

**Table 2.2. Cohort studies of consumption of alcoholic beverages and cancer in special populations**

Country Name of study	Date of cohort sampling	References	Maximum years of follow-up	Cohort sample and age at beginning of follow-up	Collection of information	Cases/deaths	Cancers analysed	Comments
<b>North America</b>								
<i>Canada</i>								
Canadian Alcoholics Study	1951	Schmidt & Popham (1981)	1951–70	9 889 alcoholic men, aged ≥15 years, admitted to the clinical service of the Addiction Research Foundation of Ontario between	Death records	Deaths	Buccal cavity, pharynx, oesophagus, stomach, large intestine, rectum, liver, pancreas, larynx, bronchus, lung, prostate, lymphoma, leukaemia	Local reference population, US veterans used as a reference population, no individual exposure data, no information on potential confounders
<i>United States</i>								
Massachusetts Cohort of Chronic Alcoholics	1930, 1935, 1940	Monson & Lyon (1975)	1930–71	1139 men and 243 women admitted in 1930, 1935 or 1940 to a mental hospital with a diagnosis of chronic alcoholism	Death certificates	Deaths	Buccal cavity, oesophagus, stomach, colon, rectum, large intestine, liver, biliary tract, pancreas, larynx, lung, breast, urogenital organs, prostate, urinary bladder, kidney, brain, leukaemia, other cancer	Compared with US population; half of group lost to follow-up; no individual exposure data; no information on confounders.
Seventh-day Adventists study	1976	Mills <i>et al.</i> (1994); Singh & Fraser (1998)	1976–82	60 000 Seventh-day Adventists in California identified by census questionnaire, aged >25 years	Lifestyle questionnaire	Cases	Buccal cavity, oesophagus, stomach, large intestine, colon, rectum, biliary passages and liver, pancreas, bronchus, lung, melanoma, breast, cervix, corpus uteri, ovary, urinary bladder, kidney, brain, Hodgkin disease, leukaemias	Study population had a low prevalence of alcohol consumption; joint effect of alcohol and tobacco examined.

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<b>Scandinavia</b>								
<i>Denmark</i>								
Danish Brewery Workers Cohort	1939–63	Jensen (1979); Thygesen <i>et al.</i> (2005)	1943–99	14 313 Danish brewery workers employed at least 6 months in 1939–63; age not given	Cancer registry database	Case/deaths	Buccal cavity, pharynx, oesophagus, stomach, colon, rectum, liver, pancreas, nasal cavities, larynx, lung, melanoma, other skin, prostate, testis, penis, urinary bladder, kidney, ureter, brain, nervous system, lymphatic and haematopoietic leukaemia	Local male population; national mortality rates used for comparison; no individual exposure data; no information on potential confounders
Danish Alcohol Abusers Study	1954–92	Tønnesen <i>et al.</i> (1994); Thygesen <i>et al.</i> (2009)	1954–99	19 185 (15 214 men, 3 093 women) alcoholics from a public outpatient clinic for free treatment. Tønnesen <i>et al.</i> (1994) study was based on 18 307 alcoholics recruited in 1954–87	Interview	Cases/deaths	Lip, tongue, salivary glands, mouth, pharynx, oesophagus, stomach, kidney, colon, rectum, liver, gall bladder, urinary bladder, pancreas, larynx, lung, pleura, melanoma, non- melanoma skin, breast, cervix uteri, corpus uteri, ovary, prostate, testis, brain, endocrine, non-Hodgkin lymphoma, multiple myeloma, haematopoietic and lymphatic leukaemia	Cohort cancer incidence compared with total Danish population; no information on potential confounders; estimates not adjusted for smoking.

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Nationwide Study of Patients with Cirrhosis	1977–89	Sørensen <i>et al.</i> (1998)	1977–93	11 605 1-year survivors of cirrhosis from the Danish National Registry of Patients	Registry database	Cases	Oral cavity, pharynx, oesophagus, stomach, colon, rectum, liver, gall bladder, biliary tract, pancreas, larynx, lung, melanoma, other skin, breast, cervix uteri, endometrium, ovary, prostate, testis, kidney, urinary bladder, brain, nervous system, thyroid, non-Hodgkin lymphoma, leukaemia	Expected rates from national incidences; estimates not adjusted for smoking
<i>Finland</i>								
Finnish Alcoholics	1967–70	Hakulinen <i>et al.</i> (1974)	1967–70	Approximately 205 000 male alcohol misusers and mean of 4 370 male chronic alcoholics, aged >30 years	Finnish Cancer Registry	Cases	Salivary glands, pharynx, oesophagus, stomach, colon, liver, pancreas, larynx, lung, bone, skin, prostate, urinary organs, eye, nervous system, thyroid, lymphoma, Hodgkin disease, leukaemia	Local reference; no individual exposure data; no data on potential confounders

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<i>Norway</i>								
Norwegian Alcoholics Study	1925–39	Sundby (1967)	1925–62	Alcoholics from Oslo psychiatric department, 1722 males, aged 15– 70 years	Death certificate	Deaths	Oral cavity, pharynx, oesophagus, stomach, colon, rectum, liver, pancreas, larynx, lung, prostate, testis, penis, urinary bladder, kidney, brain, Hodgkin disease, multiple myeloma, leukaemia	Local reference; Oslo urban mortality data
International Organization of Good Templars Cohort	1980	Kjaerheim <i>et al.</i> (1993)	1980–89	5332 members of the International Organization of Good Templars, aged ≥10 years	Hospital and laboratory reports	Cases	Oral cavity, pharynx, oesophagus, stomach, colon, rectum, gall bladder, liver, pancreas, larynx, lung, breast, female genital, prostate, male genital, urinary bladder, kidney, brain, haematopoietic cancers	Expected rates from national incidence

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<i>Sweden</i>								
Temperance Boards Study	1947	Sigvardsson <i>et al.</i> (1996)	1947–77	15 508 alcoholic women ascertained through the Temperance Boards and 15 508 non-alcoholic women from population, born 1870–1961	Temperance Boards records	Cases	Lip, tongue, salivary glands, mouth, hypopharynx, pharynx, tonsil, oesophagus, stomach, small intestine, duodenum, colon, rectum, liver, gallbladder, bile ducts, pancreas, nose, larynx, bronchus, lung, bone, connective tissue, muscle, breast, malignant melanoma, other skin, uterus, cervix uteri, corpus uteri, ovary, vulva, vagina, other female genital, urinary bladder, kidney, eye, nervous system, thyroid, endocrine glands, non-Hodgkin lymphoma, Hodgkin disease, multiple myeloma, leukaemia, unspecified sites	No adjustment for smoking

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Swedish Brewery Workers Study	1960	Carstensen <i>et al.</i> (1990)	1961–79	6230 men employed in the Swedish brewery, aged 20–69 years	Swedish Cancer Registry	Cases	Buccal cavity, pharynx, oesophagus, stomach, colon, rectum, liver, pancreas, larynx, bronchus, lung, melanoma, prostate, male genital organs, urinary bladder, kidney, urinary system, brain, nervous system, leukaemia, lymphatic and haematopoietic cancers	Swedish male population used as a reference group
Swedish Inpatient Register/Study of Patients with Chronic Pancreatitis	1964–83	Karlson <i>et al.</i> (1997); Ye <i>et al.</i> (2002)	1964–95	Karlson <i>et al.</i> (1997) Analytical cohort of 4043 patients discharged with pancreatitis in association with alcoholism  Ye <i>et al.</i> (2002) 178 688 male and female patients with hospital discharge of alcoholism, 1964–95	Medical and cancer registry records	Cases	Pancreas	Incidence rates compared with national rates; no individual exposure data; no information on potential confounders; risks not adjusted for smoking
National Board of Health and Welfare Hospital Discharge study of Alcoholism	1965	Kuper <i>et al.</i> (2000)	1965–95	Analytical cohort of 36 856 women diagnosed with alcoholism from hospital discharge data	Hospital discharge records	Cases	Breast	Compared with national incidence rates; no individual exposure information; no adjustment for potential confounders

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National Board of Health and Welfare Study of Alcoholic Women	1965–94	Lagiou <i>et al.</i> (2001); Weiderpass <i>et al.</i> (2001a,b),	1964–95	36 856 women hospitalized for alcoholism	Registry –based linkages		Trachea, bronchus, lung, cervix uteri, endometrium, ovary, vagina, vulva	No adjustment for smoking
Swedish In- patient Register and National Cancer Register Study	1965–94	Boffetta <i>et al.</i> (2001)	1965–95	173 665 patients (138 195 men, 35 470 women) with a hospital discharge diagnosis of alcoholism, aged >20 years	National Cancer Registry	Cases	Lip, tongue, salivary gland, mouth, oral cavity, pharynx, mesopharynx, nasopharynx, hypopharynx, oesophagus, stomach, colon, rectum, liver, biliary tract, pancreas, larynx, lung, melanoma, breast, cervix, corpus uteri, ovary, prostate, testis, urinary bladder, kidney, brain, thyroid, lymphatic, haematopoietic cancers	Compared with incidence in the national population

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Uppsala Alcoholics Study	1965–83	Adami <i>et al.</i> (1992a,b)	1964–84	10 350 individuals from Swedish Uppsala Inpatients Register, with discharge diagnosis for alcoholism	Cancer registry	Cases	Lip, tongue, salivary gland, mouth, oral cavity, pharynx, mesopharynx, nasopharynx, hypopharynx, oesophagus, stomach, colon, rectum, liver, biliary tract, pancreas, larynx, lung, melanoma, breast, cervix, corpus uteri, ovary, prostate, testis, urinary bladder, kidney, brain, thyroid, lymphatic, haematopoietic cancers	
<b>Western Europe</b>								
<i>Republic of Ireland</i>								
Dublin Brewers Study	1954–73	Dean <i>et al.</i> (1979)	1954–73	Deaths between 1954 and 1973 among male blue- collar brewery workers	Death certificates	Deaths	Oesophagus, stomach, colon, rectum, liver, gall bladder, pancreas, lung	Compared with Dublin skilled and unskilled manual workers; no individual exposure data; no information on confounders



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<i>United Kingdom</i>								
Study of Patients Hospitalized for Alcohol-related Diseases	1948–1971	Prior (1988)	1948–81	1 110 patients/ hospitalized in the Birmingham region for alcohol-related conditions	Hospital discharge records	Cases	Mouth, buccal cavity, pharynx, throat, oesophagus, liver, gall bladder, pancreas, digestive system, larynx, lung, respiratory system, skin, breast, cervix uteri, reproductive system, urinary system, lymphatic and haematopoietic systems	Compared with the West Midlands region
England and Wales, UK Alcoholics Study	1953–57, 1964	Adelstein & White (1976); Nicholls <i>et al.</i> (1974)	1953–74	1 595 male and 475 female alcoholics aged 15–90 years	Hospital discharge records	Deaths	Pharynx, oesophagus, stomach, intestine, rectum, liver, pancreas, larynx, lung, breast, cervix uteri, prostate	Reference death rates were sex-specific rates of England and Wales for 1972.