

**Supplemental Table S6.** Hazard Ratios of Subsequent Primary Cancer Risk in Thyroid Cancer Patients Undergoing Completion/Total Thyroidectomy according to Levothyroxine Dosage ( $n=260,701$ )

Variable	Total no.	Non-levothyroxine		Levothyroxine		Levothyroxine dosage							
		No.	HR	No.	HR (95% CI) <sup>a</sup>	Q1 (<100 µg/day)		Q2 (100–123 µg/day)		Q3 (124–149 µg/day)		Q4 (≥ 150 µg/day)	
						No.	HR (95% CI) <sup>a</sup>	No.	HR (95% CI) <sup>a</sup>	No.	HR (95% CI) <sup>a</sup>	No.	HR (95% CI) <sup>a</sup>
No.	260,701	5,285		255,416		63,846		63,871		63,845		63,854	
Total SPCs	14,535	232	1.00	14,303	1.05 (0.92–1.20)	2,766	0.90 (0.78–1.03)	3,612	1.11 (0.96–1.27)	3,805	1.12 (0.98–1.29)	4,120	1.25 (1.09–1.44)
Head and neck (C00–C14, C30–C32)	706	10	1.00	696	1.19 (0.63–2.23)	98	0.90 (0.46–1.77)	173	1.17 (0.60–2.28)	197	1.24 (0.64–2.41)	228	1.73 (0.90–3.33)
Digestive system (C15–C26)	4,717	63	1.00	4,654	1.28 (1.00–1.65)	842	0.99 (0.76–1.29)	1,136	1.29 (0.99–1.68)	1,228	1.34 (1.03–1.74)	1,448	1.72 (1.32–2.23)
GI tract (C15–C20)	2,936	43	1.00	2,893	1.14 (0.84–1.54)	553	0.97 (0.7–1.33)	691	1.12 (0.81–1.55)	776	1.20 (0.87–1.65)	873	1.36 (0.99–1.86)
Esophagus (C15)	85	5	1.00	80	0.31 (0.12–0.79)	12	0.33 (0.11–10.0)	13	0.40 (0.13–1.24)	21	0.22 (0.07–0.71)	34	0.39 (0.14–1.10)
Stomach (C16)	1,426	20	1.00	1,406	1.20 (0.77–1.87)	258	0.99 (0.62–1.59)	339	1.28 (0.80–2.05)	370	1.18 (0.74–1.89)	439	1.40 (0.88–2.22)
Colon and rectum (C18–C20)	1,376	19	1.00	1,357	1.18 (0.75–1.86)	273	1.03 (0.64–1.65)	325	1.01 (0.62–1.65)	370	1.34 (0.83–2.16)	389	1.42 (0.88–2.29)
Hepato-biliary-pancreatic (C22–C25)	1,315	17	1.00	1,298	1.34 (0.83–2.17)	225	1.02 (0.62–1.70)	308	1.32 (0.80–2.19)	341	1.33 (0.80–2.20)	424	1.95 (1.19–3.21)
Liver and biliary tract (C22–C24)	942	15	1.00	927	1.11 (0.66–1.85)	156	0.88 (0.51–1.52)	216	1.12 (0.65–1.94)	247	1.12 (0.65–1.92)	308	1.59 (0.93–2.71)
Pancreas (C25)	402	2	1.00	400	3.27 (0.81–13.17)	75	2.32 (0.56–9.58)	99	3.09 (0.75–12.74)	98	3.03 (0.73–12.54)	128	5.04 (1.23–20.62)
Lung (C34)	1,801	32	1.00	1,769	0.83 (0.58–1.18)	341	0.72 (0.50–1.06)	424	0.86 (0.59–1.25)	445	0.79 (0.54–1.16)	559	1.00 (0.69–1.45)
Skin (C43–C44)	378	6	1.00	372	0.99 (0.44–2.23)	72	0.78 (0.33–1.85)	107	1.23 (0.52–2.88)	92	0.96 (0.41–2.27)	101	1.18 (0.50–2.77)
Breast (C50)	3,537	58	1.00	3,479	1.07 (0.82–1.39)	796	0.99 (0.75–1.30)	984	1.10 (0.83–1.44)	975	1.13 (0.86–1.50)	724	1.10 (0.83–1.46)
Female genital system (C51–C58)	1,092	19	1.00	1,073	0.90 (0.57–1.43)	232	0.73 (0.45–1.18)	292	0.82 (0.50–1.33)	282	1.04 (0.64–1.69)	267	1.22 (0.75–1.99)
Cervix (C53)	364	8	1.00	356	0.77 (0.38–1.56)	77	0.58 (0.27–1.22)	99	0.73 (0.34–1.56)	99	0.91 (0.43–1.94)	81	1.04 (0.49–2.23)
Uterus (C54–C55)	387	4	1.00	383	1.55 (0.58–4.18)	85	1.30 (0.47–3.60)	104	1.44 (0.52–4.03)	94	1.77 (0.63–4.93)	100	1.90 (0.68–5.32)
Ovary (C56–C57)	385	7	1.00	378	0.81 (0.38–1.74)	80	0.73 (0.33–1.60)	102	0.67 (0.30–1.51)	105	0.94 (0.42–2.11)	91	1.12 (0.50–2.50)
Male genital system (C60–C63)	493	11	1.00	482	0.77 (0.42–1.41)	50	0.78 (0.40–1.52)	84	0.81 (0.41–1.62)	128	0.78 (0.40–1.49)	220	0.71 (0.38–1.34)
Prostate (C61)	486	11	1.00	475	0.75 (0.41–1.38)	49	0.76 (0.39–1.48)	82	0.78 (0.39–1.56)	127	0.78 (0.40–1.49)	217	0.69 (0.36–1.30)
Urinary system (C64–C68)	829	7	1.00	822	1.99 (0.94–4.22)	149	2.04 (0.95–4.42)	198	1.93 (0.89–4.22)	219	2.34 (1.08–5.06)	256	1.83 (0.85–3.96)
Kidney (C64)	546	3	1.00	543	3.11 (1.00–9.72)	99	3.13 (0.98–10.00)	142	3.24 (1.01–10.45)	134	3.18 (0.99–10.22)	168	3.10 (0.97–9.93)
Bladder (C67)	247	4	1.00	243	1.00 (0.37–2.70)	37	0.99 (0.34–2.89)	48	0.85 (0.29–2.50)	74	1.43 (0.0–4.05)	84	0.83 (0.29–2.39)
Brain, CNS (C70–C72)	271	2	1.00	269	1.97 (0.49–7.97)	33	1.21 (0.28–5.24)	57	2.12 (0.50–8.93)	78	2.47 (0.59–10.36)	101	2.64 (0.63–11.04)
Brain (C71)	224	2	1.00	222	1.73 (0.43–7.03)	24	1.03 (0.23–4.56)	48	1.86 (0.44–7.94)	69	2.35 (0.56–9.86)	81	2.30 (0.55–9.70)
Hematologic system (C81–C96)	944	25	1.00	919	0.62 (0.41–0.93)	169	0.54 (0.35–0.84)	211	0.74 (0.48–1.16)	238	0.64 (0.41–0.99)	301	0.64 (0.41–0.99)
Non-Hodgkin's lymphoma (C82–C86)	401	19	1.00	382	0.39 (0.24–0.63)	83	0.38 (0.23–0.65)	98	0.51 (0.30–0.88)	102	0.41 (0.24–0.70)	99	0.32 (0.19–0.57)
Multiple myeloma (C90)	127	0	1.00	127	-	22	-	29	-	33	-	43	-
Leukemia (C91–C95)	329	2	1.00	327	1.97 (0.49–7.98)	36	1.15 (0.27–4.97)	69	2.35 (0.56–9.90)	86	2.15 (0.51–9.09)	136	2.60 (0.62–10.88)

HR, hazard ratio; CI, confidence interval; SPC, subsequent primary cancer; C, diagnostic code by International Classification of Diseases (ICD)-10; GI, gastrointestinal; CNS, central nervous system.

<sup>a</sup>HR estimated by Cox proportional hazard models adjusted for age, sex, and cumulative doses of radioactive iodine therapy.