

Diseases, Disorders and Injuries

Acne

On this page

[What is occupational acne?](#)

[What causes oil acne?](#)

[What causes coal-tar acne?](#)

[What causes chloracne?](#)

[Are there other causes of occupational acne?](#)

[How can we prevent occupational acne?](#)

What is occupational acne?

Occupational acne is an inflammation of the skin glands (the sebaceous glands produce oil that coats, moisturizes, and protects the skin). The inflammation occurs when certain chemicals block the pores of the skin causing the accumulation of skin oils and the formation of a skin protein called keratin. The accumulation of the oily substance and the formation of keratin lead to the formation of whiteheads, blackheads, cysts, lesions, nodules, or pimples.

Three different groups of chemicals are known to cause occupational acne:

Table Causes of occupational acne in various occupations

Group	Agent	Type of Acne	Occupational Group
1	Petroleum and its derivatives: Crude oil and fractions Cutting oils	Oil acne	Machine-tool operators, mechanics, and workers exposed to petroleum and its derivatives
2	Coal-tar products: Coal tar oils Pitch Creosote	Coal-tar acne	Coal-tar plant workers, construction workers, roofers, road paving workers, paper tube impregnation workers, conduit manufacturers, wood and cable preservation workers
3	Halogenated aromatic compounds: Chloronaphthalenes Polychlorinated biphenyls (PCBs) Polychlorinated dibenzofurans (PCDFs) Polychlorinated dibenzo-p-dioxins (PCDDs) for example 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) 3,4,3',4'-Tetrachloroazoxybenzene (TCAOB) 3,4,3',4'-Tetrachloroazobenzene (TAB.)	Chloracne	Chemical manufacturing workers, laboratory workers, maintenance workers, waste handling workers, workers in industries using certain halogenated hydrocarbons

What causes oil acne?

Oil acne is caused by skin exposure to petroleum-based greases and cutting oils. Oil acne presents as pimples and blackheads. Oil acne can occur on any skin that is exposed to petroleum-based grease or oil but usually affects the arms and hands. Other areas such as the abdomen and thighs may be affected especially if they are covered with oil-soaked clothes.

People with oil acne should see a physician. Without treatment, the condition may persist for months after the exposure to oil stops. Skin lesions caused by repeated exposure to petroleum products may develop into skin cancer if they are not treated.

What causes coal-tar acne?

Coal-tar acne is caused by skin exposure to coal-tar. Coal-tar acne usually presents as blackheads around the eyes. In general, coal-tar acne clears up rapidly, but in some cases, it may persist long after the exposure stops. People with coal-tar acne may experience skin darkening. They also may report burning sensations and flushing of the skin after exposure to light. Coal-tar skin lesions, if left untreated, may develop into skin cancer.

What causes chloracne?

Exposure to various halogenated aromatic compounds causes chloracne. Chloracne presents as yellow cysts, blackheads, and nodules. The skin lesions occur mainly on the face, but in more severe cases may also occur on the shoulders, chest, back, abdomen, arms, thighs, legs, hands, and feet. Chloracne is most often caused by direct skin contact with a halogenated aromatic compound, but can also occur after ingestion or inhalation.

Halogenated aromatic compound exposure may cause chloracne within three to four weeks after exposure. In some cases, chloracne may last up to fifteen years even if exposure stops.

Note that exposure to halogenated aromatic compounds can also cause liver disease, bronchitis, nausea, vomiting, and diarrhea. The nervous system may also be affected, causing other symptoms including headache, fatigue, irritability, sweaty palms, and leg numbness.

Are there other causes of occupational acne?

Healthcare providers have reported facial acne from the prolonged use of respirators or medical masks. Acne is thought to be caused by the physical blockage of skin pores by tight-fitting masks. Currently, this type of acne is not formally classified as occupational acne.

How can we prevent occupational acne?

Occupational acne can be prevented by reducing or eliminating occupational exposure to the causative agents. Workplaces should evaluate the hazards that their workers are exposed to using the [hierarchy of controls approach](#).

Eliminating contact with the product will prevent occupational acne. Where possible, workplaces should substitute hazardous acne causing products with nonhazardous products.

Engineering controls are also important to reduce exposure. Enclosing the process separates workers from the harmful products with which they work. Installing adequate local exhaust systems may prevent direct skin contact and inhalation. Using well-designed spray equipment may reduce overspray of harmful substances. Installing barriers to prevent contact with the products may also reduce exposure.

Administrative controls include education and training about the hazards of the products, occupational and personal hygiene, and methods to reduce exposure (e.g., job rotation). Good occupational and personal hygiene, including proper skin washing techniques, can reduce occupational acne. Workplaces should provide change rooms, shower facilities, and workers should be encouraged to wear fresh coveralls daily. Education and training are also necessary. Canadian legislation requires that all workers be informed about the nature and hazards of products and work processes they are exposed to.

Workers should review the safety data sheets (SDSs) of all products they work with. The SDS provides information on compatible PPE, possible health effects from exposure, and safe use and disposal of the product. Workers should also ensure that products used at work are properly labelled and that they know how to work safely with the products.

Personnel protective equipment (PPE) including facemask, goggles, gloves, apron, etc. should be worn as required by the task and the products being used. Make sure that they are properly selected because not all protective clothing provides protection against all products.

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