List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
Lip, oral cavity, and pharynx		
Lip		Hydrochlorothiazide Solar radiation
Oral cavity	Alcoholic beverages Betel quid with tobacco Betel quid without tobacco Human papillomavirus type 16 Tobacco, smokeless Tobacco smoking	Human papillomavirus type 18
Salivary gland	X-radiation, gamma-radiation	Radioiodines, including iodine-131
Tonsil	Human papillomavirus type 16	
Pharynx	Alcoholic beverages Betel quid with tobacco Human papillomavirus type 16 Tobacco smoking	Asbestos (all forms) Opium (consumption of) Printing processes Tobacco smoke, secondhand
Nasopharynx	Epstein–Barr virus Formaldehyde Salted fish, Chinese-style Tobacco smoking Wood dust	
Digestive tract, upper	Acetaldehyde associated with consumption of alcoholic beverages	
Digestive organs		
Oesophagus	Acetaldehyde associated with consumption of alcoholic beverages Alcoholic beverages Betel quid with tobacco Betel quid without tobacco Tobacco, smokeless Tobacco smoking X-radiation, gamma-radiation	Dry cleaning Opium (consumption of) Pickled vegetables (traditional Asian) Rubber production industry Very hot beverages (squamous cell carcinoma)

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
Stomach	*Helicobacter pylori* Rubber production industry Tobacco smoking X-radiation, gamma-radiation	Asbestos (all forms) Epstein–Barr virus Lead compounds, inorganic Nitrate or nitrite (ingested) under conditions that result in endogenous nitrosation Opium (consumption of) Pickled vegetables (traditional Asian) Processed meat (consumption of) Salted fish, Chinese-style
Colon and rectum	Alcoholic beverages Processed meat (consumption of) Tobacco smoking X-radiation, gamma-radiation	Asbestos (all forms) Night shift work Red meat (consumption of) *Schistosoma japonicum*
Anus	Human immunodeficiency virus type 1 Human papillomavirus type 16	Human papillomavirus types 18, 33
Liver and bile duct	Aflatoxins Alcoholic beverages *Clonorchis sinensis* 1,2-Dichloropropane Estrogen–progestogen contraceptives Hepatitis B virus Hepatitis C virus *Opisthorchis viverrini* Plutonium Thorium-232 and its decay products Tobacco smoking (in smokers and in smokers' children) Vinyl chloride	Androgenic (anabolic) steroids Arsenic and inorganic arsenic compounds Betel quid without tobacco DDT Dichloromethane (Methylene chloride) Human immunodeficiency virus type 1 *Schistosoma japonicum* Trichloroethylene X-radiation, gamma-radiation
Gall bladder	Thorium-232 and its decay products	
Pancreas	Tobacco, smokeless Tobacco smoking	Alcoholic beverages Opium (consumption of) Red meat (consumption of) Thorium-232 and its decay

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
		products X-radiation, gamma-radiation
Digestive tract, unspecified		Radioiodines, including Iodine-131
Respiratory organs		
Nasal cavity and paranasal sinus	Isopropyl alcohol production 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 Formaldehyde Textile manufacturing
Larynx	Acid mists, strong inorganic Alcoholic beverages Asbestos (all forms) Opium (consumption of) Tobacco smoking	Human papillomavirus type 16 Rubber production industry Sulfur mustard Tobacco smoke, secondhand
Lung	Acheson process, occupational exposures associated with Aluminum production Arsenic and inorganic arsenic compounds Asbestos (all forms) Beryllium and beryllium compounds Bis(chloromethyl)ether; chloromethyl methyl ether (technical grade) Cadmium and cadmium compounds Chromium(VI) compounds Coal, indoor emissions from household combustion Coal gasification Coal-tar pitch Coke production Engine exhaust, diesel Haematite mining (underground) Iron and steel founding MOPP (vincristine-prednisone-nitrogen	Acid mists, strong inorganic Art glass, glass containers and pressed ware (manufacture of) Benzene Biomass fuel (primarily wood), indoor emissions from household combustion of Bitumens, occupational exposure to oxidized bitumens and their emissions during roofing Bitumens, occupational exposure to hard bitumens and their emissions during mastic asphalt work Carbon electrode manufacture *alpha*-Chlorinated toluenes and benzoyl chloride (combined exposures)

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
	mustard-procarbazine mixture) Nickel compounds Opium (consumption of) Outdoor air pollution Painting Particulate matter in outdoor air pollution Plutonium Radon-222 and its decay products Rubber production industry Silica dust, crystalline Soot Sulfur mustard Tobacco smoke, secondhand Tobacco smoking Welding fumes X-radiation, gamma-radiation	Cobalt metal with tungsten carbide Creosotes Diazinon Fibrous silicon carbide Frying, emissions from high-temperature Hydrazine Insecticides, non-arsenical, occupational exposures in spraying and application Printing processes 2,3,7,8-Tetrachlorodibenzo-*para*-dioxin
Bone, skin, and mesothelium, endothelium, and soft tissue		
Bone	Plutonium Radium-224 and its decay products Radium-226 and its decay products Radium-228 and its decay products X-radiation, gamma-radiation	Radioiodines, including Iodine-131
Skin (melanoma)	Solar radiation Ultraviolet-emitting tanning devices Polychlorinated biphenyls	
Skin (other malignant neoplasms)	Arsenic and inorganic arsenic compounds Azathioprine Coal-tar distillation Coal-tar pitch Cyclosporine Methoxsalen plus ultraviolet A Mineral oils, untreated or mildly treated Shale oils Solar radiation Soot	Creosotes Human immunodeficiency virus type 1 Human papillomavirus types 5 and 8 (in patients with *epidermodysplasia verruciformis*) Hydrochlorothiazide Merkel cell polyomavirus (MCV) Nitrogen mustard

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
	X-radiation, gamma-radiation	Petroleum refining, occupational exposures Ultraviolet-emitting tanning devices
Mesothelium (pleura and peritoneum)	Asbestos (all forms) Erionite Fluoro-edenite Painting	
Endothelium (Kaposi sarcoma)	Human immunodeficiency virus type 1 Kaposi sarcoma herpes virus	
Soft tissue		Polychlorophenols or their sodium salts (combined exposures) Radioiodines, including iodine-131 2,3,7,8-Tetrachlorodibenzo-*para*-dioxin
Breast and female genital organs		
Breast	Alcoholic beverages Diethylstilbestrol Estrogen–progestogen contraceptives Estrogen–progestogen menopausal therapy X-radiation, gamma-radiation	Dieldrin Digoxin Estrogen menopausal therapy Ethylene oxide Night shift work Polychlorinated biphenyls Tobacco smoking
Vulva	Human papillomavirus type 16	Human immunodeficiency virus type 1 Human papillomavirus types 18, 33
Vagina	Diethylstilbestrol (exposure in utero) Human papillomavirus type 16	Human immunodeficiency virus type 1

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
Uterine cervix	Diethylstilbestrol (exposure in utero) Estrogen–progestogen contraceptives Human immunodeficiency virus type 1 Human papillomavirus types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 Tobacco smoking	Human papillomavirus types 26, 53, 66, 67, 68, 70, 73, 82
Endometrium	Estrogen menopausal therapy Estrogen–progestogen menopausal therapy Tamoxifen	Diethylstilbestrol
Ovary	Asbestos (all forms) Estrogen menopausal therapy Tobacco smoking	Talc-based body powder (perineal use) X-radiation, gamma-radiation
Male genital organs		
Penis	Human papillomavirus type 16	Human immunodeficiency virus type 1 Human papillomavirus type 18
Prostate		Androgenic (anabolic) steroids Arsenic and inorganic arsenic compounds Cadmium and cadmium compounds Firefighters, occupational exposure Malathion Night shift work Red meat (consumption of) Rubber production industry Thorium-232 and its decay products X-radiation, gamma-radiation
Testis		DDT Diethylstilbestrol (exposure in utero)

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
		N,*N*-Dimethylformamide Firefighters, occupational exposure Perfluorooctanoic acid
Urinary tract		
Kidney	Tobacco smoking Trichloroethylene X-radiation, gamma-radiation	Arsenic and inorganic arsenic compounds Cadmium and cadmium compounds Perfluorooctanoic acid Printing processes Welding fumes
Renal pelvis and ureter	Aristolochic acid, plants containing Phenacetin Phenacetin, analgesic mixtures containing Tobacco smoking	Aristolochic acid
Urinary bladder	Aluminum production 4-Aminobiphenyl Arsenic and inorganic arsenic compounds Auramine production Benzidine Chlornaphazine Cyclophosphamide Magenta production 2-Naphthylamine Opium (consumption of) Painting Rubber production industry *Schistosoma haematobium* Tobacco smoking *ortho*-Toluidine X-radiation, gamma-radiation	4-Chloro-*ortho*-toluidine Coal-tar pitch Dry cleaning Engine exhaust, diesel Hairdressers and barbers, occupational exposure 2-Mercaptobenzothiazole Pioglitazone Printing processes Soot Tetrachloroethylene Textile manufacturing

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]		
Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
Eye, brain, and central nervous system		
Eye	Human immunodeficiency virus type 1 Ultraviolet emissions from welding Ultraviolet-emitting tanning devices	Solar radiation
Brain and central nervous system	X-radiation, gamma-radiation	Radiofrequency electromagnetic fields (including from wireless phones)
Endocrine glands		
Thyroid	Radioiodines, including Iodine-131 X-radiation, gamma-radiation	
Lymphoid, haematopoietic, and related tissue		
Leukaemia and/or lymphoma	Azathioprine Benzene[b] Busulfan 1,3-Butadiene Chlorambucil Cyclophosphamide Cyclosporine Epstein–Barr virus Etoposide with cisplatin and bleomycin Fission products, including Strontium-90 Formaldehyde *Helicobacter pylori* Hepatitis C virus Human immunodeficiency virus type 1 Human T-cell lymphotropic virus type 1 Kaposi sarcoma herpes virus Lindane Melphalan MOPP (vincristine-prednisone-nitrogen mustard-procarbazine mixture) Pentachlorophenol Phosphorus-32 Rubber production industry	Benzene[b] Bischloroethyl nitrosourea (BCNU) Chloramphenicol DDT Diazinon Dichloromethane (Methylene chloride) Ethylene oxide Etoposide Firefighters, occupational exposure Glyphosate Hepatitis B virus Magnetic fields, extremely low frequency (childhood leukaemia) Malaria (caused by infection with *Plasmodium falciparum* in holoendemic areas) Malathion Mitoxantrone Nitrogen mustard Painting (childhood leukaemia

List of classifications by cancer sites with *sufficient* or *limited evidence* in humans, *IARC Monographs* Volumes 1–127[a]

Cancer site	Carcinogenic agents with *sufficient evidence* in humans	Agents with *limited evidence* in humans
	Semustine (methyl-CCNU) Thiotepa Thorium-232 and its decay products Tobacco smoking Treosulfan X-radiation, gamma-radiation	from maternal exposure) Petroleum refining, occupational exposures Polychlorinated biphenyls Polychlorophenols or their sodium salts (combined exposures) Radioiodines, including Iodine-131 Radon-222 and its decay products Styrene Teniposide 2,3,7,8-Tetrachlorodibenzo-*para*-dioxin Tobacco smoking (childhood leukaemia in smokers' children) Trichloroethylene
Multiple or unspecified sites		
Multiple sites (unspecified)	Cyclosporine Fission products, including strontium-90 X-radiation, gamma-radiation (exposure in utero)	Chlorophenoxy herbicides Plutonium
All cancer sites (combined)	2,3,7,8-Tetrachlorodibenzo-*para*-dioxin	

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

[b] For benzene, the evidence in humans is sufficient for acute non-lymphocytic leukaemia, including acute myeloid leukaemia; and the evidence in humans is limited for non-Hodgkin lymphoma, chronic lymphoid leukaemia, multiple myeloma, chronic myeloid leukaemia, and acute myeloid leukaemia in children

Adapted from Table 4 in Cogliano *et al.* (2011) available at: http://jnci.oxfordjournals.org/content/early/2011/12/11/jnci.djr483.short?rss=1

Last update: 9 October 2020