

Supplementary Table 1. Hazard ratios for all-cause mortality between five and ten years-postdiagnosis according to calendar year of diagnosis among five-year AYA cancer survivors, stratified by cancer type

Cancer type	All-cause HR (95% CI)*
Leukemia[†]	
1975-1984	1
1985-1994	0.49 (0.40, 0.61)
1995-2004	0.23 (0.19, 0.28)
2005-2011	0.21 (0.17, 0.26)
p-trend [§]	<0.001
Non-Hodgkin lymphoma[†]	
1975-1984	1
1985-1994	0.69 (0.56, 0.84)
1995-2004	0.35 (0.29, 0.43)
2005-2011	0.25 (0.20, 0.31)
p-trend [§]	<0.001
Hodgkin lymphoma[†]	
1975-1984	1
1985-1994	0.58 (0.49, 0.70)
1995-2004	0.38 (0.32, 0.45)
2005-2011	0.29 (0.24, 0.36)
p-trend [§]	<0.001
Central nervous system[†]	
1975-1984	1
1985-1994	0.69 (0.59, 0.81)
1995-2004	0.65 (0.57, 0.75)
2005-2011	0.64 (0.55, 0.75)
p-trend [§]	<0.001
Osseous and chondromatous[‡]	
1975-1984	1
1985-1994	0.85 (0.56, 1.28)
1995-2004	1.00 (0.70, 1.44)
2005-2011	0.89 (0.60, 1.32)
p-trend [§]	0.997
Soft tissue sarcomas[‡]	
1975-1984	1
1985-1994	1.13 (0.85, 1.49)
1995-2004	0.96 (0.74, 1.25)
2005-2011	0.99 (0.75, 1.32)
p-trend [§]	0.51
Germ cell and trophoblastic[‡]	
1975-1984	1
1985-1994	1.30 (0.95, 1.78)

1995-2004	0.82 (0.61, 1.12)
2005-2011	1.00 (0.72, 1.39)
p-trend [§]	0.07
Melanoma/skin ‡	
1975-1984	1
1985-1994	0.77 (0.65, 0.92)
1995-2004	0.52 (0.44, 0.61)
2005-2011	0.55 (0.46, 0.66)
p-trend [§]	<0.001
Thyroid ‡	
1975-1984	1
1985-1994	0.69 (0.45, 1.06)
1995-2004	0.77 (0.54, 1.10)
2005-2011	0.72 (0.49, 1.05)
p-trend [§]	0.21
Head and neck ‡	
1975-1984	1
1985-1994	0.97 (0.71, 1.31)
1995-2004	0.72 (0.54, 0.96)
2005-2011	0.55 (0.38, 0.79)
p-trend [§]	<0.001
Trachea, lung, and bronchus ‡	
1975-1984	1
1985-1994	0.63 (0.09, 4.72)
1995-2004	0.51 (0.07, 3.74)
2005-2011	0.50 (0.07, 3.72)
p-trend [§]	0.14
Female breast ‡	
1975-1984	1
1985-1994	0.82 (0.75, 0.90)
1995-2004	0.69 (0.63, 0.75)
2005-2011	0.55 (0.50, 0.61)
p-trend [§]	<0.001
Kidney ‡	
1975-1984	1
1985-1994	0.77 (0.48, 1.24)
1995-2004	0.57 (0.37, 0.86)
2005-2011	0.60 (0.39, 0.93)
p-trend [§]	0.02
Bladder ‡	
1975-1984	1
1985-1994	0.78 (0.39, 1.55)
1995-2004	1.14 (0.64, 2.03)

2005-2011	1.46 (0.77, 2.80)
p-trend §	0.09
Cervix/uterus ‡	
1975-1984	1
1985-1994	0.75 (0.58, 0.97)
1995-2004	0.81 (0.65, 1.01)
2005-2011	0.93 (0.73, 1.19)
p-trend §	0.95
Colorectal ‡	
1975-1984	1
1985-1994	1.03 (0.79, 1.34)
1995-2004	1.00 (0.79, 1.26)
2005-2011	1.03 (0.81, 1.30)
p-trend §	0.70

* Hazard ratios estimated from Cox proportional hazards regression models

† Estimates adjusted for sex, age at diagnosis, and race

‡ Estimates adjusted for sex, age at diagnosis, race, and stage

§ P-value from diagnosis year modeled as a continuous variable. All tests were two-sided.

Supplementary Table 2. Cumulative mortality (95% CI) from all causes according to diagnosis year among five-year AYA cancer survivors, stratified by age at diagnosis

Cancer type	Age 15-29				Age 30-39			
	5-year	10-year	20-year	p *	5-year	10-year	20-year	p *
Leukemia				<0.001				<0.001
1975-1984	26.6 (21.8, 31.6)	33.0 (27.9, 38.3)	37.3 (31.9, 42.6)		30.9 (25.5, 36.4)	43.5 (37.5, 49.3)	57.4 (51.2, 63.1)	
1985-1994	13.0 (10.4, 16.0)	17.1 (14.1, 20.3)	23.6 (20.0, 27.3)		17.6 (14.5, 20.9)	24.2 (20.7, 27.8)	38.9 (34.6, 43.1)	
1995-2004	6.0 (4.9, 7.3)	10.2 (8.7, 11.8)	--		9.0 (7.7, 10.5)	14.8 (13.0, 16.6)	--	
2005-2011	6.5 (5.2, 7.9)				6.7 (5.3, 8.3)	--	--	
Non-Hodgkin lymphoma				<0.001				<0.001
1975-1984	7.3 (5.3, 9.7)	12.8 (10.1, 15.8)	20.6 (17.2, 24.1)		17.1 (14.5, 19.8)	25.4 (22.3, 28.5)	40.0 (36.5, 43.5)	
1985-1994	5.7 (4.3, 7.3)	9.8 (8.0, 11.9)	16.4 (14.0, 19.1)		11.9 (10.3, 13.7)	17.8 (15.9, 19.8)	27.9 (25.6, 30.4)	
1995-2004	3.4 (2.7, 4.2)	6.1 (5.1, 7.3)	--		6.2 (5.5, 7.0)	10.7 (9.7, 11.8)	--	
2005-2011	2.7 (1.9, 3.8)	--	--		4.3 (3.5, 5.2)	--	--	
Hodgkin lymphoma				<0.001				<0.001
1975-1984	9.0 (7.9, 10.3)	14.4 (12.9, 15.9)	26.5 (24.6, 28.4)		9.1 (7.3, 11.2)	17.8 (15.2, 20.5)	34.4 (31.2, 37.7)	
1985-1994	4.5 (3.8, 5.4)	7.7 (6.7, 8.7)	16.5 (15.0, 18.0)		7.3 (6.0, 8.8)	13.0 (11.2, 14.8)	26.5 (24.1, 29.0)	
1995-2004	3.4 (2.9, 3.9)	5.7 (5.0, 6.4)	--		4.4 (3.7, 5.2)	8.2 (7.1, 9.3)	--	
2005-2011	2.6 (2.0, 3.2)	--	--		3.7 (2.8, 4.9)	--	--	
Central nervous system				0.002				<0.001
1975-1984	18.9 (15.9, 22.0)	27.5 (24.1, 31.0)	39.8 (35.9, 43.6)		33.9 (29.4, 38.3)	49.5 (44.6, 54.1)	69.8 (65.2, 73.9)	
1985-1994	15.2 (13.0, 17.6)	24.0 (21.3, 26.8)	36.0 (32.8, 39.1)		24.0 (21.2, 26.8)	37.4 (34.2, 40.6)	58.6 (55.0, 61.9)	
1995-2004	14.5 (13.0, 16.2)	21.9 (20.0, 23.9)	--		21.7 (19.8, 23.6)	34.5 (32.2, 36.8)	--	
2005-2011	14.4 (12.4, 16.6)	--	--		20.8 (18.2, 23.5)	--	--	
Osseous and chondromatous				0.63				0.53
1975-1984	9.3 (6.2, 13.2)	12.4 (8.7, 16.6)	20.3 (15.7, 25.4)		13.3 (7.6, 20.5)	19.0 (12.1, 27.0)	25.6 (17.7, 34.3)	
1985-1994	9.7 (7.0, 12.9)	13.4 (10.2, 17.0)	17.9 (14.2, 22.0)		7.3 (4.3, 11.4)	12.6 (8.5, 17.6)	21.8 (16.3, 27.9)	
1995-2004	10.9 (9.0, 13.1)	14.8 (12.4, 17.3)	--		9.9 (7.3, 12.9)	15.8 (12.5, 19.5)	--	
2005-2011	10.9 (8.3, 13.8)	--	--		7.9 (4.5, 12.6)	--	--	
Soft tissue sarcomas				0.88				0.96
1975-1984	6.1 (4.4, 8.1)	8.5 (6.5, 10.8)	13.8 (11.2, 16.6)		6.3 (4.6, 8.5)	11.2 (8.8, 13.9)	21.8 (18.6, 25.2)	
1985-1994	6.4 (4.9, 8.2)	9.3 (7.4, 11.4)	14.6 (12.2, 17.2)		8.1 (6.5, 9.8)	11.9 (10.0, 13.9)	19.5 (17.0, 22.1)	
1995-2004	5.5 (4.4, 6.7)	8.6 (7.20, 10.1)	--		7.3 (6.2, 8.6)	11.9 (10.4, 13.5)	--	
2005-2011	6.2 (4.7, 8.0)	--	--		7.8 (6.2, 9.6)	--	--	
Germ cell and trophoblastic				<0.001				<0.001
1975-1984	1.7 (1.2, 2.3)	4.1 (3.3, 5.1)	9.9 (8.7, 11.3)		1.7 (1.1, 2.6)	4.9 (3.9, 6.2)	14.9 (13.0, 16.9)	
1985-1994	1.7 (1.3, 2.2)	3.3 (2.6, 4.0)	7.4 (6.4, 8.5)		2.7 (2.2, 3.4)	4.8 (4.1, 5.7)	11.3 (10.1, 12.6)	
1995-2004	1.3 (1.1, 1.7)	2.6 (2.2, 3.1)	--		1.4 (1.2, 1.8)	3.5 (3.0, 4.0)	--	

2005-2011	1.3 (1.0, 1.7)	--	--		2.1 (1.5, 2.7)	--	--	
Melanoma/skin				<0.001				<0.001
1975-1984	5.4 (4.4, 6.5)	8.6 (7.3, 9.9)	13.1 (11.6, 14.8)		5.6 (4.8, 6.6)	9.4 (8.3, 10.5)	15.1 (13.8, 16.6)	
1985-1994	3.4 (2.7, 4.2)	6.0 (5.1, 7.0)	9.3 (8.1, 10.5)		4.3 (3.8, 4.9)	6.8 (6.1, 7.6)	12.2 (11.2, 13.2)	
1995-2004	2.3 (1.9, 2.7)	3.7 (3.2, 4.3)	--		3.1 (2.8, 3.5)	5.4 (5.0, 5.9)	--	
2005-2011	2.7 (2.1, 3.4)	--	--		3.0 (2.6, 3.6)	--	--	
Thyroid				0.47				0.10
1975-1984	1.1 (0.7, 1.7)	1.8 (1.2, 2.5)	4.0 (3.1, 5.0)		1.2 (0.8, 1.8)	3.1 (2.4, 4.0)	8.3 (7.1, 9.7)	
1985-1994	0.7 (0.4, 1.1)	1.4 (1.0, 2.0)	3.5 (2.7, 4.4)		1.0 (0.7, 1.4)	2.1 (1.6, 2.6)	6.4 (5.5, 7.4)	
1995-2004	0.7 (0.5, 0.9)	1.7 (1.3, 2.1)	--		1.0 (0.8, 1.3)	2.3 (2.0, 2.7)	--	
2005-2011	0.7 (0.5, 1.1)	--	--		1.0 (0.7, 1.3)	--	--	
Head and neck				0.18				<0.001
1975-1984	3.0 (1.5, 5.4)	7.4 (4.8, 10.8)	15.3 (11.5, 19.7)		10.2 (8.0, 12.8)	16.6 (13.8, 19.7)	32.5 (28.8, 36.3)	
1985-1994	4.8 (3.0, 7.2)	8.9 (6.3, 12.0)	17.6 (13.8, 21.7)		9.6 (7.8, 11.6)	16.6 (14.3, 19.1)	31.3 (28.2, 34.5)	
1995-2004	3.9 (2.7, 5.6)	5.5 (3.9, 7.5)	--		7.3 (6.2, 8.6)	12.7 (11.1, 14.4)	--	
2005-2011	5.0 (3.1, 7.4)	--	--		6.6 (5.1, 8.5)	--	--	
Trachea, lung, and bronchus				0.30				0.16
1975-1984	2.4 (0.5, 7.5)	4.7 (1.5, 10.8)	9.4 (4.4, 16.8)		18.7 (14.0, 24.0)	32.3 (26.3, 38.4)	45.0 (38.4, 51.3)	
1985-1994	10.7 (5.6, 17.5)	13.6 (7.8, 21.0)	17.7 (11.0, 25.7)		14.3 (10.7, 18.5)	19.9 (15.7, 24.6)	37.6 (31.9, 43.2)	
1995-2004	4.4 (2.1, 8.2)	7.8 (4.3, 12.7)	--		14.1 (11.4, 17.2)	22.2 (18.7, 26.0)	--	
2005-2011	3.1 (1.0, 7.2)	--	--		14.6 (11.0, 18.6)	--	--	
Female breast				0.37				<0.001
1975-1984	17.2 (14.3, 20.3)	23.9 (20.6, 27.4)	33.7 (29.9, 37.5)		15.8 (14.7, 16.9)	23.2 (22.0, 24.5)	33.7 (32.3, 35.1)	
1985-1994	13.0 (10.5, 15.8)	20.3 (17.2, 23.5)	29.7 (26.0, 33.4)		13.1 (12.3, 13.9)	20.1 (19.1, 21.0)	30.2 (29.1, 31.3)	
1995-2004	14.1 (12.3, 16.1)	21.0 (18.7, 23.3)	--		11.7 (11.2, 12.2)	18.4 (17.7, 19.1)	--	
2005-2011	13.0 (10.8, 15.4)	--	--		9.8 (9.2, 10.5)	--	--	
Kidney				0.85				<0.001
1975-1984	4.9 (1.3, 23.4)	9.8 (3.9, 18.8)	23.6 (13.7, 35.1)		12.3 (8.4, 17.1)	18.7 (13.9, 24.2)	33.0 (26.9, 39.3)	
1985-1994	3.7 (1.2, 8.6)	10.3 (5.5, 17.0)	17.9 (11.0, 26.2)		8.0 (5.8, 10.7)	15.3 (12.1, 18.7)	26.2 (22.1, 30.4)	
1995-2004	3.1 (1.5, 5.7)	6.8 (4.0, 10.5)	--		5.4 (4.4, 6.7)	11.2 (9.6, 13.1)	--	
2005-2011	4.7 (2.2, 8.6)	--	--		4.4 (3.3, 5.7)	--	--	
Bladder				0.39				0.19
1975-1984	1.9 (0.6, 4.5)	2.9 (1.2, 5.8)	7.7 (4.6, 11.9)		2.7 (1.5, 4.4)	6.0 (4.1, 8.3)	13.4 (10.5, 16.6)	
1985-1994	0.5 (0.1, 2.6)	2.6 (1.0, 5.6)	7.3 (4.1, 11.8)		2.3 (1.3, 3.6)	5.5 (3.9, 7.4)	13.9 (11.3, 16.8)	
1995-2004	1.1 (0.3, 3.0)	2.8 (1.2, 5.5)	--		3.5 (2.5, 4.7)	7.6 (6.0, 9.4)	--	
2005-2011	3.1 (1.1, 6.8)	--	--		3.9 (2.2, 6.2)	--	--	
Cervix/uterus				0.58				0.005

1975-1984	1.7 (1.1, 2.7)	3.7 (2.7, 5.1)	8.2 (6.6, 10.1)		4.4 (3.6, 5.3)	7.8 (6.8, 9.0)	17.7 (16.1, 19.3)
1985-1994	2.0 (1.3, 3.0)	3.5 (2.4, 4.7)	8.1 (6.4, 10.0)		3.2 (2.7, 3.9)	6.2 (5.4, 7.1)	14.8 (13.5, 16.1)
1995-2004	2.0 (1.4, 2.8)	3.2 (2.4, 4.2)	--		3.8 (3.3, 4.3)	6.8 (6.2, 7.5)	--
2005-2011	2.1 (1.2, 3.5)	--	--		4.9 (4.2, 5.8)	--	--
Colorectal				0.15			0.997
1975-1984	6.8 (4.0, 10.7)	11.4 (7.6, 16.0)	19.3 (14.3, 24.8)		9.9 (7.9, 12.2)	13.4 (11.0, 15.9)	24.0 (21.0, 27.2)
1985-1994	8.7 (5.6, 12.5)	11.1 (7.6, 15.3)	18.4 (13.7, 23.7)		10.2 (8.5, 12.0)	14.4 (12.5, 16.5)	23.8 (21.3, 26.4)
1995-2004	7.4 (5.6, 9.6)	11.2 (8.8, 13.8)	--		10.2 (9.2, 11.3)	14.9 (13.7, 16.2)	--
2005-2011	10.9 (8.4, 13.9)	--	--		10.2 (8.9, 11.5)	--	--

* P-value from two-sided log-rank test comparing overall survival curves

Supplementary Table 3. Cumulative mortality (95% CI) from the primary cancer and other cancers according to diagnosis year among five-year AYA cancer survivors, stratified by cancer type, age, sex, and race

Characteristic	Primary cancer-specific mortality			p*	Other cancer mortality			p*
	5-year	10-year	20-year		5-year	10-year	20-year	
Cancer type								
Leukemia				<0.001				0.12
1975-1984	24.0 (20.6, 27.5)	29.7 (26.0, 33.4)	33.3 (29.5, 37.2)		1.2 (0.5, 2.4)	2.2 (1.3, 3.7)	3.1 (1.9, 4.8)	
1985-1994	11.6 (9.8, 13.5)	15.2 (13.2, 17.4)	19.1 (16.8, 21.6)		0.5 (0.2, 1.0)	0.6 (0.3, 1.3)	2.1 (1.4, 3.2)	
1995-2004	6.1 (5.3, 6.9)	8.8 (7.8, 9.8)	--		0.2 (0.1, 0.4)	0.5 (0.3, 0.9)	--	
2005-2011	4.7 (3.9, 5.7)	--	--		0.2 (0.1, 0.5)	--	--	
Non-Hodgkin lymphoma				<0.001				0.62
1975-1984	10.5 (8.9, 12.2)	14.8 (13.0, 16.8)	20.7 (18.5, 22.9)		0.3 (0.1, 0.8)	0.6 (0.3, 1.2)	2.1 (1.4, 3.0)	
1985-1994	7.3 (6.3, 8.4)	10.5 (9.3, 11.7)	14.0 (12.6, 15.4)		0.3 (0.1, 0.5)	0.6 (0.3, 0.9)	1.6 (1.1, 2.3)	
1995-2004	3.5 (3.0, 3.9)	5.1 (4.6, 5.7)	--		0.3 (0.2, 0.5)	0.8 (0.6, 1.0)	--	
2005-2011	2.0 (1.6, 2.6)	--	--		0.2 (0.1, 0.4)	--	--	
Hodgkin lymphoma				<0.001				0.001
1975-1984	6.8 (5.9, 7.7)	10.0 (8.9, 11.1)	14.1 (12.9, 15.4)		0.2 (0.1, 0.4)	0.7 (0.5, 1.1)	4.0 (3.3, 4.7)	
1985-1994	3.5 (3.0, 4.1)	5.2 (4.5, 5.9)	7.5 (6.7, 8.4)		0.3 (0.2, 0.5)	0.8 (0.6, 1.1)	3.2 (2.7, 3.9)	
1995-2004	2.5 (2.2, 2.9)	3.6 (3.1, 4.0)	--		0.2 (0.1, 0.3)	0.5 (0.3, 0.7)	--	
2005-2011	1.9 (1.5, 2.3)	--	--		0.2 (0.1, 0.4)	--	--	
Central nervous system				<0.001				0.77
1975-1984	23.2 (20.7, 25.8)	32.3 (29.5, 35.1)	41.3 (38.3, 44.2)		0.1 (0.0, 0.5)	0.5 (0.2, 1.1)	1.3 (0.8, 2.2)	
1985-1994	17.5 (15.8, 19.2)	26.4 (24.4, 28.5)	36.6 (34.3, 38.8)		0.4 (0.2, 0.8)	0.6 (0.3, 1.1)	1.6 (1.1, 2.3)	
1995-2004	16.4 (15.2, 17.6)	24.9 (23.5, 26.4)	--		0.2 (0.1, 0.4)	0.5 (0.3, 0.8)	--	
2005-2011	15.3 (13.8, 16.9)	--	--		0.3 (0.1, 0.8)	--	--	
Osseous and chondromatous				0.73				0.43
1975-1984	8.6 (6.0, 11.7)	11.3 (8.3, 14.7)	14.0 (10.7, 17.7)		0.5 (0.1, 1.8)	0.5 (0.1, 1.8)	2.4 (1.2, 4.4)	
1985-1994	8.0 (6.0, 10.4)	11.1 (8.7, 13.8)	13.3 (10.6, 16.2)		0.2 (0.0, 0.9)	0.7 (0.2, 1.7)	1.5 (0.7, 2.8)	
1995-2004	8.7 (7.3, 10.3)	11.4 (9.7, 13.3)	--		0.8 (0.4, 1.4)	1.3 (0.8, 2.1)	--	
2005-2011	8.5 (6.6, 10.8)	--	--		0.6 (0.2, 1.3)	--	--	
Soft tissue sarcomas				0.38				0.11
1975-1984	4.8 (3.7, 6.1)	6.3 (5.0, 7.8)	9.2 (7.7, 10.9)		0.4 (0.2, 0.9)	1.0 (0.5, 1.7)	2.7 (1.9, 3.7)	
1985-1994	5.7 (4.7, 6.9)	7.7 (6.5, 9.0)	10.5 (9.1, 12.0)		0.4 (0.2, 0.8)	0.7 (0.4, 1.2)	2.0 (1.4, 2.7)	
1995-2004	4.9 (4.2, 5.6)	7.3 (6.4, 8.2)	--		0.6 (0.4, 0.9)	1.1 (0.8, 1.5)	--	
2005-2011	5.8 (4.8, 7.0)	--	--		0.6 (0.3, 1.2)	--	--	
Germ cell and trophoblastic				<0.001				0.22

1975-1984	0.7 (0.5, 1.1)	1.5 (1.1, 1.9)	3.3 (2.7, 3.9)		0.1 (0.0, 0.3)	0.5 (0.3, 0.7)	2.1 (1.7, 2.7)	
1985-1994	0.7 (0.5, 1.0)	1.1 (0.9, 1.4)	1.9 (1.5, 2.3)		0.2 (0.1, 0.4)	0.4 (0.2, 0.6)	1.6 (1.3, 2.0)	
1995-2004	0.5 (0.3, 0.6)	0.9 (0.7, 1.1)	--		0.1 (0.1, 0.2)	0.3 (0.2, 0.5)	--	
2005-2011	0.5 (0.3, 0.7)	--	--		0.3 (0.2, 0.5)	--	--	
Melanoma/skin				<0.001				0.04
1975-1984	4.9 (4.3, 5.6)	7.4 (6.6, 8.2)	10.1 (9.3, 11.1)		0.1 (0.1, 0.3)	0.6 (0.4, 0.8)	1.8 (1.4, 2.2)	
1985-1994	3.4 (3.0, 3.8)	5.1 (4.6, 5.6)	7.0 (6.4, 7.7)		0.1 (0.1, 0.2)	0.4 (0.3, 0.5)	1.3 (1.0, 1.6)	
1995-2004	2.3 (2.0, 2.5)	3.3 (3.0, 3.6)	--		0.1 (0.1, 0.2)	0.3 (0.2, 0.4)	--	
2005-2011	2.1 (1.8, 2.5)	--	--		0.1 (0.1, 0.2)	--	--	
Thyroid				0.10				0.19
1975-1984	0.3 (0.1, 0.5)	0.5 (0.3, 0.7)	1.1 (0.8, 1.5)		0.4 (0.2, 0.6)	0.7 (0.5, 1.1)	2.0 (1.5, 2.4)	
1985-1994	0.3 (0.2, 0.5)	0.6 (0.5, 0.9)	1.2 (0.9, 1.5)		0.2 (0.1, 0.4)	0.5 (0.3, 0.7)	1.3 (1.0, 1.7)	
1995-2004	0.2 (0.2, 0.3)	0.4 (0.3, 0.6)	--		0.2 (0.1, 0.3)	0.5 (0.4, 0.6)	--	
2005-2011	0.2 (0.1, 0.3)	--	--		0.2 (0.1, 0.3)	--	--	
Head and neck				0.03				0.10
1975-1984	5.2 (3.9, 6.8)	8.3 (6.6, 10.2)	13.2 (11.1, 15.5)		0.3 (0.1, 0.9)	0.8 (0.4, 1.5)	3.4 (2.3, 4.7)	
1985-1994	5.8 (4.6, 7.2)	9.5 (8.0, 11.1)	14.3 (12.5, 16.3)		0.5 (0.2, 1.1)	0.8 (0.5, 1.5)	3.2 (2.3, 4.3)	
1995-2004	4.5 (3.7, 5.3)	6.8 (5.8, 7.9)	--		0.1 (0.0, 0.3)	0.3 (0.1, 0.6)	--	
2005-2011	4.4 (3.3, 5.5)	--	--		0.3 (0.1, 0.8)	--	--	
Trachea, lung, and bronchus				0.94				0.34
1975-1984	10.2 (7.1, 13.8)	15.56 (11.8, 19.8)	18.1 (14.1, 22.6)		0.3 (0.0, 1.7)	1.3 (0.4, 3.1)	3.2 (1.6, 5.6)	
1985-1994	9.3 (6.7, 12.3)	12.0 (9.1, 15.3)	18.8 (15.1, 22.8)		1.0 (0.3, 2.4)	1.7 (0.8, 3.4)	3.2 (1.7, 5.3)	
1995-2004	9.2 (7.2, 11.4)	12.3 (10.0, 14.9)	--		0.4 (0.1, 1.1)	0.6 (0.2, 1.6)	--	
2005-2011	9.4 (7.0, 12.3)	--	--		0.6 (0.2, 1.8)	--	--	
Female breast				<0.001				0.04
1975-1984	14.7 (13.8, 15.7)	20.7 (19.6, 21.9)	26.8 (25.6, 28.0)		0.4 (0.2, 0.6)	1.0 (0.8, 1.3)	2.9 (2.5, 3.4)	
1985-1994	12.3 (11.6, 13.0)	18.1 (17.2, 18.9)	24.5 (23.6, 25.5)		0.3 (0.2, 0.4)	0.7 (0.6, 1.0)	2.3 (2.0, 2.7)	
1995-2004	10.8 (10.3, 11.3)	16.2 (15.6, 16.8)	--		0.2 (0.2, 0.3)	0.6 (0.5, 0.8)	--	
2005-2011	9.2 (8.6, 9.8)	--	--		0.2 (0.1, 0.3)	--	--	
Kidney				<0.001				0.01
1975-1984	6.8 (4.2, 10.1)	10.7 (7.4, 14.6)	16.9 (12.8, 21.5)		0.0 (0.0, 0.0)	0.0 (0.0, 0.0)	2.6 (1.1, 5.0)	
1985-1994	4.8 (3.2, 6.7)	8.8 (6.7, 11.4)	13.0 (10.3, 16.0)		0.0 (0.0, 0.0)	0.2 (0.0, 1.0)	1.5 (0.6, 2.9)	
1995-2004	2.8 (2.1, 3.7)	5.1 (4.0, 6.2)	--		0.1 (0.0, 0.4)	0.7 (0.3, 1.2)	--	
2005-2011	2.1 (1.6, 3.4)	--	--		0.4 (0.2, 1.0)	--	--	
Bladder				0.15				0.02
1975-1984	1.7 (0.9, 2.9)	2.6 (1.6, 4.0)	4.9 (3.5, 6.8)		0.0 (0.0, 0.0)	0.4 (0.1, 1.2)	1.9 (1.1, 3.2)	
1985-1994	0.9 (0.4, 1.8)	1.6 (0.9, 2.7)	3.3 (2.2, 4.8)		0.0 (0.0, 0.0)	0.6 (0.2, 1.3)	1.9 (1.1, 3.0)	

1995-2004	1.3 (0.8, 2.1)	2.7 (1.9, 3.7)	--		0.3 (0.1, 0.8)	0.6 (0.3, 1.3)	--	
2005-2011	2.3 (1.2, 4.0)	--	--		0.6 (0.2, 1.5)	--	--	
Cervix/uterus				0.08				0.04
1975-1984	2.1 (1.6, 2.6)	3.2 (2.7, 3.9)	4.8 (4.1, 5.6)		0.6 (0.4, 0.9)	1.3 (0.9, 1.7)	3.0 (2.4, 3.6)	
1985-1994	2.0 (1.6, 2.4)	2.9 (2.4, 3.5)	4.4 (3.7, 5.0)		0.2 (0.1, 0.4)	0.7 (0.5, 1.1)	2.2 (1.8, 2.7)	
1995-2004	2.1 (1.8, 2.4)	3.0 (2.6, 3.4)	--		0.3 (0.2, 0.4)	0.6 (0.4, 0.8)	--	
2005-2011	2.8 (2.3, 3.4)	--	--		0.4 (0.2, 0.7)	--	--	
Colorectal				0.43				0.11
1975-1984	6.9 (5.4, 8.6)	8.7 (7.0, 10.6)	11.9 (9.9, 14.1)		0.3 (0.1, 0.9)	1.0 (0.5, 1.8)	3.8 (2.7, 5.1)	
1985-1994	7.7 (6.4, 9.2)	9.8 (8.3, 11.4)	12.4 (10.7, 14.2)		0.6 (0.3, 1.2)	1.5 (0.9, 2.2)	3.5 (2.6, 4.6)	
1995-2004	7.9 (7.1, 8.8)	10.3 (9.3, 11.3)	--		0.4 (0.3, 0.7)	0.9 (0.6, 1.2)	--	
2005-2011	8.5 (7.4, 9.6)	--	--		0.3 (0.1, 0.6)			
Age at diagnosis								
15-24				<0.001				0.02
1975-1984	4.6 (4.1, 5.1)	6.4 (5.8, 7.0)	9.0 (8.4, 9.7)		0.2 (0.1, 0.3)	0.4 (0.3, 0.6)	1.5 (1.2, 1.8)	
1985-1994	3.2 (2.8, 3.6)	4.8 (4.4, 5.3)	6.6 (6.0, 7.1)		0.1 (0.1, 0.2)	0.3 (0.2, 0.5)	1.2 (1.0, 1.5)	
1995-2004	2.8 (2.6, 3.1)	4.1 (3.8, 4.4)	--		0.1 (0.1, 0.2)	0.3 (0.2, 0.4)	--	
2005-2011	3.1 (2.8, 3.4)	--	--		0.1 (0.0, 0.2)	--	--	
25-29				<0.001				<0.001
1975-1984	5.7 (5.2, 6.3)	8.1 (7.4, 8.8)	11.1 (10.4, 11.9)		0.3 (0.2, 0.4)	0.7 (0.5, 0.9)	1.9 (1.6, 2.3)	
1985-1994	4.5 (4.1, 5.0)	6.6 (6.1, 7.2)	8.9 (8.3, 9.6)		0.2 (0.1, 0.3)	0.4 (0.3, 0.6)	1.5 (1.2, 1.7)	
1995-2004	3.8 (3.5, 4.0)	5.5 (5.1, 5.8)	--		0.2 (0.1, 0.2)	0.3 (0.2, 0.4)	--	
2005-2011	3.6 (3.2, 3.9)	--	--		0.1 (0.1, 0.3)	--	--	
30-34				<0.001				<0.001
1975-1984	7.0 (6.5, 7.6)	9.8 (9.2, 10.5)	13.2 (12.5, 13.9)		0.3 (0.2, 0.4)	0.9 (0.7, 1.1)	2.7 (2.4, 3.1)	
1985-1994	5.9 (5.5, 6.3)	8.7 (8.2, 9.1)	11.8 (11.2, 12.3)		0.3 (0.2, 0.4)	0.7 (0.5, 0.8)	2.0 (1.8, 2.3)	
1995-2004	4.7 (4.5, 5.0)	7.0 (6.7, 7.4)	--		0.2 (0.1, 0.3)	0.5 (0.4, 0.6)	--	
2005-2011	4.3 (4.0, 4.7)	--	--		0.3 (0.2, 0.4)	--	--	
35-39				<0.001				<0.001
1975-1984	8.8 (8.3, 9.4)	12.7 (12.1, 13.4)	17.2 (16.5, 18.0)		0.5 (0.3, 0.6)	1.1 (0.9, 1.3)	3.6 (3.2, 3.9)	
1985-1994	6.9 (6.6, 7.3)	10.1 (9.7, 10.6)	14.1 (13.6, 14.6)		0.4 (0.3, 0.4)	0.9 (0.8, 1.0)	2.6 (2.4, 2.9)	
1995-2004	5.8 (5.6, 6.0)	8.7 (8.4, 9.0)	--		0.3 (0.3, 0.4)	0.8 (0.7, 0.9)	--	
2005-2011	4.9 (4.7, 5.3)	--	--		0.4 (0.3, 0.5)	--	--	
Sex								
Women				<0.001				<0.001
1975-1984	7.0 (6.7, 7.4)	10.1 (9.7, 10.5)	13.5 (13.0, 14.0)		0.4 (0.3, 0.5)	0.9 (0.8, 1.1)	2.7 (2.5, 2.9)	
1985-1994	5.8 (5.5, 6.0)	8.6 (8.3, 8.9)	11.8 (11.4, 12.2)		0.3 (0.2, 0.3)	0.7 (0.6, 0.8)	2.0 (1.8, 2.2)	

1995-2004	4.9 (4.8, 5.1)	7.4 (7.2, 7.6)	--		0.2 (0.2, 0.3)	0.6 (0.5, 0.6)	--	
2005-2011	4.3 (4.1, 4.5)	--	--		0.3 (0.2, 0.3)	--	--	
Men				<0.001				0.19
1975-1984	6.4 (6.0, 6.9)	9.0 (8.5, 9.5)	12.6 (12.0, 13.2)		0.2 (0.1, 0.3)	0.6 (0.5, 0.8)	2.4 (2.1, 2.7)	
1985-1994	5.3 (5.0, 5.6)	7.6 (7.2, 8.0)	10.5 (10.1, 11.0)		0.3 (0.2, 0.3)	0.6 (0.5, 0.7)	2.1 (1.9, 2.3)	
1995-2004	4.3 (4.1, 4.5)	6.2 (6.0, 6.5)	--		0.3 (0.2, 0.3)	0.6 (0.5, 0.6)	--	
2005-2011	4.0 (3.8, 4.3)	--	--		0.3 (0.2, 0.3)	--	--	
Race								
White				<0.001				<0.001
1975-1984	6.7 (6.4, 7.0)	9.6 (9.2, 9.9)	13.0 (12.6, 13.4)		0.3 (0.2, 0.3)	0.8 (0.7, 0.9)	2.5 (2.3, 2.7)	
1985-1994	5.3 (5.1, 5.5)	7.8 (7.6, 8.1)	10.8 (10.5, 11.1)		0.3 (0.2, 0.3)	0.6 (0.6, 0.7)	2.0 (1.8, 2.1)	
1995-2004	4.4 (4.3, 4.6)	6.6 (6.4, 6.7)	--		0.2 (0.2, 0.3)	0.5 (0.5, 0.6)	--	
2005-2011	3.9 (3.7, 4.0)	--	--		0.3 (0.2, 0.3)	--	--	
Black				<0.001				0.07
1975-1984	8.8 (7.7, 10.0)	12.2 (10.9, 13.6)	16.6 (15.1, 18.1)		0.6 (0.4, 1.0)	1.2 (0.8, 1.7)	3.6 (2.9, 4.4)	
1985-1994	9.3 (8.4, 10.3)	13.3 (12.2, 14.4)	18.0 (16.7, 19.2)		0.4 (0.2, 0.6)	0.9 (0.7, 1.3)	2.8 (2.3, 3.4)	
1995-2004	7.4 (6.9, 7.9)	10.6 (10.0, 11.3)	--		0.3 (0.2, 0.5)	0.8 (0.6, 1.0)	--	
2005-2011	7.0 (6.3, 7.7)	--	--		0.3 (0.2, 0.6)	--	--	
Other/unknown				0.18				0.54
1975-1984	5.3 (4.4, 6.4)	8.1 (6.9, 9.4)	11.2 (9.8, 12.6)		0.3 (0.1, 0.7)	0.6 (0.3, 1.0)	2.3 (1.7, 3.1)	
1985-1994	5.0 (4.4, 5.7)	7.4 (6.6, 8.2)	10.5 (9.5, 11.5)		0.2 (0.1, 0.4)	0.5 (0.3, 0.8)	2.0 (1.6, 2.6)	
1995-2004	4.4 (4.0, 4.9)	6.9 (6.4, 7.5)	--		0.3 (0.2, 0.4)	0.5 (0.4, 0.7)	--	
2005-2011	4.3 (3.8, 4.9)	--	--		0.2 (0.1, 0.4)	--	--	

* P-value from Gray's test comparing cumulative mortality curves. All tests were two-sided.

Supplementary Table 4. Cumulative mortality (95% CI) from noncancer/nonexternal causes according to diagnosis year among five-year AYA cancer survivors, stratified by cancer type, age, sex, and race

Characteristic	Noncancer/nonexternal mortality			p *
	5-year	10-year	20-year	
Cancer type				
Leukemia				0.04
1975-1984	3.3 (2.0, 4.9)	5.2 (3.6, 7.2)	8.7 (6.5, 11.1)	
1985-1994	2.9 (2.0, 4.0)	4.2 (3.1, 5.5)	9.1 (7.5, 11.0)	
1995-2004	1.1 (0.8, 1.5)	2.8 (2.2, 3.5)	--	
2005-2011	1.4 (1.0, 1.9)	--	--	
Non-Hodgkin lymphoma				0.16
1975-1984	1.5 (0.9, 2.3)	3.4 (2.45, 4.4)	7.3 (6.0, 8.8)	
1985-1994	1.6 (1.2, 2.2)	3.1 (2.5, 3.9)	6.7 (5.7, 7.8)	
1995-2004	1.2 (1.0, 1.5)	2.6 (2.2, 3.1)	--	
2005-2011	1.1 (0.8, 1.6)	--	--	
Hodgkin lymphoma				<0.001
1975-1984	1.7 (1.3, 2.3)	3.9 (3.2, 4.6)	9.4 (8.4, 10.5)	
1985-1994	1.1 (0.8, 1.5)	2.5 (2.1, 3.0)	7.5 (6.7, 8.4)	
1995-2004	0.8 (0.6, 1.0)	2.0 (1.7, 2.4)	--	
2005-2011	0.6 (0.4, 0.9)	--	--	
Central nervous system				0.04
1975-1984	1.5 (0.9, 2.4)	3.0 (2.1, 4.2)	7.9 (6.4, 9.6)	
1985-1994	1.1 (0.7, 1.7)	2.6 (2.0, 3.4)	6.9 (5.7, 8.2)	
1995-2004	1.0 (0.7, 1.3)	1.9 (1.5, 2.4)	--	
2005-2011	1.3 (0.8, 1.9)	--	--	
Osseous and chondromatous				0.55
1975-1984	1.1 (0.4, 2.6)	1.9 (0.8, 3.7)	4.3 (2.6, 6.8)	
1985-1994	0.7 (0.2, 1.6)	1.2 (0.5, 2.3)	3.7 (2.3, 5.4)	
1995-2004	0.8 (0.4, 1.4)	1.5 (0.9, 2.4)	--	
2005-2011	0.6 (0.2, 1.7)	--	--	
Soft tissue sarcomas				0.43
1975-1984	0.7 (0.3, 1.2)	1.7 (1.1, 2.6)	4.2 (3.2, 5.4)	
1985-1994	0.9 (0.6, 1.5)	1.8 (1.2, 2.5)	3.7 (2.8, 4.7)	
1995-2004	0.8 (0.5, 1.1)	1.4 (1.0, 1.8)	--	
2005-2011	0.5 (0.3, 0.9)	--	--	
Germ cell and trophoblastic				<0.001
1975-1984	0.6 (0.3, 0.9)	1.9 (1.5, 2.4)	5.3 (4.6, 6.1)	
1985-1994	0.8 (0.6, 1.1)	1.8 (1.5, 2.1)	4.3 (3.7, 4.8)	
1995-2004	0.4 (0.3, 0.5)	1.1 (0.9, 1.3)	--	
2005-2011	0.5 (0.4, 0.7)	--	--	
Melanoma/skin				0.49
1975-1984	0.3 (0.2, 0.5)	0.7 (0.5, 1.0)	1.8 (1.5, 2.3)	
1985-1994	0.4 (0.2, 0.5)	0.7 (0.5, 0.9)	2.1 (1.8, 2.5)	
1995-2004	0.3 (0.2, 0.4)	0.8 (0.6, 0.9)	--	
2005-2011	0.4 (0.3, 0.6)	--	--	
Thyroid				0.07
1975-1984	0.4 (0.3, 0.7)	0.9 (0.7, 1.3)	2.6 (2.1, 3.2)	
1985-1994	0.2 (0.1, 0.4)	0.5 (0.3, 0.7)	2.3 (1.8, 2.7)	

1995-2004	0.3 (0.3, 0.5)	0.9 (0.8, 1.1)	--	
2005-2011	0.2 (0.1, 0.4)	--	--	
Head and neck				0.08
1975-1984	1.8 (1.1, 2.8)	4.0 (2.8, 5.4)	8.7 (7.0, 10.6)	
1985-1994	1.1 (0.7, 1.8)	3.0 (2.2, 4.1)	7.6 (6.1, 9.2)	
1995-2004	1.4 (1.0, 1.9)	2.8 (2.1, 3.5)	--	
2005-2011	1.0 (0.5, 1.8)	--	--	
Trachea, lung, and bronchus				0.22
1975-1984	2.9 (1.4, 5.2)	6.4 (4.0, 9.4)	11.2 (8.0, 14.9)	
1985-1994	2.4 (1.3, 4.3)	3.4 (2.0, 5.5)	9.1 (6.5, 12.3)	
1995-2004	1.8 (1.0, 3.0)	4.0 (2.7, 5.7)	--	
2005-2011	0.8 (0.3, 1.8)	--	--	
Female breast				<0.001
1975-1984	0.7 (0.5, 0.9)	1.2 (0.9, 1.6)	3.5 (3.0, 4.0)	
1985-1994	0.5 (0.4, 0.7)	1.1 (0.9, 1.3)	2.9 (2.5, 3.3)	
1995-2004	0.7 (0.6, 0.9)	1.5 (1.3, 1.7)	--	
2005-2011	0.6 (0.4, 0.7)	--	--	
Kidney				0.49
1975-1984	3.2 (1.6, 5.78)	5.0 (2.9, 8.0)	9.8 (6.6, 13.6)	
1985-1994	1.9 (1.0, 3.3)	4.3 (2.8, 6.1)	8.1 (6.0, 10.6)	
1995-2004	1.9 (1.3, 2.6)	3.9 (3.0, 5.0)	--	
2005-2011	1.4 (0.9, 2.1)	--	--	
Bladder				0.26
1975-1984	0.6 (0.2, 1.4)	1.7 (1.0, 2.9)	3.9 (2.7, 5.6)	
1985-1994	0.5 (0.2, 1.1)	1.8 (1.0, 2.8)	5.4 (4.0, 7.2)	
1995-2004	0.9 (0.5, 1.5)	2.1 (1.4, 3.1)	--	
2005-2011	0.1 (0.0, 0.6)	--	--	
Cervix/uterus				0.29
1975-1984	0.8 (0.5, 1.1)	1.7 (1.3, 2.2)	6.3 (5.5, 7.2)	
1985-1994	0.7 (0.4, 0.9)	1.5 (1.1, 1.9)	5.7 (4.9, 6.5)	
1995-2004	0.9 (0.7, 1.1)	2.0 (1.6, 2.3)	--	
2005-2011	1.1 (0.7, 1.5)	--	--	
Colorectal				0.61
1975-1984	1.7 (1.0, 2.7)	2.7 (1.8, 3.8)	6.6 (5.2, 8.4)	
1985-1994	1.4 (0.9, 2.1)	2.3 (1.6, 3.2)	6.1 (4.9, 7.5)	
1995-2004	1.1 (0.8, 1.4)	2.2 (1.8, 2.8)	--	
2005-2011	1.2 (0.8, 1.7)	--	--	
Age at diagnosis				
15-24				<0.001
1975-1984	0.7 (0.5, 0.9)	1.4 (1.1, 1.7)	3.6 (3.2, 4.1)	
1985-1994	0.6 (0.4, 0.7)	1.1 (0.9, 1.3)	2.9 (2.5, 3.3)	
1995-2004	0.5 (0.4, 0.6)	0.9 (0.8, 1.1)	--	
2005-2011	0.6 (0.5, 0.8)	--	--	
25-29				0.003
1975-1984	0.8 (0.6, 1.0)	1.7 (1.4, 2.0)	4.3 (3.8, 4.8)	
1985-1994	0.7 (0.5, 0.9)	1.5 (1.2, 1.7)	3.8 (3.4, 4.2)	
1995-2004	0.5 (0.4, 0.6)	1.2 (1.0, 1.4)	--	
2005-2011	0.5 (0.4, 0.7)	--	--	
30-34				<0.001

1975-1984	0.9 (0.7, 1.1)	2.0 (1.7, 2.3)	5.0 (4.6, 5.5)	
1985-1994	0.7 (0.6, 0.9)	1.6 (1.4, 1.8)	4.3 (3.9, 4.7)	
1995-2004	0.7 (0.6, 0.8)	1.5 (1.4, 1.7)	--	
2005-2011	0.6 (0.4, 0.7)	--	--	
35-39				0.003
1975-1984	1.2 (1.0, 1.5)	2.7 (2.4, 3.0)	6.8 (6.3, 7.3)	
1985-1994	1.1 (1.0, 1.3)	2.2 (2.0, 2.4)	6.0 (5.6, 6.4)	
1995-2004	1.0 (1.0, 1.1)	2.3 (2.1, 2.5)	--	
2005-2011	1.0 (0.8, 1.1)	--	--	
Sex				
Women				0.006
1975-1984	0.8 (0.7, 0.9)	1.6 (1.4, 1.7)	4.2 (4.0, 4.5)	
1985-1994	0.7 (0.6, 0.8)	1.3 (1.2, 1.5)	3.8 (3.6, 4.0)	
1995-2004	0.7 (0.6, 0.7)	1.5 (1.4, 1.6)	--	
2005-2011	0.6 (0.5, 0.7)	--	--	
Men				<0.001
1975-1984	1.2 (1.1, 1.5)	2.8 (2.6, 3.2)	6.7 (6.2, 7.2)	
1985-1994	1.2 (1.0, 1.3)	2.4 (2.2, 2.6)	5.9 (5.6, 6.3)	
1995-2004	0.9 (0.8, 1.0)	2.0 (1.9, 2.2)	--	
2005-2011	0.9 (0.7, 1.0)	--	--	
Race				
White				<0.001
1975-1984	0.8 (0.7, 0.9)	1.8 (1.6, 2.0)	4.7 (4.4, 4.9)	
1985-1994	0.8 (0.7, 0.9)	1.6 (1.5, 1.7)	4.2 (4.0, 4.4)	
1995-2004	0.7 (0.6, 0.7)	1.5 (1.5, 1.6)	--	
2005-2011	0.7 (0.6, 0.8)	--	--	
Black				0.05
1975-1984	2.3 (1.7, 2.9)	4.5 (3.7, 5.4)	10.3 (9.1, 11.5)	
1985-1994	1.8 (1.4, 2.2)	3.5 (3.0, 4.2)	9.2 (8.2, 10.2)	
1995-2004	1.5 (1.3, 1.8)	3.2 (2.8, 3.6)	--	
2005-2011	1.4 (1.1, 1.7)	--	--	
Other/unknown				<0.001
1975-1984	1.2 (0.8, 1.8)	2.3 (1.7, 3.1)	5.8 (4.8, 6.9)	
1985-1994	0.7 (0.5, 1.0)	1.7 (1.3, 2.1)	4.4 (3.7, 5.1)	
1995-2004	0.6 (0.5, 0.8)	1.4 (1.2, 1.7)	--	
2005-2011	0.4 (0.3, 0.6)	--	--	

* P-value from Gray's test comparing cumulative mortality curves. All tests were two-sided.

Supplementary Table 5. Hazard ratios for mortality between five and ten years-postdiagnosis according to calendar year of diagnosis among five-year AYA cancer survivors, stratified by cancer type

Cancer type	Primary cancer sHR (95% CI)*	Other cancer sHR (95% CI)*	Noncancer/nonexternal sHR (95% CI)*
Leukemia †			
1975-1984	1	1	1
1985-1994	0.44 (0.35, 0.56)	0.37 (0.12, 1.17)	0.85 (0.48, 1.50)
1995-2004	0.22 (0.18, 0.28)	0.13 (0.04, 0.41)	0.31 (0.17, 0.54)
2005-2011	0.18 (0.14, 0.22)	0.15 (0.04, 0.50)	0.48 (0.27, 0.83)
p-trend §	<0.001	<0.001	<0.001
Non-Hodgkin lymphoma †			
1975-1984	1	1	1
1985-1994	0.65 (0.52, 0.82)	0.78 (0.22, 2.75)	1.05 (0.60, 1.82)
1995-2004	0.29 (0.23, 0.36)	1.02 (0.35, 3.00)	0.74 (0.44, 1.23)
2005-2011	0.18 (0.14, 0.24)	0.66 (0.19, 2.28)	0.57 (0.32, 1.03)
p-trend §	<0.001	0.53	0.007
Hodgkin lymphoma †			
1975-1984	1	1	1
1985-1994	0.50 (0.40, 0.62)	1.44 (0.51, 4.07)	0.62 (0.42, 0.93)
1995-2004	0.34 (0.28, 0.42)	0.75 (0.26, 2.17)	0.41 (0.28, 0.60)
2005-2011	0.25 (0.19, 0.32)	0.92 (0.30, 2.87)	0.33 (0.21, 0.52)
p-trend §	<0.001	0.32	<0.001
Central nervous system †			
1975-1984	1	1	1
1985-1994	0.67 (0.57, 0.79)	3.83 (0.47, 31.45)	0.68 (0.35, 1.31)
1995-2004	0.63 (0.55, 0.74)	1.80 (0.23, 14.46)	0.57 (0.32, 1.04)
2005-2011	0.61 (0.52, 0.72)	1.57 (0.16, 15.64)	0.62 (0.33, 1.19)
p-trend §	<0.001	0.71	0.15
Osseous and chondromatous ‡			
1975-1984	1	1	1
1985-1994	0.95 (0.61, 1.50)	0.28 (0.03, 3.19)	0.56 (0.14, 2.26)
1995-2004	1.02 (0.68, 1.52)	1.35 (0.28, 6.40)	0.65 (0.20, 2.10)
2005-2011	0.91 (0.59, 1.39)	1.21 (0.23, 6.50)	0.33 (0.07, 1.63)
p-trend §	0.80	0.45	0.33
Soft tissue sarcomas ‡			
1975-1984	1	1	1
1985-1994	1.12 (0.82, 1.54)	0.88 (0.28, 2.76)	1.25 (0.54, 2.92)
1995-2004	0.91 (0.68, 1.22)	1.30 (0.49, 3.46)	1.09 (0.49, 2.41)
2005-2011	1.01 (0.73, 1.39)	1.16 (0.38, 3.49)	0.72 (0.29, 1.80)
p-trend §	0.48	0.60	0.76
Germ cell and trophoblastic ‡			
1975-1984	1	1	1
1985-1994	1.09 (0.66, 1.80)	2.32 (0.66, 8.14)	1.44 (0.83, 2.48)
1995-2004	0.69 (0.42, 1.13)	1.25 (0.36, 4.37)	0.71 (0.41, 1.23)
2005-2011	0.71 (0.41, 1.21)	2.64 (0.74, 9.42)	1.00 (0.57, 1.76)
p-trend §	0.04	0.48	0.05
Melanoma/skin ‡			
1975-1984	1	1	1

1985-1994	0.75 (0.62, 0.90)	0.80 (0.28, 2.31)	1.14 (0.58, 2.24)
1995-2004	0.47 (0.39, 0.56)	0.82 (0.32, 2.09)	0.86 (0.46, 1.61)
2005-2011	0.46 (0.38, 0.57)	0.87 (0.31, 2.39)	1.36 (0.70, 2.63)
p-trend §	<0.001	0.60	0.62
Thyroid ‡			
1975-1984	1	1	1
1985-1994	0.91 (0.40, 2.07)	0.56 (0.25, 1.26)	0.53 (0.25, 1.13)
1995-2004	0.81 (0.39, 1.67)	0.44 (0.22, 0.89)	0.77 (0.43, 1.39)
2005-2011	0.62 (0.28, 1.36)	0.46 (0.22, 0.97)	0.50 (0.25, 0.98)
p-trend §	0.35	0.03	0.26
Head and neck ‡			
1975-1984	1	1	1
1985-1994	1.03 (0.71, 1.49)	1.34 (0.34, 5.27)	0.64 (0.31, 1.32)
1995-2004	0.74 (0.52, 1.05)	0.30 (0.06, 1.51)	0.75 (0.41, 1.39)
2005-2011	0.58 (0.38, 0.89)	0.72 (0.15, 3.41)	0.31 (0.12, 0.84)
p-trend §	0.001	0.14	0.06
Trachea, lung, and bronchus ‡			
1975-1984	1	1	1
1985-1994	0.38 (0.07, 2.16)	NC	NC
1995-2004	0.35 (0.06, 1.96)	NC	NC
2005-2011	0.36 (0.06, 2.01)	NC	NC
p-trend §	0.42	NC	NC
Female breast ‡			
1975-1984	1	1	1
1985-1994	0.83 (0.75, 0.91)	0.68 (0.36, 1.28)	0.72 (0.46, 1.15)
1995-2004	0.67 (0.61, 0.73)	0.54 (0.31, 0.96)	1.01 (0.69, 1.48)
2005-2011	0.54 (0.49, 0.59)	0.44 (0.22, 0.87)	0.75 (0.49, 1.16)
p-trend §	<0.001	0.003	0.65
Kidney ‡			
1975-1984	1	1	1
1985-1994	0.91 (0.49, 1.71)	NC	0.56 (0.23, 1.38)
1995-2004	0.58 (0.33, 1.02)	NC	0.53 (0.25, 1.12)
2005-2011	0.61 (0.34, 1.10)	NC	0.44 (0.20, 0.97)
p-trend §	0.03	NC	0.33
Bladder ‡			
1975-1984	1	1	1
1985-1994	0.54 (0.22, 1.32)	NC	0.89 (0.21, 3.79)
1995-2004	0.68 (0.33, 1.42)	NC	1.39 (0.42, 4.58)
2005-2011	1.10 (0.49, 2.47)	NC	0.29 (0.04, 2.37)
p-trend §	0.67	NC	0.93
Cervix/uterus ‡			
1975-1984	1	1	1
1985-1994	0.88 (0.63, 1.22)	0.31 (0.14, 0.71)	0.76 (0.44, 1.30)
1995-2004	0.84 (0.63, 1.12)	0.40 (0.21, 0.75)	0.97 (0.61, 1.54)
2005-2011	1.01 (0.74, 1.38)	0.49 (0.23, 1.04)	0.97 (0.57, 1.64)
p-trend §	0.93	0.07	0.67
Colorectal ‡			
1975-1984	1	1	1

1985-1994	1.06 (0.78, 1.44)	1.82 (0.48, 6.88)	0.77 (0.40, 1.48)
1995-2004	1.07 (0.82, 1.40)	1.24 (0.36, 4.27)	0.57 (0.32, 1.01)
2005-2011	1.08 (0.82, 1.42)	0.81 (0.20, 3.28)	0.61 (0.33, 1.13)
p-trend [§]	0.58	0.40	0.16

Abbreviations: NC, not calculated due to small number of events

* Subdistribution hazard ratios estimated from Fine and Gray models

† Estimates adjusted for sex, age at diagnosis, race

‡ Estimates adjusted for sex, age at diagnosis, race, and stage

§ P-value from diagnosis year modeled as a continuous variable. All tests were two-sided.

Supplemental Figure 1. Cumulative mortality from all causes among five-year AYA survivors of selected cancers. a) Osseous and chondromatous neoplasms, b) Germ cell and trophoblastic neoplasms, c) Soft tissue sarcomas, d) Thyroid cancer, e) Head and neck cancers, f) Trachea, lung, and bronchus cancers, g) Kidney cancer, h) Bladder cancer



