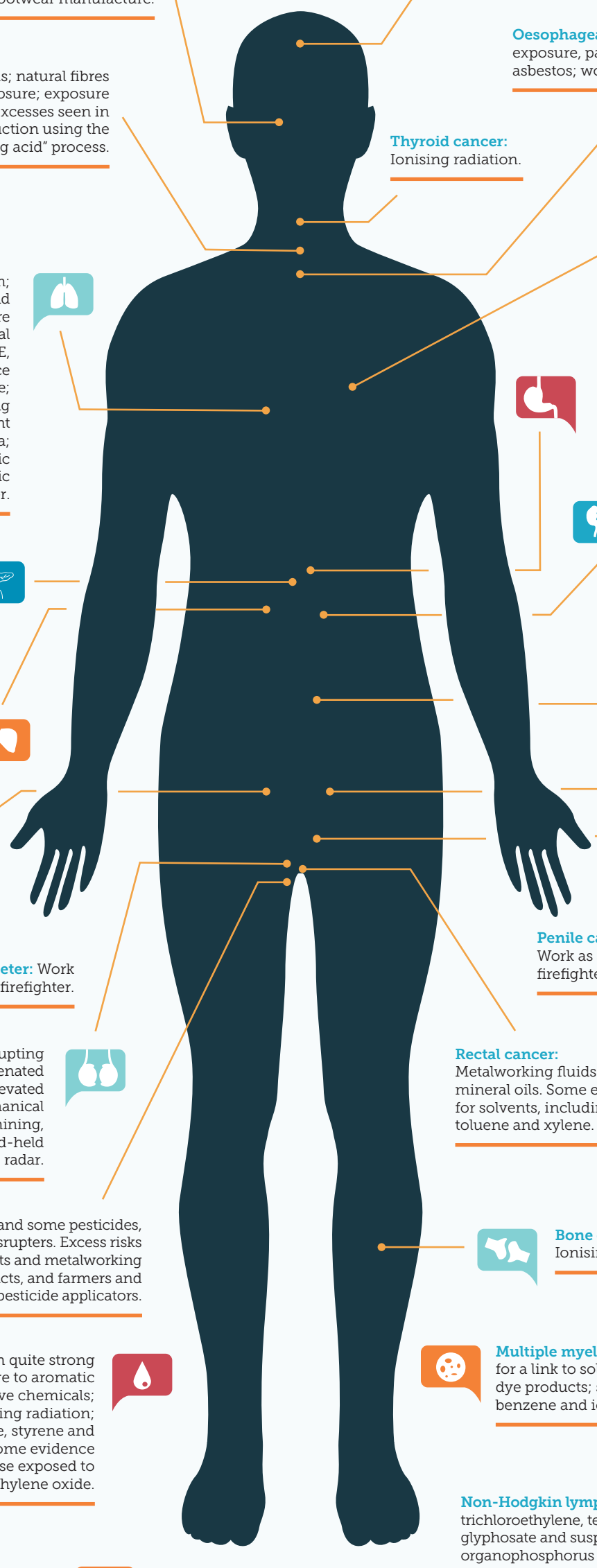
Cancers and their work causes

An ITUC/Hazards at-a-glance guide to cancer hazards at work



Nasal/sino-nasal and nasopharynx cancer: Chromium; nickel; some evidence for benzene, reactive chemicals and formaldehyde; styrene; metalworking fluids; natural fibres including wood dust; ionising radiation. Associated with work in footwear manufacture.

Laryngeal cancer: Metalworking fluids and mineral oils; natural fibres including asbestos; some evidence for wood dust exposure; exposure to reactive chemicals including sulphuric acids. Excesses seen in rubber workers, nickel refining, and chemical production using the "strong acid" process.

Mesothelioma: Asbestos; erionite.

Lung cancer: Arsenic; beryllium; cadmium; chromium; nickel; solvents, particularly aromatics (benzene and toluene); ionising radiation, including radon exposure to radon anded uranium, haematite and other metal ores miners; reactive chemicals including BCME, CCME, mustard gas, welding fumes, plus some evidence for sulphuric acids; environmental tobacco smoke; petrochemicals and combustion byproducts, including PAHs and diesel exhaust fumes; some inconsistent evidence on pesticides, including DDT; asbestos; silica; wood dust; some man-made fibres, including ceramic fibres. Some evidence supports excess risks in specific industries, including the rubber industry, work as a painter.

Pancreatic cancer: Acrylamide; metalworking fluids and mineral oils. Some evidence for cadmium, nickel, solvent exposure, reactive chemicals, possibly formaldehyde. Limited evidence for pesticides. Some evidence for DDT and DDT derivatives.

Liver and biliary cancer: Ionising radiation; vinyl chloride and angiosarcoma of the liver; PCBs. Some evidence for arsenic, chlorinated solvents and reactive chemicals.

Bladder cancer: Arsenic; solvents, particularly tetrachloroethylene; aromatic amines; petrochemicals and combustion products, including polycyclic aromatic hydrocarbons, diesel exhaust fumes; metalworking fluids and mineral oils; ionising radiation; work in the rubber industry; work as a painter.

Ureter: Work as a firefighter.

Testicular cancer: Evidence for endocrine disrupting chemicals (e.g., phthalates, PCBs and polyhalogenated hydrocarbons). A literature review found significantly elevated risks in men working in agriculture, tanning and mechanical industries, and consistent associations with painting, mining, plastics, metalworking and occupational use of hand-held radar.

Prostate cancer: Links to cadmium, arsenic and some pesticides, notably herbicides and other endocrine disrupters. Excess risks have been found for exposure to metallic dusts and metalworking fluids, PAHs and liquid fuel combustion products, and farmers and pesticide applicators.

Leukaemia: Organic solvents, notably benzene, with quite strong evidence for childhood leukaemia and paternal exposure to aromatic and chlorinated solvents, paints and pigments; reactive chemicals; ionising radiation; conflicting evidence on non-ionising radiation; pesticides, including carbon disulphide, phosphine, styrene and methyl bromide, plus limited evidence for DDT. Some evidence of increased risk in the petroleum industry and those exposed to ethylene oxide.

Soft tissue sarcomas: Vinyl chloride monomer (angiosarcoma of the liver); pesticides. Ewing's sarcoma in pesticide- exposed workers.

Brain and other CNS cancers: Lead; arsenic; mercury; solvents, including benzene, toluene, xylene and methylene chloride; pesticides; n-nitroso compounds, work in the rubber industry.

Oesophageal cancer: Suggestive evidence for solvent exposure, particularly tetrachloroethylene. Metalworking fluids; asbestos; work in the rubber industry.

Thyroid cancer: Ionising radiation.

Breast cancer: Ionising radiation; endocrine disrupters; solvents; environmental tobacco smoke; PCBs; pesticides, including DDT/DDE, hexachlorobenzene, lindane, heptachlor breakdown products and triazine herbicides; combustion by-products including PAHs and dioxin; reactive chemicals including ethylene oxide; possible links to non-ionising radiation, phthalates. Also long-term work at night.

Stomach cancer: Ionising radiation; metalworking fluids and mineral oils; asbestos. Some evidence for solvents and pesticides. Excess risks found in workers in the rubber, coal, iron, lead, zinc and gold mining industries.

Kidney cancer: Evidence sketchy because of high survival rates, but some links to arsenic, cadmium and lead; solvent exposure, particularly trichloroethylene; petroleum products; welding fume; pesticides linked to Wilms' tumour in children, and to the children of fathers employed as mechanics or welders.

Colon/colorectal cancer: Limited evidence for solvents xylene and toluene and ionising radiation.

Ovarian cancer: Asbestos. Limited evidence for pesticides and ionising radiation. Limited evidence for an excess in hairdressers and beauticians.

Penile cancer: Work as a firefighter.

Cervical cancer: Limited evidence linking solvents, including trichloroethylene and tetrachloroethylene. Work as a firefighter.

Rectal cancer: Metalworking fluids and mineral oils. Some evidence for solvents, including toluene and xylene.

Skin cancer: UV and sun exposure; metalworking fluids and mineral oils; melanoma of the eye in welders; nNon-melanoma skin cancers from arsenic, creosote, PAHs, coal tars and ionising radiation.

Bone cancer: Ionising radiation.

Hodgkin's disease: Solvents, with some evidence for trichloroethylene, dry-cleaning solvents and benzene; pesticides; woodworking.

Multiple myeloma: Some evidence for a link to solvents, pesticides and dye products; stronger evidence for benzene and ionising radiation.

Non-Hodgkin lymphoma: Organic solvents, including benzene, trichloroethylene, tetrachloroethylene, and styrene; pesticides, including glyphosate and suspected links with phenoxy herbicides, chlorophenols, organophosphorus insecticides, carbon disulphide, phosphine, methyl bromide, ethylene dibromide and 2-4-D. Limited evidence for DDT and other organochlorine pesticides. Some evidence for PCBs and dioxin and possibly dye products.

Jobs such as firefighters, manufacturing workers – especially those using chemicals – construction workers, miners, agricultural workers exposed to agrochemicals and those workers exposed to passive smoking are among the occupations at an elevated risk of certain cancers, however there is at least some risk of occupational cancer in virtually every job, from cleaning, to catering to nursing.