

Get to Know Your Skin

When you consider that skin is the body's largest organ—nearly 3,000 square inches in size—it's not surprising that skin disease is the most common job-related illness. Knowing the structure of your skin and what kinds of chemicals can damage it will help you understand how skin disease happens and how you can prevent it.

How Skin Protects

Your skin has three layers. The outermost layer serves as armor for the sensitive, living tissue underneath. It can take a fair amount of abuse, but when it becomes dry and cracked, irritants can easily pass through. Furthermore, it has holes—for hair shafts and sweat ducts—that can't keep out irritants. Beneath the surface layer is a growth layer that continually replaces the cells in the surface layer; you receive a whole new skin about every 30 days. Beneath the growth layer is a layer of tissue containing nerves, blood vessels and glands to produce sweat, and lubricating oils that protect the surface. This layer not only supports and protects your skin, but it also acts as a temperature-regulating device for your whole body.

When the top layer becomes damaged, irritants can penetrate to the deeper layers. Mild skin irritation or dermatitis involves only the surface and growth layer, while major skin damage involves all layers of skin. When irritation occurs, the skin tries to protect itself by building up a thicker epidermis—in other words, you become "thick-skinned." But this thicker layer is more likely to crack, leading to further damage and exposing your body's systems to contamination. In order to avoid skin damage, you must keep your skin's surface from becoming rough, dry or cracked.

Causes of Skin Problems

Skin can be damaged by heat, cold, mechanical trauma and infection. But by far the most common causes of workplace skin disease are chemical irritants, such as solvents, acids or caustics.

Solvents (along with the soaps and detergents used to clean them up) dissolve your skin's protective, oily coating, allowing the surface to dry and crack. This is why it is unwise to clean your hands with solvents. If solvents don't seem to bother your skin, remember that damage from solvents builds up gradually over time: The chemicals enter your body and can damage your liver and kidneys.

Acids react with your skin, chemically burning it away. The more concentrated the acid, the more immediate and penetrating the damage. Unfortunately, some acids, such as hydrofluoric acid, do not produce pain until they have already penetrated deep into the skin.

Bases, including such caustics as ammonia and lye, found in many cleaning products, also produce a chemical burn, destroying whatever they come into contact with, including skin.

Metal compounds and many other chemicals can produce allergic reactions causing allergic dermatitis. Once you develop allergic dermatitis, you must completely avoid contact with that chemical.

Many other chemicals are capable of damaging or destroying skin. Before using a chemical, always read the warning labels or MSDSs to find out if they are hazardous. Then take action to keep hazardous chemicals from getting "under your skin." □

