.7	52.3	46.8
C02	Tongue	303	0.25	>60	76.9	66.7	58.9	53.9	51.1	78.7	69.4	62.1	57.6	55.3
C03	Gum	117	0.10	51	69.2	59.8	52.9	51.8	47.7	71.7	63.1	56.8	57.0	53.5
C04	Floor of mouth	185	0.15	>60	78.9	69.2	61.0	56.3	53.5	80.1	71.0	63.0	58.8	56.6
C05	Palate	135	0.11	>60	90.4	79.3	74.7	71.0	68.9	91.7	81.7	77.8	75.1	73.5
C06	Mouth, NOS	162	0.13	52	75.3	61.1	56.1	51.7	44.3	78.0	65.0	61.3	58.3	51.8
C07	Parotid gland	183	0.15	>60	83.1	74.9	71.0	66.9	62.5	85.4	78.5	75.8	73.2	69.9
C08	Salivary glands, NOS	73	0.06	>60	84.9	82.2	76.7	72.2	66.9	86.9	85.8	81.8	78.9	74.8
C09	Tonsil	280	0.23	>60	80.0	68.6	61.3	57.7	52.9	81.1	70.3	63.5	60.5	56.7
C10	Oropharynx	118	0.10	35	72.0	57.6	48.0	44.9	40.5	73.2	59.2	49.7	46.8	42.5
C11	Nasopharynx	51	0.04	>60	86.3	82.4	74.3	69.5	69.5	87.4	84.5	77.0	72.3	72.9
C12	Pyriform sinus	78	0.06	21	76.9	46.2	34.4	30.7	28.8	77.8	47.2	35.6	32.6	30.6
C13	Hypopharynx	59	0.05	22	64.4	49.2	43.9	41.9	37.7	65.1	50.1	45.2	43.3	40.0
C14	Lip, oral cavity and pharynx, NOS	44	0.04	20	65.9	45.5	38.6	33.6	28.0	67.4	47.4	41.3	37.0	30.2
C15	Oesophagus	1,026	0.84	11	47.9	32.1	26.8	23.0	20.2	49.7	34.2	29.1	25.6	23.4
C16	Stomach	2,297	1.88	13	52.0	39.4	33.0	29.8	27.2	54.6	43.0	37.2	34.9	33.0
C17	Small intestine	407	0.33	>60	72.7	64.6	60.4	55.7	52.9	75.0	68.1	65.1	61.5	59.9
C18	Colon	11,151	9.11	>60	77.8	67.8	61.1	55.9	52.1	81.3	73.7	69.0	66.1	64.5
C19	Rectosigmoid junction	697	0.57	>60	80.6	72.0	63.3	59.1	55.4	83.6	77.3	70.2	68.0	66.3
C20	Rectum	4,266	3.48	>60	82.7	72.6	65.3	59.8	54.9	85.6	77.5	71.7	67.9	64.4
C21	Anus and anal canal	355	0.29	>60	81.4	71.2	65.7	58.8	55.9	84.3	76.0	71.9	66.0	64.4
C22	Liver and intrahepatic bile ducts	684	0.56	10	45.9	32.0	25.3	21.8	18.2	47.2	33.6	27.0	23.6	20.2
C23	Gallbladder	299	0.24	8	38.1	25.1	20.3	18.6	16.4	39.8	27.1	22.8	21.7	20.1
C24	Biliary tract, NOS	510	0.42	10	44.3	27.5	21.9	18.6	16.5	46.1	29.5	24.1	21.0	19.2
C25	Pancreas	2,500	2.04	7	33.6	16.6	11.1	9.0	8.1	34.7	17.5	11.8	9.8	9.0
C26	Other ill-defined digestive organs	46	0.04	5	39.1	17.4	15.2	12.7	12.7	41.1	18.7	16.9	14.6	15.4
C30	Nasal cavity and middle ear	67	0.05	54	82.1	74.6	66.9	53.9	48.6	83.9	78.1	71.4	58.1	53.4

TABLE 75 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN FEMALES, BELGIUM (2004-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)					Relative survival (%)				
		n	%		1 year	2 year	3 year	4 year	5 year	1 year	2 year	3 year	4 year	5 year
C31	Accessory sinuses	76	0.06	30	65.4	54.7	49.2	42.5	32.8	67.7	57.7	52.9	46.8	37.8
C32	Larynx	374	0.31	>60	81.8	70.6	63.0	58.5	53.7	83.2	72.8	65.9	62.2	58.1
C33	Trachea	17	0.01	*	*	*	*	*	*	*	*	*	*	*
C34	Bronchus and lung	7,560	6.17	11	47.3	31.0	23.9	20.4	18.0	48.2	32.1	25.0	21.6	19.5
C37	Thymus	56	0.05	>60	91.1	80.4	64.1	64.1	64.1	93.0	83.6	68.1	69.4	70.7
C38	Heart, mediastinum and pleura	28	0.02	*	*	*	*	*	*	*	*	*	*	*
C39	Respiratory system and intrathoracic organs, NOS	0	0.00	*	*	*	*	*	*	*	*	*	*	*
C40	Bone and articular cartilage of limbs	125	0.10	>60	92.8	89.6	86.4	84.4	80.6	93.6	91.1	88.4	87.1	83.9
C41	Bone and articular cartilage, NOS	143	0.12	>60	86.7	74.1	66.4	56.4	55.5	87.8	76.0	68.9	59.7	59.4
C43	Malignant melanoma of skin**	4,371	3.57	>60	95.6	91.7	88.9	86.0	84.0	97.2	94.8	93.3	91.7	91.0
C45	Mesothelioma	198	0.16	12	49.5	24.7	17.1	10.1	7.6	50.7	25.9	17.9	10.9	8.3
C46	Kaposi's sarcoma	38	0.03	>60	84.2	78.9	76.3	69.4	60.9	87.8	85.7	86.2	81.3	73.6
C47,C49	Soft tissues	647	0.53	44	78.8	69.7	64.4	61.2	58.4	81.0	73.4	69.2	67.2	65.5
C48	Retroperitoneum and peritoneum	187	0.15	39	77.5	61.5	50.6	44.9	43.2	79.1	63.8	53.3	48.5	47.2
C50	Breast	45,946	37.52	>60	95.4	91.5	87.5	83.9	80.3	97.1	94.8	92.4	90.2	88.0
C51	Vulva	778	0.64	59	79.8	67.3	60.6	54.5	49.7	83.3	73.1	68.1	63.5	60.2
C52	Vagina	200	0.16	19	62.5	44.0	37.0	32.4	29.1	65.2	47.1	40.4	36.2	33.4
C53	Cervix uteri	3,065	2.50	>60	87.3	77.6	72.7	69.3	66.6	88.4	79.4	74.9	71.9	69.8
C54	Corpus uteri	6,346	5.18	>60	90.4	83.4	78.1	73.7	70.3	92.6	87.5	83.9	81.2	79.6
C55	Uterus	157	0.13	>60	75.8	66.2	63.7	60.3	59.5	78.2	70.0	68.4	65.9	66.1
C56	Ovary	4,149	3.39	41	76.3	63.3	53.5	46.2	40.6	78.1	65.9	56.5	49.6	44.4
C57	Female genital organs, NOS	150	0.12	51	80.0	65.3	55.7	50.8	45.5	82.0	68.3	59.1	54.7	50.0
C58	Placenta	14	0.01	*	*	*	*	*	*	*	*	*	*	*
C64	Kidney	2,260	1.85	>60	82.8	76.3	71.1	66.9	62.4	84.8	80.0	76.2	73.6	70.7
C65	Renal pelvis	307	0.25	28	71.0	52.8	45.2	39.0	35.6	73.6	56.6	49.9	44.9	42.5
C66	Ureter	131	0.11	37	75.6	60.3	51.7	42.9	35.5	78.7	65.2	57.8	49.9	44.3

TABLE 75 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN FEMALES, BELGIUM (2004-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)					Relative survival (%)				
		n	%		1 year	2 year	3 year	4 year	5 year	1 year	2 year	3 year	4 year	5 year
C67	Bladder	1,894	1.55	32	67.4	55.0	47.8	42.9	39.1	70.8	60.3	54.5	51.2	49.2
C68	Urinary organs, NOS	22	0.02	*	*	*	*	*	*	*	*	*	*	*
C69	Eye and adnexa	170	0.14	>60	91.2	84.7	77.6	71.0	63.6	93.3	88.8	83.2	78.2	71.4
C70	Meninges	57	0.05	>60	84.2	75.4	73.7	67.4	65.0	86.1	78.9	78.2	73.1	72.0
C71	Brain	1,361	1.11	12	51.1	35.0	28.6	25.2	23.8	51.8	35.7	29.2	25.8	24.6
C72	Spinal cord, cranial nerves and CNS, NOS	42	0.03	>60	78.6	76.2	73.8	71.2	62.8	79.0	76.8	74.6	71.8	63.3
C73	Thyroid gland	2,352	1.92	>60	95.0	93.8	92.9	92.1	90.6	95.8	95.2	94.9	94.8	94.1
C74	Adrenal gland	65	0.05	60	81.5	67.7	59.9	54.1	47.7	82.8	69.5	61.9	56.7	51.8
C75	Endocrine glands, NOS	24	0.02	*	*	*	*	*	*	*	*	*	*	*
C81	Hodgkin's disease	549	0.45	>60	90.2	88.0	85.2	83.7	82.5	90.9	89.2	86.8	85.7	85.0
C82-C85	Non-Hodgkin-lymphoma	4,031	3.29	51	78.5	72.0	68.1	64.0	60.6	80.9	76.0	73.6	71.0	68.9
C88	Malignant immunoproliferative diseases	119	0.10	>60	90.8	85.7	80.5	74.8	67.1	94.1	91.7	89.2	85.6	79.5
C90	Multiple myeloma	1,513	1.24	52	79.7	70.4	60.8	52.6	45.2	82.1	74.4	65.8	58.6	51.8
C91	Lymphoid leukaemia	1,126	0.92	>60	88.0	81.8	76.1	71.9	67.0	90.5	86.4	82.6	80.3	76.7
C92	Myeloid leukaemia	1,099	0.90	19	58.8	46.8	42.5	39.3	37.2	60.6	49.1	45.2	42.4	40.6
C93	Monocytic leukaemia	52	0.04	15	59.6	40.4	25.6	21.9	21.9	60.6	41.5	25.6	21.2	21.2
C94-C95	Leukaemia other	61	0.05	23	55.7	47.5	40.9	37.0	34.6	58.1	50.4	44.3	40.8	35.9
C96	Lymphoid, haematopoietic and related tissue, NOS	34	0.03	*	*	*	*	*	*	*	*	*	*	*
C76	Other and ill-defined sites	41	0.03	9	45.3	37.7	35.2	30.2	30.2	48.0	42.2	41.4	37.1	39.1
C80	Unknown primary site	2,450	2.00	4	29.5	21.0	17.3	15.2	13.7	30.7	22.5	18.8	17.1	15.7
MPD	Myeloproliferative Disorders	862	0.70	>60	92.9	88.3	83.0	78.3	74.4	95.7	93.6	90.5	88.1	86.4
MDS	Myelodysplastic Syndromes	881	0.72	40	74.8	64.5	52.8	44.9	37.4	78.3	70.4	60.0	53.2	46.5
Total excl. non-melanoma		**122,464**	**100.00**	**>60**	**81.2**	**73.3**	**68.1**	**64.0**	**60.6**	**83.2**	**76.8**	**72.8**	**70.0**	**67.8**
Total excl. non-melanoma, MPD and MDS		**120,721**	**98.58**	**>60**	**81.1**	**73.3**	**68.1**	**64.1**	**60.7**	**83.2**	**76.8**	**72.7**	**70.0**	**67.8**

*Statistic not displayed due to less than 35 cases.
**Analyses for malignant melanoma of the skin were based on ICD-10 classification C43. Tumours with an unknown primary site (C80.9 according to ICD-O-3) were excluded. For more information, see section Methodology.

Source: Belgian Cancer Registry

TABLE 76 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN MALES, FLEMISH REGION (1999-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival				Relative survival				
		n	%		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	10y 95%CI
C00	Lip	362	0.22	>60	91.4	80.1	68.2	45.2	96.3	93.1	87.9	77.2	[65.5-88.5]
C01	Base of tongue	307	0.18	31	70.7	46.4	39.5	22.7	72.0	49.1	43.8	29.4	[21.9-37.6]
C02	Tongue	726	0.44	41	74.1	52.1	41.7	27.0	75.5	55.0	45.9	33.6	[28.5-38.8]
C03	Gum	92	0.06	31	69.6	48.9	46.3	34.6	71.4	52.0	51.4	43.8	[28.2-59.9]
C04	Floor of mouth	714	0.43	47	79.6	56.8	44.7	23.5	80.8	59.3	48.0	27.5	[22.6-32.7]
C05	Palate	231	0.14	50	81.4	59.2	45.7	25.2	83.0	62.7	50.4	30.4	[21.6-40.1]
C06	Mouth, NOS	374	0.22	44	72.7	53.7	44.0	30.9	74.3	56.8	48.3	38.4	[31.6-45.5]
C07	Parotid gland	267	0.16	53	80.9	62.1	47.0	40.0	84.2	69.4	56.3	54.3	[45.6-62.9]
C08	Salivary glands, NOS	91	0.05	>60	79.1	63.7	53.2	35.9	81.7	70.1	63.5	53.8	[36.8-71.0]
C09	Tonsil	737	0.44	36	75.4	49.9	39.6	24.9	76.9	52.3	42.9	30.1	[25.2-35.3]
C10	Oropharynx	362	0.22	22	63.3	38.0	27.2	12.1	64.4	39.8	29.8	15.9	[10.1-23.1]
C11	Nasopharynx	156	0.09	59	80.8	58.9	49.3	36.1	82.3	61.7	53.0	41.2	[31.1-51.4]
C12	Pyriform sinus	488	0.29	24	69.4	37.7	26.5	11.7	70.5	39.5	28.6	14.0	[10.0-18.8]
C13	Hypopharynx	290	0.17	17	59.9	31.7	23.6	15.3	60.8	33.1	25.3	18.1	[12.4-24.7]
C14	Lip, oral cavity and pharynx, NOS	132	0.08	16	57.6	34.8	30.6	18.2	58.9	37.0	33.7	23.6	[14.7-34.1]
C15	Oesophagus	3,253	1.95	13	51.0	26.4	20.2	13.5	52.7	28.6	22.9	17.9	[15.9-19.9]
C16	Stomach	4,592	2.76	12	50.2	27.7	22.0	14.0	52.9	31.8	27.6	22.5	[20.5-24.6]
C17	Small intestine	480	0.29	>60	73.7	60.5	51.8	39.6	76.3	66.2	60.1	55.3	[47.6-62.9]
C18	Colon	13,481	8.10	55	77.1	58.4	48.1	33.6	80.8	66.8	60.7	55.6	[53.9-57.4]
C19	Rectosigmoid junction	1,289	0.77	>60	82.0	62.9	50.3	34.6	85.5	71.1	62.4	56.0	[50.8-61.2]
C20	Rectum	7,537	4.53	>60	82.8	64.1	52.8	36.6	86.2	71.8	63.9	54.9	[52.7-57.0]
C21	Anus and anal canal	234	0.14	>60	78.6	61.9	52.7	44.6	81.5	68.4	62.6	63.6	[52.9-73.9]
C22	Liver and intrahepatic bile ducts	1,319	0.79	8	42.2	23.2	16.5	10.5	43.6	25.2	18.8	14.0	[11.1-17.3]
C23	Gallbladder	153	0.09	7	34.0	14.4	11.8	9.1	35.9	16.7	15.2	16.5	[8.6-27.7]
C24	Biliary tract, NOS	555	0.33	16	56.4	29.3	23.4	18.8	58.9	32.6	27.7	27.2	[21.5-33.5]
C25	Pancreas	2,844	1.71	6	30.1	11.4	8.0	6.0	31.3	12.5	9.1	8.0	[6.6-9.4]
C26	Other ill-defined digestive organs	40	0.02	5	40.0	17.5	14.6	11.7	42.0	19.4	17.2	15.2	[5.2-30.9]

TABLE 76 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN MALES, FLEMISH REGION (1999-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival				Relative survival				
		n	%		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	10y 95%CI
C30	Nasal cavity and middle ear	111	0.07	>60	82.9	68.5	52.5	35.9	86.4	77.0	64.5	54.6	[36.5-73.0]
C31	Accessory sinuses	368	0.22	58	78.2	59.6	48.7	31.9	80.2	64.0	54.9	41.2	[33.4-49.2]
C32	Larynx	3,030	1.82	>60	83.5	65.7	54.0	37.3	85.9	71.3	62.3	51.2	[48.2-54.2]
C33	Trachea	50	0.03	6	34.0	22.0	20.0	10.5	35.1	23.8	23.0	17.0	[6.3-33.5]
C34	Bronchus and lung	28,010	16.83	9	39.8	16.7	11.9	6.6	41.3	18.5	14.0	9.5	[8.9-10.0]
C37	Thymus	71	0.04	>60	83.1	63.4	56.2	49.0	85.1	68.6	64.1	66.0	[46.4-83.7]
C38	Heart, mediastinum and pleura	79	0.05	10	45.6	30.4	25.2	25.2	47.0	32.8	29.0	30.0	[19.1-42.1]
C39	Respiratory system and intrathoracic organs, NOS	3	0.00	*	*	*	*	*	*	*	*	*	*
C40	Bone and articular cartilage of limbs	171	0.10	>60	88.3	70.7	66.2	60.4	89.3	72.8	69.7	67.1	[57.9-75.3]
C41	Bone and articular cartilage, NOS	202	0.12	>60	80.2	58.9	52.1	39.0	81.5	61.6	56.1	45.5	[36.2-54.7]
C43	Malignant melanoma of skin**	2,905	1.75	>60	92.7	80.5	72.7	60.8	94.9	86.0	81.1	76.4	[73.4-79.2]
C45	Mesothelioma	1,147	0.69	10	42.2	8.8	3.9	0.9	43.7	9.6	4.4	1.4	[0.4-3.5]
C46	Kaposi's sarcoma	88	0.05	>60	79.5	76.1	68.9	59.2	82.1	83.5	81.3	91.9	[70.3-109.5]
C47,C49	Soft tissues	897	0.54	>60	81.9	67.5	60.0	49.3	84.6	73.9	69.9	67.4	[61.9-72.8]
C48	Retroperitoneum and peritoneum	124	0.07	27	63.7	44.3	37.5	23.4	65.6	47.4	42.2	29.7	[18.6-42.5]
C50	Breast	443	0.27	>60	89.4	74.7	62.7	42.4	93.1	84.1	76.2	61.9	[53.2-70.4]
C60	Penis	329	0.20	>60	82.7	66.8	54.5	38.3	86.7	76.7	68.9	62.8	[52.0-73.5]
C61	Prostate	51,554	30.98	>60	93.9	84.0	75.4	55.8	97.8	94.9	93.0	89.2	[88.3-90.2]
C62	Testis	1,315	0.79	>60	97.5	95.8	94.8	93.3	97.8	96.6	96.2	96.3	[94.5-97.7]
C63	Male genital organs, NOS	46	0.03	>60	89.1	78.3	66.4	58.1	92.5	85.7	76.2	85.3	[58.5-106.6]
C64	Kidney	4,156	2.50	>60	79.5	65.8	58.2	43.5	82.0	71.7	67.4	60.6	[57.9-63.3]
C65	Renal pelvis	489	0.29	26	68.3	43.7	35.2	22.2	71.3	49.8	43.8	35.0	[28.1-42.4]
C66	Ureter	320	0.19	42	79.4	55.2	41.8	23.5	83.0	62.9	52.5	37.9	[28.2-48.5]
C67	Bladder	8,324	5.00	50	77.9	56.5	45.9	29.7	82.1	65.5	58.8	49.6	[47.5-51.7]
C68	Urinary organs, NOS	71	0.04	29	70.4	46.3	36.4	20.0	73.7	53.1	45.9	34.0	[18.2-53.4]
C69	Eye and adnexa	244	0.15	>60	89.8	70.0	59.3	44.5	92.6	77.3	70.2	61.7	[50.8-72.2]
C70	Meninges	38	0.02	>60	78.9	63.2	52.5	39.4	81.5	69.0	59.6	52.3	[20.8-83.3]

TABLE 76 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN MALES, FLEMISH REGION (1999-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival				Relative survival				
		n	%		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	10y 95%CI
C71	Brain	2,258	1.36	11	48.0	24.2	19.7	13.4	49.0	25.1	20.7	14.5	[12.7-16.4]
C72	Spinal cord, cranial nerves and CNS, NOS	54	0.03	>60	88.9	77.7	71.0	71.0	89.8	79.9	74.9	78.6	[62.5-90.1]
C73	Thyroid gland	590	0.35	>60	86.1	80.1	75.5	60.4	87.6	83.9	81.4	71.8	[65.0-78.0]
C74	Adrenal gland	61	0.04	32	62.3	49.1	37.9	28.3	63.6	51.9	41.4	33.6	[19.2-49.4]
C75	Endocrine glands, NOS	48	0.03	>60	93.8	89.6	79.5	75.6	94.9	92.9	84.9	86.7	[67.6-98.8]
C81	Hodgkin's disease	767	0.46	>60	89.8	84.6	81.7	72.3	90.8	86.8	85.2	78.6	[73.9-82.7]
C82-C85	Non-Hodgkin-lymphoma	4,975	2.99	>60	77.1	64.5	55.0	40.9	79.8	70.7	63.9	54.6	[52.2-57.0]
C88	Malignant immunoproliferative diseases	203	0.12	>60	87.7	72.4	61.9	38.6	91.8	82.3	75.4	56.0	[41.4-70.5]
C90	Multiple myeloma	2,064	1.24	46	78.2	56.5	40.9	20.4	81.5	62.9	48.9	29.4	[25.9-33.1]
C91	Lymphoid leukaemia	2,231	1.34	>60	87.3	74.6	64.5	43.7	90.4	82.5	76.5	62.7	[58.7-66.7]
C92	Myeloid leukaemia	1,506	0.90	16	55.2	35.7	30.3	24.4	57.3	38.8	34.5	30.5	[27.3-33.7]
C93	Monocytic leukaemia	63	0.04	12	50.8	36.5	34.5	30.6	52.0	38.0	37.0	36.6	[22.3-51.9]
C94-C95	Leukaemia other	159	0.10	14	52.2	37.1	23.0	15.2	54.6	42.0	28.0	21.3	[13.6-30.7]
C96	Lymphoid, haematopoietic and related tissue, NOS	42	0.03	>60	85.7	73.7	64.9	57.1	86.9	76.6	68.4	60.7	[41.0-76.6]
C76	Other and ill-defined sites	97	0.06	20	60.8	43.3	38.1	25.0	62.9	47.6	44.6	34.0	[21.4-48.1]
C80	Unknown primary site	3,776	2.27	4	28.8	14.8	11.6	8.4	30.1	16.5	13.8	11.5	[10.2-13.0]
MPD	Myeloproliferative Disorders	766	0.46	>60	93.1	80.1	70.6	53.6	96.5	89.0	84.4	77.0	[69.5-84.1]
MDS	Myelodysplastic Syndromes	932	0.56	33	73.5	47.8	32.1	16.2	77.7	56.1	41.8	26.1	[18.2-35.2]
Total excl. non-melanoma		**166,436**	**100.00**	**54**	**72.8**	**56.2**	**48.2**	**34.6**	**75.7**	**62.8**	**58.2**	**52.3**	**[51.8-52.7]**
Total excl. non-melanoma, MPD and MDS		**164,738**	**98.98**	**54**	**72.7**	**56.2**	**48.2**	**34.6**	**75.6**	**62.8**	**58.2**	**52.3**	**[51.8-52.7]**

*Statistic not displayed due to less than 35 cases.
**Analyses for malignant melanoma of the skin were based on ICD-10 classification C43. Tumours with an unknown primary site (C80.9 according to ICD-O-3) were excluded. For more information, see section Methodology.

Source: Belgian Cancer Registry

TABLE 77 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN FEMALES, FLEMISH REGION (1999-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)				Relative survival (%)				
		n	%		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	10y 95%CI
C00	Lip	108	0.08	>60	94.4	76.8	70.6	58.3	99.9	90.6	93.2	100.0	[89.5-131.3]
C01	Base of tongue	73	0.05	52	75.3	57.4	46.4	30.9	77.1	59.9	49.3	36.4	[20.5-53.2]
C02	Tongue	301	0.22	>60	75.0	59.3	51.9	40.0	76.9	63.5	57.6	50.4	[41.8-58.9]
C03	Gum	87	0.06	49	69.0	52.8	48.8	18.2	72.0	58.5	57.9	28.4	[11.2-50.7]
C04	Floor of mouth	188	0.14	40	76.6	53.1	45.8	31.1	77.9	55.5	48.7	35.7	[26.3-45.5]
C05	Palate	123	0.09	>60	86.2	66.6	58.7	35.8	87.6	69.6	63.1	40.9	[27.1-54.9]
C06	Mouth, NOS	173	0.13	55	75.7	57.7	45.5	33.4	78.4	63.0	52.8	45.0	[33.6-56.8]
C07	Parotid gland	186	0.14	>60	81.2	67.2	62.7	53.8	83.7	71.8	69.5	67.5	[56.4-77.5]
C08	Salivary glands, NOS	81	0.06	>60	88.9	76.5	67.1	55.8	90.9	81.4	74.1	67.4	[51.0-81.4]
C09	Tonsil	202	0.15	>60	80.2	62.2	53.3	39.0	81.3	64.7	56.9	45.6	[35.8-55.3]
C10	Oropharynx	63	0.05	59	73.0	50.8	47.8	34.0	73.9	52.2	50.8	38.8	[23.0-55.2]
C11	Nasopharynx	48	0.04	>60	83.3	66.5	64.3	40.6	84.3	69.0	67.4	47.0	[26.9-65.7]
C12	Pyriform sinus	63	0.05	18	68.3	33.1	27.8	10.7	69.2	34.5	30.0	12.0	[3.2-27.8]
C13	Hypopharynx	43	0.03	34	62.8	46.5	34.7	19.0	63.6	48.1	37.1	23.6	[9.6-42.1]
C14	Lip, oral cavity and pharynx, NOS	21	0.02	*	*	*	*	*	*	*	*	*	*
C15	Oesophagus	1,010	0.74	11	46.6	28.0	21.2	14.3	48.5	30.7	24.5	19.2	[15.8-22.9]
C16	Stomach	2,972	2.17	12	50.5	31.9	26.2	18.6	53.4	36.5	32.5	29.4	[26.8-32.1]
C17	Small intestine	423	0.31	>60	74.7	60.9	54.5	36.6	76.9	65.5	61.2	46.1	[37.7-54.5]
C18	Colon	12,702	9.27	>60	76.6	59.2	50.4	37.0	79.9	66.8	62.0	58.7	[57.0-60.4]
C19	Rectosigmoid junction	975	0.71	>60	81.8	63.6	53.1	38.6	84.9	70.5	63.3	56.9	[51.5-62.2]
C20	Rectum	5,023	3.67	>60	82.4	64.9	54.2	39.3	85.3	71.4	63.6	55.8	[53.3-58.3]
C21	Anus and anal canal	314	0.23	>60	79.3	63.0	56.0	40.2	82.4	69.1	64.5	52.1	[42.7-61.2]
C22	Liver and intrahepatic bile ducts	795	0.58	7	39.5	21.1	14.2	8.3	41.0	22.8	16.2	10.2	[7.2-13.8]
C23	Gallbladder	404	0.29	7	37.1	18.7	15.2	11.1	38.8	21.3	18.7	16.6	[11.5-22.6]
C24	Biliary tract, NOS	534	0.39	10	44.2	24.6	19.1	14.3	46.1	27.1	22.3	20.0	[15.2-25.4]
C25	Pancreas	2,756	2.01	6	29.8	10.6	7.7	5.5	30.9	11.5	8.7	7.4	[6.0-8.9]
C26	Other ill-defined digestive organs	38	0.03	4	39.5	23.7	23.7	19.7	41.1	25.7	27.3	27.1	[11.7-47.1]

TABLE 77 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN FEMALES, FLEMISH REGION (1999-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)				Relative survival (%)				
		n	%		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	10y 95%CI
C30	Nasal cavity and middle ear	57	0.04	54	73.7	61.4	46.1		75.3	65.1	50.6	33.7	[9.6-63.3]
C31	Accessory sinuses	84	0.06	41	73.8	52.1	40.1	28.2	75.8	55.0	43.7	34.0	[20.1-49.2]
C32	Larynx	344	0.25	>60	82.8	63.0	53.0	40.6	84.3	66.2	57.6	49.9	[42.1-57.6]
C33	Trachea	19	0.01	*	*	*	*	*	*	*	*	*	*
C34	Bronchus and lung	6,968	5.09	11	46.8	22.7	16.9	11.1	47.7	23.8	18.4	13.2	[12.1-14.4]
C37	Thymus	62	0.05	>60	88.7	67.7	65.8	51.7	90.1	71.0	70.9	60.6	[42.6-76.2]
C38	Heart, mediastinum and pleura	34	0.02	*	*	*	*	*	*	*	*	*	*
C39	Respiratory system and intrathoracic organs, NOS	2	0.00	*	*	*	*	*	*	*	*	*	*
C40	Bone and articular cartilage of limbs	159	0.12	>60	90.6	83.0	76.4	69.7	91.3	84.7	79.2	74.7	[64.0-83.3]
C41	Bone and articular cartilage, NOS	171	0.12	>60	84.8	68.4	61.3	50.8	85.9	70.8	64.6	55.6	[45.2-65.1]
C43	Malignant melanoma of skin**	4,513	3.29	>60	95.2	88.2	82.7	73.6	96.7	92.3	89.2	85.7	[83.7-87.6]
C45	Mesothelioma	229	0.17	11	44.5	14.0	6.4	6.4	45.6	14.6	6.8	6.8	[3.8-11.1]
C46	Kaposi's sarcoma	27	0.02	*	*	*	*	*	*	*	*	*	*
C47,C49	Soft tissues	775	0.57	64	81.7	68.0	60.9	51.4	83.9	73.1	68.3	64.3	[59.1-69.4]
C48	Retroperitoneum and peritoneum	199	0.15	39	72.4	50.6	43.1	31.4	73.8	52.9	46.5	37.0	[27.9-46.5]
C50	Breast	51,572	37.65	>60	95.1	86.6	79.4	65.9	96.8	91.0	86.5	78.9	[78.3-79.5]
C51	Vulva	818	0.60	>60	81.4	62.8	51.2	38.7	84.9	70.5	61.6	55.5	[49.3-61.5]
C52	Vagina	214	0.16	22	63.6	43.0	36.9	29.3	66.2	47.4	42.9	39.9	[30.9-49.4]
C53	Cervix uteri	3,585	2.62	>60	87.5	73.3	67.4	60.4	88.6	75.5	70.6	66.2	[64.2-68.2]
C54	Corpus uteri	7,489	5.47	>60	90.1	78.3	71.8	59.9	92.2	83.5	80.2	76.6	[74.8-78.4]
C55	Uterus	270	0.20	>60	77.4	60.7	56.9	51.0	79.7	65.3	63.5	63.5	[55.2-71.2]
C56	Ovary	5,344	3.90	40	76.1	52.8	41.1	29.7	77.8	55.6	44.6	35.2	[33.5-36.9]
C57	Female genital organs, NOS	143	0.10	>60	78.3	58.7	51.4	36.7	80.2	61.7	55.6	43.0	[30.6-55.4]
C58	Placenta	20	0.01	*	*	*	*	*	*	*	*	*	*
C64	Kidney	2,726	1.99	>60	80.2	68.0	60.2	45.8	82.2	73.1	68.3	60.5	[57.3-63.7]
C65	Renal pelvis	324	0.24	23	67.3	41.0	30.1	16.2	69.7	45.6	36.8	26.0	[17.4-36.2]

TABLE 77 - OVERVIEW BY ICD-10: OBSERVED AND RELATIVE SURVIVAL IN FEMALES, FLEMISH REGION (1999-2008)

ICD-10		Cancer		Median observed survival (months)	Observed survival (%)				Relative survival (%)				
		n	%		1 year	3 year	5 year	10 year	1 year	3 year	5 year	10 year	10y 95%CI
C66	Ureter	183	0.13	36	67.2	50.7	39.3	25.0	69.8	56.0	46.4	34.2	[24.7-44.5]
C67	Bladder	2,238	1.63	36	68.9	49.9	41.8	27.2	72.4	57.2	52.6	44.6	[40.8-48.5]
C68	Urinary organs, NOS	25	0.02	*	*	*	*	*	*	*	*	*	*
C69	Eye and adnexa	212	0.15	>60	90.6	75.9	63.5	36.1	92.9	82.0	72.4	46.9	[35.6-58.3]
C70	Meninges	85	0.06	>60	85.9	78.8	68.5	54.4	87.6	83.7	74.8	63.1	[48.9-75.5]
C71	Brain	1,681	1.23	11	48.0	26.4	22.4	16.6	48.7	27.1	23.3	17.8	[15.6-20.0]
C72	Spinal cord, cranial nerves and CNS, NOS	37	0.03	>60	86.5	83.8	81.0	81.0	87.0	84.9	82.6	86.9	[68.5-97.3]
C73	Thyroid gland	1,624	1.19	>60	90.6	87.0	84.1	77.1	91.6	89.2	87.7	84.6	[81.4-87.4]
C74	Adrenal gland	76	0.06	46	75.0	57.9	47.1	43.0	76.0	59.7	49.9	48.5	[35.0-61.3]
C75	Endocrine glands, NOS	29	0.02	*	*	*	*	*	*	*	*	*	*
C81	Hodgkin's disease	620	0.45	>60	91.9	87.4	84.8	79.0	92.6	89.0	87.2	83.3	[79.0-86.9]
C82-C85	Non-Hodgkin-lymphoma	4,280	3.12	>60	76.7	64.7	57.7	44.5	79.0	69.9	65.3	57.1	[54.7-59.6]
C88	Malignant immunoproliferative diseases	118	0.09	>60	90.7	82.1	67.1	43.3	94.6	92.7	81.8	64.1	[42.0-84.6]
C90	Multiple myeloma	1,833	1.34	48	78.5	57.9	41.8	22.9	80.9	62.9	48.3	30.3	[26.9-33.9]
C91	Lymphoid leukaemia	1,466	1.07	>60	86.3	74.5	65.1	44.8	89.0	81.2	74.8	59.2	[54.5-63.8]
C92	Myeloid leukaemia	1,258	0.92	15	55.2	37.5	32.2	25.5	57.0	40.1	35.4	29.6	[26.3-33.0]
C93	Monocytic leukaemia	57	0.04	16	61.4	30.9	28.6	28.6	62.2	31.2	28.7	29.3	[17.3-42.5]
C94-C95	Leukaemia other	136	0.10	11	49.3	38.2	32.5	23.1	51.7	42.3	37.8	30.6	[20.8-41.5]
C96	Lymphoid, haematopoietic and related tissue, NOS	36	0.03	>60	88.9	80.6	68.1	68.1	90.1	83.8	73.1	74.0	[53.8-88.1]
C76	Other and ill-defined sites	101	0.07	37	63.4	50.5	41.6	32.1	67.2	60.1	55.4	55.5	[40.0-71.5]
C80	Unknown primary site	3,372	2.46	5	34.8	22.6	18.5	14.9	36.3	24.7	21.3	19.1	[17.5-20.8]
MPD	Myeloproliferative Disorders	784	0.57	>60	92.0	83.4	75.4	53.0	94.6	90.3	86.8	76.0	[65.7-85.4]
MDS	Myelodysplastic Syndromes	729	0.53	41	75.0	53.8	39.3	19.3	78.5	61.0	48.7	34.6	[23.7-46.8]
Total excl. non-melanoma		**136,995**	**100.00**	**>60**	**80.5**	**67.1**	**59.7**	**48.0**	**82.6**	**71.7**	**66.7**	**60.2**	**[59.8-60.6]**
Total excl. non-melanoma, MPD and MDS		**135,482**	**98.90**	**>60**	**80.5**	**67.1**	**59.7**	**48.0**	**82.5**	**71.7**	**66.6**	**60.2**	**[59.8-60.6]**

*Statistic not displayed due to less than 35 cases.
**Analyses for malignant melanoma of the skin were based on ICD-10 classification C43. Tumours with an unknown primary site (C80.9 according to ICD-O-3) were excluded. For more information, see section Methodology.

Source: Belgian Cancer Registry

APPENDIX 2 – OVERVIEW BY TUMOUR GROUP ANALYSED: NUMBER OF DEATHS, CRUDE AND AGE-STANDARDISED 5-YEAR RELATIVE SURVIVAL, BELGIUM (2004-2008)

TABLE 78 - OVERVIEW BY TUMOUR GROUP STUDIED: AGE-STANDARDISED RELATIVE SURVIVAL IN MALES, BELGIUM (2004-2008)

ICD-10		N at risk	Deaths	Crude 5-year relative survival (%)		Age-standardised 5-year relative survival (%)	
		n	n	Rate	95%CI	Rate	95%CI
C00-C14, C30-C32	Head and neck	8,454	4,436	50.0	[48.7-51.3]	50.6	[48.9-52.3]
C15-C16.0	Oesophagus	3,905	3,054	22.8	[21.3-24.4]	22.4	[20.9-24.1]
C16.1-C16.9	Stomach	2,685	1,953	32.6	[30.4-34.7]	34.3	[32.2-36.5]
C18-C19	Colon	12,519	5,934	62.3	[61.1-63.5]	63.2	[62.0-64.3]
C20	Rectum	5,989	2,624	64.0	[62.4-65.7]	63.7	[62.1-65.4]
C22	Liver	1,479	1,170	20.7	[18.3-23.3]	19.4	[17.2-22.0]
C23-C24	Gallbladder and biliary tract	687	547	22.5	[18.9-26.4]	23.4	[19.8-27.7]
C25	Pancreas	2,634	2,378	9.9	[8.6-11.2]	10.1	[8.8-11.5]
C34	Lung	23,757	20,467	14.6	[14.0-15.1]	14.8	[14.3-15.4]
C43*	Malignant melanoma of skin*	2,826	618	86.2	[84.2-88.1]	86.0	[84.0-87.9]
C45	Mesothelioma	913	860	4.9	[3.4-6.8]	5.8	[3.9-8.6]
C50	Breast	342	108	78.2	[70.8-84.8]	76.8	[70.3-83.9]
C61	Prostate	42,988	8,633	95.3	[94.7-95.8]	93.0	[92.4-93.6]
C62	Testis	1,356	66	96.2	[94.8-97.4]	94.2	[88.9-99.8]
C64	Kidney	3,595	1,307	71.0	[69.1-73.0]	69.5	[67.3-71.7]
C67	Bladder	7,087	3,753	56.6	[55.0-58.2]	59.0	[57.4-60.6]
C71-C72	Central Nervous System	1,922	1,478	22.7	[20.7-24.8]	25.0	[23.1-27.0]
C73	Thyroid	798	123	89.3	[86.2-92.0]	85.2	[81.4-89.1]
C00-C43, C45-C96, MPD, MDS	All tumours	142,628	68,876	59.5	[59.1-59.8]	59.0	[58.7-59.4]

*Analyses for malignant melanoma of the skin were based on ICD-10 classification C43. Tumours with an unknown primary site (C80.9 according to ICD-O-3) were excluded. For more information, see section Methodology.

Source: Belgian Cancer Registry

TABLE 79 - OVERVIEW BY TUMOUR GROUP STUDIED: AGE-STANDARDISED RELATIVE SURVIVAL IN FEMALES, BELGIUM (2004-2008)

ICD-10		N at risk	Deaths	Crude 5-year relative survival (%)		Age-standardised 5-year relative survival (%)	
		n	n	Rate	95%CI	Rate	95%CI
C00-C14, C30-C32	Head and neck	2,473	1,124	57.0	[54.6-59.2]	54.8	[52.3-57.5]
C15-C16.0	Oesophagus	1,302	1,020	22.7	[20.1-25.4]	24.6	[21.8-27.7]
C16.1-C16.9	Stomach	2,021	1,414	34.8	[32.3-37.4]	38.3	[35.7-41.1]
C18-C19	Colon	11,848	5,357	64.6	[63.5-65.8]	66.5	[65.3-67.6]
C20	Rectum	4,266	1,787	64.4	[62.5-66.3]	66.2	[64.5-68.1]
C22	Liver	684	542	20.2	[16.8-23.9]	22.2	[18.8-26.1]
C23-C24	Gallbladder and biliary tract	809	664	19.5	[16.4-22.8]	22.8	[19.3-27.0]
C25	Pancreas	2,500	2,274	9.0	[7.8-10.3]	11.3	[9.8-12.9]
C34	Lung	7,560	6,063	19.5	[18.5-20.5]	19.2	[18.2-20.3]
C43*	Malignant melanoma of skin*	4,371	637	91.0	[89.7-92.2]	90.3	[89.0-91.6]
C45	Mesothelioma	198	178	8.3	[4.4-13.7]	10.3	[5.9-17.9]
C50	Breast	45,946	8,079	88.0	[87.6-88.5]	85.5	[85.0-86.1]
C53	Cervix uteri	3,065	971	69.8	[67.9-71.6]	65.6	[63.7-67.6]
C54	Corpus uteri	6,346	1,745	79.6	[78.2-80.9]	79.4	[78.1-80.8]
C56	Ovary	4,149	2,325	44.4	[42.6-46.2]	42.6	[40.9-44.3]
C64	Kidney	2,260	791	70.7	[68.3-73.1]	70.4	[68.1-72.8]
C67	Bladder	1,894	1,103	49.2	[46.2-52.1]	52.8	[49.8-56.0]
C71-C72	Central Nervous System	1,403	1,033	25.8	[23.4-28.3]	28.5	[26.3-30.9]
C73	Thyroid	2,352	202	94.1	[92.7-95.3]	90.3	[88.3-92.3]
C00-C43, C45-C96, MPD, MDS	All tumours	122,464	45,593	67.8	[67.5-68.1]	65.7	[65.4-66.1]

*Analyses for malignant melanoma of the skin were based on ICD-10 classification C43. Tumours with an unknown primary site (C80.9 according to ICD-O-3) were excluded. For more information, see section Methodology.

Source: Belgian Cancer Registry

APPENDIX 3: DETAILS ON ANALYSES BY SUBLOCALISATION AND MORPHOLOGY

ANALYSES BY LOCALISATION AND SUBLOCALISATION	
C00-C14, C30-C32 Head and neck	
• Localisations	
Lip and oral cavity	C00, C02-C04, C05.0, C05.8, C05.9, C06
Pharynx	C01.9, C05.1, C05.2, C09.0-C13.9
Larynx	C32.0-C32.9
Nasal Cavity and paranasal sinuses	C30.0-C31.9
Salivary glands	C07.0-C08.9
Lip, oral cavity and pharynx, NOS	C14.0-C14.9
• Sublocalisations	
Lip and oral cavity	
Lip	C00
Tongue	C02
Gum	C03
Floor of mouth	C04
Hard palate and palate unspecified	C05.0, C05.8, C05.9
Mouth, NOS	C06
Pharynx	
Oropharynx	*C01, C05.1, C05.2, C09, C10*
Base of tongue	C01
Soft palate and uvula	C05.1, C05.2
Tonsil	C09
Oropharynx, other and unspecified	C10
Nasopharynx	*C11*
Hypopharynx	*C12, C13*
Pyriform sinus	C12
Hypopharynx	C13
Larynx	
Glottis	C32.0
Supraglottis	C32.1
Larynx other and unspecified	C32.2, C32.3, C32.9
Nasal Cavity and Paranasal Sinuses	
Nasal cavity and middle ear	C30
Accesory sinuses	C31
Salivary Glands	
Parotid gland	C07
Salivary glands, NOS	C08
Lip, oral cavity and pharynx, NOS	
C23-C24 Gallbladder and biliary tract (+ C22.1)	
Intrahepatic bile ducts	C22.1
Gallbladder	C23.9
Extrahepatic bile ducts	C24.0
Ampulla of Vater	C24.1
Biliary tract, NOS	C24.9
C43 Malignant melanoma of skin	
Head and trunk	C43.0-C43.5
Arms and legs	C43.6-C43.7

ANALYSES BY MORPHOLOGY	
C16.1-C16.9 Stomach	
Adenocarcinoma	8140-8141, 8143-8145, 8190-8231, 8260-8263, 8310, 8401, 8480-8490, 8550-8551, 8570-8574, 8576
Gastrointestinal stromal tumour	8936
C15-C16.0 Oesophagus	
Squamous cell carcinoma	8050-8078, 8083-8084
Adenocarcinoma	8140-8141, 8143-8145, 8190-8231, 8260-8263, 8310, 8401, 8480-8490, 8550-8551, 8570-8574, 8576
Other and unspecified histology	8036-8049, 8079-8082, 8085-8139, 8142, 8146-8189, 8232-8259, 8264-8309, 8311-8400, 8402-8479, 8491-8549, 8552-8569, 8575, 8010-8035
C22 Liver	
Cholangiocarcinoma	8050, 8140-8141, 8160-8161, 8260, 8440, 8480-8500, 8570-8572
Hepatocellular carcinoma	8170-8176
Other and unspecified carcinoma	8036-8049, 8051-8139, 8142-8159, 8162-8169, 8177-8259, 8261-8439, 8441-8479, 8501-8569, 8573-8576, 8010-8035
C25 Pancreas	
Neuroendocrine tumour	8150-8159, 8240-8249
Carcinoma	8036-8149, 8160-8239, 8250-8576
Unspecified carcinoma	8000-8005, 8010-8035
C34 Lung	
Squamous cell carcinoma	8050-8078, 8083-8084
Adenocarcinoma	8140, 8211, 8230-8231, 8250-8260, 8323, 8480-8490, 8550-8551, 8570-8574, 8576
Small cell carcinoma	8041-8045, 8246
Large cell carcinoma	8010-8012, 8014-8031, 8035, 8310
Other and unspecified histology	8013, 8032-8034, 8036-8040, 8046-8049, 8079-8082, 8085-8139, 8141-8210, 8212-8229, 8232-8245, 8247-8249, 8261-8309, 8311-8322, 8324-8479, 8491-8549, 8552-8569, 8575
C45 Mesothelioma	
Epithelioid	9052
Other	9050, 9051, 9053-9055
C54 Corpus uteri	
Carcinoma Endometrioid	8140-8141, 8261-8263, 8380-8384, 8430, 8480-8482, 8570-8574, 8510-8559
Carcinoma Non-Endometrioid	8036-8139, 8142-8260, 8264-8379, 8385-8429, 8431-8473, 8490-8509, 8560-8569, 8576, 8980-8981
Sarcoma	8800-8811, 8830, 8840-8979, 8982-8991, 9040-9044, 9120-9133, 9150, 9540-9581
C62 Testis	
Non-seminoma	9065-9102
Seminoma	9060-9064
Other and unspecified histology	8000-8005, 8006-9059, 9103-9999
C71-72 Central nervous system	
Astrocytic tumours	9384, 9400-9421, 9424, 9440-9442
Oligodendroglial tumours and mixed gliomas	9382, 9450-9451
Ependymal tumours	9383, 9391-9394
Glioma, other	9380-9381, 9423, 9430, 9444, 9460
Medulloblastoma	9470-9472, 9474
Embryonal tumours, other	9473, 9490, 9500-9504, 9508

• Astrocytic tumours – WHO grade II-IV	
WHO grade II	9400, 9410, 9411, 9420, 9424
WHO grade III	9401
WHO grade IV	9440-9442
C73 Thyroid gland	
Follicular carcinoma	8290, 8330-8335
Papillary carcinoma	8050, 8260, 8340-8344, 8350, 8450-8460
Medullar carcinoma	8345, 8510-8513
Anaplastic carcinoma	8020-8035
Other and unspecified carcinoma	8016-8019, 8036-8049, 8051-8259, 8261-8289, 8291-8329, 8336-8339, 8346-8349, 8351-8449, 8461-8509, 8514-8576, 8010-8015

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