

Table 2.32. Case-control studies on tobacco smoking and cancers of the upper aerodigestive tract: main characteristics of study design

Reference, Country and years of study	Number of cases and controls	Criteria for eligibility and comments
Schlecht <i>et al.</i> (1999a) Brazil 1986-1989	784 cases and 1578 controls	Multicenter study, hospital-based case-control in three metropolitan hospital areas in Brazil All cases were confirmed histopathologically Matched for gender, 5-year age group, and trimester of admission, control subjects were selected from the same or nearby hospitals, at a ratio of two controls to each case Patients with neoplastic diseases (ICD-9 140-239) or mental disorders (ICD-9 290-319) were not considered eligible
Olshan <i>et al.</i> (2000) USA 1994-1997	182 cases and 202 controls	Hospital-based at the University of North Carolina Hospitals Cases comprised patients newly diagnosed with a first SCCHN and >17 years of age, had pathologically confirmed squamous cell carcinoma of the oral cavity, pharynx, or larynx, or did not have a history of a previous malignant cancer or a diagnosis of a genetic disease or syndrome Patients with nasopharyngeal cancer were not included. In addition, cases were eligible if they spoke either English or Spanish Control subjects included patients seen in the same clinic conditions requiring surgery In addition, patients with the aspirin triad (nasal polyposis, asthma, and aspirin sensitivity) were also excluded Controls were frequency-matched with cases on age and gender A blood sample and buccal swap sample of exfoliated oral cells were obtained with informed consent at the time
Garrote <i>et al.</i> (2001) Cuba 1996-1999	200 cases and 200 controls	Hospital-based study in Havana All cases had their interview and oral examination before any cancer treatment Eligible controls had been admitted in 4 hospitals in Havana city for diseases unrelated to smoking or drinking habits and they were frequency-matched with cases by age and gender
Chen <i>et al.</i> (2001) USA 1985-1995	341 cases and 552 controls	Population-based case-control study Cases and controls (age 18-65 years) Cases with cancer of the lip were excluded Controls were identified through random digit telephone dialing Exfoliated oral cell samples and, in some instances, venous blood specimens were obtained
Pacella-Norman <i>et al.</i> (2002) South Africa 1995-1999	Men: 405 cases and 804 controls Women: 175 cases and 1370 controls	Hospital-based case-control study in the three main public referral hospitals of greater Johannesburg (included cases of oesophageal, lung, oral and laryngeal cancers) For 90% of patients the diagnosis was confirmed by histology, haematology, or cytology
Gallus <i>et al.</i> (2003a) Italy and Switzerland 1992-99	Oral/pharyngeal: 749 cases and 1770 controls Oesophageal: 395 cases and 1066 controls	Two case-control studies on the upper digestive tract cancer Cases aged <77 years with incident, histologically confirmed cases of the oral and pharynx or squamous-cell oesophageal cancer Controls were matched with cases by age (within 5 year intervals), sex and study centre, with a control:case ratio of ~5 for women and ~2 for men
Znaor <i>et al.</i> (2003) India 1993-1999	Men: 2765 cases and 3638 controls	Hospital-based case-control All cases and cancer controls were histologically confirmed Males patients with non-tobacco-related cancers reported during the same study period from the same centers were selected as disease controls

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Lissowska <i>et al.</i> (2003) Poland 1997-2000	Men: 78 cases and 72 controls Women: 44 cases and 52 controls	Hospital-based case-control Cases histologically confirmed incident cancer of the oral cavity and pharynx Cases with cancer of lip, major salivary gland, nasopharynx and hypopharynx were excluded from the study Patients admitted for acute illnesses to hospitals serving the same areas where the cases lived were eligible controls and none of these patients had been admitted for malignant disorders Other exclusion criteria for controls included tobacco and alcohol-related diseases Controls were frequency-matched to cases by sex and age in 5-year groups
Castellsagué <i>et al.</i> (2004) Spain 1996-1999	375 cases and 375 controls	Multicenter hospital-based case-control study Cases were patients newly and histologically diagnosed with invasive cancer of the oral cavity and oropharynx Patients with invasive tumors originating in the mucosal inner lip were also eligible to participate Controls patients were identified and recruited from the same hospitals from which the cases were identified and they were group-matched to the case subjects by gender and quinquennia of age Patients with an admission diagnosis related to alcohol or tobacco consumption were not accepted as controls Patients with oncologic diseases were also excluded If a select control refused to participate, a replacement with the same matching criteria was used
Rodriguez <i>et al.</i> (2004) Italy and Switzerland 1984-1997	137 cases and 298 controls	Multicenter hospital-based case-control study Cases below age 46 with incident, histologically confirmed cancer of the oral cavity and pharynx Controls were matched to cases by sex, quinquennia of age and study centre, with a control-to-case ratio of 2 for men and 3 for women, and admitted to the same network of hospitals as cases for acute, non neoplastic diseases, non tobacco nor alcohol related
Menvielle <i>et al.</i> (2004a) France 1989-1991	Men: 504 cases and 242 controls	Multicenter hospital-based case-control study Cases were all men diagnosed with primary squamous cell tumors of the larynx or hypopharynx Controls were men with primary non-respiratory cancers, selected by frequency matching for age, in the same hospitals as the cases or in similar nearby hospital Controls were patients with types of cancer requiring the same medical environment as the cases
Rosenquist <i>et al.</i> (2005) Sweden 2000-04	Men: 91 cases and 215 controls Women: 41 cases and 105 controls	Population-base case-control study The cases were considered eligible were individuals with oropharyngeal squamous cell carcinoma born in Sweden and without a previous cancer diagnosis, with the exception of skin cancer Individuals born in Sweden with no previous cancer diagnosis with the exception of skin cancer and who were living in the Southern Healthcare Region of Sweden were eligible as controls Three controls per case were selected from the Swedish Population Register by means of stratified random sampling The matching criteria were: age \pm 3 years; sex, and county Cell samples from the oral cavity were collected for human papillomavirus (HPV) DNA analysis
Andreotti <i>et al.</i> (2006) Brazil 1999-2002	325 cases and 468 controls	Hospital-based case-control study in Greater Metropolitan Sao Paulo, Brazil Frequency-matched with cases by sex and age Cases with oral cavity and oropharynx cancer, histologically confirmed Controls selected in the same hospitals as the cases

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Sapkota <i>et al.</i> (2007) India 2001-2004	1024 cases and 718 controls	Multicenter case-control study Controls matched on age (± 5 years), sex and geographical area of residency were recruited, patients with disease not related to alcohol or tobacco consumption and visitors to patients at the hospital were recruitment as controls
De Stefani <i>et al.</i> (2007) Uruguay 1988-2000	Men: 776 cases 1501 controls	Hospital-based case-control study All newly diagnosed and microscopically confirmed male cases of squamous cell carcinoma of the mouth and pharynx were considered eligible Cancers of the lip and nasopharynx were non-eligible In the same time period and in the same hospitals all male patients which were hospitalized by non-neoplastic conditions which were not related with smoking, drinking and without recent changes in their diets were considered eligible controls
Bosetti <i>et al.</i> (2008) Italy 1984-2000	Men: 2192 cases and 3781 controls	Hospital-based case-control study Cases with incident, histologically confirmed cancer All controls were patients admitted to the same hospitals as the cases for a wide spectrum of acute non-neoplastic conditions that would not have been expected to be related to tobacco smoking, alcohol consumption, or diet
Randi <i>et al.</i> (2007) Italy and Switzerland 1984-99	Men: 93 cases and 1032 controls	Multicenter hospital-based case-control study Incident cases, histologically confirmed male cases Controls were men admitted to the same network of hospitals as cases for a wide spectrum of acute, non-neoplastic conditions, neither related to smoking and alcohol consumption nor to long-term diet modifications
Soya <i>et al.</i> (2007) India 2003-2006	Men: 269 cases and 148 controls Women: 139 cases and 72 controls	Hospital-based case-control study Patients with upper aerodigestive tract cancers were recruited as cases, diagnosis of squamous cell carcinoma was confirmed by histopathologic examination The group control consisted of subjects without present or past history of any malignancies The age and sex matched controls were selected randomly from those who came for treatment of various diseases other than malignancy at the same hospital and in the same period Five milliliters of venous blood was collected using ethylene diamine tetra acetic acid (EDTA) as anticoagulant
Hashibe <i>et al.</i> (2007c) INHANCE consortium Europe, North America, South/Central America, International 1984-2006	1072 cases and 5775 controls	Multicenter hospital-based case-control study Investigators who had recently conducted molecular epidemiologic studies of head and neck cancers were invited to participate in the INHANCE consortium Studies were included if they had included more than 300 head and neck cancer case subjects and that information be available on demographic and tumor characteristics, alcohol consumption, and tobacco use habits Case subjects were included in this analysis if their tumor had been classified by the original study as an invasive tumor of the oral cavity, oropharynx, hypopharynx, oral cavity or pharynx not otherwise specified, or larynx or head and neck cancer unspecified according to the ICD-O-2, subjects with salivary gland cancers were excluded from analysis Cases who alcohol drinking in never users of tobacco and cigarette smoking in never drinkers

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Applebaum <i>et al.</i> (2007) USA 1999-2003	485 cases and 549 controls	<p>Population-based case-control study</p> <p>The study area included 249 cities and towns within 1 hour's drive of Boston</p> <p>Eligible patients had carcinoma located on the tongue, gum, floor of mouth, other location in the mouth, oropharynx, hypopharynx, ill-defined site within lip oral cavity or pharynx, and larynx as determined by pathology reports</p> <p>Additional eligibility criteria included residence in the study area, age of 18 years or older, and a diagnosis of head and neck squamous cell carcinoma no more than 6 months before the time of patient contact, patients presenting with recurrent disease were excluded</p> <p>Potential control subjects were identified from Massachusetts town books, which are required by state law to list all residents 17 years and older</p> <p>Control subjects were matched to case subjects on sex, age (within 3 years), and town of residence using random selection</p>