

**Table 2.59. Case-control studies of active smoking and risk of breast cancer: age at initiation**

Study	Cases/controls	Age at initiation	OR (95% CI)
<i>Incidence</i>			
Brinton <i>et al.</i> (1986) (ever)	805/1090	Nonsmoker	1.00 (ref)
	190/206	<17	1.30 (1.0–1.6)
	249/267	17–19	1.29 (1.0–1.6)
	147/177	20–22	1.14 (0.9–1.5)
	151/187	≥23	1.10 (0.9–1.4)
Chu <i>et al.</i> (1990) (ever)	1788/1961	Nonsmoker	1.0 (ref)
	684/731	<17	1.1 (1.0–1.2)
	901/828	17–19	1.2 (1.1–1.4)
	424/393	20–22	1.2 (1.0–1.4)
	336/299	≥23	1.3 (1.1–1.5) p-trend=0.19
Ewertz (1990) (ever)	503/446	Nonsmoker	1.12 (0.76–1.64)
	68/53	<15	0.99 (0.83–1.20)
	488/429	15–19	0.88 (0.70–1.11)
	209/200	20–24	0.97 (0.70–1.35)
	90/78	25–29	0.81 (0.59–1.09) p-trend=0.2
104/105	≥30		
Palmer <i>et al.</i> (1991) Canada (ever)	293/599	Nonsmoker	1.0 (ref)
	13/14	<14	1.9 (0.8–4.4)
	17/23	14–15	1.5 (0.7–3.0)
	17/32	16–17	1.0 (0.6–1.0)
	31/57	18–21	1.2 (0.7–1.9)
	30/51	≥22	1.1 (0.6–1.8) p-trend=0.21
Palmer <i>et al.</i> (1991) U.S. (ever)	841/392	Nonsmoker	1.0 (ref)
	26/4	<14	2.4 (0.8–7.1)
	42/12	14–15	1.6 (0.8–3.3)
	69/20	16–17	1.3 (0.7–2.2)
	85/32	18–21	1.0 (0.6–1.6)
	73/27	≥22	1.2 (0.7–1.9) p-trend=0.10
Field <i>et al.</i> (1992) (ever)	682/694	Nonsmoker	1.00 (ref)
	565/565	<20	1.00 (0.86–1.16)
	294/268	20–29	1.12 (0.93–1.35)
	75/88	≥30	0.85 (0.61–1.16)

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Baron <i>et al.</i> (1996) (ever)	3297/4633	Nonsmoker	1.00 (ref)
	405/637	≤15	1.13 (0.97–1.31)
	1386/1918	15–18	1.09 (0.99–1.19)
	868/1143	18–21	1.05 (0.94–1.17)
	328/395	21–24	1.09 (0.92–1.29)
	208/297	>24–27	0.89 (0.73–1.09)
	344/453	>27	0.96 (0.82–1.13)
Gammon <i>et al.</i> (1998) (current)	913/817	Nonsmoker	1.00 (ref)
	79/98	≤15	0.59 (0.41–0.85)
	79/82	16–17	0.79 (0.55–1.13)
	111/90	18–19	0.98 (0.71–1.36)
	101/100	≥20	0.91 (0.66–1.27)
			p-trend=0.14
Gammon <i>et al.</i> (1998) (former)	913/817	Nonsmoker	1.00 (ref)
	55/64	≤15	0.76 (0.50–1.15)
	101/83	16–17	1.15 (0.82–1.62)
	114/90	18–19	0.95 (0.69–1.30)
	92/73	≥20	1.03 (0.72–1.48)
		p-trend=0.92	
Lash & Aschengrau (1999) (ever)	40/139	Nonsmoker	1.0 (ref)
	28/75	<17	2.4 (0.8–7.2)
	60/138	17–20	2.3 (1.0–5.5)
	47/106	≥21	2.4 (1.0–5.7)
Johnson <i>et al.</i> (2000) (ever) (premenopausal)	14/35	Nonsmoker	1.0 (ref)
	121/126	≤15	2.1 (1.0–4.3)
	138/123	16–19	2.4 (1.2–4.9)
	38/33	≥20	2.1 (0.9–4.8)
		p-trend=0.63	
Johnson <i>et al.</i> (2000) (ever) (postmenopausal)	52/92	Nonsmoker	1.0 (ref)
	110/129	≤15	1.2 (0.7–1.9)
	230/209	16–19	1.5 (1.0–2.4)
	167/173	≥20	1.4 (0.9–2.3)
		p-trend=0.19	
Marcus <i>et al.</i> (2000) (ever)	445/423	Nonsmoker	1.0 (ref)
	44/27	10–14	1.5 (0.9–2.5)
	217/196	15–19	1.0 (0.8–1.3)
	156/140	≥20	1.2 (0.8–1.5)

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Marcus <i>et al.</i> (2000) (ever)	445/423	Nonsmoker	1.00 (ref)
	44/27	10–14	1.5 (0.9–2.5)
	217/196	15–19	1.0 (0.8–1.3)
	156/146	≥20	1.2 (0.8–1.5)
Kropp & Chang-Claude (2002) (ever)	44/144	Nonsmoker	1.00 (ref)
	46/128	9–15	1.02 (0.62–1.68)
	134/321	16–18	1.29 (0.86–1.94)
	91/184	≥19	1.54 (0.99–2.37) p-trend=0.015
Zheng <i>et al.</i> (2002) (ever)	142/154	Nonsmoker	1.0 (ref)
	100/99	<18	1.1 (0.8–1.6)
	78/81	18–24	1.0 (0.7–1.5)
	18/11	>24	1.6 (0.7–3.7)
Lash & Aschengrau (2002) (ever)	80/53	Nonsmoker	1.00 (ref)
	10/16	<13	0.61 (0.30–1.2)
	48/43	14–15	0.81 (0.54–1.2)
	72/81	16–17	0.67 (0.47–1.0)
	139/118	18–21	0.78 (0.57–1.1)
	48/50	21–29	0.71 (0.47–1.1)
	21/27	≥30	0.59 (0.32–1.1)
Egan <i>et al.</i> (2002) (ever)	330/384	Nonsmoker	1.00 (ref)
	165/149	≤16	1.23 (0.83–1.83)
	295/264	>16	1.19 (0.86–1.66)
Li <i>et al.</i> (2005b) (ever)	432/504	Nonsmoker	1.0 (ref)
	284/257	<20	1.3 (1.0–1.6)
	223/202	≥20	1.2 (1.0–1.6) p-trend=0.03
Lissowska <i>et al.</i> (2006) (ever)	1034/1162	Nonsmoker	1.00 (ref)
	110/127	<17	1.07 (0.80–1.42)
	479/428	17–19	1.23 (1.04–1.46)
	473/489	20–24	1.03 (0.87–1.21)
	258/278	>24	1.10 (0.90–1.34) p-trend=0.93
Mechanic <i>et al.</i> (2006) (ever) (Afro-Americans)	161/172	Nonsmoker	1.0 (ref)
	144/106	<18	1.5 (1.1–2.2)
	257/212	≥18	1.5 (1.1–2.1)

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Study	Cases/controls	Age at initiation	OR (95% CI)
Mechanic <i>et al.</i> (2006) (ever) (Caucasians)	287/235	Nonsmoker	1.0 (ref)
	251/236	<18	0.9 (0.7–1.2)
	443/381	≥18	1.1 (0.8–1.4)
Magnusson <i>et al.</i> (2007) (current)	1526/1453	Nonsmoker	1.0 (ref)
	359/281	<20	1.2 (1.0–1.4)
	196/204	20–29	0.9 (0.7–1.1)
	99/99	≥30	1.0 (0.7–1.3)
			p-trend=0.73
Magnusson <i>et al.</i> (2007) (former)	1526/1453	Nonsmoker	1.0 (ref)
	300/265	<20	1.0 (0.8–1.2)
	221/202	20–29	1.0 (0.8–1.2)
	77/71	≥30	1.1 (0.8–1.5)
			p-trend=0.99
Prescott <i>et al.</i> (2007) (ever)	991/261	Nonsmoker	1.00 (ref)
	230/64	≤15	0.83 (0.59–1.16)
	302/61	>15–≤18	1.20 (0.86–1.67)
	205/55	>18	0.94 (0.66–1.33)
			p-trend=0.68
Slattery <i>et al.</i> (2008) (ever) (Non-Hispanic Whites) (premenopausal)	313/327	Nonsmoker	1.0 (ref)
	90/67	≤16	1.3 (0.9–1.9)
	73/57	17–19	1.2 (0.8–1.8)
	59/40	≥20	1.4 (0.9–2.3)
			p-trend=0.08
Slattery <i>et al.</i> (2008) (ever) (Hispanic/AI) (premenopausal)	232/232	Nonsmoker	1.0 (ref)
	38/41	≤16	1.0 (0.6–1.7)
	29/24	17–19	1.1 (0.6–1.9)
	30/33	≥20	1.1 (0.6–1.9)
			p-trend=0.84
Slattery <i>et al.</i> (2008) (ever) (Non-Hispanic Whites) (postmenopausal)	516/597	Nonsmoker	1.0 (ref)
	116/140	≤16	0.9 (0.7–1.2)
	177/200	17–19	1.0 (0.8–1.2)
	158/146	≥20	1.2 (0.9–1.6)
			p-trend=0.51
Slattery <i>et al.</i> (2008) (ever) (Hispanic/AI) (postmenopausal)	286/355	Nonsmoker	1.0 (ref)
	46/63	≤16	0.9 (0.6–1.3)
	50/61	17–19	1.0 (0.7–1.6)
	68/90	≥20	1.0 (0.7–1.4)
			p-trend=0.65

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Study	Cases/controls	Age at initiation	OR (95% CI)
Young <i>et al.</i> (2009) (ever)	1270/1398	Nonsmoker	1.00 (ref)
	44/58	<12	0.88 (0.59–1.31)
	759/848	12–15	1.02 (0.90–1.16)
	1586/1563	16–20	1.12 (1.01–1.24)
	369/350	21–25	1.13 (0.96–1.33)
	235/195	≥26	1.26 (1.03–1.55)