

# Chapter 3

## Cancers of the Esophagus, Stomach, and Small Intestine

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### INTRODUCTION

Cancers of the esophagus, stomach, and small intestine together account for a approximately 3% of the malignant neoplasms diagnosed in the United States each year. Approximately 43,000 people were diagnosed with one of these cancers in 2006 (1). About one-third will be cancer of the esophagus (14,550), one-half will be cancer of the stomach (22,280) and the remainder will be cancer of the small intestine (6,170) (1). However, because as a group they have relatively poor survival rates, these upper gastrointestinal cancers are responsible for about 4.7% of the annual U.S. cancer deaths, 26,270 estimated deaths in 2006 (1).

In the 14 year period 1988-2001, the SEER Program recorded 19,410 cancers of the esophagus, 39,623 stomach cancers and 6,879 malignant neoplasms of the small intestine (including 2,202 carcinoids).

The tables and text in this chapter address some of the *patient* characteristics (sex, race, and age) and *tumor* characteristics (tumor stage, grade, size, subsite location, and

histology) that may be associated with differences in patients' prognosis and outcome.

The text primarily cites 5-year relative survival rates as the primary outcome measure because of its wide general use. However, for cancers associated with poor survival, readers may find the tabulations of 1-, 2-, and 3-year relative survival rates to be more informative.

### MATERIALS AND METHODS

The NCI contracts with medically-oriented, nonprofit institutions located in specific geographic areas to obtain data on all cancers diagnosed in residents of the SEER geographic areas. SEER collects data on all invasive and in situ cancers except basal cell and squamous cell carcinomas of the skin (of non-genital anatomic sites) and in situ carcinomas of the uterine cervix. SEER actively follows all previously diagnosed patients on an annual basis to obtain vital status allowing the calculation of observed and relative survival rates.

This analysis is based on data from 12 SEER geographic areas which collectively cover about 14% of the total US

Table 3.1: Cancers of the Esophagus, Stomach, and Small Intestine: Number of Cases and Exclusions, 12 SEER Areas, 1988-2001

Esophagus		Stomach		Small Intestine		Reason for Exclusion/Selection
Number Selected/Remaining	Number Excluded	Number Selected/Remaining	Number Excluded	Number Selected/Remaining	Number Excluded	
19,410	0	39,623	0	6,879	0	Select 1988-2001 diagnosis (Los Angeles for 1992-2001 only)
15,934	3,476	33,871	5,752	5,210	1,669	Select first primary only
15,702	232	33,356	515	5,101	109	Exclude death certificate only or at autopsy
15,668	34	33,269	87	5,084	17	Exclude unknown race
15,650	18	33,198	71	5,073	11	Exclude alive with no survival time
15,644	6	33,170	28	5,061	12	Exclude children (000-019)
15,446	198	32,839	331	5,023	38	Exclude in situ cancers
14,999	447	31,996	843	4,945	78	Exclude no or unknown microscopic confirmation
14,959	40	31,045	951	4,264	681	Exclude sarcomas (including stromal 8930-8939)
14,932	27	30,382	663	2,062	2,202	Exclude Carcinoids

Table 3.2: Cancer of the Esophagus (Excluding carcinoids): Median Survival Time and 1-, 2-, 3-, 5-, 8-, &amp; 10-Year Relative Survival Rates by Sex, Race, Age, Historic Stage, Grade, Primary Site and Tumor Size, 12 SEER Areas, 1988-2001

Characteristics	Cases	Percent	Median Survival (Months)	Relative Survival					
				1-Year	2-Year	3-Year	5-Year	8-Year	10-Year
				Percent	Percent	Percent	Percent	Percent	Percent
All Cases	14,932	100.0	9.2	42.1	24.3	18.2	13.6	10.9	9.8
Sex									
Male	11,168	74.8	9.2	42.4	24.3	18.2	13.5	11.0	9.8
Female	3,764	25.2	9.0	41.1	24.3	18.5	13.7	10.6	9.6
Race									
White	11,561	77.4	9.5	43.7	25.9	19.5	14.6	11.8	10.5
Black	2,412	16.2	8.0	35.8	17.5	13.0	9.4	6.9	6.6
Other	959	6.4	8.6	~	~	~	~	~	~
Age									
20-49	1,272	8.5	11.1	46.9	27.4	21.9	18.0	15.7	14.7
50-64	4,948	33.1	10.8	47.0	27.5	20.4	14.8	11.6	9.9
65+	8,712	58.3	8.0	38.4	21.8	16.2	11.9	9.2	8.4
Historic Stage									
Localized	3,828	25.6	17.0	62.7	44.5	36.1	28.5	23.2	21.1
Regional	4,260	28.5	11.0	48.1	26.0	18.8	13.0	9.5	8.4
Distant	4,037	27.0	5.1	19.5	6.3	3.6	2.3	1.6	1.5
Unstaged	2,807	18.8	8.0	37.4	20.0	14.4	10.8	9.7	9.3
Grade									
Well	722	4.8	12.5	53.6	36.2	30.5	25.9	22.2	18.9
Moderate	4,861	32.6	10.0	45.0	26.4	19.5	13.9	10.5	9.8
Poor	6,341	42.5	8.5	38.9	20.4	15.0	11.1	8.7	7.9
Undifferentiated	405	2.7	7.1	36.5	20.4	13.8	8.0	6.1	6.1
Unknown	2,603	17.4	9.0	42.1	27.2	21.3	16.4	13.9	12.2
Primary Site									
Cervical	431	2.9	10.0	44.6	27.8	19.6	14.9	10.8	7.8
Thoracic	463	3.1	8.8	39.3	22.8	17.6	14.7	12.3	9.8
Abdominal	179	1.2	9.1	42.8	27.6	22.3	15.3	13.9	13.9
Upper third	963	6.4	8.3	38.6	21.7	15.9	10.9	8.0	8.0
Middle third	3,467	23.2	9.1	41.0	22.3	16.3	11.6	7.9	6.7
Lower third	7,400	49.6	9.9	44.8	26.4	20.1	15.2	12.9	11.8
Overlapping lesion	807	5.4	7.1	36.6	20.0	13.1	8.8	6.1	5.9
Esophagus, NOS	1,222	8.2	7.0	34.6	20.6	16.6	13.2	11.4	10.1
Tumor Size									
≤ 2 cm	903	6.0	19.0	64.5	48.2	39.9	32.7	26.1	23.6
2.1-5 cm	3,556	23.8	11.3	49.7	28.5	21.2	15.8	12.3	10.4
5.1-10 cm	3,003	20.1	8.5	37.6	19.5	13.6	10.2	7.6	7.2
>10 cm	449	3.0	7.5	35.3	18.9	13.3	7.6	5.8	5.2
Unknown	7,021	47.0	7.9	37.7	21.5	16.3	11.8	9.8	9.0

~ Not calculated.

population. The areas are the States of Connecticut, Iowa, New Mexico, Utah, and Hawaii; the metropolitan areas of Detroit, Michigan; Atlanta, Georgia; San Francisco, San Jose, and Los Angeles, California; Seattle, Washington;

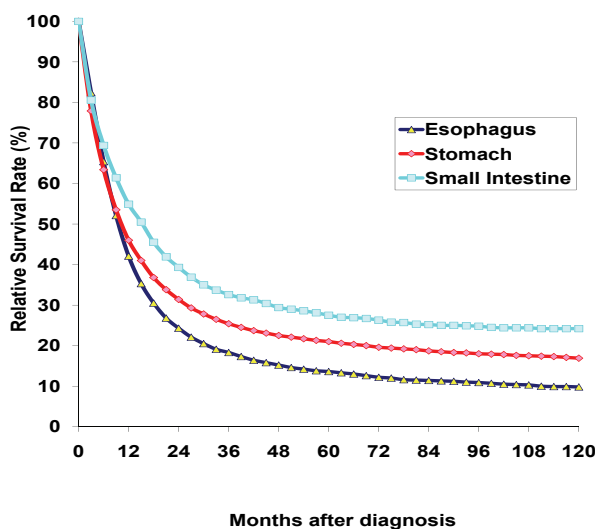
and 10 counties in rural Georgia. Los Angeles contributed data for diagnosis years 1992 to 2001, all other areas for 1988-2001.

The following cases were excluded from this survival analysis: patients for whom the upper gastrointestinal cancer was not the first primary, cases diagnosed at autopsy or by death certificate only, persons of unknown race, patients alive with no recorded survival time, patients less than 20 years old, and cases without microscopic confirmation. Gastrointestinal sarcomas and lymphomas are excluded here, but appear in the Sarcoma and Lymphoma chapters of this monograph. Remaining cases (including carcinoids) available for analysis are as follows: 14,959 esophageal cancers; 31,045 stomach cancers; 4,264 small intestine cancers (Table 3.1). Because the 5-year relative survival for carcinoids of the stomach and small intestine exceeds 70%, they are shown separately in the relative survival tables.

Survival analysis is based on relative survival rates calculated by the life-table (actuarial) method. Relative survival, defined as observed survival in the cohort divided by expected survival in the cohort, adjusts for the expected mortality that the cohort would experience from other causes of death. Expected survival is based on decennial life tables for the United States in 1990.

The staging definitions utilized in this chapter are SEER historic stage: *localized* – confined to the primary site; *regional* – spread to regional lymph nodes or by direct extension beyond the primary; *distant* – metastatic spread.

Figure 3.1: Relative Survival Rates (%) by Primary Site (Esophagus, Stomach, Small Intestine) and Months after Diagnosis, Ages 20+, 12 SEER Areas, 1988-2001



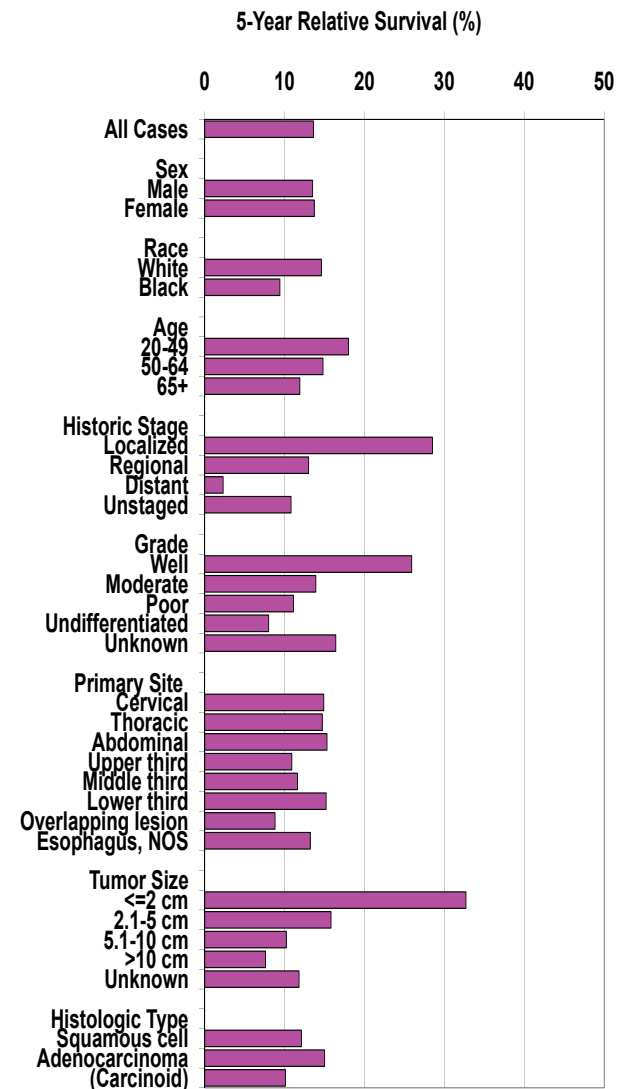
RESULTS

The relative survival curves for esophagus, stomach, and small intestine cancer are shown in Figure 3.1.

Esophagus

Overall short median survival time (9.2 months) and low 5-year relative survival rates (14%) serve as baseline measures for the following esophageal cancer tables and text. Five-year relative survival rates are presented graphically in Figure 3.2.

Figure 3.2: Cancer of the Esophagus: 5-Year Relative Survival Rates by Sex, Race, Age, Stage, Grade, Primary Site, Tumor Size and Histology, Ages 20+, 12 SEER Areas, 1988-2001



*Sex, Race, and Age*

Among 14,932 esophageal cancers cases eligible for this analysis, males outnumbered females by a factor of 3 to 1. However, the observed sex-specific median survival times (9.2 and 9.0 months) and 5-year relative survival rates (14%) were virtually identical. Survival experience of white patients was slightly better than the experience of black patients. Fifty-eight percent of the patients were 65 years and older and their survival experience was worse than that of patients in the younger age groups (Table 3.2).

*Tumor Stage, Grade, and Size*

Localized tumor stage, well differentiated tumor grade and small tumor size (2 cm or less) were associated with 5-year relative survival rates of 26% to 33%, whereas for distant stage, undifferentiated grade and large tumor size (more than 10 cm) rates were 2% to 8% (Table 3.2).

*Esophageal Subsite and Histology*

Squamous cell carcinoma is the predominant histologic type of esophageal carcinoma worldwide, but in recent decades there has been a striking increase of adenocarcinoma, especially in U.S. white males. Squamous cell carcinomas moderately outnumber adenocarcinomas in total, but adenocarcinomas predominate in the lower third of the esophagus. Relative 5-year survival was 12% for patients with squamous cell carcinoma and only slightly better (15%) for adenocarcinoma patients (Table 3.3). Patients whose cancers were coded to locations in the lower third of the esophagus or abdominal esophagus had relative 5-year survival of about 15%.

Carcinoid tumors are not very common in the esophagus when compared to other parts of the upper gastrointestinal tract. In this series, the ones that did occur had much poorer relative 5-year survival (10%) than those in the stomach (71%) or small intestine (77%). Five-year relative survival rates by tumor and patient characteristics are presented graphically in Figure 3.2.

**Table 3.3: Cancer of the Esophagus: Distribution, Median Survival Time and 1-, 2-, 3-, 5-, 8-, & 10-Year Relative Survival Rates (%) by Histology, Ages 20+, 12 SEER Areas, 1988-2001**

Histology (ICD-O code)	Cases	Percent	Median Survival (Months)	Relative Survival Rate (%)					
				1-Year	2-Year	3-Year	5-Year	8-Year	10-Year
All Cases excluding carcinoids	14,932	100.0	9.2	42.1	24.3	18.2	13.6	10.9	9.8
Carcinoma excluding carcinoids 8010-8231, 8247-8572	14,839	99.4	9.2	42.1	24.2	18.2	13.5	10.8	9.8
Squamous-cell carcinoma 8050-8076	7,465	50.0	8.9	40.2	22.4	16.6	12.1	9.4	8.3
Adenocarcinoma 8140-8141,8191-8231, 8260-8263,8310,8430, 8480-8490,8560, 8570-8572	6,514	43.6	10.0	45.4	26.9	20.1	15.0	12.4	11.3
Other specified carcinomas	178	1.2	8.8	40.5	22.8	17.3	9.8	5.2	5.2
Unspecified carcinoma 8010-8034	682	4.6	6.0	31.1	19.7	16.9	14.3	14.3	13.4
Unspecified Cancer 8000-8004	75	0.5	8.8	40.7	34.7	34.7	34.3	25.9	21.5
Other specified cancer	18	0.1	~	~	~	~	~	~	~
Carcinoids 8240-8246	27	0.2	12.5	53.6	24.1	10.1	10.1	10.1	10.1

~ Statistic not displayed due to less than 25 cases.

Stomach

Short median survival time (10 months) and low 5-year relative survival rates (21%) are the overall baseline measures for the stomach cancer tables and text. Five-year relative survival rates by tumor and patient characteristics are presented graphically in Figure 3.3.

Sex, Race, and Age

There were a total of 30,382 stomach cancer cases available for this analysis with male cancers exceeding female by about 1.7 to 1. Female patients experienced a slight relative survival advantage at each follow-up interval between 1 year and 10 years, but median survival time for both sexes was less than 10 months from initial diagnosis. Survival for black patients was similar to that for white patients. While relative survival rates are not shown for other races, it should be noted that most of the “Other” races are Asian/Pacific Islanders, whose incidence rate of stomach cancer is high; their median survival time (13.5 months) is higher than for blacks or whites. Almost 2/3 of the eligible stomach cancer patients in this analysis were 65 years old or older. During the first year after diagnosis, persons 65 years of age and older had lower relative survival (44%) than those 20-49 years of age (52%) and 50-64 years (49%). However, at intervals between 2 and 10 years the survival rates were remarkably similar (Table 3.4).

Tumor Stage, Grade, and Size

About 20% had cancers that had not spread beyond the stomach and their 5-year relative survival was 59%. About 1/3 of the patients exhibited extension of tumor to adjacent structures or metastasis to regional lymph nodes and their 5-year relative survival dropped to 21%. Another 1/3 of the cases had recognized tumor spread to distant organs or lymph nodes at the time of diagnosis and they experienced only 2% relative survival at 5 years. Tumors measuring 2 cm or less were associated with far better 5-year relative survival rate (57%) than tumors measuring 2.1-5.0 cm (30%) or 5.1-10 cm (22%) or greater than 10 cm (10%). Tumors assigned a histologic grade of “well differentiated” were associated with better 5-year relative survival rate (42%) than the less differentiated grades, but they accounted for only about 4% of the cases (Table 3.4).

Figure 3.3: Cancer of the Stomach: 5-Year Relative Survival Rates by Sex, Race, Age, Stage, Grade, Primary Site, Tumor Size and Histology, Ages 20+, 12 SEER Areas, 1988-2001

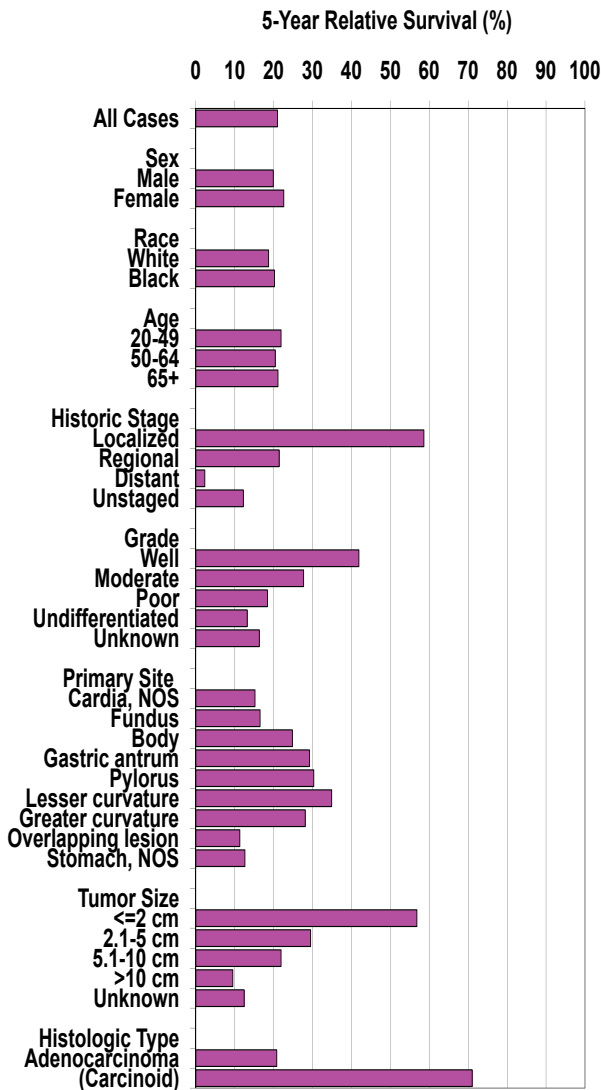


Table 3.4: Cancer of the Stomach (Excluding Carcinoids): Median Survival Time and 1-, 2-, 3-, 5-, 8-, &amp; 10-Year Relative Survival Rates by Sex, Race, Age (20+), Historic Stage, Grade, Primary Site and Tumor Size, 12 SEER Areas, 1988-2001

Characteristics	Cases	Percent	Median Survival (Months)	Relative Survival Rate (%)					
				1-Year	2-Year	3-Year	5-Year	8-Year	10-Year
All Cases	30,382	100.0	9.6	46.0	31.4	25.4	21.0	18.0	16.9
Sex									
Male	19,034	62.6	9.7	45.9	30.9	24.8	19.9	16.8	15.5
Female	11,348	37.4	9.5	46.0	32.1	26.4	22.6	20.0	19.0
Race									
White	21,276	70.0	9.0	44.0	29.2	23.2	18.7	15.7	14.4
Black	3,519	11.6	8.8	44.1	30.4	24.8	20.2	16.8	15.8
Other	5,587	18.4	13.5	~	~	~	~	~	~
Age									
20-49	3,270	10.8	13.0	52.2	33.5	26.6	21.9	18.3	17.5
50-64	7,179	23.6	11.5	49.3	32.8	25.8	20.4	17.3	16.7
65+	19,933	65.6	8.4	43.6	30.4	25.1	21.1	18.5	17.0
Historic Stage									
Localized	6,085	20.0	45.5	78.5	69.1	63.7	58.6	54.0	51.8
Regional	10,272	33.8	15.3	59.7	38.4	28.8	21.4	17.2	15.9
Distant	10,401	34.2	4.3	17.7	6.3	3.7	2.3	1.7	1.6
Unstaged	3,624	11.9	6.2	33.8	20.3	15.1	12.2	10.5	10.2
Grade									
Well	1,232	4.1	22.6	65.2	53.8	47.2	41.9	37.3	36.3
Moderate	7,014	23.1	13.2	54.8	39.7	33.0	27.7	23.6	21.5
Poor	16,687	54.9	9.0	43.9	28.5	22.6	18.4	16.0	15.0
Undifferentiated	894	2.9	7.6	38.6	24.9	18.7	13.2	10.4	10.4
Unknown	4,555	15.0	6.6	36.2	24.2	19.8	16.3	14.0	13.3
Primary Site									
Cardia, NOS	7,760	25.5	10.0	45.2	27.4	20.3	15.2	12.0	11.2
Fundus	1,241	4.1	7.3	38.5	24.9	20.2	16.5	12.8	12.0
Body	2,240	7.4	9.1	45.6	33.1	28.0	24.8	22.2	21.8
Gastric antrum	6,282	20.7	12.9	54.3	40.2	34.1	29.2	25.6	24.8
Pylorus	964	3.2	14.6	58.4	42.3	34.7	30.3	25.4	21.5
Lesser curvature, NOS	2,996	9.9	16.8	60.4	46.1	39.9	34.9	31.8	29.9
Greater curvature, NOS	1,306	4.3	11.7	51.4	39.5	33.2	28.1	23.9	22.8
Overlapping lesion	2,967	9.8	6.8	34.9	20.0	14.8	11.3	10.0	8.9
Stomach, NOS	4,626	15.2	5.6	31.8	20.3	16.0	12.6	10.5	9.5
Tumor Size									
≤ 2 cm	2,056	6.8	46.4	77.6	68.9	62.7	56.8	50.0	48.0
2.1-5 cm	6,986	23.0	17.1	61.8	44.3	36.2	29.5	26.0	23.9
5.1-10 cm	5,842	19.2	12.6	53.4	35.4	27.5	21.9	17.6	15.8
>10 cm	2,584	8.5	7.5	36.4	18.9	13.0	9.5	7.9	7.4
Unknown	12,914	42.5	5.6	30.8	18.9	15.1	12.4	10.7	10.3

- Not calculated.

Table 3.5: Cancer of the Stomach: Distribution, Median Survival Time and 1-, 2-, 3-, 5-, 8-, &amp; 10-Year Relative Survival Rates (%) by Histology, Ages 20+, 12 SEER Areas, 1988-2001

Histology (ICD-O code)	Cases	Percent	Median Survival (Months)	Relative Survival Rate (%)					
				1-Year	2-Year	3-Year	5-Year	8-Year	10-Year
All Cases excluding carcinoids	30,382	100.0	9.6	46.0	31.4	25.4	21.0	18.0	16.9
Carcinoma excluding carcinoids 8010-8231,8247-8572	30,156	99.3	9.6	46.0	31.3	25.3	20.8	17.9	16.8
Squamous-cell carcinoma 8050-8076	256	0.8	7.4	34.2	23.4	18.4	15.2	14.3	14.3
Adenocarcinoma 8140-8141,8191-8231, 8260-8263,8310,8430, 8480-8490,8560, 8570-8572	25,322	83.3	9.5	45.4	30.7	24.8	20.4	17.3	16.2
Other specified carcinomas	3,635	12.0	13.5	54.7	39.4	32.2	26.8	23.9	22.2
Unspecified carcinoma 8010-8034	943	3.1	4.5	28.9	18.5	14.8	11.8	11.2	10.5
Unspecified Cancer 8000-8004	212	0.7	9.1	47.8	41.9	38.5	37.9	36.5	30.9
Other specified cancer	14	0.0	~	~	~	~	~	~	~
Carcinoids 8240-8247	663	2.1	103.8	84.5	77.5	74.4	71.0	67.4	66.0

~ Statistic not displayed due to less than 25 cases.

### Stomach Subsite and Histology

Cancers arising in proximal regions (cardia, fundus) of the stomach are associated with lower relative survival than those arising in the greater and lesser curvatures, antrum, and pylorus. Adenocarcinomas (of many subtypes) account for a large majority of stomach cancer histologic diagnoses (Table 3.5). In addition, there are about 3,400 patients with primary gastric lymphomas and about 950 patients with soft

tissue tumors (sarcomas, stromal tumors) of the stomach discussed elsewhere in this monograph.

In this analysis, the 663 eligible patients with carcinoid tumors of the stomach had a median survival time of 104 months, 5-year relative survival of 71%, and 10-year relative survival of 66%.

Small Intestine

Short median survival time (14.0 months) and 5-year relative survival (27%) are the overall baseline outcome measures for cancers (mostly adenocarcinomas) of the small intestine that are included in this analysis. The small intestine is remarkable for the relative rarity of malignant neoplasms occurring in such a large (surface area) organ. Five-year relative survival rates are presented graphically in Figure 3.4.

Sex, Race, and Age

Of 2,062 small intestine cancers included in this analysis, a little more than half (52.6%) occurred in males. This contrasts with the much stronger male predominance observed for cancers of the esophagus and stomach. Males exhibit slightly better relative survival at years 1 and 2 after diagnosis; relative survival is virtually equal at years 3 and 5; and there is a slight female advantage at years 8 and 10. Beginning at year 3, white patients maintain a consistent survival advantage over patients who are black. A larger percent of small intestine cancer patients (17.0%) are in the youngest age group than for the other upper gastrointestinal cancers (esophagus 8.5%, stomach 10.8%) and a smaller percent in the oldest age group. The younger patients have an early survival advantage that diminishes by 10 years after diagnosis (Table 3.6).

Tumor Stage, Grade, and Size

About 21% of the cancers were confined to the small intestine at the time of diagnosis and they were associated with more favorable 5-year relative survival (57%), compared to those with regional (34%) or distant spread (3%). Tumor grades of well and moderate differentiation were associated with similar survival outcomes (35% and 35%, respectively) in contrast to poor differentiation (21%). Smaller tumors (2 cm or less) have moderately better outcomes than larger tumors, but the gradient associated with increasing tumor size is less striking than the gradient for cancers of the esophagus and stomach.

The 2,202 patients with small intestine carcinoid tumors in this series experienced a median survival time of 97.6 months and 5- and 10-year relative survival rates of 77% and 62%, respectively (Table 3.7).

Carcinoid tumors outnumber carcinomas in this series by a factor of 1.11 (2,202/1,985). Additionally, about 681 sarcomas and 1,367 primary lymphomas of the small intestine are excluded from this analysis, but are discussed in other chapters of this monograph.

Figure 3.4: Cancer of the Small Intestine: 5-Year Relative Survival Rates by Sex, Race, Age, Stage, Grade, Primary Site, Tumor Size and Histology, Age 20+, 12 SEER Areas, 1988-2001

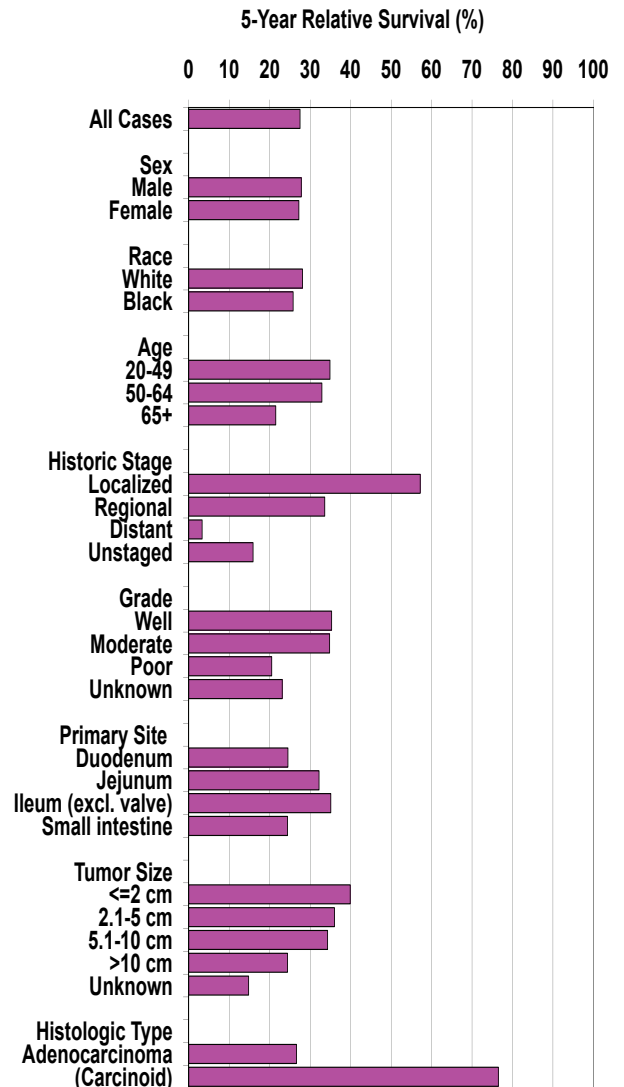




Table 3.6: Cancer of the Small Intestine (Excluding Carcinoids): Median Survival Time and 1-, 2-, 3-, 5-, 8-, & 10-Year Relative Survival Rates by Sex, Race, Age, Historic Stage, Grade, Primary Site and Tumor Size, 12 SEER Areas, 1988-2001

Characteristics	Cases	Percent	Median Survival (Months)	Relative Survival Rate (%)					
				1-Year	2-Year	3-Year	5-Year	8-Year	10-Year
<b>All Cases</b>	<b>2,062</b>	<b>100.0</b>	<b>14.0</b>	<b>55.1</b>	<b>39.3</b>	<b>32.6</b>	<b>27.5</b>	<b>24.8</b>	<b>24.3</b>
<b>Sex</b>									
Male	1,084	52.6	14.4	56.7	40.1	32.7	27.8	23.8	23.8
Female	978	47.4	13.3	53.3	38.3	32.7	27.2	25.4	24.8
<b>Race</b>									
White	1,561	75.7	13.7	54.8	39.7	33.5	28.1	25.9	25.6
Black	348	16.9	15.8	57.6	40.7	31.3	25.8	21.0	19.5
Other	153	7.4	12.2	~	~	~	~	~	~
<b>Age</b>									
20-49	350	17.0	22.2	67.5	48.0	41.4	34.9	31.5	28.7
50-64	546	26.5	18.6	61.6	46.5	38.7	32.9	29.5	28.4
65+	1,166	56.5	10.0	48.0	32.7	26.4	21.5	18.4	18.0
<b>Historic Stage</b>									
Localized	438	21.2	49.8	79.7	70.1	62.5	57.2	54.5	54.0
Regional	784	38.0	22.2	69.7	51.0	41.4	33.6	28.5	27.9
Distant	660	32.0	5.1	25.7	9.6	5.6	3.3	2.6	2.6
Unstaged	180	8.7	6.8	39.2	22.1	20.4	15.9	13.7	12.0
<b>Grade</b>									
Well	178	8.6	19.4	66.3	47.3	40.3	35.3	34.2	34.2
Moderate	790	38.3	20.9	65.8	50.0	41.3	34.8	29.6	27.9
Poor	658	31.9	9.3	45.4	30.3	24.5	20.5	18.7	18.2
Undifferentiated	45	2.2	3.1	16.1	4.8	4.8	!	!	!
Unknown	391	19.0	10.7		33.0	28.6	23.1	21.6	21.4
<b>Primary Site</b>									
Duodenum	1,140	55.3	10.8	49.4	34.1	28.0	24.5	22.0	21.7
Jejunum	394	19.1	21.2	68.1	49.3	39.6	32.2	26.6	26.2
Ileum (excl. valve)	255	12.4	18.6	60.9	48.9	43.4	35.1	32.2	30.1
Meckels diverticulum	8	0.4	~	~	~	~	~	~	~
Overlapping lesion	20	1.0	~	~	~	~	~	~	~
Small intestine, NOS	245	11.9	13.1	53.7	36.2	29.6	24.4	21.5	21.5
<b>Tumor Size</b>									
<2 cm	165	8.0	24.0	76.4	53.4	47.3	39.9	37.7	35.7
2.1-5 cm	641	31.1	21.7	67.3	51.2	42.8	36.0	29.8	29.8
5.1-10 cm	370	17.9	19.2	64.8	48.7	41.4	34.3	31.0	28.2
>10 cm	67	3.2	11.6	50.0	36.7	29.4	24.4	24.4	24.4
Unknown	819	39.7	7.0	37.0	22.8	17.6	14.8	13.8	13.4

! Not enough intervals to produce rate.

~ Statistic not displayed due to less than 25 cases.

Table 3.7: Cancer of the Small Intestine: Distribution, Median Survival Time and 1-, 2-, 3-, 5-, 8-, & 10-Year Relative Survival Rates (%) by Histology, ages 20+, 12 SEER Areas, 1988-2001

Histology (ICD-O code)	Cases	Percent	Median Survival (Months)	Relative Survival Rate (%)					
				1-Year	2-Year	3-Year	5-Year	8-Year	10-Year
All Cases excluding carcinoids	2,062	100.0	14.0	55.1	39.3	32.6	27.5	24.8	24.3
Carcinoma excluding carcinoids 8010-8572	1,985	96.3	13.4	54.3	38.4	31.6	26.5	24.1	23.7
Squamous-cell carcinoma 8050-8076	7	0.3	~	~	~	~	~	~	~
Adenocarcinoma 8140-8141,8191-8231, 8260-8263,8310,8430, 8480-8490,8560, 8570-8572	1,852	89.8	13.9	55.1	38.7	31.7	26.6	24.1	23.6
Other specified carcinomas	40	1.9	41.3	69.7	62.5	56.4	41.3	41.3	41.3
Unspecified carcinoma 8010-8034	86	4.2	5.4	33.8	24.4	20.5	19.5	14.7	14.7
Unspecified Cancer 8000-8004	66	3.2	52.4	73.1	63.4	61.5	54.8	43.1	22.7
Other specified cancer	11	0.5	~	~	~	~	~	~	~
Carcinoids	2,202	51.6	97.6	89.9	87.5	84.8	76.5	67.1	61.5

~ Statistic not displayed due to less than 25 cases.

## DISCUSSION

Survival rates for these three sites were generally poor. Overall the 5-year relative survival rates were 14% for esophageal, 21% for stomach, and 28% for small intestine cancers. Even though survival rates were higher for localized disease, well differentiated tumors, and small sized tumors, the survival rates were still lower than those for many primary sites such as breast, prostate, and colon/rectum. Carcinoids of the stomach and small intestine had the highest 5-year survival rates, 71% and 77%, respectively.

## REFERENCE

1. American Cancer Society. Cancer Facts and Figures 2006. Atlanta: American Cancer Society, 2006.