

# Contact Dermatitis

## What is Contact Dermatitis?

Contact dermatitis is the term for dermatitis (eczema) which is due to the effects of chemicals in contact with the skin. There are two types of contact dermatitis — irritant and allergic.

## Irritant Contact Dermatitis (ICD)

Irritant contact dermatitis (ICD) occurs when damage to the surface layer of the skin exceeds the capacity of the skin to repair itself. This damage may be caused by soaps/detergents, solvents, acids or alkalis, water, hygroscopic agents, abrasives, and so on.

Often ICD is due to the cumulative effects of several irritants. The degree of damage to the skin will also depend on factors like the concentration of the irritant, and the duration and frequency of exposure.

Extremes of temperature or humidity, and covering up the skin (e.g. wearing protective gloves) may magnify any irritant effect. Also, people vary in their susceptibility, and those with a previous history of hand dermatitis may be more at risk than others.

In general, ICD affects the hands — since these are normally the only site with a sufficient exposure to irritants to develop a dermatitis.

Usually, ICD of the hands looks no different to any other type of hand dermatitis, and the diagnosis is made by the history and exclusion of other causes such as an allergy.

Dermatitis, caused by a significant exposure to irritants, often improves when the sufferer has markedly reduced or discontinued exposure to the irritant (e.g. when on holiday).

Generally, a clinical examination cannot differentiate contact dermatitis from any other form of dermatitis, nor determine whether it is irritant or allergic in origin. The exception is that dermatitis of the fingerwebs is usually due to wet work.

## Allergic Contact Dermatitis (ACD)

Allergic contact dermatitis (ACD) involves the immune system (as does any kind of allergy).

ACD has a delayed hypersensitivity response, which means that it may take two to three days before the dermatitis reaction develops following contact with the chemical to which the person is allergic. Because of this delay, and the fact that people are exposed to multiple chemicals at work and at home, it is impossible to be sure what the allergen (the chemical which causes the allergy) is just by taking a history.

Some chemicals are more likely to cause an allergy than others, and so the medical practitioner can draw up a list of possible culprits, based on the person's history of exposure, but the allergy needs to be verified by allergy testing.

The allergy test is called a "patch test" and involves putting test substances on the person's back, and reading the response after two and four days.

Choosing the chemicals to be tested (and their concentrations) and interpreting the results is not as straightforward as it might seem, and is best left to someone skilled in this procedure.

Some allergens are activated by sunlight and may produce a sunburn-like reaction on exposed sites such as the face, V of the neck, tops of the hands and forearms. A reaction to an airborne substance, e.g. an allergy to colophony in soldering fume, may cause a similar clinical picture.

There are hundreds of potential allergens and some common ones include: epoxy resins, chromate (in cement), plants, rubber additives and acrylates.

One does not usually develop an allergy on first contact with a chemical — it usually follows repeated contact and/or exposure to a high concentration of the chemical. ACD, like ICD, may develop after weeks, months or even years in a particular job. Once allergic though, even small exposures may provoke a vigorous reaction. ACD can coexist with ICD or other forms of dermatitis.

## How is Contact Dermatitis Treated and Prevented?

- Strongly irritating or highly allergenic chemicals can sometimes be replaced with less problematic alternatives.
- In general, the grubbier the work, the more heavy duty the cleanser needs to be, but try to use the mildest one to clean off workplace dirt.
- DO NOT use solvents to clean the skin and dry hands thoroughly on soft material or paper.

- Use an emollient or moisturising cream regularly (at least three times a day) if doing wet work or exposed to other irritants, as this will help the skin to repair its own barrier layer.

Barrier creams, as such, are often of dubious worth, and may make dermatitis worse in some industries — they should not be recommended without good reason. Barrier creams in some jobs may allow for easier cleansing of the skin at the end of the day.

- Wear gloves that are appropriate for the job. Material safety data sheets can provide information on whether or not gloves are necessary, and what type of glove material is suitable. Gloves themselves may be a source of irritation or allergy. Gloves which are perished or have holes in them may be worse than no gloves at all. Where possible, it is best to avoid wearing gloves for more than two hours a day.
- Be clean in your work habits and avoid spills, splashes and unnecessary exposures.
- Where possible, keep the temperature down — the hotter the work environment, water or other irritant substance, the more likely irritant contact dermatitis will occur.
- Treat any minor dermatitis with creams as prescribed by your doctor. Damaged skin is more susceptible to further damage.

## Further Information

Further information may be obtained from the OSH publication *A Guide to Occupational Skin Disease* (\$10.00 incl. GST).