

**Table 2.28. Case-control studies on tobacco smoking and laryngeal cancer**

Reference, Country and years of study	Cancer subsite	Smoking categories	Relative risk (95%CI)	Comments
Talamini <i>et al.</i> (2002) Italy and Switzerland 1992-2000	Squamous cell carcinoma ICD-9 161.0 supraglottis 161.2 subglottis 161.3 laryngeal cartilage 161.8 overlapping larynx 161.9 larynx unspecified	Non smoker	1.0	Conditioned for sex, age, center, and adjusted for education and alcohol intake
		Former smoker	7.0 (4.2–11.9)	
		Current smoker	19.8 (11.9–32.9)	
		<i>Frequency (cigarettes/day)</i>		
		1-14	9.8 (5.5–17.6)	
		15-24	29.9 (17.0–52.5)	
		≥25	42.9 (22.8–80.9)	
		<i>Tar yield (mg)</i>		
		≤19	19.3 (11.4–32.7)	
		>19	27.1 (14.9–49.2)	
		<i>Duration (years)</i>		
		1-29	8.7 (4.5–16.8)	
		30-39	16.8 (9.4–30.0)	
		≥40	37.2 (20.2–68.5)	
<i>Age starting smoking (years)</i>				
<17	24.4 (13.6–43.8)			
17-19	18.1 (10.1–32.4)			
≥20	18.9 (11.0–32.5)			
Pacella-Norman <i>et al.</i> (2002) South Africa 1995-1999	Laryngeal cancer	<b>Males</b>		OR adjusted for age, place of birth, education, work category, heating fuel, snuff use and alcohol consumption
		Non-smokers	1.0	
		Ex-smokers	17.1 (3.6-82.0)	
		Current smokers; all	13.8 (3.0-63.9)	
		1-14 g/day	10.2 (2.1-49.3)	
15+ g/day	23.6 (4.6-121.2)			
Gallus <i>et al.</i> (2003b) Italy and Switzerland 1986–2000	Laryngeal cancer (ICD-9: 161)	Non smoker	1.0	Conditioned for age, year of interview, study center, education, BMI, nonalcohol energy intake, and alcohol consumption
		Former smoker	4.4. (1.2–16.1)	
		Current smoker	46.0 (16.1–131.2)	
		<i>Frequency (cigarettes/day)</i>		
		<15	23.7 (7.4–76.2)	
		15-24	135.5 (33.4–548.8)	
≥25	435.7 (38.2–4964.4)			

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Hashibe <i>et al.</i> (2007c) INHANCE consortium Europe, North America, South/Central America, International 1984-2006	Larynx: C32.0-C32.3, C32.8- C32.9	<b>Never drinkers</b>	1.0	Random-effects model used. Study-specific odds ratios were adjusted for age, sex, race/ethnicity, education level, study center, years of cigar smoking, and years of pipe smoking
		Cigarette smoking	6.84 (4.25-11.01)	
		Never	1.0	
		Ever	5.72 (3.41-9.60)	
		<i>Frequency, cigarettes/day</i>	8.36 (5.18-13.51)	
		Never smokers	14.38 (8.47-24.43)	
		1-10	18.38 (7.14-47.31)	
		11-20	11.02 (4.92-24.72)	
		21-30	1.0	
		31-40	4.33 (1.13-16.62)	
		>40	3.48 (1.61-7.50)	
		<i>Duration, y</i>	5.75 (2.94-11.23)	
		Never smokers	9.30 (5.40-16.02)	
		1-10	16.32 (9.58-27.79)	
11-20				
21-30				
31-40				
>40				
Bosetti <i>et al.</i> (2008) Italy 1984-2000	Laryngeal cancer	Never smokers Current smokers	0.09 (0.06-0.14) 1.0	Estimated from unconditional logistic regression with adjustment for age, study center, education, and alcohol drinking
Ramroth <i>et al.</i> (2004) Germany 1998-2000	Laryngeal cancer	<i>Pack-years</i> 0 >0-10 >10-20 >20-40 >40-80 >80	1.0 4.1 (1.6-10.7) 10.2 (4.1-24.9) 21.6 (9.8-47.4) 28.3 (12.9-62.2) 59.8 (21.3-167.3)	Adjusted by age, sex, alcohol intake and education

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Hashibe <i>et al.</i> (2007b) Hungary, Poland, Romania, Russia, Slovakia 2000–2002	Squamous cell carcinoma ICD-10 32.0 glottis 32.1 supraglottis 32.2 subglottis 32.8 overlapping 32.9 unspecified	Non smoker	0.19 (0.10-0.40)	Adjusted by age, sex, alcohol intake (years and grams of ethanol per week), education, BMI, fruit and vegetable intake, center	
		Former smoker	1.00		
		Current smoker	2.88 (1.95-4.24)		
		<i>Frequency (cigarettes/day)</i>			
		Non smoker	0.19 (0.09-0.43)		
		1-9	1.00		
		10-19	1.87 (1.08-3.24)		
		20-29	2.65 (1.49-4.71)		
		≥30	5.61 (2.78–11.30)		
		<i>Duration (years)</i>			
		Non smoker	0.45 (0.13-1.58)		
		1-9	1.00		
		10-19	0.79 (0.20-3.15)		
		20-29	3.16 (1.10-9.91)		
		30-39	5.18 (1.72-15.67)		
		40-49	7.62 (2.49-23.34)		
		≥50	8.96 (2.79–28.81)		
		<i>Pack-years (years)</i>			
		Non smoker	0.36 (0.15-0.90)		
1-9	1.00				
10-19	2.03 (0.92-4.43)				
20-29	2.99 (1.44-6.13)				
30-39	5.58 (2.70-11.54)				
≥40	7.78 (3.80-15.95)				
Applebaum <i>et al.</i> (2007) USA 1999-2003	Laryngeal	<i>Smoking, pack-years</i>			
		None	1.0	Models also controlled for sex, age, race, and education	
		>0 to <20	3.7 (1.3-10.6)		
		20 to <45	6.5 (2.3-18.5)		
		≥45	19.9 (7.2-54.9)		

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Sapkota <i>et al.</i> (2007) India 2001-2004	Larynx C32.0, C32.1, C32.2- C32.9	<b>Glottis</b>		Adjusted for center, age, sex, SES, alcohol consumption, tobacco snuffling and tobacco chewing
		<i>Ever smoke</i>		
		No	1.0	
		Yes	5.35 (3.40-8.42)	
		<i>Frequency of cigarette smoking</i>		
		0		
		1-10 per day	1.0	
		>10-20 per day	1.33 (0.27-6.65)	
		>20 per day	4.28 (0.45-40.72)	
		<i>Duration of cigarette smoking</i>		
		0 years	6.55 (0.46-92.57)	
		1-15 years	1.0	
		>15-30 years	3.35 (1.36-8.23)	
		>30 years	3.25 (1.36-7.79)	
		<i>Frequency of Bidi smoking</i>		
		0	5.71 (2.55-12.81)	
		1-10 per day	1.0	
		>10-20 per day	2.01 (0.96-4.20)	
		>20 per day	5.31 (2.42-11.63)	
		<i>Duration of Bidi smoking</i>		
		0 years	14.59 (7.47-28.50)	
		1-15 years	1.0	
		>15-30 years	3.37 (1.15-9.90)	
>30 years	3.96 (1.91-8.19)			
	7.76 (4.16-14.47)			
<b>Larynx_other</b>				
<i>Ever smoke</i>				
No	1.0			
Yes	8.28 (5.02-13.67)			
<i>Frequency of cigarette smoking</i>				
0	1.0			
1-10 per day	2.57 (1.02-6.32)			
>10-20 per day	10.95 (3.94-30.40)			
>20 per day	7.05 (1.12-44.46)			
<i>Duration of cigarette smoking</i>				
0 years	1.0			
1-15 years	1.50 (0.32-7.06)			
>15-30 years	4.51 (1.61-12.61)			
>30 years	6.64 (2.65-16.64)			

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Reference, Country and years of study	Cancer subsite	Smoking categories	Relative risk (95%CI)	Comments
Sapkota <i>et al.</i> (2007) (contd)	Larynx C32.0, C32.1, C32.2- C32.9	<i>Frequency of Bidi smoking</i>		Adjusted for center, age, sex, SES, alcohol consumption, tobacco snuffling and tobacco chewing
		0	1.0	
		1-10 per day	2.82 (1.40-5.67)	
		>10-20 per day	11.94 (5.74-24.84)	
		>20 per day	24.71 (12.56-48.61)	
		<i>Duration of Bidi smoking</i>		
		0 years	1.0	
		1-15 years	1.54 (0.32-7.53)	
		>15-30 years	7.16 (3.60-14.23)	
		>30 years	12.99 (7.14-23.61)	
		<b>Supraglottis</b>		
		<i>Ever smoke</i>		
		No	1.0	
		Yes	6.69 (3.50-12.77)	
		<i>Frequency of cigarette smoking</i>		
		0	1.0	
		1-10 per day	1.33 (0.27-6.65)	
		>10-20 per day	4.28 (0.45-40.72)	
		>20 per day	6.55 (0.46-92.57)	
		<i>Duration of cigarette smoking</i>		
		0 years	1.0	
		1-15 years	3.77 (0.73-19.54)	
		>15-30 years	2.16 (0.39-11.85)	
>30 years				
<i>Frequency of Bidi smoking</i>				
0	1.0			
1-10 per day	3.07 (1.29-7.33)			
>10-20 per day	7.25 (2.77-18.94)			
>20 per day	20.31 (9.10-45.31)			
<i>Duration of Bidi smoking</i>				
0 years	1.0			
1-15 years	5.09 (1.43-18.16)			
>15-30 years	6.04 (2.54-14.35)			
>30 years	11.04 (5.10-23.91)			