

List of classifications by cancer site or type with *sufficient or limited evidence in human*^a

IARC Monographs Volumes 1–141 (version 2026/07/22)

Cancer site	Carcinogenic agents with <i>sufficient evidence in humans</i>	Agents with <i>limited evidence in humans</i>
Lip, oral cavity, and pharynx		
Lip	Hydrochlorothiazide	Solar radiation
Oral cavity	Acetaldehyde associated with the consumption of alcoholic beverages Alcohol consumption Betel quid with tobacco Betel quid without tobacco Human papillomavirus (HPV) type 16 Tobacco smoking Tobacco, smokeless	Bitumens, occupational exposure to hard bitumens and their emissions during mastic–asphalt work Bitumens, occupational exposure to oxidized bitumens and their emissions during roofing Human papillomavirus (HPV) type 18
Salivary gland	Acetaldehyde associated with the consumption of alcoholic beverages X– and Gamma–Radiation	Radioiodines, including iodine–131
Pharynx: oropharynx ^b	Human papillomavirus (HPV) type 16	
Pharynx: tonsil ^b	Human papillomavirus (HPV) type 16	
Pharynx: nasopharynx ^b	Epstein–Barr virus (EBV) Formaldehyde Salted fish, Chinese–style Wood dust	Pickled vegetables (traditional Asian)
Pharynx: all combined	Acetaldehyde associated with the consumption of alcoholic beverages Alcohol consumption Betel quid with tobacco Tobacco smoking	Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Bitumens, occupational exposure to hard bitumens and their emissions during mastic–asphalt work Bitumens, occupational exposure to oxidized bitumens and their emissions during roofing Opium consumption Tobacco smoke, second–hand
Digestive organs		
Oesophagus: all combined	Acetaldehyde associated with the consumption of alcoholic beverages Alcohol consumption Betel quid with tobacco Betel quid without tobacco Tobacco smoking Tobacco, smokeless X– and Gamma–Radiation	Bitumens, occupational exposure to hard bitumens and their emissions during mastic–asphalt work Bitumens, occupational exposure to oxidized bitumens and their emissions during roofing Dry cleaning (occupational exposures in) Opium consumption Pickled vegetables (traditional Asian) Rubber manufacturing industry
Oesophagus: squamous cell carcinoma ^c		Very hot beverages at above 65 °C (drinking)



Cancer site	Carcinogenic agents with sufficient evidence in humans	Agents with limited evidence in humans
Stomach	<i>Helicobacter pylori</i> (infection with) Rubber manufacturing industry Tobacco smoking X- and Gamma-Radiation	Art glass, glass containers and pressed ware (manufacture of) Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Automotive gasoline Epstein-Barr virus (EBV) Lead compounds, inorganic Nitrate or nitrite (ingested) under conditions that result in endogenous nitrosation Opium consumption Pickled vegetables (traditional Asian) Processed meat (consumption of) Salted fish, Chinese-style
Colon	Alcohol consumption Processed meat (consumption of) Tobacco smoking X- and Gamma-Radiation	Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Firefighter (occupational exposure as a) Night shift work Red meat (consumption of) <i>Schistosoma japonicum</i> (infection with)
Rectum	Alcohol consumption Processed meat (consumption of) Tobacco smoking	Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Night shift work Red meat (consumption of) <i>Schistosoma japonicum</i> (infection with) X- and Gamma-Radiation
Anus	Human immunodeficiency virus type 1 (HIV1, infection with) Human papillomavirus (HPV) type 16	Human papillomavirus (HPV) type 18 Human papillomavirus (HPV) type 33
Liver	Estrogen-progestogen oral contraceptives, combined Plutonium-239 Thorium-232 (as Thorotrast) Tobacco smoking Vinyl chloride	Androgenic (anabolic) steroids Arsenic and inorganic arsenic compounds Betel quid without tobacco DDT (4,4'-dichlorodiphenyltrichloroethane) <i>Schistosoma japonicum</i> (infection with) Trichloroethylene X- and Gamma-Radiation
Liver (hepatocellular carcinoma) ^d	Aflatoxins Alcohol consumption Hepatitis B virus (HBV, chronic infection with) Hepatitis C virus (HCV, chronic infection with) Hepatitis D virus (HDV)	Aspartame Human immunodeficiency virus type 1 (HIV1, infection with)
Bile duct	1,2-Dichloropropane <i>Clonorchis sinensis</i> (infection with) <i>Opisthorchis viverrini</i> (infection with) Plutonium-239 Thorium-232 (as Thorotrast) Tobacco smoking	Androgenic (anabolic) steroids Arsenic and inorganic arsenic compounds Betel quid without tobacco DDT (4,4'-dichlorodiphenyltrichloroethane) Dichloromethane (Methylene chloride) Hepatitis B virus (HBV, chronic infection with) Hepatitis C virus (HCV, chronic infection with) <i>Schistosoma japonicum</i> (infection with) Trichloroethylene X- and Gamma-Radiation
Childhood liver cancer (hepatoblastoma)	Tobacco smoking (parental exposure)	



Cancer site	Carcinogenic agents with sufficient evidence in humans	Agents with limited evidence in humans
Gall bladder	Thorium-232 (as Thorotrast)	
Pancreas	Tobacco smoking Tobacco, smokeless	Alcohol consumption Opium consumption Red meat (consumption of) Thorium-232 (as Thorotrast) X- and Gamma-Radiation
Digestive tract, unspecified		Radioiodines, including iodine-131
Respiratory and intrathoracic organs		
Nasal cavity and paranasal sinus	Isopropyl alcohol (Isopropanol) manufacture using strong acids Leather dust Nickel compounds Radium-226 and its decay products Radium-228 and its decay products Tobacco smoking Wood dust	Carpentry and joinery Chromium (VI) compounds (Hexavalent chromium compounds) Formaldehyde Textile manufacturing industry (work in)
Larynx	Acetaldehyde associated with the consumption of alcoholic beverages Alcohol consumption Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Mists from strong inorganic acids (Sulfuric acid, and other strong inorganic acids) Opium consumption Tobacco smoking	Alachlor Bitumens, occupational exposure to hard bitumens and their emissions during mastic-asphalt work Bitumens, occupational exposure to oxidized bitumens and their emissions during roofing Human papillomavirus (HPV) type 16 Human papillomavirus (HPV) type 18 Rubber manufacturing industry Sulfur mustard Tobacco smoke, second-hand



Cancer site	Carcinogenic agents with sufficient evidence in humans	Agents with limited evidence in humans
Lung	Acheson process, occupational exposures associated with the Acrylonitrile Aluminium production Arsenic and inorganic arsenic compounds Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Beryllium and beryllium compounds Bis(chloromethyl) ether Cadmium and cadmium compounds Chloromethyl methyl ether Chromium (VI) compounds (Hexavalent chromium compounds) Coal gasification Coal-tar pitch Coal, indoor emissions from household combustion of Coke production Diesel engine exhausts Haematite mining (underground, with exposure to radon) Iron and steel founding (occupational exposure during) MOPP and other combined chemotherapy including alkylating agents Nickel compounds Opium consumption Outdoor air pollution Outdoor air pollution, particulate matter in Painter (occupational exposure as a) Plutonium-239 Radon-222 and its decay products Rubber manufacturing industry Silica dust, crystalline, in the form of quartz or cristobalite Soot (Soots, as found in occupational exposure of chimney sweeps) Sulfur mustard Tobacco smoke, second-hand Tobacco smoking Welding fumes X- and Gamma-Radiation	2,3,7,8-Tetrachlorodibenzo-para-dioxin alpha-Chlorinated toluenes and benzoyl chloride Art glass, glass containers and pressed ware (manufacture of) Benzene Bitumens, occupational exposure to hard bitumens and their emissions during mastic-asphalt work Bitumens, occupational exposure to oxidized bitumens and their emissions during roofing Carbon electrode manufacture Cobalt metal with tungsten carbide Creosotes Diazinon Frying, emissions from high-temperature Hydrazine Indoor emissions from household combustion of biomass fuel (primarily wood) Mists from strong inorganic acids (Sulfuric acid, and other strong inorganic acids) Non-arsenical insecticides (occupational exposures in spraying and application of) Printing processes (occupational exposures in) Silicon carbide, fibrous Trivalent antimony Uranium, mixture of isotopes
Upper aerodigestive tract (oral cavity, pharynx, larynx, oesophagus)		
Upper aerodigestive tract (oral cavity, pharynx, larynx, oesophagus)	Acetaldehyde associated with the consumption of alcoholic beverages Tobacco smoking	Bitumens, occupational exposure to hard bitumens and their emissions during mastic-asphalt work Bitumens, occupational exposure to oxidized bitumens and their emissions during roofing
Bone		
Bone	Plutonium-239 Radium-224 and its decay products Radium-226 and its decay products Radium-228 and its decay products X- and Gamma-Radiation	Radioiodines, including iodine-131



Cancer site	Carcinogenic agents with <i>sufficient evidence in humans</i>	Agents with <i>limited evidence in humans</i>
Skin		
Skin (melanoma)	Polychlorinated biphenyls Solar radiation Ultraviolet-emitting tanning devices	Firefighter (occupational exposure as a) Hydrochlorothiazide Petroleum refining (occupational exposures in)
Skin (malignant non-melanoma)	Arsenic and inorganic arsenic compounds Coal-tar distillation Shale oils Solar radiation Soot (Soots, as found in occupational exposure of chimney sweeps)	Creosotes Human immunodeficiency virus type 1 (HIV1, infection with) Human papillomavirus (HPV) types 5 and 8 (in patients with epidermodysplasia verruciformis) Petroleum refining (occupational exposures in)
Skin (basal cell carcinoma) ^e	Solar radiation X- and Gamma-Radiation	Hydrochlorothiazide
Skin (squamous cell carcinoma) ^e	Azathioprine Ciclosporin Hydrochlorothiazide Methoxsalen plus ultraviolet A radiation Solar radiation Voriconazole	Nitrogen mustard Tacrolimus Ultraviolet-emitting tanning devices
Skin (Merkel cell carcinoma)	Merkel cell polyomavirus ^l	Hydrochlorothiazide
Skin (malignant adnexal skin tumours)		Hydrochlorothiazide
Mesothelium, endothelium and soft tissue		
Mesothelium (pleura, peritoneum, and other)	Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Erionite Firefighter (occupational exposure as a) Fluoro-edenite fibrous amphibole Painter (occupational exposure as a)	
Endothelium (Kaposi sarcoma)	Human immunodeficiency virus type 1 (HIV1, infection with) Kaposi sarcoma herpesvirus (KSHV/HHV8)	
Soft tissue		2,3,7,8-Tetrachlorodibenzo- <i>para</i> -dioxin Polychlorophenols and their sodium salts Radioiodines, including iodine-131
Breast		
Breast	Alcohol consumption Diethylstilbestrol Estrogen-progestogen menopausal therapy, combined Estrogen-progestogen oral contraceptives, combined X- and Gamma-Radiation	Dieldrin, and aldrin metabolized to dieldrin Digoxin Estrogen therapy, post-menopausal Ethylene oxide Night shift work Polychlorinated biphenyls Tobacco smoking
Female genital organs		
Vulva	Human papillomavirus (HPV) type 16	Human immunodeficiency virus type 1 (HIV1, infection with) Human papillomavirus (HPV) type 18 Human papillomavirus (HPV) type 33



Cancer site	Carcinogenic agents with sufficient evidence in humans	Agents with limited evidence in humans
Vagina	Diethylstilbestrol (exposure in utero) Human papillomavirus (HPV) type 16	Human immunodeficiency virus type 1 (HIV1, infection with)
Uterine cervix	Diethylstilbestrol (exposure in utero) Estrogen–progestogen oral contraceptives, combined Human immunodeficiency virus type 1 (HIV1, infection with) Human papillomavirus (HPV) type 16 Human papillomavirus (HPV) type 18 Human papillomavirus (HPV) type 33 Human papillomavirus (HPV) types 31, 35, 39, 45, 51, 52, 56, 58, 59 Tobacco smoking	Human papillomavirus (HPV) type 68 Human papillomavirus (HPV) types 26, 53, 66, 67, 70, 73, 82
Endometrium	Estrogen therapy, post–menopausal Estrogen–progestogen menopausal therapy, combined Tamoxifen	Diethylstilbestrol
Ovary	Asbestos (all forms, including actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite) Estrogen therapy, post–menopausal Tobacco smoking	Talc ^k X– and Gamma–Radiation
Male genital organs		
Penis	Human papillomavirus (HPV) type 16	Human immunodeficiency virus type 1 (HIV1, infection with) Human papillomavirus (HPV) type 18
Prostate		Androgenic (anabolic) steroids Arsenic and inorganic arsenic compounds Cadmium and cadmium compounds Firefighter (occupational exposure as a) Malathion Night shift work Red meat (consumption of) Rubber manufacturing industry Thorium–232 (as Thorotrast) X– and Gamma–Radiation
Testis		DDT (4,4'–dichlorodiphenyltrichloroethane) Diethylstilbestrol (exposure in utero) Firefighter (occupational exposure as a) N,N–Dimethylformamide Perfluorooctanoic acid (PFOA)
Urinary tract		
Kidney	Tobacco smoking Trichloroethylene X– and Gamma–Radiation	Arsenic and inorganic arsenic compounds Automotive gasoline Cadmium and cadmium compounds Welding fumes
Kidney (renal cell carcinoma)		Perfluorooctanoic acid (PFOA)
Renal pelvis and ureter	Aristolochic acid, plants containing Phenacetin Phenacetin, analgesic mixtures containing Tobacco smoking	Aristolochic acid



Cancer site	Carcinogenic agents with sufficient evidence in humans	Agents with limited evidence in humans
Urinary bladder	2-Naphthylamine 4-Aminobiphenyl Aluminium production Arsenic and inorganic arsenic compounds Auramine production Automotive gasoline Benzidine Chlornaphazine Cyclophosphamide Firefighter (occupational exposure as a) Magenta production Opium consumption ortho-Toluidine Painter (occupational exposure as a) Rubber manufacturing industry <i>Schistosoma haematobium</i> (infection with) Tobacco smoking X- and Gamma-Radiation	2-Mercaptobenzothiazole 4-Chloro-ortho-toluidine Acrylonitrile Coal-tar pitch Diesel engine exhausts Dry cleaning (occupational exposures in) Hairdresser or barber, occupational exposures as a Outdoor air pollution Pioglitazone Printing processes (occupational exposures in) Soot (Soots, as found in occupational exposure of chimney sweeps) Tetrachloroethylene (Perchloroethylene) Textile manufacturing industry (work in)
Urinary tract: all combined	Tobacco smoking	
Eye, brain and central nervous system		
Eye	Human immunodeficiency virus type 1 (HIV1, infection with) Ultraviolet radiation from welding Ultraviolet-emitting tanning devices	Solar radiation
Brain: glioma		Radiofrequency electromagnetic fields
Acoustic neuroma		Radiofrequency electromagnetic fields
Brain and central nervous system: all combined	X- and Gamma-Radiation	
Thyroid and other endocrine glands		
Thyroid	Radioiodines, including iodine-131 X- and Gamma-Radiation	
Lymphoid, hematopoietic and related tissues^f		
Childhood acute lymphoblastic leukaemia ^g		Automotive gasoline Human cytomegalovirus (HCMV) Tobacco smoking (parental exposure)
Childhood acute myeloid leukaemia ^g		Benzene Teniposide
Childhood leukaemia: all combined	Fission products, mixtures of (and including strontium-90) Thorium-232 (as Thorotrast) X- and Gamma-Radiation	Chloramphenicol Magnetic fields, extremely low-frequency Painter (occupational exposure as a) (maternal exposure) Radioiodines, including iodine-131 Tobacco smoking (parental exposure)



Cancer site	Carcinogenic agents with sufficient evidence in humans	Agents with limited evidence in humans
Acute myeloid leukaemia ^h	Automotive gasoline Benzene Busulfan Chlorambucil Cyclophosphamide Etoposide in combination with cisplatin and bleomycin Formaldehyde Melphalan MOPP and other combined chemotherapy including alkylating agents Phosphorus-32, as phosphate Semustine (1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea, Methyl-CCNU) Thorium-232 (as Thorotrast) Tobacco smoking Treosulfan X- and Gamma-Radiation	Bischloroethyl nitrosourea (BCNU, Carmustine) Etoposide Mitoxantrone Teniposide
Other acute non-lymphocytic leukaemia ^h	Benzene Formaldehyde Phosphorus-32, as phosphate Thorium-232 (as Thorotrast) X- and Gamma-Radiation	Bischloroethyl nitrosourea (BCNU, Carmustine)
Chronic myeloid leukaemia ^h	Formaldehyde Thorium-232 (as Thorotrast) Tobacco smoking X- and Gamma-Radiation	Benzene
Acute lymphocytic leukaemia ^h	Phosphorus-32, as phosphate Thorium-232 (as Thorotrast) X- and Gamma-Radiation	
Chronic lymphocytic leukaemia ^h		Automotive gasoline Benzene Ethylene oxide
Myelodysplastic syndrome		Automotive gasoline
Leukaemia: all combined	1,3-Butadiene Fission products, mixtures of (and including strontium-90) Human T-cell lymphotropic virus type I (HTLV-1) Rubber manufacturing industry Thiotepa Thorium-232 (as Thorotrast) X- and Gamma-Radiation	Chloramphenicol Diazinon Nitrogen mustard Petroleum refining (occupational exposures in) Radioiodines, including iodine-131 Radon-222 and its decay products Styrene Tacrolimus
Hodgkin lymphoma ⁱ	Epstein-Barr virus (EBV) Human immunodeficiency virus type 1 (HIV1, infection with)	
Primary effusion lymphoma ⁱ	Kaposi sarcoma herpesvirus (KSHV/HHV8)	
Non-Hodgkin lymphoma: immunosuppression-related lymphoma ^{i,j}	Epstein-Barr virus (EBV) Tacrolimus	



Cancer site	Carcinogenic agents with sufficient evidence in humans	Agents with limited evidence in humans
Non-Hodgkin lymphoma: Burkitt lymphoma ^{i,j}	Epstein-Barr virus (EBV)	Malaria (caused by infection with <i>Plasmodium falciparum</i> in holoendemic areas)
Non-Hodgkin lymphoma: extranodal NK/T-cell lymphoma (nasal type) ^{i,j}	Epstein-Barr virus (EBV)	
Non-Hodgkin lymphoma: MALT gastric lymphoma ^{i,j}	<i>Helicobacter pylori</i> (infection with)	
Non-Hodgkin lymphoma: positive for the chromosomal translocation t(14;18) ^{i,j}		Atrazine
Non-Hodgkin lymphoma: all combined ⁱ	2,4,6-Trichlorophenol Azathioprine Ciclosporin Hepatitis C virus (HCV, chronic infection with) Human immunodeficiency virus type 1 (HIV1, infection with) Lindane Pentachlorophenol Tacrolimus	2,3,7,8-Tetrachlorodibenzo- <i>para</i> -dioxin Automotive gasoline Benzene Chlorophenoxy herbicides DDT (4,4'-dichlorodiphenyltrichloroethane) Diazinon Dichloromethane (Methylene chloride) Ethylene oxide Firefighter (occupational exposure as a) Glyphosate Hepatitis B virus (HBV, chronic infection with) Malathion Polychlorinated biphenyls Polychlorophenols and their sodium salts Trichloroethylene X- and Gamma-Radiation
Multicentric Castleman disease ⁱ		Kaposi sarcoma herpesvirus (KSHV/HHV8)
Lymphoma: all combined	1,3-Butadiene Rubber manufacturing industry	Styrene
Multiple myeloma	Pentachlorophenol	1,1,1-Trichloroethane Automotive gasoline Benzene Ethylene oxide X- and Gamma-Radiation
Multiple or unspecified sites		
Lymphoepithelioma-like carcinoma (LELC)		Epstein-Barr virus (EBV)
All cancer sites (combined)	2,3,7,8-Tetrachlorodibenzo- <i>para</i> -dioxin	
Multiple sites (unspecified)	Ciclosporin Fission products, mixtures of (and including strontium-90) X- and Gamma-Radiation (exposure in utero)	Chlorophenoxy herbicides



Footnotes

a This table does not include factors not covered in the IARC Monographs, notably genetic traits, reproductive status, and some nutritional factors.

b See also Pharynx: all combined.

c See also Oesophagus: all combined.

d See also Liver.

e See also Skin (malignant non-melanoma).

f For historical purposes, chronic lymphocytic leukaemia has been included with leukaemias rather than as chronic lymphocytic leukaemia/small lymphocytic lymphoma with non-Hodgkin lymphomas.

g See also Childhood leukaemia: all combined.

h See also Leukaemia: all combined.

i See also Lymphoma: all combined.

j See also Non-Hodgkin lymphoma: all combined.

k The agent "Talc" includes talc containing asbestiform fibres other than asbestos, and talc not containing asbestiform fibres. For talc containing asbestos, see "Asbestos."

l Also includes Merkel cell carcinoma of other sites.

Adapted from Supplemental Table 1 in Schubauer-Berigan et al. (2026) (available from:

<https://academic.oup.com/jncimono/article/2026/72/78/8659402>) and augmented with new information for more recent IARC Monographs evaluations.