

Chapter 9

New Malignancies Following Cancer of the Uterine Corpus and Ovary

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Synopsis

The risk of subsequent primary cancers was evaluated in more than 115,000 women diagnosed with cancer of the uterine corpus (UCC) or cancer of the ovary between 1973 and 2000. The overall risk of subsequent primary cancers outside the female genital tract was significantly increased among survivors of ovarian cancer (O/E=1.18,¹ O=2,091, EAR=15 per 10,000 person-years) but not of UCC (O/E=0.99,¹ O=8,409). Overall, nongenital cancer risk did not increase over time among UCC patients, but it rose to 31% among those surviving 5 years or more after ovarian cancer diagnosis. Excess new malignancies of the colon, rectum, urinary bladder, and breast were associated with both gynecologic cancer sites. Hormonal and dietary factors, as well as genetic predisposition, may have contributed to the elevated risks of cancers of the breast and colon. In particular, BRCA1/2 susceptibility genes are involved in hereditary forms of breast and ovarian cancer. In addition, UCC and ovarian cancers are associated with hereditary nonpolyposis colorectal cancer, which may explain the excess of colorectal cancer among younger gynecologic patients and also account for some of the excess cancers of the small intestine, renal pelvis, and biliary tract among ovarian cancer patients. Radiotherapy may have also contributed to the observed excess of certain solid tumors following UCC and ovarian cancers, particularly sarcomas, and cancers of the urinary bladder and colon, as well as rectal cancer following UCC. While the excess of acute leukemia following UCC appeared to be related to radiotherapy, the elevated risks after ovarian cancer were more likely due to chemotherapy regimens that include alkylating agents or platinum compounds. Ovarian cancer was also associated with other new malignancies, including ocular melanoma. Further studies are needed to untangle the genetic and other risk factors linking colorectal cancer to both gynecologic tumors and to clarify the relation of ovarian cancer to less common tumors, such as cancers of the biliary tract and ocular melanoma.

¹Observed-to-expected ratios of subsequent primary cancers following cancers of the UCC and ovary exclude new cancers of the female genital sites.

Abbreviations: O=observed number of subsequent (2nd, 3rd, etc.) primary cancers; O/E=ratio of observed to expected cancers; CI=confidence interval; PYR=person-years at risk; EAR=excess absolute risk (excess cancers per 10,000 person-years, calculated as [(O-E)/PYR]×10,000).

Uterine Corpus Cancer

Uterine corpus cancer (UCC) is the fourth most common cancer among U.S. women, accounting for about 6% of incident cancers and 2.7% of cancer deaths among females (Jemal et al, 2005). The relative survival rate is 87.0% at 5 years (83.0% at 10 years) among white females but only 64.7% at 5 years among black females, reflecting racial disparities in the stage of disease at the time of diagnosis. Because most women (91%) are treated surgically with removal of the uterus, cervix, ovaries, and fallopian tubes (Rose, 1996), few remain at risk to develop subsequent cancers of the female genital tract. Adjuvant radiotherapy to the pelvis is given to 35% of patients, while primary radiotherapy is administered to a much smaller percentage of cases, usually those considered at high risk of surgical complications.

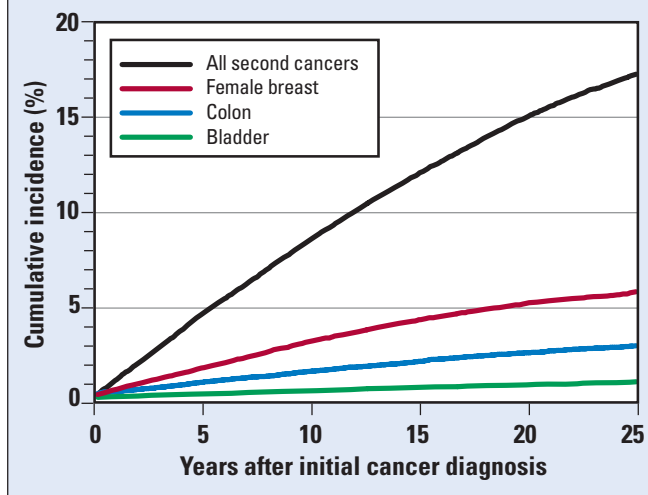
Most of the established risk factors for UCC involve sustained estrogen stimulation of the endometrium, including estrogen replacement therapy, nulliparity, late menopause, and obesity (Hulka, 1997; Brinton and Hoover, 2000). Some, but not all, studies have reported a positive relation to socioeconomic status, diabetes, and hypertension, and an inverse relation to cigarette smoking (Hulka, 1997; Brinton and Hoover, 2000).

Results and Discussion

The overall risk of subsequent primary cancers was not increased at any time among the 74,185 women who survived 2 months or more following a diagnosis of UCC (O/E= 0.99 excluding female genital sites, O=8,409, 95% CI=0.97-1.01). The cumulative incidence of developing a second cancer following uterine cancer, adjusting for the competing risk of death due to other causes, was 17.5% at 25 years, 95% CI=17.1%-17.9% (Figure 9.1). The risk of developing a new malignancy (including 2nd, 3rd, and 4th cancers), however, varied significantly by age at diagnosis, race, and subsequent cancer site although not substantially by histologic type of UCC (leiomyosarcomas, other sarcomas, carcinomas). Elevated risks were limited to younger women (25% excess for women diagnosed at younger than 50 years of age, and 47% for those diagnosed at younger than 40 years), while black women (O/E=1.27, EAR=29 per 10,000 person-years) had a higher risk of new

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Figure 9.1: Cumulative incidence of developing a second cancer among patients with cancer of the corpus uteri, females, SEER 1973-2000.



malignancies than white women ($O/E=0.98$). There were significantly increased risks for subsequent cancers of the small intestine, colon, urinary bladder, breast, vagina, and soft tissue, as well as for acute leukemia. Also noteworthy was a 64% nonsignificant higher risk for bone cancer after uterine cancer and a small (12%), but borderline significant, risk for subsequent rectal cancer. Significant deficits were seen for new malignancies of the buccal cavity, esophagus, and respiratory system, as well as for chronic lymphocytic leukemia. Our findings are consistent with previous surveys of UCC revealing elevated risks for subsequent cancers of the colon, urinary bladder, and breast, as well as for leukemia (Annegers and Malkasian, 1981; Curtis et al, 1985, 1994; Schwartz et al, 1985; Storm and Ewertz, 1985; Schoen et al, 1994; Bergfeldt et al, 1995; Re et al, 1997; Zimmerman and Westhoff, 1999).

Subsequent breast and colon cancers were the 2 most frequent cancers after a diagnosis of UCC. While the underlying mechanisms are unclear, it has been shown that endometrial, ovarian, and breast cancers have many similar reproductive and menstrual risk factors (Schottenfeld, 1996; Brinton and Hoover, 2000; McPherson et al, 2000). Hormonal factors may also play a role in subsequent colon cancers; however, while hormone replacement therapy increases the risk of breast cancer and UCC, it appears to lower the risk of colon cancer (Potter, 1999). A number of studies also suggest that obesity and physical inactivity increase the risk of UCC, colon cancer, and postmenopausal breast cancer (Potter, 1999; Brinton and Hoover, 2000; Willett, 2001). In addition, we found a reciprocal significantly increased risk for UCC following both breast and colon cancer, providing further evidence of shared risk factors with UCC. Radiotherapy probably contributed to the elevated risk of colon cancer

(UNSCEAR, 2000), particularly because the excess in our study seemed limited to women who received radiotherapy in the initial regimen.

The risks of subsequent breast and colon cancers varied by age at UCC diagnosis. While breast cancer risks were highest in the oldest age groups, the increase in colon cancer was limited to women younger than 50 years at UCC diagnosis (a nearly 4-fold risk increase, rising to 7-fold among women younger than 40 years). This tendency to early onset of multiple primary cancers is characteristic of genetic syndromes such as hereditary nonpolyposis colorectal cancer, which encompasses endometrial and certain other extracolonic cancers (Lynch et al, 1991; Weinberg et al, 1999). This syndrome may provide insights into the increased risk we observed for small intestinal cancer after UCC and for the 3-fold excess of rectal cancer among women younger than 50 years of age.

It seems likely that radiotherapy contributed to the elevated risks observed for subsequent acute non-lymphocytic leukemia (ANLL) and cancers of the rectum, urinary bladder, bone, and soft tissue, particularly because the excesses were noted primarily among women who received radiotherapy in the initial treatment regimen (Boice et al, 1988; UNSCEAR, 2000). For example, a large majority of new soft tissue and bone sarcomas diagnosed among UCC survivors receiving initial radiotherapy occurred in the irradiated pelvic fields. The excesses of rectal and urinary bladder cancer in our study are interesting in view of the dose-dependent excesses of urinary bladder and rectal cancers previously reported following comparable pelvic radiotherapy for cervical cancer (Boice et al, 1988). Similarly, the increased risk for acute leukemia in our study is consistent with the radiogenic effects described in an international survey of patients with UCC (Curtis et al, 1994). Although the temporal sequence of these new malignancies was generally consistent with the latency periods of radiogenic cancers, there was some excess risk of solid tumors in the first 5 years of follow-up, suggesting that heightened medical surveillance may have played some role.

The reduced risk of new malignancies of the buccal cavity and lung is noteworthy in view of reports suggesting that cigarette smoking may lower the risk of UCC (Brinton and Hoover, 2000), perhaps through its inhibition of ovarian function and relation to early menopause. Significant excesses of new malignancies of the vagina and ovary within the first year of follow-up are likely to reflect uncertainties in the diagnosis of the primary or subsequent tumor, although heightened gynecologic surveillance may improve cancer detection. The deficit in chronic lymphocytic leukemia among survivors of UCC was seen with other first primary cancer sites and could be related to earlier detection during the first 2 months of follow-up and thus excluded from this analysis.

Ovarian Cancer

Ovarian cancer, while accounting for only 3% of female malignancies, is the leading cause of gynecologic cancer death and the fourth most common cause of cancer mortality in women (Jemal et al, 2005). Because most patients present with late-stage disease, the 5-year relative survival rate is only 43.9% (excluding borderline ovarian tumors). Treatment for ovarian cancer typically includes surgery (including removal of most genital tract organs), followed by chemotherapy, depending on disease stage (Cannistra, 1993); less than 10% of patients also receive radiotherapy during the first course of treatment.

Several factors increase the risk of ovarian cancer, including nulliparity, antecedent breast cancer, and a family history of ovarian cancer. Total years of ovulation, use of fertility drugs, using talc on the perineum, and high dietary fat or lactose intake have also been implicated in some, but not all, studies. In addition, a reduced risk has been reported with oral contraceptive use, tubal ligation, and hysterectomy (Hulka, 1997; Brinton and Hoover, 2000).

Results and Discussion

A total of 2,091 subsequent nongenital primary cancers were observed among 41,489 2-month survivors of ovarian cancer (O/E=1.18 excluding female genital sites, 95% CI=1.13-1.23, EAR=15). The cumulative incidence of second cancer, adjusted for the competing risk of death due to other causes, was 9.4% within 25 years (95% CI=8.9%-9.9%). Subsequent primary cancer risk was low during the first 5 years of follow-up, but rose to a 31% excess among those surviving 5 years or more. Excluding female genital sites, overall subsequent cancer risk was higher in blacks (O/E=1.42, EAR=29) than whites (O/E=1.16, EAR=14). Women younger than age 50 years at ovarian cancer diagnosis had a 58% increased risk of new malignancies, whereas risk declined to below unity among patients diagnosed at ages older than 70 years. Most of the overall excess was attributable to significantly increased risks for acute leukemia, as well as for cancers of the breast, colon, rectum, small intestine, bladder, renal pelvis, eye, and intrahepatic bile ducts. Significant deficits were noted only for cancers of the female genital tract, due to surgical removal of those organs. The findings are generally consistent with prior studies of ovarian cancer, which have shown significantly increased risks for acute leukemia and for cancers of the breast, colon, rectum, and urinary bladder (Reimer et al, 1978; Curtis et al, 1985; Storm and Ewertz, 1985; Coleman et al, 1987; Kaldor et al, 1987; Prior and Pope, 1989; Bergfeldt et al, 1995; Travis et al, 1996).

As observed for UCC, breast and colon cancers were the most common new malignancies. Subsequent primary breast cancer excesses were strongly related to age at initial ovarian cancer diagnosis, with the largest increase in risk (27%) among women diagnosed before age 50 years. The findings are consistent with genetic

susceptibility, as hereditary breast and ovarian cancer tend to affect younger women as a result of germline mutations in the BRCA1/2 genes (Li and Karlan, 2001). The role of genetic factors is also consistent with the reciprocal 2-fold increased risk of ovarian cancer following early-onset breast cancer. Among women diagnosed with ovarian cancer at ages younger than 50 years, there was a rapid decline in breast cancer risk 5 years or more after initial surgery, probably caused by therapeutic ablation of gonadal function. Older patients with ovarian cancer (diagnosed at age ≥ 50 years) had only a small (4%) nonsignificant increased risk of subsequent breast cancer, with the excesses attributable to women between the ages of 50 and 69 years. The association between breast and ovarian cancer at least partly reflects shared reproductive factors, which also may contribute to the reciprocal 27% increased risk for ovarian neoplasms seen after breast cancer in our survey.

Breast cancer risks varied somewhat by histologic type, with highest, nonsignificant risks after endometrioid tumors of the ovary, although confidence intervals overlapped with those of other histologic types. There is some evidence that distinct histologic types may be associated with different risk factors, including family cancer history (Travis et al, 1996).

The increased risk for subsequent primary colon cancer may also reflect shared risk factors with ovarian cancer, including nutritional, hormonal, and genetic influences (Weinberg et al, 1999). The early onset of ovarian cancer was a strong predictor of increased colon cancer risk, with 3-fold increased risks for women younger than age 50 years at ovarian cancer diagnosis, and 4-fold for those younger than age 35 years. It is noteworthy that subsequent endometrial and ovarian cancers have been associated with hereditary nonpolyposis colorectal cancer, a syndrome that may also contribute to the 2- to 3-fold excesses we observed for new malignancies of the small intestine, bile ducts, and renal pelvis (Lynch et al, 1991). The role of genetic factors is further suggested by the reciprocal 6-fold increase in ovarian cancer risk among colon cancer patients diagnosed at younger than age 40 years. Excesses of colon cancer also have been reported in some studies of familial breast/ovarian cancer, as well as in individuals with BRCA1 mutations, although the results have not been consistent (Ford et al, 1994). In addition, radiation may have contributed to excess colon cancers, as risks were particularly high in women surviving 10 years or more who had received initial radiotherapy. The possibility exists, however, that some subsequent intestinal cancers following ovarian cancer may represent misclassified metastases (Bergfeldt et al, 2000).

Similar genetic and other risk factors may contribute to the excess of subsequent primary rectal cancers, although interpretation is limited by small numbers. However, no differential risk was seen between women with and without radiotherapy during initial treatment of their ovarian cancer, in contrast to the excess of rectal cancer linked to pelvic radiotherapy for cervical cancer (Boice et al, 1988).

The increased risks of subsequent primary urinary bladder, soft tissue, and bone cancers after ovarian cancer appeared related to treatment. Risk of urinary bladder cancer was substantially higher among irradiated patients, with 3- to 4-fold increases in risk observed 10 years or more after initial treatment. This finding resembles an earlier study revealing a radiation-related excess of bladder cancer following ovarian cancer (Kaldor et al, 1995). Chemotherapy may have played a role also, since some patients in earlier years probably received long-term treatment with cyclophosphamide, a known bladder carcinogen (Kaldor et al, 1995; Travis et al, 1995). Excess risks for soft tissue and bone cancers were seen only among irradiated women, with 5 of the 7 sarcomas arising within the radiation field.

A significantly increased risk of subsequent primary acute leukemia, including non-lymphocytic and lymphocytic types, occurred within the first 10 years after diagnosis of ovarian cancer. Previous analytic studies of ovarian cancer have attributed these risks primarily to treatment with alkylating agents (especially melphalan and chlorambucil) and platinum-based chemotherapy (Kaldor et al, 1990; Travis et al, 1999).

Increased risks were also noted for subsequent primary ocular melanoma (the most common form of eye cancer in adults). Reports of this tumor in families with hereditary breast and ovarian cancer suggest the role of genetic factors (Houlston and Damato, 1999), although endogenous hormones may be involved as well (Hartge et al, 1989).

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Corpus Uteri Females

Table 9.1.1: Characteristics of patients with an initial cancer of the corpus uteri, females, SEER 1973-2000.

Characteristics	Males		Females		Total	
	No.	%	No.	%	No.	%
Number of patients with 1st primary cancer						
Total	—	—	74,185	100.0	74,185	100.0
Initial treatment						
Any radiation	—	—	29,629	39.9	29,629	39.9
With surgery	—	—	26,161	35.3	26,161	35.3
Without surgery	—	—	3,468	4.7	3,468	4.7
No radiation	—	—	44,556	60.1	44,556	60.1
With surgery	—	—	41,162	55.5	41,162	55.5
Without surgery	—	—	3,394	4.6	3,394	4.6
Race						
White	—	—	66,697	89.9	66,697	89.9
Black	—	—	3,607	4.9	3,607	4.9
Other	—	—	3,556	4.8	3,556	4.8
Unknown	—	—	325	0.4	325	0.4
Age at 1st primary cancer diagnosis, years						
< 30	—	—	304	0.4	304	0.4
30–49	—	—	8,864	11.9	8,864	11.9
50–69	—	—	42,589	57.4	42,589	57.4
70–79	—	—	16,203	21.8	16,203	21.8
≥ 80	—	—	6,225	8.4	6,225	8.4
Number of patients with one or more primary cancers						
One primary cancer only	—	—	66,199	89.2	66,199	89.2
1st and 2nd cancers	—	—	7,253	9.8	7,253	9.8
1st, 2nd, and 3rd cancers	—	—	673	0.9	673	0.9
1st, 2nd, 3rd, and additional cancers	—	—	60	0.1	60	0.1
Other statistics						
Median age at 1st cancer diagnosis	—	—	63.7	—	63.7	—
Median year of 1st cancer diagnosis	—	—	1986.8	—	1986.8	—
Median person-years at risk	—	—	7.7	—	7.7	—
Percent histologically confirmed*						
Both 1st and 2nd cancers	—	—	—	95.9	—	95.9
1st, 2nd, and additional cancers	—	—	—	95.5	—	95.5
1st cancer only	—	—	—	4.0	—	4.0

*Percent histologically confirmed among patients who developed a subsequent primary cancer.

Table 9.1.2: Risk of subsequent primary cancers after cancer of the corpus uteri, females, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	699	1.07	2,421	0.93*	2,347	0.91*	3,324	0.86*	8,791	9,695.69	0.91*	-12.83
All excluding same site	542	0.97	2,326	1.03	2,289	1.01	3,252	0.95*	8,409	8,485.35	0.99	-1.08
Buccal cavity, pharynx	6	0.48	24	0.48*	39	0.82	54	0.83	123	174.30	0.71*	-0.73
Lip	0	0.00	3	0.99	5	1.59	9	1.76	17	12.05	1.41	0.07
Tongue	1	0.37	7	0.64	7	0.67	11	0.77	26	38.34	0.68*	-0.18
Salivary gland	2	1.56	1	0.20	6	1.23	3	0.41	12	18.53	0.65	-0.09
Mouth	2	0.47	8	0.47*	9	0.55	18	0.78	37	60.99	0.61*	-0.34
Nasopharynx	0	0.00	2	1.00	2	1.09	1	0.43	5	6.70	0.75	-0.02
Tonsil	0	0.00	2	0.43	3	0.72	4	0.84	9	14.86	0.61	-0.08
Oropharynx	1	3.09	0	0.00	2	1.58	2	1.32	5	4.42	1.13	0.01
Hypopharynx	0	0.00	0	0.00	3	0.88	4	0.98	7	12.03	0.58	-0.07
Digestive system	133	0.92	626	1.07	623	1.05	969	1.04	2,351	2,251.37	1.04*	1.41
Esophagus	5	1.23	15	0.92	4	0.25*	13	0.52*	37	61.46	0.60*	-0.35
Stomach	8	0.71	38	0.87	39	0.89	57	0.85	142	165.68	0.86	-0.34
Small intestine	7	3.49*	8	0.99	17	2.06*	18	1.32	50	31.95	1.56*	0.26
Colon	56	0.78	344	1.19*	351	1.17*	520	1.09*	1,271	1,135.40	1.12*	1.92
Rectum, rectosigmoid junction	19	0.79	93	0.96	109	1.15	148	1.09	369	351.72	1.05	0.25
Rectum	16	1.02	65	1.04	69	1.12	109	1.21	259	230.31	1.12	0.41
Anus, anal canal	0	0.00	3	0.37	5	0.63	11	0.93	19	29.78	0.64*	-0.15
Liver	2	0.68	11	0.92	7	0.57	16	0.76	36	48.16	0.75	-0.17
Gallbladder	5	1.48	10	0.75	8	0.60	14	0.72	37	49.54	0.75	-0.18
Bile ducts, other biliary	7	2.36	10	0.83	15	1.17	22	0.96	54	50.77	1.06	0.05
Pancreas	17	0.91	79	1.05	57	0.73*	133	1.06	286	297.58	0.96	-0.16
Respiratory system	54	0.64*	314	0.90	304	0.84*	419	0.75*	1,091	1,356.45	0.80*	-3.77
Nose, nasal cavity, ear	1	1.12	5	1.41	6	1.70	4	0.75	16	13.30	1.20	0.04
Larynx	0	0.00	4	0.33*	3	0.26*	14	0.98	21	40.82	0.51*	-0.28
Lung, bronchus	53	0.66*	304	0.91	294	0.85*	400	0.74*	1,051	1,298.94	0.81*	-3.52
Female breast	217	1.15*	802	1.07	824	1.13*	973	0.93*	2,816	2,709.68	1.04*	1.51
Female genital system	157	1.68*	95	0.26*	58	0.18*	72	0.17*	382	1,210.34	0.32*	-11.75
Cervix uteri	7	0.66	4	0.10*	5	0.16*	3	0.09*	19	112.95	0.17*	-1.33
Corpus uteri	9	0.18*	3	0.02*	3	0.02*	7	0.03*	22	638.59	0.03*	-8.75
Ovary	124	4.78*	47	0.46*	23	0.24*	18	0.14*	212	357.89	0.59*	-2.07
Vagina	7	5.61*	16	3.25*	10	2.10*	17	2.45*	50	17.85	2.80*	0.46
Vulva	3	0.85	19	1.33	17	1.16	25	1.02	64	56.93	1.12	0.10
Urinary system	41	1.36	163	1.35*	131	1.04	255	1.28*	590	477.46	1.24*	1.60
Urinary bladder	22	1.24	105	1.46*	94	1.26*	183	1.53*	404	283.64	1.42*	1.71
Kidney parenchyma	18	1.82*	45	1.12	27	0.66*	45	0.71*	135	153.97	0.88	-0.27
Renal pelvis, other urinary	1	0.39	13	1.26	10	0.95	27	1.64*	51	39.86	1.28	0.16
Ureter	0	0.00	4	1.25	2	0.60	10	1.97	16	12.38	1.29	0.05
Bone, joints	1	1.62	4	1.65	6	2.63	3	0.93	14	8.54	1.64	0.08
Soft tissue including heart	0	0.00	18	1.83*	16	1.66	18	1.19	52	37.08	1.40*	0.21
Kaposi sarcoma	1	5.04	2	2.45	0	0.00	1	0.63	4	3.51	1.14	0.01
Melanoma of skin	12	0.96	59	1.17	44	0.91	74	1.02	189	183.79	1.03	0.07
Eye, orbit	2	1.89	3	0.72	3	0.78	2	0.37	10	14.42	0.69	-0.06
Brain, central nervous system	6	0.84	22	0.77	18	0.65	38	0.98	84	101.76	0.83	-0.25
Thyroid	11	1.82	21	0.92	10	0.50*	20	0.80	62	73.81	0.84	-0.17
Lymphatic, hematopoietic	39	0.82	184	0.95	180	0.91	330	1.04	733	755.97	0.97	-0.33
Hodgkin lymphoma	1	0.63	5	0.82	3	0.53	9	1.21	18	20.77	0.87	-0.04
Non-Hodgkin lymphoma	22	0.97	82	0.88	85	0.87	175	1.10	364	372.61	0.98	-0.12
Myeloma	7	0.85	23	0.70	34	1.01	56	1.07	120	127.31	0.94	-0.10
Leukemia	9	0.60	74	1.22	58	0.94	90	0.92	231	235.28	0.98	-0.06
Acute lymphocytic	0	0.00	2	1.15	4	2.30	1	0.38	7	6.54	1.07	0.01
Chronic lymphocytic	4	0.68	15	0.63	16	0.65	34	0.88	69	93.01	0.74*	-0.34
Acute non-lymphocytic	4	0.76	37	1.74*	27	1.25	40	1.14	108	83.23	1.30*	0.35
Chronic myeloid	0	0.00	11	1.35	6	0.73	9	0.68	26	31.63	0.82	-0.08

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Corpus Uteri
Females, Long-term Follow-up

Table 9.1.3: Risk of subsequent primary cancers after cancer of the corpus uteri, females, long-term follow-up, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<10 years		10-14 years		15-19 years		≥20 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	5,467	0.93*	1,646	0.86*	1,099	0.88*	579	0.85*	8,791	9,695.69	0.91*	-12.83
All excluding same site	5,157	1.02	1,611	0.95*	1,073	0.97	568	0.93	8,409	8,485.35	0.99	-1.08
Buccal cavity, pharynx	69	0.63*	30	0.90	16	0.78	8	0.74	123	174.30	0.71*	-0.73
Lip	8	1.16	4	1.64	2	1.18	3	3.00	17	12.05	1.41	0.07
Tongue	15	0.62	6	0.81	4	0.89	1	0.43	26	38.34	0.68*	-0.18
Salivary gland	9	0.80	1	0.28	2	0.84	0	0.00	12	18.53	0.65	-0.09
Mouth	19	0.50*	9	0.77	6	0.82	3	0.76	37	60.99	0.61*	-0.34
Nasopharynx	4	0.92	0	0.00	1	1.35	0	0.00	5	6.70	0.75	-0.02
Tonsil	5	0.49	3	1.12	0	0.00	1	1.65	9	14.86	0.61	-0.08
Oropharynx	3	1.03	2	2.49	0	0.00	0	0.00	5	4.42	1.13	0.01
Hypopharynx	3	0.38	3	1.34	1	0.80	0	0.00	7	12.03	0.58	-0.07
Digestive system	1,382	1.05	469	1.04	335	1.11	165	0.95	2,351	2,251.37	1.04*	1.41
Esophagus	24	0.66*	8	0.65	3	0.37	2	0.43	37	61.46	0.60*	-0.35
Stomach	85	0.86	26	0.79	22	1.01	9	0.72	142	165.68	0.86	-0.34
Small intestine	32	1.74*	8	1.24	6	1.32	4	1.53	50	31.95	1.56*	0.26
Colon	751	1.14*	258	1.12	179	1.16	83	0.92	1,271	1,135.40	1.12*	1.92
Rectum, rectosigmoid junction	221	1.02	72	1.04	56	1.29	20	0.85	369	351.72	1.05	0.25
Rectum	150	1.07	53	1.18	42	1.45*	14	0.86	259	230.31	1.12	0.41
Anus, anal canal	8	0.45*	4	0.68	4	1.04	3	1.45	19	29.78	0.64*	-0.15
Liver	20	0.74	8	0.82	7	1.00	1	0.23	36	48.16	0.75	-0.17
Gallbladder	23	0.76	8	0.82	5	0.79	1	0.30	37	49.54	0.75	-0.18
Bile ducts, other biliary	32	1.15	7	0.67	8	1.04	7	1.47	54	50.77	1.06	0.05
Pancreas	153	0.89	61	1.01	38	0.92	34	1.44	286	297.58	0.96	-0.16
Respiratory system	672	0.84*	205	0.74*	133	0.72*	81	0.81	1,091	1,356.45	0.80*	-3.77
Nose, nasal cavity, ear	12	1.51	2	0.77	2	1.17	0	0.00	16	13.30	1.20	0.04
Larynx	7	0.26*	7	0.90	3	0.68	4	1.90	21	40.82	0.51*	-0.28
Lung, bronchus	651	0.86*	196	0.74*	127	0.71*	77	0.80*	1,051	1,298.94	0.81*	-3.52
Female breast	1,843	1.11*	518	0.97	316	0.95	139	0.80*	2,816	2,709.68	1.04*	1.51
Female genital system	310	0.40*	35	0.16*	26	0.19*	11	0.16*	382	1,210.34	0.32*	-11.75
Cervix uteri	16	0.20*	1	0.05*	2	0.20*	0	0.00*	19	112.95	0.17*	-1.33
Corpus uteri	15	0.04*	4	0.03*	3	0.04*	0	0.00*	22	638.59	0.03*	-8.75
Ovary	194	0.86*	7	0.10*	10	0.23*	1	0.05*	212	357.89	0.59*	-2.07
Vagina	33	3.02*	8	2.29	3	1.35	6	4.96*	50	17.85	2.80*	0.46
Vulva	39	1.20	14	1.21	7	0.87	4	0.84	64	56.93	1.12	0.10
Urinary system	335	1.20*	116	1.20	85	1.30*	54	1.46*	590	477.46	1.24*	1.60
Urinary bladder	221	1.35*	87	1.51*	53	1.35*	43	1.90*	404	283.64	1.42*	1.71
Kidney parenchyma	90	0.99	19	0.61*	20	0.96	6	0.53	135	153.97	0.88	-0.27
Renal pelvis, other urinary	24	1.02	10	1.25	12	2.22*	5	1.64	51	39.86	1.28	0.16
Ureter	6	0.82	3	1.21	5	3.01	2	2.13	16	12.38	1.29	0.05
Bone, joints	11	2.07*	1	0.63	1	0.95	1	1.72	14	8.54	1.64	0.08
Soft tissue including heart	34	1.54*	8	1.10	9	1.80	1	0.36	52	37.08	1.40*	0.21
Kaposi sarcoma	3	1.56	1	1.33	0	0.00	0	0.00	4	3.51	1.14	0.01
Melanoma of skin	115	1.03	35	0.99	26	1.10	13	0.96	189	183.79	1.03	0.07
Eye, orbit	8	0.88	1	0.37	0	0.00	1	1.13	10	14.42	0.69	-0.06
Brain, central nervous system	46	0.73*	20	1.00	12	0.97	6	0.95	84	101.76	0.83	-0.25
Thyroid	42	0.86	9	0.69	7	0.89	4	0.99	62	73.81	0.84	-0.17
Lymphatic, hematopoietic	403	0.92	144	0.94	108	1.04	78	1.32*	733	755.97	0.97	-0.33
Hodgkin lymphoma	9	0.68	2	0.52	4	1.64	3	2.53	18	20.77	0.87	-0.04
Non-Hodgkin lymphoma	189	0.88	73	0.96	56	1.07	46	1.53*	364	372.61	0.98	-0.12
Myeloma	64	0.85	26	1.01	20	1.17	10	1.05	120	127.31	0.94	-0.10
Leukemia	141	1.03	43	0.90	28	0.87	19	1.03	231	235.28	0.98	-0.06
Acute lymphocytic	6	1.53	0	0.00	1	1.18	0	0.00	7	6.54	1.07	0.01
Chronic lymphocytic	35	0.64*	15	0.79	15	1.19	4	0.58	69	93.01	0.74*	-0.34
Acute non-lymphocytic	68	1.41*	24	1.44	7	0.61	9	1.30	108	83.23	1.30*	0.35
Chronic myeloid	17	0.92	1	0.16*	4	0.93	4	1.64	26	31.63	0.82	-0.08

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

CORPUS UTERI

Table 9.1.4: Risk of subsequent primary cancers after cancer of the corpus uteri, females, <50 years of age, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	63	2.71*	146	1.30*	142	1.01	368	1.10	719	610.71	1.18*	10.97
All excluding same site	27	1.41	131	1.41*	135	1.15	352	1.22*	645	516.77	1.25*	13.00
Buccal cavity, pharynx	0	0.00	1	0.50	0	0.00	3	0.50	4	11.09	0.36*	-0.72
Lip	0	0.00	0	0.00	0	0.00	1	3.48	1	0.49	2.05	0.05
Tongue	0	0.00	0	0.00	0	0.00	0	0.00	0	2.54	0.00	-0.26
Salivary gland	0	0.00	1	3.26	0	0.00	0	0.00	1	1.37	0.73	-0.04
Mouth	0	0.00	0	0.00	0	0.00	1	0.53	1	3.37	0.30	-0.24
Nasopharynx	0	0.00	0	0.00	0	0.00	1	3.18	1	0.71	1.41	0.03
Tonsil	0	0.00	0	0.00	0	0.00	0	0.00	0	1.19	0.00	-0.12
Oropharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.28	0.00	-0.03
Hypopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.79	0.00	-0.08
Digestive system	8	3.76*	39	3.41*	43	2.56*	132	2.53*	222	82.49	2.69*	14.14
Esophagus	0	0.00	0	0.00	0	0.00	1	0.59	1	2.50	0.40	-0.15
Stomach	0	0.00	1	1.04	2	1.62	3	0.87	6	5.84	1.03	0.02
Small intestine	1	16.64	0	0.00	0	0.00	2	1.87	3	1.81	1.65	0.12
Colon	4	4.38*	24	4.84*	32	4.32*	76	3.16*	136	37.36	3.64*	10.00
Rectum, rectosigmoid junction	1	2.25	10	4.09*	6	1.72	30	3.20*	47	15.78	2.98*	3.16
Rectum	1	3.33	8	4.99*	2	0.89	24	3.86*	35	10.37	3.38*	2.50
Anus, anal canal	0	0.00	0	0.00	0	0.00	5	4.64*	5	1.92	2.60	0.31
Liver	0	0.00	3	9.42*	0	0.00	0	0.00	3	2.28	1.31	0.07
Gallbladder	0	0.00	0	0.00	0	0.00	1	0.96	1	1.62	0.62	-0.06
Bile ducts, other biliary	1	24.35	0	0.00	0	0.00	3	2.58	4	1.75	2.28	0.23
Pancreas	1	4.78	1	0.83	1	0.52	10	1.50	13	10.02	1.30	0.30
Respiratory system	3	1.82	11	1.15	18	1.16	43	0.84	75	77.79	0.96	-0.28
Nose, nasal cavity, ear	0	0.00	0	0.00	0	0.00	0	0.00	0	0.75	0.00	-0.08
Larynx	0	0.00	0	0.00	0	0.00	3	1.62	3	3.16	0.95	-0.02
Lung, bronchus	3	1.97	11	1.23	17	1.17	40	0.82	71	73.65	0.96	-0.27
Female breast	7	0.69	35	0.73	42	0.75	92	0.79*	176	229.82	0.77*	-5.45
Female genital system	36	8.76*	15	0.76	7	0.31*	16	0.34*	74	93.94	0.79*	-2.02
Cervix uteri	0	0.00	2	0.43	0	0.00*	2	0.37	4	15.34	0.26*	-1.15
Corpus uteri	0	0.00	0	0.00*	1	0.09*	4	0.16*	5	44.81	0.11*	-4.03
Ovary	35	28.00*	10	1.68	5	0.71	4	0.28*	54	28.51	1.89*	2.58
Vagina	1	28.77	1	6.09	1	4.80	3	5.93*	6	0.91	6.57*	0.52
Vulva	0	0.00	1	1.99	0	0.00	2	1.37	3	2.67	1.13	0.03
Urinary system	2	3.58	5	1.65	7	1.57	26	1.84*	40	22.17	1.80*	1.81
Urinary bladder	1	4.00	1	0.71	4	1.85	14	1.89*	20	11.21	1.78*	0.89
Kidney parenchyma	1	3.52	4	2.70	2	0.97	10	1.71	17	9.67	1.76*	0.74
Renal pelvis, other urinary	0	0.00	0	0.00	1	4.14	2	2.29	3	1.29	2.33	0.17
Ureter	0	0.00	0	0.00	0	0.00	2	8.02	2	0.34	5.84	0.17
Bone, joints	0	0.00	0	0.00	0	0.00	0	0.00	0	0.70	0.00	-0.07
Soft tissue including heart	0	0.00	2	3.43	1	1.56	2	1.49	5	2.70	1.85	0.23
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.07	0.00	-0.01
Melanoma of skin	1	0.84	11	2.14*	7	1.32	8	0.88	27	20.68	1.31	0.64
Eye, orbit	0	0.00	0	0.00	0	0.00	0	0.00	0	0.93	0.00	-0.09
Brain, central nervous system	0	0.00	4	2.62	1	0.56	2	0.54	7	7.31	0.96	-0.03
Thyroid	4	4.46*	7	1.94	2	0.61	3	0.65	16	12.44	1.29	0.36
Lymphatic, hematopoietic	1	0.81	12	1.99*	8	1.02	29	1.35	50	36.63	1.37*	1.36
Hodgkin lymphoma	0	0.00	1	1.82	0	0.00	1	1.28	2	1.97	1.02	0.00
Non-Hodgkin lymphoma	1	1.61	5	1.61	3	0.72	16	1.38	25	19.45	1.29	0.56
Myeloma	0	0.00	0	0.00	0	0.00	3	0.90	3	5.13	0.58	-0.22
Leukemia	0	0.00	6	3.49*	5	2.30	9	1.54	20	10.08	1.98*	1.01
Acute lymphocytic	0	0.00	0	0.00	0	0.00	0	0.00	0	0.52	0.00	-0.05
Chronic lymphocytic	0	0.00	0	0.00	0	0.00	1	0.47	1	3.21	0.31	-0.22
Acute non-lymphocytic	0	0.00	6	8.25*	3	3.44	7	3.18*	16	3.96	4.04*	1.22
Chronic myeloid	0	0.00	0	0.00	1	2.59	1	1.19	2	1.64	1.22	0.04

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Corpus Uteri Females, 50-69 Years of Age

Table 9.1.5: Risk of subsequent primary cancers after cancer of the corpus uteri, females, 50-69 years of age, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	353	1.05	1,313	0.88*	1,546	0.90*	2,597	0.84*	5,809	6,638.75	0.88*	-17.50
All excluding same site	276	0.98	1,270	1.00	1,513	1.02	2,548	0.93*	5,607	5,769.92	0.97*	-3.44
Buccal cavity, pharynx	2	0.28*	14	0.45*	31	0.92	49	0.95	96	124.02	0.77*	-0.59
Lip	0	0.00	0	0.00	4	2.19	7	1.76	11	7.58	1.45	0.07
Tongue	0	0.00	6	0.86	4	0.54	11	0.97	21	27.34	0.77	-0.13
Salivary gland	1	1.53	0	0.00	4	1.28	3	0.53	8	12.33	0.65	-0.09
Mouth	1	0.41	3	0.28*	7	0.61	16	0.87	27	42.86	0.63*	-0.33
Nasopharynx	0	0.00	2	1.52	2	1.51	0	0.00	4	4.81	0.83	-0.02
Tonsil	0	0.00	2	0.57	3	0.91	4	1.03	9	11.49	0.78	-0.05
Oropharynx	0	0.00	0	0.00	2	2.02	2	1.60	4	3.36	1.19	0.01
Hypopharynx	0	0.00	0	0.00	3	1.11	4	1.16	7	9.39	0.75	-0.05
Digestive system	61	1.01	337	1.18*	355	0.99	708	0.96	1,461	1,441.84	1.01	0.40
Esophagus	3	1.46	8	0.87	3	0.28*	9	0.45*	23	42.11	0.55*	-0.40
Stomach	6	1.39	20	1.00	23	0.92	44	0.84	93	101.50	0.92	-0.18
Small intestine	4	4.09*	8	1.81	13	2.43*	14	1.28	39	21.68	1.80*	0.37
Colon	21	0.74	174	1.28*	186	1.06	375	1.00	756	715.26	1.06	0.86
Rectum, rectosigmoid junction	10	0.88	52	0.99	66	1.07	102	0.94	230	234.00	0.98	-0.08
Rectum	9	1.23	36	1.07	44	1.11	74	1.03	163	152.19	1.07	0.23
Anus, anal canal	0	0.00	1	0.21	4	0.74	6	0.64	11	20.55	0.54*	-0.20
Liver	2	1.59	7	1.18	4	0.52	15	0.88	28	32.04	0.87	-0.09
Gallbladder	2	1.51	9	1.42	5	0.62	12	0.78	28	31.13	0.90	-0.07
Bile ducts, other biliary	3	2.67	4	0.74	10	1.39	17	0.95	34	31.64	1.07	0.05
Pancreas	7	0.90	46	1.24	35	0.73	101	1.01	189	192.61	0.98	-0.08
Respiratory system	28	0.60*	165	0.75*	213	0.81*	332	0.71*	738	997.68	0.74*	-5.48
Nose, nasal cavity, ear	1	2.17	5	2.52	3	1.32	3	0.70	12	8.98	1.34	0.06
Larynx	0	0.00	3	0.35	2	0.22*	10	0.86	15	31.38	0.48*	-0.35
Lung, bronchus	27	0.61*	157	0.76*	208	0.82*	318	0.71*	710	954.93	0.74*	-5.17
Female breast	120	1.14	465	1.02	600	1.20*	784	0.95	1,969	1,888.21	1.04	1.70
Female genital system	77	1.36*	43	0.18*	33	0.14*	49	0.14*	202	868.83	0.23*	-14.07
Cervix uteri	4	0.62	1	0.04*	4	0.19*	1	0.04*	10	76.68	0.13*	-1.41
Corpus uteri	2	0.06*	0	0.00*	1	0.01*	3	0.02*	6	476.25	0.01*	-9.92
Ovary	60	4.03*	22	0.35*	12	0.18*	12	0.11*	106	251.80	0.42*	-3.08
Vagina	4	6.83*	5	1.93	6	2.02	12	2.19*	27	11.64	2.32*	0.32
Vulva	2	1.40	12	1.80	10	1.19	20	1.06	44	35.30	1.25	0.18
Urinary system	21	1.50	93	1.42*	75	0.92	202	1.26*	391	320.93	1.22*	1.48
Urinary bladder	11	1.42	60	1.62*	48	1.03	148	1.55*	267	186.64	1.43*	1.69
Kidney parenchyma	10	1.94	26	1.11	20	0.71	31	0.60*	87	107.90	0.81*	-0.44
Renal pelvis, other urinary	0	0.00	7	1.35	7	1.04	23	1.71*	37	26.38	1.40	0.22
Ureter	0	0.00	2	1.28	2	0.96	8	1.93	12	8.12	1.48	0.08
Bone, joints	0	0.00	3	2.18	4	2.65	3	1.17	10	5.77	1.73	0.09
Soft tissue including heart	0	0.00	10	1.85	11	1.82	15	1.27	36	24.44	1.47*	0.24
Kaposi sarcoma	0	0.00	1	4.70	0	0.00	1	0.88	2	1.72	1.16	0.01
Melanoma of skin	4	0.58	27	0.91	28	0.88	60	1.08	119	124.01	0.96	-0.11
Eye, orbit	0	0.00	2	0.77	3	1.11	2	0.47	7	10.14	0.69	-0.07
Brain, central nervous system	5	1.26	11	0.63	14	0.71	36	1.13	66	73.04	0.90	-0.15
Thyroid	5	1.42	9	0.64	5	0.38*	15	0.81	34	49.29	0.69*	-0.32
Lymphatic, hematopoietic	18	0.84	90	0.90	112	0.90	271	1.07	491	500.34	0.98	-0.20
Hodgkin lymphoma	1	1.21	1	0.29	2	0.54	8	1.34	12	14.00	0.86	-0.04
Non-Hodgkin lymphoma	9	0.85	43	0.86	52	0.83	150	1.17	254	251.93	1.01	0.04
Myeloma	3	0.82	11	0.64	21	0.98	46	1.08	81	84.81	0.96	-0.08
Leukemia	5	0.79	35	1.19	37	1.01	67	0.87	144	149.60	0.96	-0.12
Acute lymphocytic	0	0.00	1	1.07	4	3.76*	1	0.50	6	4.20	1.43	0.04
Chronic lymphocytic	3	1.20	6	0.50	10	0.66	30	0.98	49	60.26	0.81	-0.24
Acute non-lymphocytic	2	0.90	17	1.63	17	1.32	27	0.97	63	53.37	1.18	0.20
Chronic myeloid	0	0.00	6	1.53	3	0.63	5	0.50	14	19.66	0.71	-0.12

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Table 9.1.6: Risk of subsequent primary cancers after cancer of the corpus uteri, females, ≥70 years of age, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	283	0.96	962	0.96	659	0.92*	359	0.83*	2,263	2,446.23	0.93*	-13.86
All excluding same site	239	0.92	925	1.03	641	0.99	352	0.89*	2,157	2,198.66	0.98	-3.15
Buccal cavity, pharynx	4	0.83	9	0.56	8	0.71	2	0.29	23	39.19	0.59*	-1.22
Lip	0	0.00	3	2.01	1	0.82	1	1.16	5	3.99	1.25	0.08
Tongue	1	0.96	1	0.29	3	1.24	0	0.00	5	8.45	0.59	-0.26
Salivary gland	1	1.80	0	0.00	2	1.42	0	0.00	3	4.83	0.62	-0.14
Mouth	1	0.56	5	0.83	2	0.47	1	0.37	9	14.76	0.61	-0.44
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.18	0.00	-0.09
Tonsil	0	0.00	0	0.00	0	0.00	0	0.00	0	2.18	0.00	-0.16
Oropharynx	1	9.06	0	0.00	0	0.00	0	0.00	1	0.77	1.29	0.02
Hypopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.85	0.00	-0.14
Digestive system	64	0.78*	250	0.88*	225	1.03	129	0.91	668	727.03	0.92*	-4.46
Esophagus	2	1.02	7	1.04	1	0.20	3	0.94	13	16.85	0.77	-0.29
Stomach	2	0.30	17	0.74	14	0.80	10	0.89	43	58.33	0.74*	-1.16
Small intestine	2	2.06	0	0.00	4	1.58	2	1.24	8	8.46	0.95	-0.03
Colon	31	0.73	146	0.98	133	1.15	69	0.90	379	382.79	0.99	-0.29
Rectum, rectosigmoid junction	8	0.65	31	0.74	37	1.24	16	0.90	92	101.95	0.90	-0.75
Rectum	6	0.74	21	0.76	23	1.16	11	0.90	61	67.75	0.90	-0.51
Anus, anal canal	0	0.00	2	0.67	1	0.47	0	0.00	3	7.32	0.41	-0.33
Liver	0	0.00	1	0.18*	3	0.73	1	0.41	5	13.84	0.36*	-0.67
Gallbladder	3	1.50	1	0.15*	3	0.61	1	0.33	8	16.78	0.48*	-0.66
Bile ducts, other biliary	3	1.67	6	0.93	5	0.94	2	0.52	16	17.38	0.92	-0.10
Pancreas	9	0.84	32	0.86	21	0.74	22	1.18	84	94.95	0.88	-0.83
Respiratory system	23	0.64*	138	1.13	73	0.90	44	1.05	278	280.97	0.99	-0.22
Nose, nasal cavity, ear	0	0.00	0	0.00	3	2.78	1	1.52	4	3.56	1.12	0.03
Larynx	0	0.00	1	0.35	1	0.59	1	1.25	3	6.27	0.48	-0.25
Lung, bronchus	23	0.66*	136	1.16	69	0.88	42	1.04	270	270.36	1.00	-0.03
Female breast	90	1.22	302	1.22*	182	1.06	97	0.99	671	591.65	1.13*	6.00
Female genital system	44	1.35	37	0.35*	18	0.26*	7	0.18*	106	247.57	0.43*	-10.71
Cervix uteri	3	0.99	1	0.11*	1	0.18*	0	0.00	5	20.93	0.24*	-1.21
Corpus uteri	7	0.43*	3	0.06*	1	0.03*	0	0.00*	11	117.53	0.09*	-8.06
Ovary	29	2.96*	15	0.46*	6	0.27*	2	0.16*	52	77.58	0.67*	-1.93
Vagina	2	3.18	10	4.63*	3	1.91	2	2.12	17	5.30	3.21*	0.88
Vulva	1	0.50	6	0.84	7	1.23	3	0.73	17	18.96	0.90	-0.15
Urinary system	18	1.15	65	1.21	49	1.23	27	1.08	159	134.36	1.18*	1.86
Urinary bladder	10	1.03	44	1.30	42	1.64*	21	1.25	117	85.78	1.36*	2.36
Kidney parenchyma	7	1.58	15	0.99	5	0.47	4	0.65	31	36.39	0.85	-0.41
Renal pelvis, other urinary	1	0.70	6	1.20	2	0.55	2	0.93	11	12.19	0.90	-0.09
Ureter	0	0.00	2	1.25	0	0.00	0	0.00	2	3.92	0.51	-0.14
Bone, joints	1	3.86	1	1.15	2	3.30	0	0.00	4	2.08	1.93	0.15
Soft tissue including heart	0	0.00	6	1.55	4	1.34	1	0.51	11	9.95	1.11	0.08
Kaposi sarcoma	1	6.60	1	1.70	0	0.00	0	0.00	2	1.73	1.16	0.02
Melanoma of skin	7	1.57	21	1.36	9	0.79	6	0.77	43	39.11	1.10	0.29
Eye, orbit	2	4.70	1	0.72	0	0.00	0	0.00	3	3.35	0.90	-0.03
Brain, central nervous system	1	0.36	7	0.75	3	0.49	0	0.00	11	21.42	0.51*	-0.79
Thyroid	2	1.23	5	0.95	3	0.88	2	1.11	12	12.08	0.99	-0.01
Lymphatic, hematopoietic	20	0.80	82	0.94	60	0.92	30	0.73	192	219.01	0.88	-2.04
Hodgkin lymphoma	0	0.00	3	1.45	1	0.72	0	0.00	4	4.80	0.83	-0.06
Non-Hodgkin lymphoma	12	1.03	34	0.83	30	0.99	9	0.48*	85	101.24	0.84	-1.23
Myeloma	4	0.90	12	0.79	13	1.17	7	1.07	36	37.36	0.96	-0.10
Leukemia	4	0.48	33	1.13	16	0.71	14	0.91	67	75.60	0.89	-0.65
Acute lymphocytic	0	0.00	1	1.44	0	0.00	0	0.00	1	1.82	0.55	-0.06
Chronic lymphocytic	1	0.30	9	0.78	6	0.68	3	0.51	19	29.54	0.64	-0.80
Acute non-lymphocytic	2	0.70	14	1.39	7	0.90	6	1.16	29	25.90	1.12	0.23
Chronic myeloid	0	0.00	5	1.28	2	0.65	3	1.34	10	10.33	0.97	-0.02

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Corpus Uteri Females, Radiotherapy

Table 9.1.7: Risk of subsequent primary cancers after cancer of the corpus uteri, females, with initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	312	1.16*	1,062	1.00	1,003	0.93*	1,637	0.97	4,014	4,091.70	0.98	-2.69
All excluding same site	224	0.98	1,034	1.14*	978	1.04	1,609	1.07*	3,845	3,580.08	1.07*	9.16
Buccal cavity, pharynx	4	0.76	10	0.49*	14	0.70	26	0.91	54	74.09	0.73*	-0.69
Lip	0	0.00	3	2.41	1	0.76	6	2.63	10	5.15	1.94	0.17
Tongue	1	0.88	1	0.22	4	0.91	3	0.48	9	16.23	0.55	-0.25
Salivary gland	2	3.85	0	0.00	3	1.50	2	0.62	7	7.76	0.90	-0.03
Mouth	1	0.55	5	0.70	3	0.43	11	1.08	20	26.11	0.77	-0.21
Nasopharynx	0	0.00	1	1.24	0	0.00	0	0.00	1	2.77	0.36	-0.06
Tonsil	0	0.00	0	0.00	1	0.57	0	0.00	1	6.32	0.16*	-0.18
Oropharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.89	0.00	-0.07
Hypopharynx	0	0.00	0	0.00	1	0.70	2	1.12	3	5.13	0.58	-0.07
Digestive system	53	0.87	279	1.15*	283	1.12	523	1.26*	1,138	972.13	1.17*	5.74
Esophagus	2	1.17	5	0.74	2	0.29	7	0.63	16	26.37	0.61*	-0.36
Stomach	5	1.04	18	0.97	20	1.07	36	1.20	79	72.23	1.09	0.23
Small intestine	3	3.74	2	0.62	5	1.48	11	1.84	21	13.36	1.57	0.26
Colon	22	0.73	158	1.31*	170	1.33*	289	1.36*	639	491.75	1.30*	5.09
Rectum, rectosigmoid junction	5	0.48	38	0.94	51	1.26	79	1.31*	173	151.96	1.14	0.73
Rectum	5	0.75	29	1.10	32	1.22	60	1.50*	126	99.24	1.27*	0.93
Anus, anal canal	0	0.00	3	0.93	2	0.60	4	0.77	9	12.53	0.72	-0.12
Liver	1	0.83	5	1.05	2	0.40	12	1.30	20	20.25	0.99	-0.01
Gallbladder	3	2.05	6	1.05	4	0.69	6	0.69	19	21.67	0.88	-0.09
Bile ducts, other biliary	5	4.14*	5	1.02	2	0.37	12	1.18	24	21.62	1.11	0.08
Pancreas	7	0.89	34	1.09	23	0.69	61	1.09	125	128.30	0.97	-0.11
Respiratory system	26	0.77	151	1.09	145	0.98	194	0.79*	516	565.13	0.91*	-1.70
Nose, nasal cavity, ear	1	2.72	2	1.38	1	0.68	1	0.42	5	5.65	0.89	-0.02
Larynx	0	0.00	2	0.41	1	0.21	8	1.29	11	17.12	0.64	-0.21
Lung, bronchus	25	0.78	146	1.11	142	1.01	184	0.78*	497	540.92	0.92	-1.52
Female breast	86	1.13	336	1.13*	298	1.00	413	0.91	1,133	1,125.76	1.01	0.25
Female genital system	88	2.24*	28	0.19*	25	0.18*	28	0.15*	169	511.62	0.33*	-11.85
Cervix uteri	5	1.11	1	0.06*	4	0.31*	0	0.00*	10	47.59	0.21*	-1.30
Corpus uteri	7	0.33*	1	0.01*	2	0.03*	1	0.01*	11	270.80	0.04*	-8.98
Ovary	71	6.67*	7	0.17*	7	0.17*	3	0.05*	88	150.21	0.59*	-2.15
Vagina	1	1.89	7	3.41*	4	1.98	9	2.93*	21	7.69	2.73*	0.46
Vulva	1	0.69	11	1.90	8	1.31	15	1.38	35	24.25	1.44*	0.37
Urinary system	16	1.29	81	1.63*	69	1.32*	162	1.84*	328	202.63	1.62*	4.34
Urinary bladder	11	1.50	58	1.96*	52	1.66*	122	2.30*	243	121.16	2.01*	4.21
Kidney parenchyma	4	1.01	16	1.01	11	0.66	23	0.83	54	64.26	0.84	-0.35
Renal pelvis, other urinary	1	0.93	7	1.62	6	1.33	17	2.33*	31	17.22	1.80*	0.48
Ureter	0	0.00	2	1.48	2	1.41	7	3.09*	11	5.37	2.05*	0.19
Bone, joints	0	0.00	1	1.02	4	4.23*	3	2.12	8	3.59	2.23	0.15
Soft tissue including heart	0	0.00	9	2.29*	5	1.26	12	1.81	26	15.53	1.67*	0.36
Kaposi sarcoma	1	12.16	1	2.94	0	0.00	1	1.37	3	1.55	1.94	0.05
Melanoma of skin	6	1.26	25	1.31	19	0.99	31	0.99	81	74.30	1.09	0.23
Eye, orbit	1	2.24	2	1.16	0	0.00	1	0.43	4	6.13	0.65	-0.07
Brain, central nervous system	4	1.37	7	0.60	7	0.61	17	1.00	35	42.91	0.82	-0.27
Thyroid	4	1.74	9	1.04	5	0.64	13	1.23	31	29.24	1.06	0.06
Lymphatic, hematopoietic	13	0.66	83	1.06	89	1.07	163	1.16	348	321.21	1.08	0.93
Hodgkin lymphoma	0	0.00	1	0.40	1	0.43	6	1.84	8	8.74	0.92	-0.03
Non-Hodgkin lymphoma	6	0.65	35	0.94	42	1.04	90	1.29*	173	156.83	1.10	0.56
Myeloma	3	0.87	11	0.80	15	1.05	22	0.94	51	54.73	0.93	-0.13
Leukemia	4	0.64	36	1.45*	31	1.19	45	1.03	116	100.91	1.15	0.52
Acute lymphocytic	0	0.00	1	1.45	2	2.79	0	0.00	3	2.73	1.10	0.01
Chronic lymphocytic	1	0.40	3	0.30*	7	0.67	19	1.10	30	40.21	0.75	-0.35
Acute non-lymphocytic	2	0.92	20	2.31*	18	2.00*	19	1.22	59	35.41	1.67*	0.82
Chronic myeloid	0	0.00	8	2.40*	2	0.58	6	1.02	16	13.53	1.18	0.09

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Table 9.1.8: Risk of subsequent primary cancers after cancer of the corpus uteri, females, without initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	387	1.00	1,359	0.87*	1,344	0.89*	1,687	0.78*	4,777	5,603.98	0.85*	-19.89
All excluding same site	318	0.96	1,292	0.96	1,311	0.99	1,643	0.86*	4,564	4,905.27	0.93*	-8.21
Buccal cavity, pharynx	2	0.28*	14	0.48*	25	0.91	28	0.77	69	100.20	0.69*	-0.75
Lip	0	0.00	0	0.00	4	2.20	3	1.05	7	6.90	1.01	0.00
Tongue	0	0.00	6	0.93	3	0.49	8	1.00	17	22.11	0.77	-0.12
Salivary gland	0	0.00	1	0.33	3	1.05	1	0.24	5	10.77	0.46	-0.14
Mouth	1	0.40	3	0.30*	6	0.63	7	0.54	17	34.87	0.49*	-0.43
Nasopharynx	0	0.00	1	0.83	2	1.83	1	0.75	4	3.93	1.02	0.00
Tonsil	0	0.00	2	0.73	2	0.83	4	1.49	8	8.54	0.94	-0.01
Oropharynx	1	5.35	0	0.00	2	2.75	2	2.35	5	2.53	1.98	0.06
Hypopharynx	0	0.00	0	0.00	2	1.02	2	0.87	4	6.90	0.58	-0.07
Digestive system	80	0.96	347	1.02	340	1.00	446	0.87*	1,213	1,279.24	0.95	-1.59
Esophagus	3	1.28	10	1.05	2	0.21*	6	0.43*	21	35.10	0.60*	-0.34
Stomach	3	0.47	20	0.79	19	0.77	21	0.57*	63	93.45	0.67*	-0.73
Small intestine	4	3.32	6	1.23	12	2.46*	7	0.92	29	18.59	1.56*	0.25
Colon	34	0.82	186	1.10	181	1.06	231	0.88	632	643.66	0.98	-0.28
Rectum, rectosigmoid junction	14	1.01	55	0.98	58	1.07	69	0.91	196	199.76	0.98	-0.09
Rectum	11	1.22	36	0.99	37	1.04	49	0.98	133	131.07	1.01	0.05
Anus, anal canal	0	0.00	0	0.00*	3	0.64	7	1.06	10	17.25	0.58	-0.17
Liver	1	0.57	6	0.84	5	0.69	4	0.34*	16	27.92	0.57*	-0.29
Gallbladder	2	1.05	4	0.52	4	0.53	8	0.75	18	27.87	0.65	-0.24
Bile ducts, other biliary	2	1.14	5	0.69	13	1.74	10	0.79	30	29.15	1.03	0.02
Pancreas	10	0.92	45	1.02	34	0.76	72	1.04	161	169.27	0.95	-0.20
Respiratory system	28	0.55*	163	0.77*	159	0.75*	225	0.71*	575	791.32	0.73*	-5.20
Nose, nasal cavity, ear	0	0.00	3	1.43	5	2.44	3	1.01	11	7.65	1.44	0.08
Larynx	0	0.00	2	0.28	2	0.30	6	0.74	10	23.70	0.42*	-0.33
Lung, bronchus	28	0.58*	158	0.78*	152	0.75*	216	0.71*	554	758.01	0.73*	-4.91
Female breast	131	1.16	466	1.03	526	1.22*	560	0.95	1,683	1,583.92	1.06*	2.38
Female genital system	69	1.27	67	0.32*	33	0.17*	44	0.18*	213	698.72	0.30*	-11.68
Cervix uteri	2	0.33	3	0.13*	1	0.06*	3	0.16*	9	65.36	0.14*	-1.36
Corpus uteri	2	0.07*	2	0.02*	1	0.01*	6	0.05*	11	367.79	0.03*	-8.58
Ovary	53	3.47*	40	0.66*	16	0.28*	15	0.20*	124	207.68	0.60*	-2.01
Vagina	6	8.35*	9	3.14*	6	2.20	8	2.08	29	10.17	2.85*	0.45
Vulva	2	0.96	8	0.94	9	1.05	10	0.74	29	32.68	0.89	-0.09
Urinary system	25	1.41	82	1.13	62	0.85	93	0.84	262	274.83	0.95	-0.31
Urinary bladder	11	1.06	47	1.10	42	0.97	61	0.92	161	162.48	0.99	-0.04
Kidney parenchyma	14	2.36*	29	1.20	16	0.67	22	0.62*	81	89.71	0.90	-0.21
Renal pelvis, other urinary	0	0.00	6	1.00	4	0.66	10	1.10	20	22.64	0.88	-0.06
Ureter	0	0.00	2	1.08	0	0.00	3	1.06	5	7.01	0.71	-0.05
Bone, joints	1	2.75	3	2.09	2	1.50	0	0.00	6	4.95	1.21	0.03
Soft tissue including heart	0	0.00	9	1.52	11	1.93	6	0.71	26	21.55	1.21	0.11
Kaposi sarcoma	0	0.00	1	2.10	0	0.00	0	0.00	1	1.97	0.51	-0.02
Melanoma of skin	6	0.77	34	1.09	25	0.85	43	1.04	108	109.49	0.99	-0.04
Eye, orbit	1	1.64	1	0.41	3	1.33	1	0.33	6	8.29	0.72	-0.06
Brain, central nervous system	2	0.48	15	0.89	11	0.68	21	0.97	49	58.85	0.83	-0.24
Thyroid	7	1.87	12	0.84	5	0.41*	7	0.49*	31	44.56	0.70*	-0.33
Lymphatic, hematopoietic	26	0.93	101	0.88	91	0.79*	167	0.95	385	434.77	0.89*	-1.20
Hodgkin lymphoma	1	1.07	4	1.10	2	0.61	3	0.72	10	12.03	0.83	-0.05
Non-Hodgkin lymphoma	16	1.18	47	0.84	43	0.75	85	0.96	191	215.79	0.89	-0.60
Myeloma	4	0.84	12	0.62	19	0.98	34	1.17	69	72.58	0.95	-0.09
Leukemia	5	0.57	38	1.07	27	0.76	45	0.83	115	134.37	0.86	-0.47
Acute lymphocytic	0	0.00	1	0.95	2	1.96	1	0.68	4	3.81	1.05	0.00
Chronic lymphocytic	3	0.88	12	0.86	9	0.64	15	0.70	39	52.81	0.74	-0.33
Acute non-lymphocytic	2	0.65	17	1.35	9	0.72	21	1.07	49	47.82	1.02	0.03
Chronic myeloid	0	0.00	3	0.62	4	0.84	3	0.41	10	18.10	0.55	-0.19

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Corpus Uteri

Females, Long-term Follow-up, Radiotherapy

Table 9.1.9: Risk of subsequent primary cancers after cancer of the corpus uteri, females, long-term follow-up, with initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<10 years		10-14 years		15-19 years		≥20 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
Number starting interval	29,629		12,886		8,385		4,657		29,629			
Person-years in interval	187,600		52,739		32,217		16,599		289,155			
All subsequent cancers	2,377	0.99	791	0.95	547	0.98	299	0.98	4,014	4,091.70	0.98	-2.69
All excluding same site	2,236	1.08*	778	1.06	539	1.09	292	1.06	3,845	3,580.08	1.07*	9.16
Buccal cavity, pharynx	28	0.61*	11	0.76	11	1.20	4	0.83	54	74.09	0.73*	-0.69
Lip	4	1.39	1	0.94	2	2.62	3	6.57*	10	5.15	1.94	0.17
Tongue	6	0.60	3	0.94	0	0.00	0	0.00	9	16.23	0.55	-0.25
Salivary gland	5	1.10	0	0.00	2	1.87	0	0.00	7	7.76	0.90	-0.03
Mouth	9	0.56	4	0.78	6	1.82	1	0.56	20	26.11	0.77	-0.21
Nasopharynx	1	0.57	0	0.00	0	0.00	0	0.00	1	2.77	0.36	-0.06
Tonsil	1	0.24	0	0.00	0	0.00	0	0.00	1	6.32	0.16*	-0.18
Oropharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.89	0.00	-0.07
Hypopharynx	1	0.30	1	1.04	1	1.80	0	0.00	3	5.13	0.58	-0.07
Digestive system	615	1.10*	250	1.25*	184	1.35*	89	1.12	1,138	972.13	1.17*	5.74
Esophagus	9	0.59	4	0.75	1	0.28	2	0.95	16	26.37	0.61*	-0.36
Stomach	43	1.02	18	1.24	13	1.32	5	0.88	79	72.23	1.09	0.23
Small intestine	10	1.35	5	1.80	5	2.47	1	0.85	21	13.36	1.57	0.26
Colon	350	1.25*	145	1.43*	98	1.40*	46	1.12	639	491.75	1.30*	5.09
Rectum, rectosigmoid junction	94	1.03	38	1.26	30	1.54*	11	1.03	173	151.96	1.14	0.73
Rectum	66	1.11	30	1.52*	23	1.77*	7	0.95	126	99.24	1.27*	0.93
Anus, anal canal	5	0.68	1	0.39	0	0.00	3	3.23	9	12.53	0.72	-0.12
Liver	8	0.73	5	1.19	6	1.92	1	0.52	20	20.25	0.99	-0.01
Gallbladder	13	1.00	5	1.15	1	0.35	0	0.00	19	21.67	0.88	-0.09
Bile ducts, other biliary	12	1.05	4	0.88	4	1.15	4	1.84	24	21.62	1.11	0.08
Pancreas	64	0.88	23	0.86	23	1.24	15	1.40	125	128.30	0.97	-0.11
Respiratory system	322	1.00	101	0.85	62	0.76*	31	0.70*	516	565.13	0.91*	-1.70
Nose, nasal cavity, ear	4	1.21	1	0.88	0	0.00	0	0.00	5	5.65	0.89	-0.02
Larynx	3	0.27*	4	1.21	1	0.51	3	3.21	11	17.12	0.64	-0.21
Lung, bronchus	313	1.03	96	0.84	60	0.76*	28	0.65*	497	540.92	0.92	-1.52
Female breast	720	1.07	218	0.95	135	0.91	60	0.77*	1,133	1,125.76	1.01	0.25
Female genital system	141	0.43*	13	0.13*	8	0.13*	7	0.23*	169	511.62	0.33*	-11.85
Cervix uteri	10	0.30*	0	0.00*	0	0.00*	0	0.00	10	47.59	0.21*	-1.30
Corpus uteri	10	0.06*	0	0.00*	1	0.03*	0	0.00*	11	270.80	0.04*	-8.98
Ovary	85	0.92	3	0.10*	0	0.00*	0	0.00*	88	150.21	0.59*	-2.15
Vagina	12	2.60*	3	1.95	2	2.00	4	7.35*	21	7.69	2.73*	0.46
Vulva	20	1.49	7	1.38	5	1.37	3	1.38	35	24.25	1.44*	0.37
Urinary system	166	1.45*	71	1.69*	57	1.94*	34	2.04*	328	202.63	1.62*	4.34
Urinary bladder	121	1.78*	55	2.19*	39	2.21*	28	2.74*	243	121.16	2.01*	4.21
Kidney parenchyma	31	0.85	9	0.67	10	1.08	4	0.79	54	64.26	0.84	-0.35
Renal pelvis, other urinary	14	1.41	7	2.00	8	3.29*	2	1.45	31	17.22	1.80*	0.48
Ureter	4	1.29	2	1.83	3	4.02	2	4.70	11	5.37	2.05*	0.19
Bone, joints	5	2.29	1	1.46	1	2.14	1	3.83	8	3.59	2.23	0.15
Soft tissue including heart	14	1.57	5	1.60	6	2.69	1	0.79	26	15.53	1.67*	0.36
Kaposi sarcoma	2	2.45	1	2.93	0	0.00	0	0.00	3	1.55	1.94	0.05
Melanoma of skin	50	1.16	12	0.81	11	1.06	8	1.31	81	74.30	1.09	0.23
Eye, orbit	3	0.79	1	0.85	0	0.00	0	0.00	4	6.13	0.65	-0.07
Brain, central nervous system	18	0.69	8	0.93	6	1.09	3	1.06	35	42.91	0.82	-0.27
Thyroid	18	0.96	5	0.93	5	1.47	3	1.68	31	29.24	1.06	0.06
Lymphatic, hematopoietic	185	1.02	67	1.00	50	1.07	46	1.72*	348	321.21	1.08	0.93
Hodgkin lymphoma	2	0.37	1	0.61	2	1.84	3	5.63*	8	8.74	0.92	-0.03
Non-Hodgkin lymphoma	83	0.96	35	1.06	28	1.19	27	1.99*	173	156.83	1.10	0.56
Myeloma	29	0.92	11	0.97	5	0.65	6	1.40	51	54.73	0.93	-0.13
Leukemia	71	1.24	20	0.96	15	1.03	10	1.19	116	100.91	1.15	0.52
Acute lymphocytic	3	1.90	0	0.00	0	0.00	0	0.00	3	2.73	1.10	0.01
Chronic lymphocytic	11	0.48*	8	0.95	8	1.41	3	0.96	30	40.21	0.75	-0.35
Acute non-lymphocytic	40	2.02*	12	1.65	2	0.39	5	1.59	59	35.41	1.67*	0.82
Chronic myeloid	10	1.31	0	0.00	4	2.06	2	1.80	16	13.53	1.18	0.09

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Corpus Uteri
Females, Long-term Follow-up, No Radiotherapy

Table 9.1.10: Risk of subsequent primary cancers after cancer of the corpus uteri, females, long-term follow-up, without initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<10 years		10-14 years		15-19 years		≥20 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	3,090	0.90*	855	0.78*	552	0.80*	280	0.75*	4,777	5,603.98	0.85*	-19.89
All excluding same site	2,921	0.98	833	0.87*	534	0.87*	276	0.82*	4,564	4,905.27	0.93*	-8.21
Buccal cavity, pharynx	41	0.64*	19	1.00	5	0.44	4	0.68	69	100.20	0.69*	-0.75
Lip	4	0.99	3	2.19	0	0.00	0	0.00	7	6.90	1.01	0.00
Tongue	9	0.64	3	0.71	4	1.61	1	0.78	17	22.11	0.77	-0.12
Salivary gland	4	0.60	1	0.49	0	0.00	0	0.00	5	10.77	0.46	-0.14
Mouth	10	0.45*	5	0.75	0	0.00*	2	0.93	17	34.87	0.49*	-0.43
Nasopharynx	3	1.15	0	0.00	1	2.40	0	0.00	4	3.93	1.02	0.00
Tonsil	4	0.68	3	1.98	0	0.00	1	2.97	8	8.54	0.94	-0.01
Oropharynx	3	1.79	2	4.36	0	0.00	0	0.00	5	2.53	1.98	0.06
Hypopharynx	2	0.44	2	1.57	0	0.00	0	0.00	4	6.90	0.58	-0.07
Digestive system	767	1.00	219	0.86*	151	0.91	76	0.80*	1,213	1,279.24	0.95	-1.59
Esophagus	15	0.71	4	0.58	2	0.45	0	0.00	21	35.10	0.60*	-0.34
Stomach	42	0.74	8	0.44*	9	0.76	4	0.59	63	93.45	0.67*	-0.73
Small intestine	22	2.01*	3	0.81	1	0.40	3	2.08	29	18.59	1.56*	0.25
Colon	401	1.05	113	0.88	81	0.96	37	0.75	632	643.66	0.98	-0.28
Rectum, rectosigmoid junction	127	1.02	34	0.88	26	1.09	9	0.69	196	199.76	0.98	-0.09
Rectum	84	1.04	23	0.91	19	1.19	7	0.79	133	131.07	1.01	0.05
Anus, anal canal	3	0.28*	3	0.89	4	1.88	0	0.00	10	17.25	0.58	-0.17
Liver	12	0.74	3	0.54	1	0.26	0	0.00	16	27.92	0.57*	-0.29
Gallbladder	10	0.58	3	0.55	4	1.16	1	0.55	18	27.87	0.65	-0.24
Bile ducts, other biliary	20	1.22	3	0.51	4	0.95	3	1.15	30	29.15	1.03	0.02
Pancreas	89	0.89	38	1.12	15	0.66	19	1.47	161	169.27	0.95	-0.20
Respiratory system	350	0.74*	104	0.66*	71	0.69*	50	0.91	575	791.32	0.73*	-5.20
Nose, nasal cavity, ear	8	1.71	1	0.68	2	2.12	0	0.00	11	7.65	1.44	0.08
Larynx	4	0.26*	3	0.68	2	0.81	1	0.85	10	23.70	0.42*	-0.33
Lung, bronchus	338	0.74*	100	0.66*	67	0.68*	49	0.92	554	758.01	0.73*	-4.91
Female breast	1,123	1.13*	300	0.98	181	0.97	79	0.82	1,683	1,583.92	1.06*	2.38
Female genital system	169	0.37*	22	0.17*	18	0.24*	4	0.11*	213	698.72	0.30*	-11.68
Cervix uteri	6	0.13*	1	0.09*	2	0.36	0	0.00	9	65.36	0.14*	-1.36
Corpus uteri	5	0.02*	4	0.06*	2	0.05*	0	0.00*	11	367.79	0.03*	-8.58
Ovary	109	0.82*	4	0.10*	10	0.42*	1	0.08*	124	207.68	0.60*	-2.01
Vagina	21	3.33*	5	2.55	1	0.82	2	3.00	29	10.17	2.85*	0.45
Vulva	19	0.99	7	1.07	2	0.45	1	0.38	29	32.68	0.89	-0.09
Urinary system	169	1.03	45	0.82	28	0.78	20	0.99	262	274.83	0.95	-0.31
Urinary bladder	100	1.04	32	0.98	14	0.65	15	1.21	161	162.48	0.99	-0.04
Kidney parenchyma	59	1.09	10	0.56	10	0.87	2	0.32	81	89.71	0.90	-0.21
Renal pelvis, other urinary	10	0.74	3	0.67	4	1.34	3	1.79	20	22.64	0.88	-0.06
Ureter	2	0.48	1	0.72	2	2.18	0	0.00	5	7.01	0.71	-0.05
Bone, joints	6	1.91	0	0.00	0	0.00	0	0.00	6	4.95	1.21	0.03
Soft tissue including heart	20	1.53	3	0.73	3	1.09	0	0.00	26	21.55	1.21	0.11
Kaposi sarcoma	1	0.91	0	0.00	0	0.00	0	0.00	1	1.97	0.51	-0.02
Melanoma of skin	65	0.95	23	1.12	15	1.14	5	0.67	108	109.49	0.99	-0.04
Eye, orbit	5	0.94	0	0.00	0	0.00	1	2.07	6	8.29	0.72	-0.06
Brain, central nervous system	28	0.75	12	1.06	6	0.88	3	0.86	49	58.85	0.83	-0.24
Thyroid	24	0.80	4	0.52	2	0.45	1	0.45	31	44.56	0.70*	-0.33
Lymphatic, hematopoietic	218	0.84*	77	0.89	58	1.01	32	0.98	385	434.77	0.89*	-1.20
Hodgkin lymphoma	7	0.89	1	0.46	2	1.48	0	0.00	10	12.03	0.83	-0.05
Non-Hodgkin lymphoma	106	0.84	38	0.88	28	0.96	19	1.15	191	215.79	0.89	-0.60
Myeloma	35	0.81	15	1.04	15	1.59	4	0.76	69	72.58	0.95	-0.09
Leukemia	70	0.88	23	0.86	13	0.74	9	0.89	115	134.37	0.86	-0.47
Acute lymphocytic	3	1.28	0	0.00	1	2.14	0	0.00	4	3.81	1.05	0.00
Chronic lymphocytic	24	0.76	7	0.66	7	1.01	1	0.27	39	52.81	0.74	-0.33
Acute non-lymphocytic	28	0.99	12	1.27	5	0.79	4	1.05	49	47.82	1.02	0.03
Chronic myeloid	7	0.65	1	0.28	0	0.00	2	1.50	10	18.10	0.55	-0.19

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Ovary Females

Table 9.2.1: Characteristics of patients with an initial cancer of the ovary, females, SEER 1973-2000.

Characteristics	Males		Females		Total	
	No.	%	No.	%	No.	%
Number of patients with 1st primary cancer						
Total	—	—	41,489	100.0	41,489	100.0
Initial treatment						
Any radiation	—	—	3,462	8.3	3,462	8.3
With surgery	—	—	2,958	7.1	2,958	7.1
Without surgery	—	—	504	1.2	504	1.2
No radiation	—	—	38,027	91.7	38,027	91.7
With surgery	—	—	31,302	75.4	31,302	75.4
Without surgery	—	—	6,725	16.2	6,725	16.2
Race						
White	—	—	36,685	88.4	36,685	88.4
Black	—	—	2,435	5.9	2,435	5.9
Other	—	—	2,252	5.4	2,252	5.4
Unknown	—	—	117	0.3	117	0.3
Age at 1st primary cancer diagnosis, years						
< 30	—	—	2,241	5.4	2,241	5.4
30–49	—	—	9,173	22.1	9,173	22.1
50–69	—	—	18,906	45.6	18,906	45.6
70–79	—	—	7,739	18.7	7,739	18.7
≥ 80	—	—	3,430	8.3	3,430	8.3
Number of patients with one or more primary cancers						
One primary cancer only	—	—	39,440	95.1	39,440	95.1
1st and 2nd cancers	—	—	1,894	4.6	1,894	4.6
1st, 2nd, and 3rd cancers	—	—	144	0.3	144	0.3
1st, 2nd, 3rd, and additional cancers	—	—	11	0.0	11	0.0
Other statistics						
Median age at 1st cancer diagnosis	—	—	60.4	—	60.4	—
Median year of 1st cancer diagnosis	—	—	1988.8	—	1988.8	—
Median person-years at risk	—	—	2.4	—	2.4	—
Percent histologically confirmed*						
Both 1st and 2nd cancers	—	—	—	96.4	—	96.4
1st, 2nd, and additional cancers	—	—	—	95.9	—	95.9
1st cancer only	—	—	—	3.0	—	3.0

*Percent histologically confirmed among patients who developed a subsequent primary cancer.

Table 9.2.2: Risk of subsequent primary cancers after cancer of the ovary, females, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	264	0.96	714	0.99	575	1.17*	662	1.18*	2,215	2,044.83	1.08*	8.18
All excluding same site	220	0.93	668	1.08	553	1.30*	650	1.32*	2,091	1,775.72	1.18*	15.16
Buccal cavity, pharynx	3	0.59	14	1.06	16	1.82*	9	0.95	42	36.55	1.15	0.26
Lip	0	0.00	0	0.00	0	0.00	1	1.52	1	2.29	0.44	-0.06
Tongue	2	1.78	8	2.74*	4	2.03	2	0.94	16	8.15	1.96*	0.38
Salivary gland	1	1.80	0	0.00	0	0.00	2	1.80	3	4.12	0.73	-0.05
Mouth	0	0.00	3	0.68	7	2.38	3	0.93	13	12.31	1.06	0.03
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.61	0.00	-0.08
Tonsil	0	0.00	1	0.80	4	5.02*	0	0.00	5	3.31	1.51	0.08
Oropharynx	0	0.00	1	2.96	0	0.00	0	0.00	1	0.92	1.09	0.00
Hypopharynx	0	0.00	1	1.07	1	1.65	0	0.00	2	2.53	0.79	-0.03
Digestive system	68	1.17	139	0.94	145	1.42*	187	1.56*	539	428.61	1.26*	5.31
Esophagus	1	0.61	1	0.24	6	2.10	2	0.59	10	12.09	0.83	-0.10
Stomach	3	0.67	10	0.89	8	1.06	16	1.85*	37	31.94	1.16	0.24
Small intestine	4	4.71*	4	1.77	3	1.90	3	1.53	14	6.65	2.11*	0.35
Colon	37	1.29	71	0.97	70	1.39*	90	1.50*	268	211.86	1.26*	2.70
Rectum, rectosigmoid junction	8	0.83	28	1.14	31	1.88*	34	1.86*	101	68.91	1.47*	1.54
Rectum	5	0.79	16	1.00	24	2.23*	21	1.73*	66	45.20	1.46*	1.00
Anus, anal canal	2	2.39	2	0.90	3	1.96	3	1.71	10	6.33	1.58	0.18
Liver	0	0.00	0	0.00	1	0.43	4	1.38	5	9.75	0.51	-0.23
Gallbladder	1	0.75	1	0.30	2	0.90	2	0.82	6	9.29	0.65	-0.16
Bile ducts, other biliary	2	1.65	4	1.26	3	1.33	7	2.42	16	9.53	1.68	0.31
Pancreas	7	0.93	16	0.83	14	1.05	23	1.43	60	56.15	1.07	0.18
Respiratory system	17	0.48*	70	0.73*	83	1.24	100	1.23*	270	279.03	0.97	-0.43
Nose, nasal cavity, ear	0	0.00	0	0.00	1	1.53	0	0.00	1	2.73	0.37	-0.08
Larynx	2	1.59	2	0.61	1	0.46	6	2.56	11	9.09	1.21	0.09
Lung, bronchus	15	0.44*	68	0.75*	81	1.27*	94	1.20	258	266.49	0.97	-0.41
Female breast	72	0.88	239	1.09	175	1.18*	184	1.11	670	614.79	1.09*	2.65
Female genital system	44	1.14	46	0.46*	22	0.34*	12	0.18*	124	269.10	0.46*	-6.98
Cervix uteri	4	0.82	3	0.24*	1	0.13*	2	0.29	10	31.99	0.31*	-1.06
Corpus uteri	31	1.57*	17	0.34*	6	0.19*	2	0.06*	56	136.61	0.41*	-3.87
Ovary	6	0.54	18	0.62*	9	0.47*	2	0.10*	35	79.91	0.44*	-2.16
Vagina	1	1.95	4	3.05	2	2.28	3	3.07	10	3.68	2.72*	0.30
Vulva	1	0.68	2	0.52	4	1.49	3	0.92	10	11.26	0.89	-0.06
Urinary system	14	1.13	36	1.11	28	1.25	52	1.92*	130	94.26	1.38*	1.72
Urinary bladder	3	0.42	24	1.29	18	1.40	32	2.04*	77	54.31	1.42*	1.09
Kidney parenchyma	10	2.39*	11	0.98	8	1.03	13	1.39	42	32.55	1.29	0.45
Renal pelvis, other urinary	1	0.99	1	0.39	2	1.14	7	3.37*	11	7.40	1.49	0.17
Ureter	0	0.00	0	0.00	0	0.00	2	3.18	2	2.25	0.89	-0.01
Bone, joints	0	0.00	0	0.00	3	6.11*	1	1.94	4	2.04	1.96	0.09
Soft tissue including heart	2	1.82	1	0.34	6	3.01*	5	2.20	14	8.30	1.69	0.27
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.63	0.00	-0.03
Melanoma of skin	11	1.82	14	0.82	7	0.60	14	1.10	46	47.38	0.97	-0.07
Eye, orbit	3	6.97*	1	0.91	1	1.39	5	6.39*	10	3.03	3.29*	0.33
Brain, central nervous system	2	0.66	6	0.75	6	1.12	6	1.03	20	22.24	0.90	-0.11
Thyroid	4	1.27	10	1.13	9	1.55	9	1.59	32	23.52	1.36	0.41
Lymphatic, hematopoietic	20	1.00	116	2.22*	62	1.71*	55	1.28	253	151.49	1.67*	4.88
Hodgkin lymphoma	1	1.24	0	0.00	1	0.72	3	2.27	5	5.68	0.88	-0.03
Non-Hodgkin lymphoma	10	1.04	26	1.02	16	0.89	25	1.14	77	74.98	1.03	0.10
Myeloma	4	1.19	5	0.58	4	0.68	8	1.13	21	24.95	0.84	-0.19
Leukemia	5	0.81	85	5.35*	41	3.75*	19	1.47	150	45.88	3.27*	5.01
Acute lymphocytic	0	0.00	5	9.04*	2	5.28	1	2.44	8	1.55	5.17*	0.31
Chronic lymphocytic	1	0.43	4	0.67	4	0.97	4	0.82	13	17.34	0.75	-0.21
Acute non-lymphocytic	3	1.36	69	12.00*	28	7.08*	9	1.91	109	16.62	6.56*	4.44
Chronic myeloid	1	1.15	4	1.79	5	3.27*	2	1.13	12	6.40	1.87	0.27

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Ovary

Females, Long-term Follow-up

Table 9.2.3: Risk of subsequent primary cancers after cancer of the ovary, females, long-term follow-up, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<10 years		10-14 years		15-19 years		≥20 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
Number starting interval	41,489		7,411		3,956		1,866		41,489			
Person-years in interval	160,398		27,227		14,106		6,290		208,021			
All subsequent cancers	1,553	1.05	345	1.15*	216	1.25*	101	1.17	2,215	2,044.83	1.08*	8.18
All excluding same site	1,441	1.12*	340	1.29*	212	1.39*	98	1.28*	2,091	1,775.72	1.18*	15.16
Buccal cavity, pharynx	33	1.22	5	0.96	4	1.38	0	0.00	42	36.55	1.15	0.26
Lip	0	0.00	0	0.00	1	4.83	0	0.00	1	2.29	0.44	-0.06
Tongue	14	2.33*	1	0.85	1	1.53	0	0.00	16	8.15	1.96*	0.38
Salivary gland	1	0.33	2	3.38	0	0.00	0	0.00	3	4.12	0.73	-0.05
Mouth	10	1.10	1	0.57	2	2.04	0	0.00	13	12.31	1.06	0.03
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.61	0.00	-0.08
Tonsil	5	1.98	0	0.00	0	0.00	0	0.00	5	3.31	1.51	0.08
Oropharynx	1	1.44	0	0.00	0	0.00	0	0.00	1	0.92	1.09	0.00
Hypopharynx	2	1.05	0	0.00	0	0.00	0	0.00	2	2.53	0.79	-0.03
Digestive system	352	1.14*	89	1.39*	68	1.83*	30	1.58*	539	428.61	1.26*	5.31
Esophagus	8	0.92	0	0.00	2	1.90	0	0.00	10	12.09	0.83	-0.10
Stomach	21	0.90	7	1.50	7	2.64*	2	1.52	37	31.94	1.16	0.24
Small intestine	11	2.35*	3	2.97	0	0.00	0	0.00	14	6.65	2.11*	0.35
Colon	178	1.17*	48	1.51*	26	1.40	16	1.68	268	211.86	1.26*	2.70
Rectum, rectosigmoid junction	67	1.32*	11	1.11	18	3.23*	5	1.81	101	68.91	1.47*	1.54
Rectum	45	1.36	6	0.92	12	3.22*	3	1.59	66	45.20	1.46*	1.00
Anus, anal canal	7	1.53	2	2.14	1	1.83	0	0.00	10	6.33	1.58	0.18
Liver	1	0.15*	2	1.35	1	1.09	1	1.99	5	9.75	0.51	-0.23
Gallbladder	4	0.58	1	0.75	0	0.00	1	2.78	6	9.29	0.65	-0.16
Bile ducts, other biliary	9	1.36	5	3.38*	2	2.17	0	0.00	16	9.53	1.68	0.31
Pancreas	37	0.92	10	1.18	9	1.79	4	1.55	60	56.15	1.07	0.18
Respiratory system	170	0.86*	58	1.36*	32	1.25	10	0.76	270	279.03	0.97	-0.43
Nose, nasal cavity, ear	1	0.50	0	0.00	0	0.00	0	0.00	1	2.73	0.37	-0.08
Larynx	5	0.74	4	3.07	2	2.83	0	0.00	11	9.09	1.21	0.09
Lung, bronchus	164	0.87	54	1.32	30	1.22	10	0.79	258	266.49	0.97	-0.41
Female breast	486	1.08	94	1.05	63	1.24	27	1.09	670	614.79	1.09*	2.65
Female genital system	112	0.56*	5	0.13*	4	0.19*	3	0.31*	124	269.10	0.46*	-6.98
Cervix uteri	8	0.32*	1	0.25	0	0.00	1	1.21	10	31.99	0.31*	-1.06
Corpus uteri	54	0.53*	1	0.05*	0	0.00*	1	0.20	56	136.61	0.41*	-3.87
Ovary	33	0.56*	1	0.09*	1	0.16*	0	0.00	35	79.91	0.44*	-2.16
Vagina	7	2.59*	0	0.00	2	6.74	1	6.77	10	3.68	2.72*	0.30
Vulva	7	0.87	2	1.17	1	0.98	0	0.00	10	11.26	0.89	-0.06
Urinary system	78	1.16	26	1.82*	19	2.24*	7	1.60	130	94.26	1.38*	1.72
Urinary bladder	45	1.16	16	1.94*	14	2.86*	2	0.79	77	54.31	1.42*	1.09
Kidney parenchyma	29	1.25	6	1.22	3	1.02	4	2.68	42	32.55	1.29	0.45
Renal pelvis, other urinary	4	0.75	4	3.66	2	3.09	1	2.96	11	7.40	1.49	0.17
Ureter	0	0.00	1	3.01	1	5.10	0	0.00	2	2.25	0.89	-0.01
Bone, joints	3	1.97	1	3.58	0	0.00	0	0.00	4	2.04	1.96	0.09
Soft tissue including heart	9	1.49	3	2.48	1	1.41	1	2.83	14	8.30	1.69	0.27
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.63	0.00	-0.03
Melanoma of skin	32	0.92	11	1.61	3	0.76	0	0.00	46	47.38	0.97	-0.07
Eye, orbit	5	2.22	2	4.71	2	8.22	1	8.71	10	3.03	3.29*	0.33
Brain, central nervous system	14	0.85	3	0.94	1	0.56	2	2.33	20	22.24	0.90	-0.11
Thyroid	23	1.29	4	1.27	3	1.76	2	2.51	32	23.52	1.36	0.41
Lymphatic, hematopoietic	198	1.83*	32	1.40	8	0.59	15	2.18*	253	151.49	1.67*	4.88
Hodgkin lymphoma	2	0.46	2	2.67	0	0.00	1	5.68	5	5.68	0.88	-0.03
Non-Hodgkin lymphoma	52	0.98	13	1.14	5	0.73	7	1.96	77	74.98	1.03	0.10
Myeloma	13	0.73	4	1.07	2	0.91	2	1.79	21	24.95	0.84	-0.19
Leukemia	131	3.97*	13	1.89*	1	0.25	5	2.47	150	45.88	3.27*	5.01
Acute lymphocytic	7	6.15*	1	4.40	0	0.00	0	0.00	8	1.55	5.17*	0.31
Chronic lymphocytic	9	0.72	2	0.76	0	0.00	2	2.68	13	17.34	0.75	-0.21
Acute non-lymphocytic	100	8.40*	6	2.43	1	0.68	2	2.59	109	16.62	6.56*	4.44
Chronic myeloid	10	2.16*	2	2.10	0	0.00	0	0.00	12	6.40	1.87	0.27

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Table 9.2.4: Risk of subsequent primary cancers after cancer of the ovary, females, <50 years of age, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	58	2.70*	144	1.71*	125	1.49*	186	1.19*	513	345.49	1.48*	19.56
All excluding same site	42	2.38*	115	1.65*	116	1.66*	185	1.39*	458	290.44	1.58*	19.56
Buccal cavity, pharynx	0	0.00	1	0.73	2	1.37	2	0.73	5	5.90	0.85	-0.11
Lip	0	0.00	0	0.00	0	0.00	0	0.00	0	0.26	0.00	-0.03
Tongue	0	0.00	1	3.32	0	0.00	1	1.53	2	1.36	1.47	0.07
Salivary gland	0	0.00	0	0.00	0	0.00	1	2.94	1	0.88	1.14	0.01
Mouth	0	0.00	0	0.00	1	2.37	0	0.00	1	1.70	0.59	-0.08
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.41	0.00	-0.05
Tonsil	0	0.00	0	0.00	1	6.29	0	0.00	1	0.62	1.61	0.04
Oropharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.14	0.00	-0.02
Hypopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.37	0.00	-0.04
Digestive system	13	7.17*	17	2.21*	19	2.14*	55	2.51*	104	40.28	2.58*	7.44
Esophagus	0	0.00	0	0.00	0	0.00	0	0.00	0	1.17	0.00	-0.14
Stomach	1	6.06	0	0.00	0	0.00	6	4.07*	7	2.96	2.37	0.47
Small intestine	0	0.00	0	0.00	0	0.00	1	2.04	1	0.99	1.01	0.00
Colon	6	7.76*	10	3.05*	10	2.60*	29	2.93*	55	17.80	3.09*	4.34
Rectum, rectosigmoid junction	2	5.28	3	1.83	7	3.74*	10	2.46*	22	7.95	2.77*	1.64
Rectum	1	3.89	3	2.74	4	3.26	6	2.22	14	5.28	2.65*	1.02
Anus, anal canal	1	16.37	1	3.98	0	0.00	2	3.95	4	1.09	3.69	0.34
Liver	0	0.00	0	0.00	0	0.00	1	1.60	1	1.15	0.87	-0.02
Gallbladder	0	0.00	0	0.00	1	6.03	0	0.00	1	0.75	1.33	0.03
Bile ducts, other biliary	1	28.61	0	0.00	0	0.00	2	4.16	3	0.85	3.54	0.25
Pancreas	2	11.41*	3	3.81	0	0.00	3	1.10	8	4.70	1.70	0.39
Respiratory system	3	2.16	10	1.60	14	1.76	22	1.04	49	36.75	1.33	1.43
Nose, nasal cavity, ear	0	0.00	0	0.00	1	9.77	0	0.00	1	0.42	2.39	0.07
Larynx	0	0.00	0	0.00	0	0.00	2	2.46	2	1.59	1.25	0.05
Lung, bronchus	3	2.34	10	1.72	13	1.75	20	0.99	46	34.61	1.33	1.33
Female breast	15	1.64	61	1.72*	44	1.29	52	0.91	172	135.68	1.27*	4.24
Female genital system	16	4.23*	29	1.99*	9	0.65	1	0.04*	55	55.05	1.00	-0.01
Cervix uteri	1	0.83	2	0.49	1	0.32	0	0.00	4	11.90	0.34*	-0.92
Corpus uteri	11	9.19*	5	0.97	0	0.00*	1	0.09*	17	23.12	0.74	-0.71
Ovary	4	3.43	17	3.77*	7	1.64	0	0.00*	28	16.88	1.66*	1.30
Vagina	0	0.00	4	32.02*	1	8.05	0	0.00	5	0.52	9.67*	0.52
Vulva	0	0.00	0	0.00	0	0.00	0	0.00	0	1.60	0.00	-0.19
Urinary system	2	3.99	4	1.86	6	2.43	12	1.99*	24	11.15	2.15*	1.50
Urinary bladder	0	0.00	3	3.12	1	0.87	6	1.98	10	5.37	1.86	0.54
Kidney parenchyma	2	7.67	1	0.91	3	2.49	3	1.13	9	5.21	1.73	0.44
Renal pelvis, other urinary	0	0.00	0	0.00	2	16.67*	3	8.73*	5	0.58	8.67*	0.52
Ureter	0	0.00	0	0.00	0	0.00	2	21.45*	2	0.14	14.04*	0.22
Bone, joints	0	0.00	0	0.00	0	0.00	0	0.00	0	0.57	0.00	-0.07
Soft tissue including heart	0	0.00	1	1.92	3	6.60*	2	2.85	6	1.82	3.30*	0.49
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.06	0.00	-0.01
Melanoma of skin	3	2.28	3	0.62	1	0.25	6	1.14	13	15.49	0.84	-0.29
Eye, orbit	0	0.00	0	0.00	0	0.00	3	12.99*	3	0.54	5.55*	0.29
Brain, central nervous system	0	0.00	1	0.77	2	1.71	2	1.10	5	4.63	1.08	0.04
Thyroid	3	3.00	5	1.40	8	2.87*	7	2.23	23	10.49	2.19*	1.46
Lymphatic, hematopoietic	0	0.00	9	1.79	13	2.63*	16	1.63	38	21.07	1.80*	1.98
Hodgkin lymphoma	0	0.00	0	0.00	1	1.79	1	1.77	2	2.14	0.93	-0.02
Non-Hodgkin lymphoma	0	0.00	0	0.00	3	1.20	6	1.15	9	10.74	0.84	-0.20
Myeloma	0	0.00	0	0.00	0	0.00	1	0.70	1	2.53	0.40	-0.18
Leukemia	0	0.00	9	6.58*	9	6.77*	8	3.06*	26	5.66	4.59*	2.37
Acute lymphocytic	0	0.00	0	0.00	1	9.56	1	7.30	2	0.41	4.89	0.19
Chronic lymphocytic	0	0.00	0	0.00	0	0.00	2	2.32	2	1.48	1.35	0.06
Acute non-lymphocytic	0	0.00	9	14.80*	6	10.67*	4	3.92*	19	2.35	8.08*	1.94
Chronic myeloid	0	0.00	0	0.00	2	8.11	0	0.00	2	1.00	2.00	0.12

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Ovary

Females, 50-69 Years of Age

Table 9.2.5: Risk of subsequent primary cancers after cancer of the ovary, females, 50-69 years of age, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
Number starting interval	18,906		14,579		6,017		3,271		18,906			
Person-years in interval	13,734		35,699		22,225		20,886		92,544			
All subsequent cancers	131	0.98	373	0.97	336	1.16*	421	1.21*	1,261	1,154.37	1.09*	11.52
All excluding same site	113	1.01	362	1.11*	329	1.31*	410	1.33*	1,214	996.40	1.22*	23.51
Buccal cavity, pharynx	2	0.71	9	1.16	12	2.18*	6	1.02	29	21.92	1.32	0.77
Lip	0	0.00	0	0.00	0	0.00	1	2.35	1	1.20	0.83	-0.02
Tongue	2	3.17	4	2.29	4	3.22	1	0.78	11	4.90	2.24*	0.66
Salivary gland	0	0.00	0	0.00	0	0.00	1	1.56	1	2.18	0.46	-0.13
Mouth	0	0.00	3	1.18	4	2.18	2	0.98	9	7.35	1.23	0.18
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.93	0.00	-0.10
Tonsil	0	0.00	1	1.18	3	5.53*	0	0.00	4	2.18	1.84	0.20
Oropharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.61	0.00	-0.07
Hypopharynx	0	0.00	1	1.57	1	2.28	0	0.00	2	1.72	1.16	0.03
Digestive system	32	1.37	71	1.02	86	1.49*	111	1.40*	300	229.82	1.31*	7.58
Esophagus	0	0.00	0	0.00	5	2.76	2	0.88	7	7.19	0.97	-0.02
Stomach	2	1.21	4	0.83	7	1.76	8	1.43	21	16.06	1.31	0.53
Small intestine	2	5.05	3	2.55	3	3.20	1	0.80	9	3.76	2.39*	0.57
Colon	18	1.65	38	1.16	39	1.40	53	1.33	148	111.48	1.33*	3.95
Rectum, rectosigmoid junction	4	0.92	15	1.19	17	1.74*	22	1.86*	58	38.56	1.50*	2.10
Rectum	2	0.71	10	1.23	15	2.37*	14	1.79	41	25.07	1.64*	1.72
Anus, anal canal	1	2.40	1	0.82	2	2.18	0	0.00	4	3.62	1.11	0.04
Liver	0	0.00	0	0.00	1	0.73	3	1.55	4	5.41	0.74	-0.15
Gallbladder	0	0.00	0	0.00	1	0.80	1	0.61	2	4.87	0.41	-0.31
Bile ducts, other biliary	1	2.25	1	0.73	2	1.66	4	2.10	8	4.92	1.63	0.33
Pancreas	3	1.00	7	0.77	6	0.78	15	1.38	31	30.62	1.01	0.04
Respiratory system	9	0.47*	43	0.75	55	1.20	71	1.30*	178	176.79	1.01	0.13
Nose, nasal cavity, ear	0	0.00	0	0.00	0	0.00	0	0.00	0	1.53	0.00	-0.16
Larynx	1	1.22	1	0.45	1	0.65	4	2.82	7	6.01	1.17	0.11
Lung, bronchus	8	0.44*	42	0.77	54	1.24	67	1.27	171	168.84	1.01	0.23
Female breast	36	0.84	125	1.04	95	1.09	116	1.21*	372	345.84	1.08	2.83
Female genital system	18	0.84	11	0.19*	7	0.18*	11	0.28*	47	157.97	0.30*	-11.99
Cervix uteri	3	1.20	1	0.16*	0	0.00	2	0.67	6	15.24	0.39*	-1.00
Corpus uteri	12	1.00	8	0.25*	5	0.23*	1	0.05*	26	86.49	0.30*	-6.54
Ovary	1	0.17*	1	0.06*	1	0.09*	2	0.16*	5	45.61	0.11*	-4.39
Vagina	0	0.00	0	0.00	1	2.02	3	4.90	4	1.98	2.02	0.22
Vulva	1	1.78	1	0.60	0	0.00	3	1.50	5	5.61	0.89	-0.07
Urinary system	8	1.44	20	1.21	17	1.26	39	2.20*	84	53.44	1.57*	3.30
Urinary bladder	3	0.99	12	1.31	14	1.84*	26	2.50*	55	30.20	1.82*	2.68
Kidney parenchyma	4	1.90	7	1.13	3	0.62	9	1.52	23	19.10	1.20	0.42
Renal pelvis, other urinary	1	2.45	1	0.81	0	0.00	4	2.75	6	4.15	1.45	0.20
Ureter	0	0.00	0	0.00	0	0.00	0	0.00	0	1.25	0.00	-0.14
Bone, joints	0	0.00	0	0.00	3	12.04*	1	3.51	4	1.00	3.99*	0.32
Soft tissue including heart	2	3.97	0	0.00	2	1.90	2	1.52	6	4.29	1.40	0.18
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.22	0.00	-0.02
Melanoma of skin	7	2.41	7	0.86	6	1.05	6	0.93	26	23.26	1.12	0.30
Eye, orbit	3	13.34*	0	0.00	1	2.28	2	4.20	6	1.76	3.41*	0.46
Brain, central nervous system	1	0.64	3	0.68	4	1.24	4	1.11	12	12.75	0.94	-0.08
Thyroid	1	0.67	4	1.01	1	0.41	1	0.44	7	10.21	0.69	-0.35
Lymphatic, hematopoietic	11	1.30	68	2.69*	39	1.88*	35	1.26	153	82.32	1.86*	7.64
Hodgkin lymphoma	1	3.11	0	0.00	0	0.00	2	3.01	3	2.46	1.22	0.06
Non-Hodgkin lymphoma	5	1.18	14	1.09	8	0.76	18	1.27	45	41.87	1.07	0.34
Myeloma	2	1.38	3	0.70	4	1.12	6	1.26	15	14.08	1.07	0.10
Leukemia	3	1.22	51	7.03*	27	4.55*	9	1.09	90	23.91	3.76*	7.14
Acute lymphocytic	0	0.00	5	20.03*	0	0.00	0	0.00	5	0.75	6.69*	0.46
Chronic lymphocytic	0	0.00	2	0.70	2	0.83	1	0.31	5	9.49	0.53	-0.49
Acute non-lymphocytic	2	2.28	41	15.74*	21	9.88*	5	1.66	69	8.62	8.01*	6.52
Chronic myeloid	1	2.85	1	1.00	2	2.56	1	0.93	5	3.20	1.56	0.19

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Table 9.2.6: Risk of subsequent primary cancers after cancer of the ovary, females, ≥70 years of age, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	75	0.63*	197	0.78*	114	0.98	55	0.96	441	544.97	0.81*	-34.87
All excluding same site	65	0.61*	191	0.85*	108	1.03	55	1.05	419	488.89	0.86*	-23.44
Buccal cavity, pharynx	1	0.51	4	0.99	2	1.11	1	1.11	8	8.73	0.92	-0.24
Lip	0	0.00	0	0.00	0	0.00	0	0.00	0	0.84	0.00	-0.28
Tongue	0	0.00	3	3.43	0	0.00	0	0.00	3	1.89	1.59	0.37
Salivary gland	1	4.46	0	0.00	0	0.00	0	0.00	1	1.05	0.95	-0.02
Mouth	0	0.00	0	0.00	2	2.91	1	2.83	3	3.26	0.92	-0.09
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.28	0.00	-0.09
Tonsil	0	0.00	0	0.00	0	0.00	0	0.00	0	0.51	0.00	-0.17
Oropharynx	0	0.00	1	11.20	0	0.00	0	0.00	1	0.18	5.54	0.27
Hypopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.44	0.00	-0.15
Digestive system	23	0.70	51	0.72*	40	1.13	21	1.12	135	158.51	0.85	-7.88
Esophagus	1	1.25	1	0.59	1	1.24	0	0.00	3	3.73	0.80	-0.25
Stomach	0	0.00	6	1.04	1	0.34	2	1.28	9	12.92	0.70	-1.31
Small intestine	2	5.02	1	1.15	0	0.00	1	4.62	4	1.90	2.11	0.71
Colon	13	0.77	23	0.63*	21	1.12	8	0.79	65	82.58	0.79	-5.89
Rectum, rectosigmoid junction	2	0.41	10	0.97	7	1.45	2	0.85	21	22.40	0.94	-0.47
Rectum	2	0.62	3	0.44	5	1.56	1	0.62	11	14.85	0.74	-1.29
Anus, anal canal	0	0.00	0	0.00	1	2.91	1	5.70	2	1.63	1.23	0.12
Liver	0	0.00	0	0.00	0	0.00	0	0.00	0	3.20	0.00	-1.07
Gallbladder	1	1.25	1	0.60	0	0.00	1	2.49	3	3.67	0.82	-0.23
Bile ducts, other biliary	0	0.00	3	1.82	1	1.14	1	1.96	5	3.77	1.33	0.41
Pancreas	2	0.46	6	0.64	8	1.72	5	2.01	21	20.84	1.01	0.05
Respiratory system	5	0.33*	17	0.54*	14	1.06	7	1.27	43	65.49	0.66*	-7.54
Nose, nasal cavity, ear	0	0.00	0	0.00	0	0.00	0	0.00	0	0.79	0.00	-0.26
Larynx	1	2.70	1	1.36	0	0.00	0	0.00	2	1.48	1.35	0.17
Lung, bronchus	4	0.28*	16	0.52*	14	1.10	7	1.32	41	63.04	0.65*	-7.39
Female breast	21	0.70	53	0.84	36	1.31	16	1.25	126	133.26	0.95	-2.44
Female genital system	10	0.76	6	0.23*	6	0.54	0	0.00*	22	56.08	0.39*	-11.43
Cervix uteri	0	0.00	0	0.00	0	0.00	0	0.00	0	4.84	0.00*	-1.62
Corpus uteri	8	1.21	4	0.30*	1	0.19	0	0.00	13	27.00	0.48*	-4.69
Ovary	1	0.25	0	0.00*	1	0.28	0	0.00	2	17.42	0.11*	-5.17
Vagina	1	3.99	0	0.00	0	0.00	0	0.00	1	1.18	0.85	-0.06
Vulva	0	0.00	1	0.56	4	4.35*	0	0.00	5	4.05	1.23	0.32
Urinary system	4	0.63	12	0.88	5	0.78	1	0.30	22	29.67	0.74	-2.57
Urinary bladder	0	0.00*	9	1.06	3	0.72	0	0.00	12	18.74	0.64	-2.26
Kidney parenchyma	4	2.20	3	0.77	2	1.16	1	1.23	10	8.24	1.21	0.59
Renal pelvis, other urinary	0	0.00	0	0.00	0	0.00	0	0.00	0	2.68	0.00	-0.90
Ureter	0	0.00	0	0.00	0	0.00	0	0.00	0	0.86	0.00	-0.29
Bone, joints	0	0.00	0	0.00	0	0.00	0	0.00	0	0.46	0.00	-0.16
Soft tissue including heart	0	0.00	0	0.00	1	2.05	1	3.85	2	2.19	0.91	-0.06
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.35	0.00	-0.12
Melanoma of skin	1	0.54	4	1.01	0	0.00	2	1.99	7	8.63	0.81	-0.55
Eye, orbit	0	0.00	1	2.94	0	0.00	0	0.00	1	0.73	1.36	0.09
Brain, central nervous system	1	0.88	2	0.85	0	0.00	0	0.00	3	4.86	0.62	-0.62
Thyroid	0	0.00	1	0.74	0	0.00	1	4.11	2	2.82	0.71	-0.27
Lymphatic, hematopoietic	9	0.88	39	1.78*	10	0.95	4	0.74	62	48.10	1.29	4.66
Hodgkin lymphoma	0	0.00	0	0.00	0	0.00	0	0.00	0	1.07	0.00	-0.36
Non-Hodgkin lymphoma	5	1.05	12	1.16	5	1.03	1	0.41	23	22.37	1.03	0.21
Myeloma	2	1.11	2	0.52	0	0.00	1	1.15	5	8.34	0.60	-1.12
Leukemia	2	0.59	25	3.44*	5	1.37	2	0.98	34	16.31	2.08*	5.93
Acute lymphocytic	0	0.00	0	0.00	1	11.32	0	0.00	1	0.39	2.55	0.20
Chronic lymphocytic	1	0.75	2	0.70	2	1.42	1	1.30	6	6.37	0.94	-0.12
Acute non-lymphocytic	1	0.86	19	7.49*	1	0.79	0	0.00	21	5.65	3.72*	5.15
Chronic myeloid	0	0.00	3	3.11	1	2.00	1	3.40	5	2.20	2.27	0.94

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Ovary Females, Radiotherapy

Table 9.2.7: Risk of subsequent primary cancers after cancer of the ovary, females, with initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
Number starting interval	3,462		2,628		1,499		1,117		3,462			
Person-years in interval	2,501		7,483		6,458		9,881		26,323			
All subsequent cancers	28	1.43	79	1.33*	74	1.25	167	1.40*	348	257.12	1.35*	34.52
All excluding same site	26	1.61*	74	1.49*	71	1.40*	163	1.56*	334	220.67	1.51*	43.05
Buccal cavity, pharynx	0	0.00	3	2.41	3	2.55	3	1.44	9	4.91	1.83	1.55
Lip	0	0.00	0	0.00	0	0.00	0	0.00	0	0.29	0.00	-0.11
Tongue	0	0.00	2	7.57	1	3.85	2	4.30	5	1.08	4.64*	1.49
Salivary gland	0	0.00	0	0.00	0	0.00	0	0.00	0	0.51	0.00	-0.20
Mouth	0	0.00	1	2.35	2	5.03	1	1.42	4	1.67	2.40	0.89
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.22	0.00	-0.08
Tonsil	0	0.00	0	0.00	0	0.00	0	0.00	0	0.48	0.00	-0.18
Oropharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.13	0.00	-0.05
Hypopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.36	0.00	-0.14
Digestive system	8	1.97	14	1.15	14	1.13	46	1.83*	82	53.79	1.52*	10.72
Esophagus	0	0.00	0	0.00	0	0.00	2	2.79	2	1.53	1.30	0.18
Stomach	1	2.98	2	2.06	2	2.14	4	2.24	9	4.03	2.23*	1.89
Small intestine	1	18.69	0	0.00	0	0.00	1	2.50	2	0.79	2.54	0.46
Colon	5	2.54	7	1.18	7	1.15	25	1.99*	44	26.54	1.66*	6.63
Rectum, rectosigmoid junction	0	0.00	2	0.91	4	1.86	5	1.27	11	9.03	1.22	0.75
Rectum	0	0.00	1	0.71	4	2.91	4	1.54	9	5.85	1.54	1.19
Anus, anal canal	0	0.00	0	0.00	0	0.00	1	2.70	1	0.78	1.28	0.08
Liver	0	0.00	0	0.00	0	0.00	2	3.40	2	1.14	1.76	0.33
Gallbladder	0	0.00	0	0.00	0	0.00	0	0.00	0	1.21	0.00	-0.46
Bile ducts, other biliary	1	13.43	0	0.00	0	0.00	0	0.00	1	1.12	0.89	-0.05
Pancreas	0	0.00	3	1.99	1	0.63	4	1.19	8	6.94	1.15	0.40
Respiratory system	1	0.46	6	0.85	9	1.16	19	1.09	35	34.44	1.02	0.21
Nose, nasal cavity, ear	0	0.00	0	0.00	0	0.00	0	0.00	0	0.35	0.00	-0.13
Larynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.22	0.00	-0.47
Lung, bronchus	1	0.49	6	0.90	9	1.22	19	1.13	35	32.77	1.07	0.85
Female breast	11	1.89	30	1.69*	27	1.52*	40	1.13	108	76.53	1.41*	11.96
Female genital system	2	0.59	5	0.51	3	0.35	4	0.27*	14	36.45	0.38*	-8.53
Cervix uteri	0	0.00	0	0.00	0	0.00	1	0.68	1	4.40	0.23	-1.29
Corpus uteri	2	1.08	3	0.57	2	0.45	1	0.13*	8	19.12	0.42*	-4.22
Ovary	0	0.00	1	0.39	0	0.00	0	0.00*	1	10.38	0.10*	-3.56
Vagina	0	0.00	0	0.00	1	9.11	1	4.86	2	0.47	4.28	0.58
Vulva	0	0.00	1	3.37	0	0.00	1	1.51	2	1.36	1.47	0.24
Urinary system	2	2.48	4	1.61	4	1.54	18	3.15*	28	11.60	2.41*	6.23
Urinary bladder	1	2.11	4	2.75	2	1.33	12	3.64*	19	6.73	2.82*	4.66
Kidney parenchyma	1	3.81	0	0.00	2	2.28	6	3.04*	9	3.93	2.29*	1.93
Renal pelvis, other urinary	0	0.00	0	0.00	0	0.00	0	0.00	0	0.95	0.00	-0.36
Ureter	0	0.00	0	0.00	0	0.00	0	0.00	0	0.29	0.00	-0.11
Bone, joints	0	0.00	0	0.00	1	16.88	1	9.35	2	0.25	7.95	0.66
Soft tissue including heart	0	0.00	0	0.00	3	13.18*	2	4.28	5	1.00	4.98*	1.52
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.07	0.00	-0.03
Melanoma of skin	2	5.16	1	0.79	1	0.77	3	1.15	7	5.54	1.26	0.56
Eye, orbit	1	27.24	0	0.00	0	0.00	0	0.00	1	0.41	2.44	0.22
Brain, central nervous system	1	4.28	1	1.40	0	0.00	2	1.58	4	2.90	1.38	0.42
Thyroid	0	0.00	0	0.00	0	0.00	3	2.64	3	2.74	1.09	0.10
Lymphatic, hematopoietic	0	0.00	12	2.99*	9	2.15	16	1.77*	37	18.54	2.00*	7.01
Hodgkin lymphoma	0	0.00	0	0.00	0	0.00	1	3.64	1	0.71	1.42	0.11
Non-Hodgkin lymphoma	0	0.00	1	0.54	3	1.49	8	1.75	12	9.07	1.32	1.11
Myeloma	0	0.00	0	0.00	0	0.00	2	1.35	2	3.08	0.65	-0.41
Leukemia	0	0.00	11	8.63*	6	4.65*	5	1.85	22	5.69	3.87*	6.20
Acute lymphocytic	0	0.00	1	24.72	0	0.00	1	11.64	2	0.18	10.98*	0.69
Chronic lymphocytic	0	0.00	0	0.00	2	3.98	2	1.91	4	2.20	1.82	0.68
Acute non-lymphocytic	0	0.00	10	22.08*	4	8.77*	1	1.03	15	2.03	7.39*	4.93
Chronic myeloid	0	0.00	0	0.00	0	0.00	0	0.00	0	0.79	0.00	-0.30

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Table 9.2.8: Risk of subsequent primary cancers after cancer of the ovary, females, without initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<1 year		1-4 years		5-9 years		≥10 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	236	0.93	635	0.96	501	1.16*	495	1.12*	1,867	1,787.71	1.04	4.36
All excluding same site	194	0.88	594	1.04	482	1.28*	487	1.25*	1,757	1,555.05	1.13*	11.11
Buccal cavity, pharynx	3	0.64	11	0.92	13	1.71	6	0.81	33	31.63	1.04	0.08
Lip	0	0.00	0	0.00	0	0.00	1	1.92	1	2.01	0.50	-0.06
Tongue	2	1.93	6	2.26	3	1.76	0	0.00	11	7.07	1.55	0.22
Salivary gland	1	1.95	0	0.00	0	0.00	2	2.28	3	3.60	0.83	-0.03
Mouth	0	0.00	2	0.50	5	1.97	2	0.80	9	10.64	0.85	-0.09
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.40	0.00	-0.08
Tonsil	0	0.00	1	0.90	4	5.90*	0	0.00	5	2.84	1.76	0.12
Oropharynx	0	0.00	1	3.28	0	0.00	0	0.00	1	0.79	1.26	0.01
Hypopharynx	0	0.00	1	1.20	1	1.93	0	0.00	2	2.17	0.92	-0.01
Digestive system	60	1.11	125	0.92	131	1.46*	141	1.49*	457	374.82	1.22*	4.52
Esophagus	1	0.66	1	0.26	6	2.39	0	0.00	8	10.56	0.76	-0.14
Stomach	2	0.48	8	0.78	6	0.90	12	1.75	28	27.91	1.00	0.00
Small intestine	3	3.77	4	1.91	3	2.13	2	1.28	12	5.86	2.05*	0.34
Colon	32	1.20	64	0.96	63	1.42*	65	1.37*	224	185.32	1.21*	2.13
Rectum, rectosigmoid junction	8	0.90	26	1.17	27	1.89*	29	2.02*	90	59.88	1.50*	1.66
Rectum	5	0.86	15	1.03	20	2.13*	17	1.78*	57	39.34	1.45*	0.97
Anus, anal canal	2	2.56	2	0.98	3	2.23	2	1.45	9	5.55	1.62	0.19
Liver	0	0.00	0	0.00	1	0.48	2	0.87	3	8.62	0.35	-0.31
Gallbladder	1	0.81	1	0.33	2	1.04	2	1.04	6	8.08	0.74	-0.11
Bile ducts, other biliary	1	0.88	4	1.36	3	1.49	7	3.03*	15	8.41	1.78	0.36
Pancreas	7	1.00	13	0.73	13	1.10	19	1.49	52	49.21	1.06	0.15
Respiratory system	16	0.48*	64	0.72*	74	1.25	81	1.27*	235	244.58	0.96	-0.53
Nose, nasal cavity, ear	0	0.00	0	0.00	1	1.75	0	0.00	1	2.38	0.42	-0.08
Larynx	2	1.72	2	0.67	1	0.53	6	3.30*	11	7.86	1.40	0.17
Lung, bronchus	14	0.44*	62	0.74*	72	1.28	75	1.22	223	233.72	0.95	-0.59
Female breast	61	0.80	209	1.04	148	1.13	144	1.11	562	538.26	1.04	1.31
Female genital system	42	1.20	41	0.46*	19	0.34*	8	0.15*	110	232.66	0.47*	-6.75
Cervix uteri	4	0.91	3	0.27*	1	0.15*	1	0.19	9	27.58	0.33*	-1.02
Corpus uteri	29	1.62*	14	0.31*	4	0.14*	1	0.04*	48	117.49	0.41*	-3.82
Ovary	6	0.59	17	0.65	9	0.54	2	0.12*	34	69.53	0.49*	-1.96
Vagina	1	2.11	4	3.35	1	1.30	2	2.59	8	3.21	2.49*	0.26
Vulva	1	0.72	1	0.28	4	1.68	2	0.78	8	9.91	0.81	-0.10
Urinary system	12	1.04	32	1.07	24	1.21	34	1.59*	102	82.66	1.23*	1.06
Urinary bladder	2	0.30	20	1.17	16	1.40	20	1.62	58	47.58	1.22	0.57
Kidney parenchyma	9	2.29*	11	1.06	6	0.87	7	0.95	33	28.62	1.15	0.24
Renal pelvis, other urinary	1	1.07	1	0.43	2	1.30	7	4.28*	11	6.46	1.70	0.25
Ureter	0	0.00	0	0.00	0	0.00	2	4.04	2	1.96	1.02	0.00
Bone, joints	0	0.00	0	0.00	2	4.63	0	0.00	2	1.78	1.12	0.01
Soft tissue including heart	2	1.95	1	0.37	3	1.70	3	1.66	9	7.30	1.23	0.09
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.56	0.00	-0.03
Melanoma of skin	9	1.59	13	0.83	6	0.58	11	1.09	39	41.84	0.93	-0.16
Eye, orbit	2	5.08	1	1.01	1	1.60	5	8.15*	9	2.63	3.43*	0.35
Brain, central nervous system	1	0.36	5	0.68	6	1.28	4	0.88	16	19.34	0.83	-0.18
Thyroid	4	1.37	10	1.22	9	1.75	6	1.32	29	20.77	1.40	0.45
Lymphatic, hematopoietic	20	1.07	104	2.16*	53	1.66*	39	1.14	216	132.95	1.62*	4.57
Hodgkin lymphoma	1	1.35	0	0.00	1	0.82	2	1.91	4	4.97	0.80	-0.05
Non-Hodgkin lymphoma	10	1.11	25	1.05	13	0.82	17	0.99	65	65.91	0.99	-0.05
Myeloma	4	1.28	5	0.63	4	0.77	6	1.07	19	21.88	0.87	-0.16
Leukemia	5	0.87	74	5.07*	35	3.63*	14	1.37	128	40.19	3.18*	4.83
Acute lymphocytic	0	0.00	4	7.80*	2	5.95	0	0.00	6	1.37	4.39*	0.26
Chronic lymphocytic	1	0.46	4	0.73	2	0.55	2	0.52	9	15.14	0.59	-0.34
Acute non-lymphocytic	3	1.46	59	11.14*	24	6.86*	8	2.14	94	14.59	6.44*	4.37
Chronic myeloid	1	1.24	4	1.95	5	3.70*	2	1.43	12	5.61	2.14*	0.35

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Ovary

Females, Long-term Follow-up, Radiotherapy

Table 9.2.9: Risk of subsequent primary cancers after cancer of the ovary, females, long-term follow-up, with initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<10 years		10-14 years		15-19 years		≥20 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
Number starting interval	3,462		1,117		770		510		3,462			
Person-years in interval	16,442		4,722		3,187		1,972		26,323			
All subsequent cancers	181	1.31*	74	1.45*	50	1.26	43	1.53*	348	257.12	1.35*	34.52
All excluding same site	171	1.47*	73	1.64*	49	1.41*	41	1.64*	334	220.67	1.51*	43.05
Buccal cavity, pharynx	6	2.12	1	1.07	2	2.93	0	0.00	9	4.91	1.83	1.55
Lip	0	0.00	0	0.00	0	0.00	0	0.00	0	0.29	0.00	-0.11
Tongue	3	4.91	1	4.77	1	6.48	0	0.00	5	1.08	4.64*	1.49
Salivary gland	0	0.00	0	0.00	0	0.00	0	0.00	0	0.51	0.00	-0.20
Mouth	3	3.11	0	0.00	1	4.37	0	0.00	4	1.67	2.40	0.89
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.22	0.00	-0.08
Tonsil	0	0.00	0	0.00	0	0.00	0	0.00	0	0.48	0.00	-0.18
Oropharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.13	0.00	-0.05
Hypopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	0.36	0.00	-0.14
Digestive system	36	1.26	19	1.78*	15	1.80*	12	1.96*	82	53.79	1.52*	10.72
Esophagus	0	0.00	0	0.00	2	8.49	0	0.00	2	1.53	1.30	0.18
Stomach	5	2.23	2	2.58	1	1.69	1	2.39	9	4.03	2.23*	1.89
Small intestine	1	2.58	1	6.37	0	0.00	0	0.00	2	0.79	2.54	0.46
Colon	19	1.36	11	2.06*	6	1.45	8	2.61*	44	26.54	1.66*	6.63
Rectum, rectosigmoid junction	6	1.18	2	1.14	2	1.56	1	1.12	11	9.03	1.22	0.75
Rectum	5	1.53	1	0.88	2	2.36	1	1.64	9	5.85	1.54	1.19
Anus, anal canal	0	0.00	1	6.34	0	0.00	0	0.00	1	0.78	1.28	0.08
Liver	0	0.00	2	8.89	0	0.00	0	0.00	2	1.14	1.76	0.33
Gallbladder	0	0.00	0	0.00	0	0.00	0	0.00	0	1.21	0.00	-0.46
Bile ducts, other biliary	1	1.87	0	0.00	0	0.00	0	0.00	1	1.12	0.89	-0.05
Pancreas	4	1.11	0	0.00	3	2.68	1	1.20	8	6.94	1.15	0.40
Respiratory system	16	0.94	12	1.68	6	1.02	1	0.23	35	34.44	1.02	0.21
Nose, nasal cavity, ear	0	0.00	0	0.00	0	0.00	0	0.00	0	0.35	0.00	-0.13
Larynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.22	0.00	-0.47
Lung, bronchus	16	1.00	12	1.76	6	1.06	1	0.24	35	32.77	1.07	0.85
Female breast	68	1.65*	14	0.90	14	1.20	12	1.49	108	76.53	1.41*	11.96
Female genital system	10	0.46*	1	0.15*	1	0.21	2	0.63	14	36.45	0.38*	-8.53
Cervix uteri	0	0.00	0	0.00	0	0.00	1	3.93	1	4.40	0.23	-1.29
Corpus uteri	7	0.60	0	0.00	0	0.00	1	0.61	8	19.12	0.42*	-4.22
Ovary	1	0.17*	0	0.00	0	0.00	0	0.00	1	10.38	0.10*	-3.56
Vagina	1	3.81	0	0.00	1	14.91	0	0.00	2	0.47	4.28	0.58
Vulva	1	1.44	1	3.68	0	0.00	0	0.00	2	1.36	1.47	0.24
Urinary system	10	1.70	9	3.81*	4	2.08	5	3.51*	28	11.60	2.41*	6.23
Urinary bladder	7	2.04	7	5.13*	3	2.72	2	2.42	19	6.73	2.82*	4.66
Kidney parenchyma	3	1.53	2	2.46	1	1.50	3	6.14*	9	3.93	2.29*	1.93
Renal pelvis, other urinary	0	0.00	0	0.00	0	0.00	0	0.00	0	0.95	0.00	-0.36
Ureter	0	0.00	0	0.00	0	0.00	0	0.00	0	0.29	0.00	-0.11
Bone, joints	1	6.92	1	21.49	0	0.00	0	0.00	2	0.25	7.95	0.66
Soft tissue including heart	3	5.60*	1	5.13	1	6.29	0	0.00	5	1.00	4.98*	1.52
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.07	0.00	-0.03
Melanoma of skin	4	1.36	1	0.91	2	2.32	0	0.00	7	5.54	1.26	0.56
Eye, orbit	1	4.16	0	0.00	0	0.00	0	0.00	1	0.41	2.44	0.22
Brain, central nervous system	2	1.22	1	1.77	0	0.00	1	3.54	4	2.90	1.38	0.42
Thyroid	0	0.00	0	0.00	1	2.67	2	8.07	3	2.74	1.09	0.10
Lymphatic, hematopoietic	21	2.21*	8	2.13	2	0.66	6	2.68	37	18.54	2.00*	7.01
Hodgkin lymphoma	0	0.00	0	0.00	0	0.00	1	17.71	1	0.71	1.42	0.11
Non-Hodgkin lymphoma	4	0.89	5	2.68	2	1.29	1	0.86	12	9.07	1.32	1.11
Myeloma	0	0.00	1	1.61	0	0.00	1	2.77	2	3.08	0.65	-0.41
Leukemia	17	5.69*	2	1.75	0	0.00	3	4.58	22	5.69	3.87*	6.20
Acute lymphocytic	1	10.39	1	25.73	0	0.00	0	0.00	2	0.18	10.98*	0.69
Chronic lymphocytic	2	1.74	0	0.00	0	0.00	2	8.23	4	2.20	1.82	0.68
Acute non-lymphocytic	14	13.25*	0	0.00	0	0.00	1	3.99	15	2.03	7.39*	4.93
Chronic myeloid	0	0.00	0	0.00	0	0.00	0	0.00	0	0.79	0.00	-0.30

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

Table 9.2.10: Risk of subsequent primary cancers after cancer of the ovary, females, long-term follow-up, without initial radiotherapy, SEER 1973-2000.

Subsequent primary cancer	Years after first primary cancer diagnosis											
	<10 years		10-14 years		15-19 years		≥20 years		Total			
	O	O/E	O	O/E	O	O/E	O	O/E	O	E	O/E	EAR
All subsequent cancers	1,372	1.02	271	1.09	166	1.24*	58	0.99	1,867	1,787.71	1.04	4.36
All excluding same site	1,270	1.09*	267	1.22*	163	1.38*	57	1.10	1,757	1,555.05	1.13*	11.11
Buccal cavity, pharynx	27	1.11	4	0.94	2	0.90	0	0.00	33	31.63	1.04	0.08
Lip	0	0.00	0	0.00	1	6.23	0	0.00	1	2.01	0.50	-0.06
Tongue	11	2.03*	0	0.00	0	0.00	0	0.00	11	7.07	1.55	0.22
Salivary gland	1	0.37	2	4.05	0	0.00	0	0.00	3	3.60	0.83	-0.03
Mouth	7	0.86	1	0.69	1	1.33	0	0.00	9	10.64	0.85	-0.09
Nasopharynx	0	0.00	0	0.00	0	0.00	0	0.00	0	1.40	0.00	-0.08
Tonsil	5	2.24	0	0.00	0	0.00	0	0.00	5	2.84	1.76	0.12
Oropharynx	1	1.62	0	0.00	0	0.00	0	0.00	1	0.79	1.26	0.01
Hypopharynx	2	1.19	0	0.00	0	0.00	0	0.00	2	2.17	0.92	-0.01
Digestive system	316	1.13*	70	1.32*	53	1.84*	18	1.40	457	374.82	1.22*	4.52
Esophagus	8	1.01	0	0.00	0	0.00	0	0.00	8	10.56	0.76	-0.14
Stomach	16	0.76	5	1.29	6	2.92*	1	1.11	28	27.91	1.00	0.00
Small intestine	10	2.32*	2	2.35	0	0.00	0	0.00	12	5.86	2.05*	0.34
Colon	159	1.15	37	1.40	20	1.39	8	1.24	224	185.32	1.21*	2.13
Rectum, rectosigmoid junction	61	1.34*	9	1.10	16	3.74*	4	2.15	90	59.88	1.50*	1.66
Rectum	40	1.34	5	0.92	10	3.48*	2	1.57	57	39.34	1.45*	0.97
Anus, anal canal	7	1.68	1	1.29	1	2.37	0	0.00	9	5.55	1.62	0.19
Liver	1	0.16*	0	0.00	1	1.40	1	2.95	3	8.62	0.35	-0.31
Gallbladder	4	0.65	1	0.91	0	0.00	1	4.13	6	8.08	0.74	-0.11
Bile ducts, other biliary	8	1.31	5	3.99*	2	2.78	0	0.00	15	8.41	1.78	0.36
Pancreas	33	0.90	10	1.41	6	1.54	3	1.71	52	49.21	1.06	0.15
Respiratory system	154	0.85*	46	1.30	26	1.32	9	1.02	235	244.58	0.96	-0.53
Nose, nasal cavity, ear	1	0.56	0	0.00	0	0.00	0	0.00	1	2.38	0.42	-0.08
Larynx	5	0.83	4	3.78*	2	3.73	0	0.00	11	7.86	1.40	0.17
Lung, bronchus	148	0.86	42	1.24	24	1.27	9	1.06	223	233.72	0.95	-0.59
Female breast	418	1.02	80	1.08	49	1.25	15	0.89	562	538.26	1.04	1.31
Female genital system	102	0.57*	4	0.13*	3	0.19*	1	0.15*	110	232.66	0.47*	-6.75
Cervix uteri	8	0.36*	1	0.30	0	0.00	0	0.00	9	27.58	0.33*	-1.02
Corpus uteri	47	0.52*	1	0.07*	0	0.00*	0	0.00	48	117.49	0.41*	-3.82
Ovary	32	0.60*	1	0.11*	1	0.20	0	0.00	34	69.53	0.49*	-1.96
Vagina	6	2.46	0	0.00	1	4.35	1	9.98	8	3.21	2.49*	0.26
Vulva	6	0.82	1	0.70	1	1.26	0	0.00	8	9.91	0.81	-0.10
Urinary system	68	1.11	17	1.43	15	2.29*	2	0.68	102	82.66	1.23*	1.06
Urinary bladder	38	1.08	9	1.31	11	2.91*	0	0.00	58	47.58	1.22	0.57
Kidney parenchyma	26	1.22	4	0.97	2	0.88	1	0.99	33	28.62	1.15	0.24
Renal pelvis, other urinary	4	0.83	4	4.39*	2	4.00	1	4.42	11	6.46	1.70	0.25
Ureter	0	0.00	1	3.62	1	6.62	0	0.00	2	1.96	1.02	0.00
Bone, joints	2	1.45	0	0.00	0	0.00	0	0.00	2	1.78	1.12	0.01
Soft tissue including heart	6	1.09	2	1.97	0	0.00	1	4.16	9	7.30	1.23	0.09
Kaposi sarcoma	0	0.00	0	0.00	0	0.00	0	0.00	0	0.56	0.00	-0.03
Melanoma of skin	28	0.88	10	1.75	1	0.33	0	0.00	39	41.84	0.93	-0.16
Eye, orbit	4	1.99	2	5.70	2	10.80*	1	12.93	9	2.63	3.43*	0.35
Brain, central nervous system	12	0.81	2	0.76	1	0.74	1	1.74	16	19.34	0.83	-0.18
Thyroid	23	1.42	4	1.51	2	1.50	0	0.00	29	20.77	1.40	0.45
Lymphatic, hematopoietic	177	1.79*	24	1.26	6	0.58	9	1.94	216	132.95	1.62*	4.57
Hodgkin lymphoma	2	0.51	2	3.22	0	0.00	0	0.00	4	4.97	0.80	-0.05
Non-Hodgkin lymphoma	48	0.99	8	0.84	3	0.57	6	2.50	65	65.91	0.99	-0.05
Myeloma	13	0.80	3	0.96	2	1.17	1	1.32	19	21.88	0.87	-0.16
Leukemia	114	3.80*	11	1.92	1	0.32	2	1.46	128	40.19	3.18*	4.83
Acute lymphocytic	6	5.76*	0	0.00	0	0.00	0	0.00	6	1.37	4.39*	0.26
Chronic lymphocytic	7	0.62	2	0.92	0	0.00	0	0.00	9	15.14	0.59	-0.34
Acute non-lymphocytic	86	7.93*	6	2.89*	1	0.87	1	1.91	94	14.59	6.44*	4.37
Chronic myeloid	10	2.37*	2	2.52	0	0.00	0	0.00	12	5.61	2.14*	0.35

*P < 0.05. Notes: See Appendices for definitions of cancer sites and "all excluding same site." Abbreviations: O = observed number of subsequent (2nd, 3rd, etc.) primary cancers; E = expected number of subsequent primary cancers; O/E = ratio of observed to expected cancers; PYR = person-years at risk; EAR = excess absolute risk per 10,000 person-years = [(O-E)/PYR] × 10,000.

