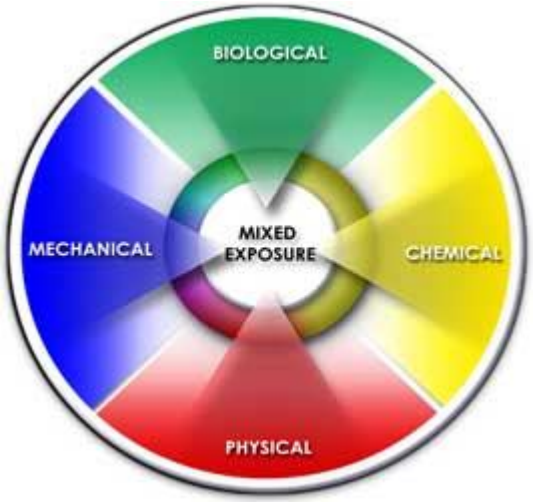
GET TO KNOW YOUR SKIN

Functions of the Skin

The skin is the body's largest organ, accounting for more than 10 percent of body mass. The skin provides a number of functions including:

- Protection
- Water preservation
- Tactile sensation
- Calorie reservation
- Temperature control
- Shock absorption
- Lubrication and waterproofing
- Vitamin D synthesis

Types of Skin Hazard



(a) **Physical agents** such as extreme temperatures (hot or cold) and radiation (UV/solar radiation).

(b) **Mechanical trauma** includes friction, pressure, abrasions, lacerations and contusions (scrapes, cuts and bruises).

(c) **Biological agents** include parasites, microorganisms, plants and other animal materials.

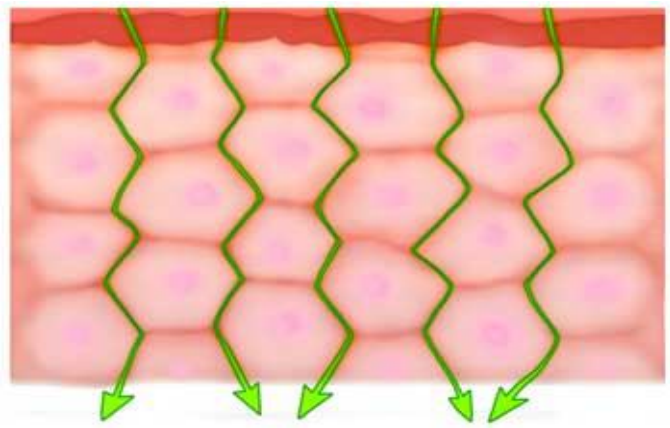
(d) **Chemical agents** are the main cause of occupational skin diseases and disorders. These agents are divided into two types:

1. Primary irritants.
   - Primary or direct irritants act directly on the skin though chemical reactions.
2) Sensitizers.

- Sensitizers may not cause immediate skin reactions, but repeated exposure can result in allergic reactions.
- A worker's skin may be exposed to hazardous chemicals through:
  (a) direct contact with contaminated surfaces
  (b) deposition of aerosols
  (c) immersion
  (d) splashes

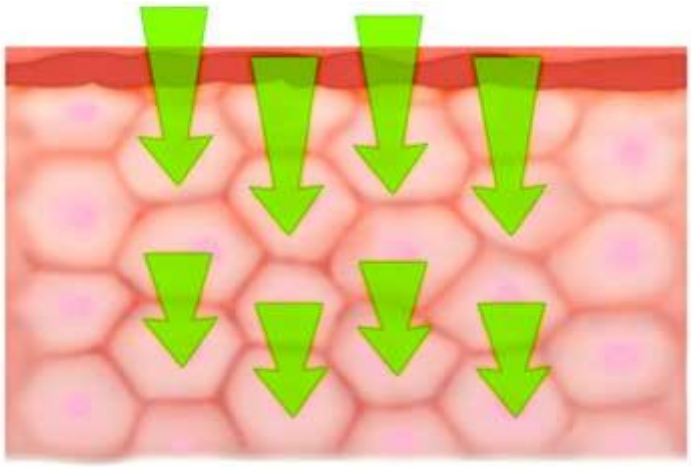
Dermal Absorption

Research has revealed that skin absorption occurs via diffusion, the process whereby molecules spread from areas of high concentration to areas of low concentration. Three mechanisms by which chemicals diffuse into the skin:

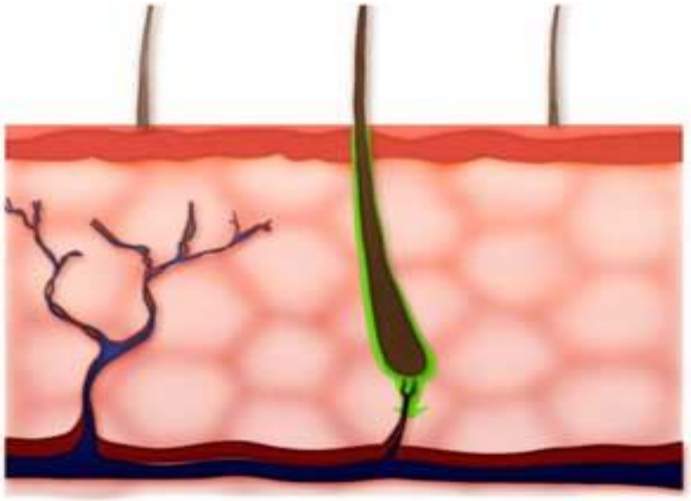


(a) Intercellular lipid pathway.

The stratum corneum consists of cells known as corneocytes. The spaces between the corneocytes are filled with substances such as fats, oils, or waxes known as lipids. Some chemicals can penetrate through these lipid-filled intercellular spaces through diffusion.



(b) Transcellular permeation
Chemicals to be absorbed into and through the skin cell-to-cell, permeation whereby molecules diffuse directly through the corneocytes.



(c) Through the appendages (hair follicles, glands)

This pathway is usually insignificant because the surface area of the appendages is very small compared to the total skin area. However, very slowly permeating chemicals may employ this pathway during the initial stage of absorption.

The severity of contact dermatitis is highly variable and depends on many factors including:

- Characteristics of the hazardous agent
- Concentration of the hazardous agent
- Duration and frequency of exposure to the hazardous agent
- Environmental factors
- Condition of the skin

The following can help keep your workplace safe if you work with chemicals or other hazardous substances:

- Keep your workplace clean.
- Keep proper waste containers in place.
- Store all chemicals safely and label them correctly.
- Have an MSDS available for any dangerous substance used in your work.
- Keep eye baths and safety showers available if you use strong acids or dangerous chemicals in your workplace.

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