

**Supplemental Table S9.** Hazard Ratios of Subsequent Primary Cancer Risk in Thyroid Cancer Patients with Medication Possession Ratio  $\geq 80\%$ , according to Levothyroxine Dosage ( $n=269,859$ )

Variable	Total no.		Non-levothyroxine		Levothyroxine		Levothyroxine dosage							
	No.	HR	No.	HR (95% CI) <sup>a</sup>	No.	HR (95% CI) <sup>a</sup>	Q1 (<100 µg/day)		Q2 (100–123 µg/day)		Q3 (124–149 µg/day)		Q4 ( $\geq 150$ 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.	269,859	22,595	247,264	61,830	61,806	61,811								
Total SPCs	13,946	849	13,097	1.09 (1.01–1.17)	2,184	0.89 (0.82–0.97)	3,214	1.07 (0.99–1.17)	3,685	1.20 (1.10–1.31)	4,014	1.44 (1.32–1.57)		
Head and neck (C00–C14, C30–C32)	679	49	630	0.88 (0.65–1.19)	63	0.51 (0.34–0.75)	152	0.92 (0.63–1.33)	188	1.06 (0.74–1.54)	227	1.51 (1.06–2.16)		
Digestive system (C15–C26)	4,387	230	4,157	1.27 (1.11–1.46)	610	0.95 (0.81–1.11)	1,004	1.19 (1.01–1.39)	1,191	1.56 (1.33–1.82)	1,352	1.79 (1.53–2.10)		
GI tract (C15–C20)	2,742	150	2,592	1.22 (1.03–1.45)	399	0.97 (0.80–1.18)	629	1.18 (0.97–1.44)	729	1.44 (1.18–1.75)	835	1.57 (1.29–1.92)		
Esophagus (C15)	84	10	74	0.61 (0.3–1.22)	11	0.55 (0.22–1.35)	13	0.68 (0.26–1.77)	15	0.45 (0.16–1.26)	35	0.83 (0.36–1.93)		
Stomach (C16)	1,339	75	1,264	1.19 (0.94–1.52)	185	0.94 (0.71–1.24)	300	1.13 (0.85–1.51)	365	1.43 (1.08–1.90)	414	1.50 (1.13–1.99)		
Colon and rectum (C18–C20)	1,278	63	1,215	1.34 (1.04–1.74)	198	1.08 (0.80–1.45)	306	1.30 (0.96–1.75)	335	1.53 (1.13–2.06)	376	1.77 (1.31–2.39)		
Hepato-biliary-pancreatic (C22–C25)	1,258	58	1,200	1.49 (1.14–1.95)	184	1.20 (0.89–1.63)	262	1.09 (0.79–1.50)	347	1.86 (1.38–2.52)	407	2.27 (1.68–3.06)		
Liver and biliary tract (C22–C24)	885	44	841	1.37 (1.00–1.87)	126	1.07 (0.75–1.53)	172	1.02 (0.69–1.49)	259	1.94 (1.37–2.74)	284	1.90 (1.34–2.71)		
Pancreas (C25)	395	15	380	1.81 (1.07–3.06)	61	1.59 (0.89–2.85)	97	1.32 (0.73–2.40)	91	1.57 (0.86–2.86)	131	3.30 (1.87–5.81)		
Lung (C34)	1,715	109	1,606	0.94 (0.77–1.16)	249	0.78 (0.62–0.99)	397	0.94 (0.74–1.20)	422	0.94 (0.74–1.21)	538	1.22 (0.96–1.56)		
Skin (C43–C44)	375	32	343	0.72 (0.50–1.06)	66	0.66 (0.42–1.03)	92	0.81 (0.52–1.28)	88	0.61 (0.37–0.99)	97	0.90 (0.56–1.46)		
Breast (C50)	3,502	211	3,291	1.13 (0.98–1.31)	679	1.02 (0.87–1.19)	889	1.11 (0.94–1.31)	998	1.19 (1.00–1.40)	725	1.38 (1.15–1.65)		
Female genital system (C51–C58)	1,002	55	947	1.08 (0.82–1.43)	175	0.93 (0.68–1.28)	251	0.97 (0.70–1.34)	279	1.21 (0.87–1.68)	242	1.63 (1.17–2.29)		
Cervix (C53)	316	19	297	1.06 (0.66–1.72)	55	0.83 (0.48–1.43)	84	1.01 (0.58–1.75)	96	1.38 (0.80–2.39)	62	1.37 (0.75–2.49)		
Uterus (C54–C55)	362	16	346	1.38 (0.82–2.30)	67	1.22 (0.70–2.15)	82	1.20 (0.67–2.14)	108	1.59 (0.89–2.83)	89	1.89 (1.03–3.46)		
Ovary (C56–C57)	361	22	339	0.92 (0.59–1.44)	57	0.80 (0.48–1.34)	98	0.88 (0.52–1.48)	88	0.85 (0.49–1.47)	96	1.58 (0.92–2.69)		
Male genital system (C60–C63)	487	41	446	0.91 (0.65–1.27)	53	1.01 (0.67–1.52)	55	0.86 (0.54–1.38)	117	0.87 (0.56–1.35)	221	0.87 (0.59–1.28)		
Prostate (C61)	480	40	440	0.92 (0.65–1.29)	51	1.00 (0.65–1.51)	55	0.88 (0.55–1.41)	115	0.89 (0.58–1.38)	219	0.88 (0.59–1.30)		
Urinary system (C64–C68)	816	48	768	1.16 (0.86–1.57)	130	1.19 (0.84–1.69)	165	1.17 (0.81–1.69)	193	1.00 (0.69–1.45)	280	1.35 (0.95–1.92)		
Kidney (C64)	544	25	519	1.52 (1.01–2.30)	91	1.59 (1.01–2.51)	120	1.68 (1.04–2.70)	128	1.18 (0.71–1.95)	180	1.71 (1.06–2.75)		
Bladder (C67)	240	18	222	0.88 (0.53–1.45)	33	0.85 (0.46–1.59)	39	0.74 (0.38–1.45)	57	0.88 (0.47–1.64)	93	1.11 (0.62–2.00)		
Brain, CNS (C70–C72)	252	13	239	1.14 (0.64–2.03)	24	0.62 (0.31–1.26)	44	1.05 (0.53–2.09)	60	1.18 (0.59–2.33)	111	2.31 (1.22–4.37)		
Brain (C71)	211	12	199	1.06 (0.58–1.94)	17	0.48 (0.22–1.04)	37	1.07 (0.52–2.18)	52	1.04 (0.50–2.16)	93	2.33 (1.20–4.54)		
Hematologic system (C81–C96)	928	69	859	0.89 (0.69–1.14)	132	0.63 (0.46–0.86)	199	1.06 (0.78–1.43)	235	1.02 (0.75–1.39)	293	1.01 (0.73–1.39)		
Non-Hodgkin's lymphoma (C82–C86)	395	40	355	0.73 (0.52–1.03)	60	0.51 (0.33–0.78)	97	0.97 (0.64–1.46)	100	0.83 (0.54–1.28)	98	0.74 (0.47–1.17)		
Multiple myeloma (C90)	128	6	122	1.48 (0.64–3.42)	22	0.96 (0.38–2.42)	27	1.67 (0.66–4.22)	36	1.60 (0.62–4.14)	37	1.39 (0.51–3.78)		
Leukemia (C91–C95)	319	14	305	1.09 (0.63–1.91)	23	0.53 (0.26–1.10)	61	1.06 (0.55–2.03)	83	1.55 (0.83–2.90)	138	1.60 (0.84–3.06)		

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.