



Hand Dermatitis

a pocket guide for health care workers





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Hand dermatitis (also known as hand eczema) is a common condition affecting up to 10% of the population. Some occupations including working in health care make us more vulnerable to dermatitis. Good hand care and simple precautions can reduce your risk of developing hand dermatitis. If you do develop this condition these simple precautions will for most improve the condition of your hands. This booklet will provide healthcare workers with a better understanding of good hand care and prevention of skin damage. It will also aid in understanding the common types of hand dermatitis how to recognise them and actions to take if you suspect skin damage.



The booklet is divided into 5 sections:

- **Section 1** explains the normal structure and functions of the skin
- **Section 2** describes what we can all do to keep our hands healthy
- **Section 3** highlights the early warning signs of skin damage
- **Section 4** explores the three most common types of hand dermatitis
- **Section 5** describes treatment for hand dermatitis

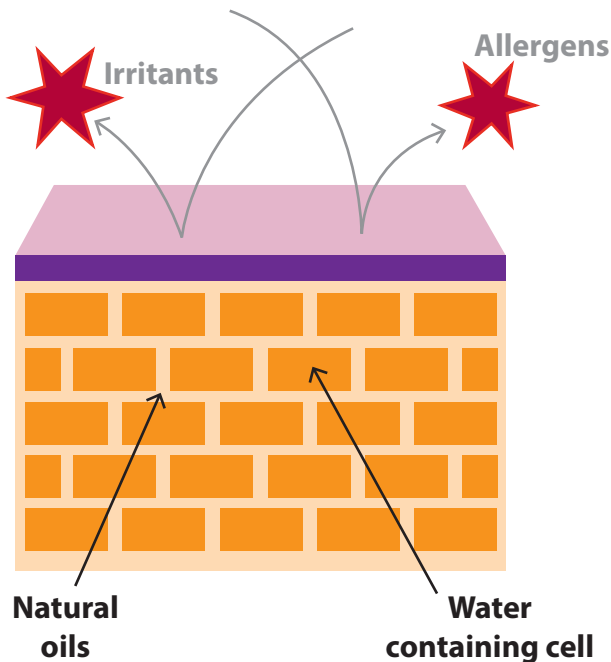


The Structure and Function of the Skin

It is essential to have some background knowledge on the normal structure and function of any organ before you can consider what may go wrong. Remember throughout this learning resource that the skin has the unique capacity to renew itself when damaged.

The skin is often referred to as the largest and most visible organ of the body and serves as the main protective barrier against damage to internal organs. The skin barrier is located in the uppermost layer of the skin, protecting the underlying skin from the entry of irritants and allergens.

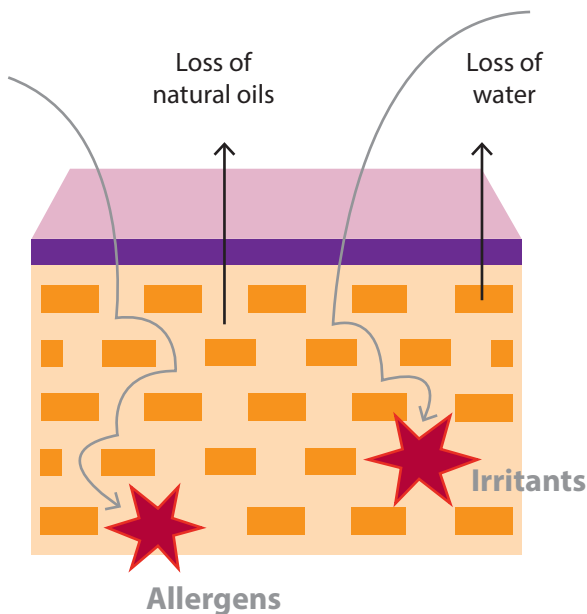
The skin barrier could be imagined as a brick wall with the skin cells as the bricks and the natural oils (also known as the lipid layer) surrounding them as the cement.

Healthy Skin

The best way of looking after your skin is to take a preventive approach to promote skin health. To keep healthy, the skin must be intact i.e. its barrier function must not be compromised. Breakdown of the skin barrier, leading to dry itchy skin is common

and tells us that there is water being lost. This can, in turn, lead to cracks in the skin, which allow the penetration of irritants and allergens. The brick wall image below shows that the bricks (skin cells) have shrunk and the cement (natural oils) are depleted.

Loss of Skin Barrier





Section 1: The Structure and Function of the Skin

Key Point:



The skin is our protective covering and it can become damaged by a number of factors including strong sunlight, smoking, diet and stress. Skin cleansing also takes a toll and, for healthcare workers in particular, hand hygiene. For those who develop it, damaged skin can be extremely uncomfortable with symptoms such as itch, pain and swelling. Promoting healthy skin not only prevents physical skin deterioration, but also has a major positive impact on quality of life.

In **section 2** we will focus on the hands and how we can use simple measures to keep the skin on our hands healthy.



Prevention – Good Hand Care

The World Health Organisation (WHO) cites skin irritation as the most common barrier to good hand hygiene technique. Both employers and employees are responsible for the introduction and use of good hand care techniques with a view to prevention of skin problems becoming established. The Health & Safety at Work Act 1974 states individuals must take care of themselves and others who may be affected by their actions. NHS Scotland have a strong focus on patient safety and the elimination of avoidable harm. Good practice in hand hygiene is essential in reducing risk of infection to our patients.

The UK Health and Safety Executive notes that healthcare workers may develop dermatitis more often than the general population. The most common causes are working with wet hands and contact with liquid soaps and cleaning materials. Many people have pre-existing skin conditions, which although not work related, may get worse with workplace exposure.

Both you and your employer have a legal obligation to identify tasks that are likely to cause dermatitis. COSHH is the law that requires employers to



Section 2: Prevention - Good Hand Care

control substances that are hazardous to health <http://www.hse.gov.uk/coshh/> A risk assessment should be carried out to reduce the risk as far as is reasonably possible by preventing/controlling exposure to substances that are known to cause irritation.



The condition of your skin can be affected in both a positive and negative way by:

- how frequently you wash your hands with soap and water
- alcohol gel application
- application of emollients
- wearing of gloves
- use of chemicals

Using emollient (soap substitute and moisturising cream) can reduce episodes of hand dermatitis, or improve the condition of your hands if it does occur. These products should be readily available in your workplace and at home and used as often as is practical, in particular prior to breaks. Do not use communal tubs of hand cream in the care setting as these are an infection risk.



Hand hygiene techniques have been implemented for infection control measures and these are in place to protect both patients and healthcare workers. The World Health Organisation (WHO) introduced “Five Moments for Hand Hygiene” in healthcare www.who.int/gpsc/tools/Five_moments/en. This defines the key moments for hand hygiene in order to reduce the spread of healthcare associated infection. Liquid soap and water is known to have a drying and sometimes irritant effect on the hands. Using the right cleansing product at the right time can help prevent irritation and dryness. With this in mind the NHS Scotland National Infection Prevention and Control Manual www.hps.scot.nhs.uk/haic/ic/guidelinedetail.aspx?id=49785 advises the following:

Wash hands with liquid soap and water when:

- hands are visibly soiled or dirty; or
- caring for a patient/client with a suspected or known gastro-intestinal infection e.g. Norovirus or a spore forming organism such as Clostridium

Use alcohol based hand rub for routine hand hygiene in all other clinical situations.



Section 2: Prevention - Good Hand Care

Other important considerations include:

- jewellery - only wear a plain band as jewellery can increase skin irritation
- wet hands prior to applying liquid soap
- rinse and dry well

Key Point:



Follow the WHO and NHS Scotland advice on hand hygiene and the use of hand hygiene products. Alcohol based hand rubs are more gentle on the skin than soap and water because they do not strip away the natural oils / lipid layer. As they work by evaporation...the natural oils / lipid layer is protected. If you have skin that is already damaged by wet work, alcohol based hand rubs will sting, but continued use over a matter of a few days will allow the natural oils to replenish themselves and it will no longer sting. There are several alcohol based hand rubs available and if you experience an ongoing problem with one, it is important that you are given access to an alternative product, ensuring you are safe in the workplace. Speak with your line manager or occupational health services to access alternative products.

In **section 3** we will focus on the importance of regularly examining your hands and the changes you may see with hand dermatitis.

What to look for in your skin

Hand dermatitis (also known as hand eczema) is a common condition affecting up to 10% of the population. It often results from a combination of factors including:

- your own genetic make-up such as if you have or previously had atopic eczema
- contact with irritants and allergens.

The irritant nature of some chemicals means that hand dermatitis is particularly common in healthcare workers who wash their hands frequently with soap and water or detergents. Accidental exposure to disinfectant or other substances may cause irritation. More rarely the constituents of gloves and other equipment may cause allergy.



Hand dermatitis is an inflammatory condition and is not contagious, but it can have a major impact on work, social life and self-esteem.

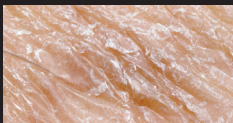


Examining your skin

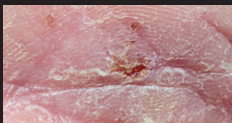
Regularly inspecting your hands will lead to early detection of changes. The symptoms of hand dermatitis vary in severity. It may affect the backs of the hands, the palms or both. It often starts as an occasional complaint, but can become increasingly severe and persistent. The affected skin initially becomes red and dry, then may progress to one or all of the following:

- itchy bumps (papules)
- fluid-filled blisters (vesicles)
- scaling
- cracking (fissures).

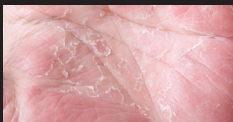
Bacterial infection can result in pus filled spots (pustules), crusting and pain. Hand dermatitis may trigger a reaction affecting other areas of the body, particularly the forearms and feet.



Dryness



Scaling



Flaking



Cracking



Redness



Swelling



Blisters or Vesicles



Change in sensation

In addition to the changes in appearance of the skin, itching, tingling or pain may be experienced depending on severity.

Key Point:



Early detection of skin damage and appropriate treatment will quickly resolve the problem for most people. Speak to your GP, nurse, pharmacist, line manager or occupational health department for further advice if you are experiencing any of the changes described here.

In **section 4** we will look at the 3 main types of hand dermatitis in more detail.



What can go wrong

This section will cover the three main types of hand dermatitis:

- irritant contact dermatitis
- allergic contact dermatitis including latex/ rubber allergy
- contact urticaria

Irritant Contact Dermatitis

Irritant contact dermatitis is the most common form of contact dermatitis. It is caused by chemical or physical damage to the skin. There are two types of irritant contact dermatitis:

- **acute** - which usually happens after a brief contact with water along with an irritant substance such as undiluted liquid soaps, solvents or detergents.
- **chronic** - which develops after repeated contact with an irritant substance, causing damage to the skin barrier. The rash usually completely clears up if the substance is no longer in contact with the skin, but can reappear with further contact.

**Table 1 - common irritants**

The most common irritants in healthcare workers

Water

Solvents and detergents

Chemicals

Abrasives

People who already have a skin condition may have a reduced skin barrier function and be more likely to develop irritant contact dermatitis

Changes you might experience in your hands

Irritant contact dermatitis can range from mild dryness to a severe reaction. It usually occurs on the hands with inflammation, pain and a rash in the finger webs and may spread to the palms and back of the hands. The affected area tends to be sore rather than itchy.

Steps you can take

Firstly do you know what is causing the problem? If possible, avoid using the product or substance. Good skin care is the corner stone to healthy hands. Section 5 explains the key elements to avoidance and general skin care.



Traffic light

If your hands do not improve with good skin care and avoidance measures, speak to your GP, nurse, pharmacist, occupational health department or line manager for further advice.

Allergic Contact Dermatitis

Allergic contact dermatitis develops in two phases:

- **Phase 1:** the skin becomes sensitive to a specific substance which results in an allergic reaction.
- **Phase 2:** repeated contact will result in long term sensitivity to the specific substance. Be aware it can take several days for the skin to react.

Changes you might experience in your hands

We can all react differently - in some people the reaction will be mild while in others it will be severe. You may experience intense itching and see well-defined patches of redness. Blisters may also appear.

If untreated or unidentified long term problems can lead to: dryness, scaling, and cracking of the hands.

Steps you can take

If you know or suspect a substance is causing any of the above changes to your hands, speak with your line manager for advice. You should also make sure you are referred to occupational health who may make a referral on to dermatology services for patch testing which may be necessary. Patch testing is used to confirm or exclude allergy to a substance.

Table 2 lists the workplace substances which most commonly cause allergic reactions in healthcare workers and gives examples of the type of product which may contain the substance.



Traffic light

If allergy is confirmed by patch testing, it will be life-long. You will be advised by the dermatology nurse or doctor on how to avoid the substance you are allergic to. You may need further advice and support from your occupational health department if the avoidance measure has an impact on the equipment at work or the way in which you may carry out your work tasks.

Table 2 - common substances causing reactions



The most common substances which cause allergic reactions in healthcare workers

Chromium - found in dental or orthopaedic implants

Biocides – used to preserve liquids and wet wipes

Nickel - found in paper clips, keyboards, jewellery

Epoxy resin - found in glues and adhesives, vinyl gloves, dental bonding agents

Formaldehyde resins - found in adhesives, adhesive tapes, disinfectants, hearing aids, prosthesis, rubber products

Acrylates - found in acrylic bone cement, medical spray adhesives, dental technology/materials, floor polishes, plastic bottles

Fragrances - found in dental cement, mouth wash, toothpaste, personal hygiene products, pharmaceutical creams and ointments

Rubber additives (added to natural rubber latex) - found in rubber gloves, elastic bandages, adhesive tapes, urinary catheters, wound drains, protective sheets, anaesthetic equipment, teeth protectors.



Latex/rubber allergy

Latex /rubber allergy has occurred over many years. It is one of the more common causes of allergic reaction in healthcare workers and this is thought to be due to repeated exposure through the use of latex gloves and other medical devices. The use of safer powder free, low protein latex has reduced the occurrence of latex allergy.



Traffic light

If latex allergy or sensitivity is confirmed, it will be life-long. You will be advised on latex avoidance measures such as using non-latex gloves.

For a few people a severe reaction to latex may be a medical emergency.

Contact Urticaria

Contact urticaria is a common condition which is also known as nettle rash, wheals or hives. This usually happens when the skin reacts to a substance. The substances which commonly cause reactions in the workplace are listed in Table 2. The urticarial reaction usually happens very quickly, within a few minutes.

Changes you might experience in your hands

The affected area will be swollen with a red border and white centre. The rash may blister and is usually itchy, it may last for a few hours but can last up to 24 hours.

Steps you can take

If you know or suspect a substance is causing any of the above changes to your hands, speak with your line manager for advice on avoidance.



Traffic light

People who already have a skin condition may have a reduced skin barrier function and may be more likely to develop contact urticaria. In most people, urticaria is non-allergic, for some however, it is due to an allergic reaction. If this is suspected, referral on to dermatology services for further tests may be necessary.



Section 4: What can go wrong

In **section 5** we will focus on the three key elements of treatment for hand dermatitis.

Treating Hand Dermatitis:

In many cases an accurate diagnosis, followed by careful avoidance or minimising use of the substance will result in complete resolution of symptoms.



The three key elements to treatment are:

- avoidance or minimising contact with the identified substance
- good general skin care at home: use of soap substitutes and emollients/moisturisers
- practicing appropriate skin cleansing at work

Avoiding or minimising contact

If you can totally avoid contact with the substance i.e. wearing protective gloves, you should do so. In some cases, such as liquid soap and water, avoidance is not possible. Minimising the use of liquid soap and water and replacing it with alcohol based hand rub can help relieve symptoms. The recommendation is that liquid soap and water is



Section 5: Treating Hand Dermatitis

only used to clean hands when they are visibly soiled. Alcohol based hand rub should be used at all other times.

General skin care

Emollients / moisturisers are a key element in controlling and managing dry skin conditions such as hand dermatitis.

To cleanse hands out with working hours, a soap substitute may be used. Soap substitutes, when applied prior to contact with water, help prevent stinging and act as a moisturiser.

Moisturisers come in several forms but the cream moisturisers are most often used. They can be used on any dry skin on the body and have a cooling effect. Emollient / moisturisers should be applied at least twice a day during working hours, such as before coffee or lunch breaks. Do not use communal tubs of hand cream in the care setting as these are an infection risk. After work more regular application is recommended.

Appropriate skin cleansing at work

Use liquid soap and water only when hands are visibly soiled or dirty or caring for a patient/client with a suspected or known gastro-intestinal infection e.g. Norovirus or a spore forming organism such as Clostridium.

Use alcohol based hand rub for routine hand cleansing in all other clinical situations

Hand dermatitis may be considered as a relatively minor ailment, but if it is left unchecked, it can become a chronic condition which may have a significant impact on work and home life. Applying the three key elements of treatment can greatly improve, or completely resolve the condition.



Traffic Light

If your hands do not improve with good skin care and avoidance measures speak to your GP, nurse, pharmacist, occupational health department or line manager for further advice. You may need prescribed treatments to alleviate symptoms.



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This resource may be made available, in full or summary form, in alternative formats and community languages. Please contact us on **0131 656 3200** or email **altformats@nes.scot.nhs.uk** to discuss how we can best meet your requirements.



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