

Table 2.14. Association between estrogen–progestogen oral contraceptives and other cancers

Reference, location	Age (years)	Cancer type	Oral contraceptive use	Cases	Controls/person years	Odds ratio (95% CI)	Comments
Nelson et al. (2001), Los Angeles, USA	18–75	Intermediate or high-grade B-cell non-Hodgkin lymphoma	Never	111	93	1.00	Matched, fitting education, place of birth
			Ever	66	84	0.47 (0.26–0.86)	
			< 5 years	43	53	0.50 (0.26–0.95)	
			≥ 5 years	21	29	0.35 (0.15–0.82)	
Glaser et al. (2003), San Francisco Bay Area, USA	19–79	Hodgkin lymphoma	Never	87	91	1.0	Multivariate parsimonious model that includes variables significant at $P < 0.10$ (reproductive history, socioeconomic status)
			≤ 2.2 years	91	79	1.2 (0.8–1.9)	
			2.3–5.3 years	72	73	0.9 (0.6–1.5)	
			> 5.3 years	62	82	0.8 (0.5–1.3)	
Vessey and Painter (2006), England and Scotland	25–39	Lymphoma/haemopoietic cancer	Never	47	–	1.0	OFPA cohort of 17 032 Caucasian women; adjusted for parity, social class, smoking
			Ever	83	–	1.1 (0.7–1.6)	
			< 4 years	23	–	1.1 (0.6–1.8)	
			4–8 years	28	–	1.0 (0.6–1.7)	
			> 8 years	32	–	1.1 (0.7–1.7)	
Schiff et al. (1998), Rochester, MN, USA	≥ 20	Central nervous system & lymphoma	Never	35	52	1.0	
			Ever	3	19	0.3	
Hannafoord et al. (2007)	–	Central nervous system or Pituitary	Never	15	–	1.00	
			Ever	34	–	1.34 (0.73–2.47)	
			< 4 years	3	–	1.70 (0.34–8.42)	
			4–8 years	5	–	3.73 (0.89–15.59)	
			> 8 years	6	–	5.51 (1.38–22.05)	

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Silvera et al. (2006)	–	Gliomas	Never	55	613 982	1.00	
			Ever	65	866 451	1.01 (0.68–1.52)	
			1–11 months	16	171 173	1.31 (0.72–40?)	
			12–35 months	10	195 102	0.85 (0.42–1.70)	
			36–71 months	16	211 472	0.92 (0.48–1.76)	
			≥ 72 months	23	288 755	1.01 (0.58–1.74)	
Wigertz et al. (2006)	20–69	Gliomas	Never	30	77	1.0	
			Ever	85	243	0.8 (0.5–1.4)	
			> 1 year	8	29	0.7 (0.3–1.9)	
			1–4 years	24	74	0.7 (0.4–1.4)	
			5–9 years	22	56	0.8 (0.4–1.6)	
			≥ 10 years	28	82	0.8 (0.4–1.5)	
Hatch et al. (2005)	–	Glioma	Never	102	170	1.00	
			Ever	100	258	0.66 (0.44–1.00)	
			< 1 year	19	47	0.69 (0.37–1.31)	
			1–4 years	39	96	0.68 (0.41–1.12)	
			5–9 years	15	60	0.40 (0.20–0.79)	
			≥ 10 years	22	47	0.85 (0.45–1.59)	
Gago-Dominguez et al. (1999), Los Angeles, USA	25–74	Renal cell cancer	Never	258	255	1.0	Adjusted for age, education, hysterectomy
			Ever	164	167	1.0 (0.7–1.4)	
Kabat et al. (2007a)	–	Renal cell cancer	Never	83	611 469	1.00	
			Ever	89	863 819	0.80 (0.58–1.09)	
			1–11 months	19	170 748	0.81 (0.48–1.35)	
			12–35 months	21	194 388	0.86 (0.53–1.40)	
			36–95 months	29	298 430	0.75 (0.49–1.17)	
			≥ 96 months	29	200 252	0.80 (0.48–1.31)	

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McGrath et al. (2006)	–	Bladder	Never	222	1 418 166	1.00	
			Ever	110	1 139 675	0.84 (0.65–1.08)	
			≤ 12 months	31	311 452	0.81 (0.55–1.20)	
			13–35 months	21	2 793 212	0.74 (0.47–1.19)	
			36–72 months	28	243 362	1.10 (0.73–1.66)	
			≥ 73 months	30	299 358	0.80 (0.54–1.19)	
Cantwell et al. (2006)	–	Bladder	Never	125	231 728	1.00	
			Ever	41	105 484	1.14 (0.77–1.70)	
			< 2 years	21	48 303	1.25 (0.76–2.04)	
			2–5 years	14	26 625	1.56 (0.87–2.78)	
			> 5 years	6	30 529	0.59 (0.25–1.37)	
Taioli & Wynder (1994), USA	20–89	Lung adeno-carcinoma	Never	134	229	1.0	RCGP cohort of 46 000 women
			Ever	46	74	0.8 (0.5–1.5)	
Hannafoord et al. (2007), United Kingdom	16–79	Lung	Never	91	–	1.00	
			Ever	206	–	1.05 (0.82–1.35)	
			< 4 years	24	–	1.12 (0.67–1.87)	
			4–8 years	15	–	0.74 (0.41–1.35)	
			> 8 years	28	–	1.35 (0.83–2.19)	

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Kreuzer et al. (2003), Germany	≤ 75	Lung	Never	528	557	1.00	Adjusted for age, region, education, smoking variables
			Ever	279	354	0.69 (0.51–0.92)	
			< 5 years	86	105	0.69 (0.46–1.03)	
			5–11 years	87	130	0.65 (0.44–0.95)	
			≥ 12 years	102	115	0.69 (0.47–1.02)	
			<i>Nonsmokers</i>				Adjusted for age, region, education, time since stopped smoking
			Never	–	–	1.00	
			Ever	–	–	1.18 (0.78–1.79)	
			<i>Smokers</i>				
			Never	–	–	1.00	
			Ever	–	–	0.50 (0.34–0.74)	
Vessey and Painter (2006), England and Scotland	25–39	Lung	Never	30	–	1.0	OFPA cohort of 17 032 Caucasian women; adjusted for parity, social class, smoking
			Ever	85	–	1.4 (0.9–2.1)	
			< 4 years	17	–	1.2 (0.6–2.3)	
			4–8 years	30	–	1.5 (0.8–2.5)	
			> 8 years	38	–	1.4 (0.8–2.3)	
Kabat et al. (2007b), Canada	40–59	Lung	Never	332	611 103	1.00	
			Ever	418	863 237	0.91 (0.78–1.06)	
			1–11 months	80	170 616	0.86 (0.67–1.10)	
			12–35 months	83	194 307	0.89 (0.68–1.12)	
			36–71 months	132	298 208	0.84 (0.68–1.04)	
			≥ 72 months	123	200 108	1.07 (0.87–1.33)	
Rosenblatt et al. (2008)	Born 1925–58	Lung	Never	742	2 048 263	1.00	
			Ever	82	353 284	0.87 (0.69–1.10)	
			< 1 year	25	134 223	0.96 (0.64–1.45)	
			1–4 years	29	133 484	0.77 (0.53–1.12)	
			5–9 years	14	42 667	1.05 (0.62–1.79)	
			≥ 10 years	14	42 417	0.83 (0.49–1.41)	

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Kreiger et al. (2001), Ontario, Canada	20–74	Pancreas	< 6 months ≥ 6 months	41 9	160 64	1.00 0.36 (0.13–0.96)	Multivariate, fitting age, oral contraceptives, hormonal menopausal therapy, obstetric history, body mass index, diet, smoking
Skinner et al. (2003), USA	30–55	Pancreas	Never Ever < 1 year 1–2.9 years 3–7.9 years ≥ 8 years	159 83 26 13 27 17	– – – – – –	1.00 1.21 (0.91–1.61) 1.45 (0.94–2.21) 0.78 (0.44–1.39) 1.38 (0.85–1.99) 1.26 (0.76–2.10)	Nurses Health Study; multivariate, fitting age, period, smoking, diabetes, body mass index, parity; age at baseline, 30–55 and followed up to 1998
Duell & Holly (2005), San Francisco Bay Area, USA	21–85	Pancreas	Never Ever < 1 year 1–2 years 3–7 years ≥ 8 years	135 102 18 25 18 41	402 394 70 140 73 103	1.00 0.95 (0.65–1.4) 0.85 (0.47–1.5) 0.67 (0.39–1.2) 0.92 (0.50–1.7) 1.4 (0.89–2.3)	Adjusted for age, education, smoking
Teras et al. (2005)	–	Pancreas	Never ≤ 1 year 2–5 years 6–10 years ≥ 11 years	1663 52 66 54 29	4 953 391 327 829 388 215 258 592 129 087	1.00 0.93 (0.70–1.24) 0.97 (0.75–1.25) 1.21 (0.90–1.60) 1.30 (0.90–1.90)	
Yen et al. (1987), Rhode Island State, USA	< 60	Gallbladder	Never Ever	6 4	70 6	1.0 7.8 (2.0–30)	

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WHO (1989c), Chile, China, Columbia, Israel, Kenya, Mexico	NR	Gallbladder	Never Ever Current	49 9 1	269 86 8	1.0 0.6 (0.3–1.3) 0.9 (0.1–7.4)	
Moerman et al. (1994), Netherlands	35–79	Gallbladder and biliary tract	Never Ever	61 14	203 49	1.0 1.1 (0.5–2.4)	
Zatonski et al. (1997), Australia, Canada, Netherlands, Poland	64.9 (mean)	Gallbladder	Never Ever	132 20	558 142	1.0 1.0 (0.5–2.0)	
Rosenblatt et al. (2008)	Born 1925–1958	Gallbladder	Never Ever	121 10	2 045 817 353 015	1.00 0.73 (0.38–1.42)	
Gallus et al. (2001)	< 79	Squamous cell esophageal	Never Ever	110 4	392 33	1.00 0.24 (0.06–0.96)	Three hospital-based case–control studies pooled; adjusted for age, education, body mass index, energy intake, and tobacco and alcohol use.

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Rosenblatt et al. (2008)	Born 1925–58	Stomach	Never	721	2 046 890	1.00	Odds ratios also unity for oral contraceptive use in previous year or ever
			Ever	103	353 051	1.02 (0.82–1.27)	
			< 1 year	30	134 167	0.94 (0.65–1.37)	
			1–4 years	38	133 390	0.96 (0.69–1.33)	
			5–9 years	14	42 610	1.04 (0.61–1.77)	
			≥ 10 years	21	42 390	1.32 (0.85–2.05)	
Freedman et al. (2007)	–	Stomach	Never	121	333 571	1.00	
			Ever	33	85 688	1.05 (0.70–1.56)	
Frise et al. (2006)	20–74	Stomach	Never	109	107	1.00	
			Ever	36	38	0.79 (0.43–1.45)	
Olshan et al. (1999), Canada and USA	< 20	Neuroblastoma	<i>Maternal use during first trimester</i>				
			No	442	444	1.0	
			Yes	17	15	1.0 (0.5–2.1)	
Schüz et al. (2001), Germany	≤ 7	Neuroblastoma	<i>Maternal use during pregnancy</i>				Matched analysis; <i>P</i> = 0.03 for trend with duration
			No	159	1 671	1.0	
			Yes	4	26	5.7 (1.5–23)	
			Unspecified	16	70	NR	
Palmer et al. (1999), USA	≥ 18	GTD	Never	36	98	1.0	
			Ever	199	315	1.8 (1.2–2.8)	

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Parazzini et al. (2002), Greater Milan area, Italy	13–56	GTD	Never Ever	164 104	306 130	1.0 1.5 (1.1–2.1)	Risk increased with duration

CI, confidence interval; GTD, gestational trophoblastic diseases; OFPA, Oxford Family Planning Association; RCGP, Royal College of General Practitioners