

Table 2.14. Case-control studies on tobacco smoking and pharyngeal cancer

Reference, Country and years of study	Cancer subsite	Smoking categories	Relative risk (95% CI)	Comments
Escribano Uzcudun et al. (2002) Spain, 1990-1995	Oropharynx, hypopharynx and nasopharynx	Never smokers	1.0	Adjusted for alcohol intake
		Former smokers	2.4 (1.2-4.7)	
		Current smokers	6.5 (3.5-12.0)	
		<i>Started smoking</i> <15 years age	2.3 (1.9-18.6)	
		15-20 years age	4.5 (2.5-8.3)	
Znaor et al. (2003) India 1993-1999	Pharynx	Never smokers	1.0	
		<i>Duration of smoking (yr)</i> <20	1.73 (1.21-2.47)	
		20-29	2.85 (2.06-3.93)	
		30-39	4.55 (3.33-6.20)	
		≥40	4.68 (3.30-6.64)	
		<i>Average daily amount of tobacco (g)</i> <9	2.62 (1.98-3.46)	
		10-19	4.17 (3.10-5.62)	
		≥20	3.76 (2.53-5.60)	
		<i>Type of tobacco</i> Cigarette only	1.79 (1.29-2.50)	
		Bidi only	4.68 (3.50-6.27)	
		Cigarette and bidi only	3.57 (2.55-4.98)	
		Chutta only	3.22 (1.85-5.78)	
		Cigar/cheroot only	4.28 (1.63-11.20)	
		Other combinations	2.97 (1.19-7.42)	
		<i>Time since quitting smoking (yr)</i> Current smokers	1.0	
		2-4	0.42 (0.23-0.67)	
5-9	0.30 (0.16-0.55)			
10-14	0.21 (0.01-0.43)			
≥15	0.24 (0.12-0.48)			

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Vlajinac et al. (2006) Serbia and Montenegro, 1998-2000	Pharynx (ICD-10: C01, C05.1, C05.2, C05.8, C05.9, C09.1, C09.8)	Never smokers	1.0	Adjusted for education, BMI, alcohol consumption and family history of oropharyngeal cancers
		Former smokers	5.71 (2.05-15.87)	
		Current smokers	6.85 (2.16-21.77)	
		Former smokers		
		<i>Number cigarettes per day</i>		
		≤14	1.0	
		15-24	0.79 (0.13-4.75)	
		25+	1.34 (0.55-3.29)	
		<i>Years of smoking</i>		
		≤29	1.0	
		30-39	3.70 (0.96-14.31)	
		40+	3.53 (1.32-9.46)	
		Current smokers		
		<i>Number cigarettes per day</i>		
≤14	1.0			
15-24	0.76 (0.39-1.46)			
25+	1.22 (0.73-2.44)			
<i>Years of smoking</i>				
≤29	1.0			
30-39	1.81 (1.11-2.93)			
40+	2.72 (1.52-4.86)			

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De Stefani <i>et al.</i> (2007) Uruguay 1988-2000	Pharynx excluded nasopharynx	Never smokers	1.0	Adjusted for age, residence, urban/rural status, hospital, year at diagnosis, education, family history of cancer among first-degree relatives, occupation, total vegetables and fruits consumption, mate intake and alcohol drinking
		Former smokers	10.1 (4.0-25.7)	
		Current smokers	25.7 (10.3-64.4)	
		Ever smokers	18.6 (7.4-46.3)	
		<i>Cigarettes/day</i>		
		Never smokers	1.0	
		1-9	7.1 (2.6-19.3)	
		10-19	13.2 (5.1-33.8)	
		20-29	22.8 (9.0-57.6)	
		30+	28.3 (11.2-71.4)	
		<i>Years of smoking</i>		
		Never smokers	1.0	
		1-29	6.1 (2.4-17.7)	
		30-39	16.8 (6.4-43.7)	
		40-49	26.4 (10.3-68.0)	
		50+	28.9 (11.1-75.2)	
		<i>Pack-years</i>		
		Never smokers	1.0	
		1-29	8.2 (3.2-20.8)	
30-39	15.8 (6.0-41.2)			
40-49	24.5 (9.5-62.9)			
50+	27.5 (10.8-67.4)			

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Sapkota <i>et al.</i> (2007) India 2001-2004	Hypopharynx	<i>Ever smoke</i>		Adjusted for center, age, sex, SES, alcohol consumption, tobacco snuffling and tobacco chewing
		No	1.0	
		Yes	5.66 (3.99-8.02)	
		<i>Smoking product</i>		
		Never	1.0	
		Cigarette	3.82 (2.32-6.29)	
		Bidi	6.80 (4.64-9.97)	
		Cigarette and bidi	4.74 (2.42-9.29)	
		Other	4.21 (1.69-10.47)	
		<i>Frequency of cigarette smoking</i>		
		0	1.0	
		1-10 per day	2.47 (1.34-4.54)	
		>10-20 per day	5.24 (2.19-12.53)	
		>20 per day	9.75 (2.95-32.22)	
		<i>Duration of cigarette smoking</i>		
		0 years	1.0	
		1-15 years	1.15 (0.36-3.64)	
		>15-30 years	4.77 (2.41-9.48)	
		>30 years	4.26 (2.05-8.87)	
		<i>Frequency of bidi smoking</i>		
0	1.0			
1-10 per day	2.83 (1.73-4.63)			
>10-20 per day	9.45 (5.32-16.78)			
>20 per day	17.13 (9.97-29.44)			
<i>Duration of bidi smoking</i>				
0 years	1.0			
1-15 years	6.35 (3.02-13.33)			
>15-30 years	5.51 (3.31-9.16)			
>30 years	9.22 (5.78-14.73)			

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Applebaum <i>et al.</i> (2007) USA 1999-2003	Pharyngeal	<i>Smoking, pack-years</i>			
		None	1.0	Models also controlled for sex, age, race, and education Joint effects OR, adjusted for sex, age, race, education, and alcohol consumption	
		>0 to <20	0.9 (0.5-1.6)		
		20 to <45	1.6 (0.9-2.8)		
		≥45	3.2 (1.8-5.6)		
		<i>HPV16 serology Negative</i>			
		<i>Cigarettes, pack-years</i>			
		None	1.0		
		> 0 to <20	1.7 (0.7-4.0)		
		20 to <45	3.4 (1.5-7.5)		
		≥45	6.9 (3.1-15.1)		
		<i>HPV16 serology Positive</i>			
		<i>Cigarettes, pack-years</i>			
		None	1.0		
> 0 to <20	0.5 (0.2-1.2)				
20 to <45	0.7 (0.3-1.8)				
≥45	0.9 (0.3-2.4)				
Hashibe <i>et al.</i> (2007c) INHANCE consortium Europe, North America, South/Central America, International 1984-2006	Oropharynx: C01.9, C02.4, C05.1, C05.1, C05.2, C09.0, C09.1, C09.8, C09.9, C10.0-C10.4, C10.8, C10.9 Hypopharynx: C12.9, C13.0-C13.2, C13.8, C13.9	Never drinkers		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	
		Oropharynx/hypopharynx			
		<i>Cigarette smoking</i>			
		Never	1.0		
		Ever	2.02 (1.34-3.05)		
		<i>Frequency, cigarettes/day</i>			
		Never smokers	1.0		
		1-10	2.55 (1.59-4.10)		
		11-20	2.15 (1.38-3.34)		
		21-30	3.86 (1.80-8.25)		
		31-40	4.82 (2.42-9.60)		
		>40	3.10 (1.43-6.69)		
		<i>Duration, y</i>			
		Never smokers	1.0		
1-10	1.69 (1.00-2.88)				
11-20	1.18 (0.61-2.28)				
21-30	1.47 (0.94-2.31)				
31-40	3.74 (2.61-5.38)				
>40	4.84 (2.22-10.54)				