

# gloves



**Use gloves when contact is likely with blood, body fluids, sterile equipment or substances hazardous to health**



**Latex allergies and sensitivities can be serious and can affect you and/or the residents. Typical signs include itchiness, rashes, dermatitis and even anaphylaxis**

## 5 point action plan



**You must report any allergic reaction or sensitivity to gloves or latex. Alternative products are available**



**If your hands become dry, use hand cream to avoid cracks and soreness**



**If in doubt please ask**

# allergy

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# medical briefing

## Glove and latex sensitivities

**This article reviews the use of gloves in a nursing home environment and looks at the risks associated with glove/latex sensitivities**

### HISTORY

The medical glove can be traced back to 1896 when a surgeon in Baltimore named Halstead commissioned the first pair. A theatre sister had developed hand dermatitis from repeated contact with chloride of lime scrub-solution. The rubber gloves allowed her hands to heal and she subsequently married Halstead!

Early rubber gloves were made by dissolving solidified natural rubber in a solvent called naphtha. Ceramic hand shapes were then dipped in this solution until a number of layers had built up and the glove was of sufficient thickness to provide protection. The only problem was that the naphtha weakened the natural properties of the latex and the gloves were relatively thick. Since natural latex is sticky, the gloves were dusted with talc inside and out to assist donning.

A shortage of natural rubber during the second world war led to the development of several synthetic polymers, including nitrile and vinyl (polyvinyl chloride). These polymers have a number of benefits over natural latex including greater resistance to oils and chemicals.

Just after the war, it was realised that the presence of talc was causing a number of problems such as postoperative adhesions and granulomas. Corn starch was introduced in the hope that this would be more acceptable to the body, but in fact similar complications were experienced particularly in patients whose systems failed to "digest" the starch particles. Another problem with the powder used in gloves is that it absorbs potentially allergenic natural proteins from the latex and then carries them in the air. This powder can cause Type 1 contact urticaria and even anaphylactic reactions.

A new process was developed called chlorination, which created a smooth inner surface to the glove and reduced the stickiness of the latex. The chlorination process if properly carried out reduces the gloves' extractable protein content to below the analytical limit of detection. Many (but by no means all) staff with known sensitivity to rubber proteins can wear chlorinated latex gloves without provoking a skin reaction.

Another source of allergic reaction arises from the chemicals used to develop the physical strength and storage stability of natural and synthetic gloves. Known as organic accelerators, these chemicals can cause Type IV delayed allergic contact allergens.

Unfortunately there is no simple universal answer to the problem of glove allergy, there are however a number of different products which usually enable individuals to find an acceptable solution.

### LATEX GLOVES

- ◆ Generally favoured for its tactile properties
- ◆ Good overall strength
- ◆ Resistance to a wide range of aqueous chemical solutions
- ◆ Similarly priced to vinyl gloves

### VINYL GLOVES

- ◆ Contain no proteins
- ◆ Contain no allergenic chemicals
- ◆ Less tactile than latex gloves
- ◆ Not as strong as latex
- ◆ Suitable for examination work and a range of procedures
- ◆ Similarly priced to latex gloves

### NITRILE GLOVES

- ◆ Do not absorb oils and solvents as readily as latex
- ◆ Generally stronger than latex and vinyl
- ◆ Around 3-4 times the price of latex or vinyl gloves

### WELDED SEAMS

- ◆ The welded seams of polythene or co-polymer gloves have been proven to be unreliable in application where transmission of infections could occur.
- ◆ Use in a healthcare setting has been largely discontinued

The control of substances hazardous to health (COSHH) regulations (1994) imposes statutory obligation on employers to carry out risk assessments for hazardous substances, implement suitable control measures and carry out any necessary health surveillance.

**POWDERED GLOVES**

- ◆ Powder assists donning and manufacture/storage
- ◆ The powder itself may cause allergic reactions
- ◆ Powder absorbs proteins from the glove which then become air borne when donned
- ◆ The powder can be harmful to both the wearer and the patient



between the fingers. The skin may become leathery and express papules or blisters.

**OR POWDER FREE**

- ◆ No powder means no airborne allergens when donning
- ◆ No residual powder left on the patient
- ◆ The chlorination process used to make powder free gloves also reduces the levels of other potential allergens.
- ◆ Powder free gloves are around 1.5 times the price of powdered gloves because of the additional costs involved in manufacturing.

**GLOVE STANDARDS**

All gloves should be produced to EN455, an European norm that specifies freedom from holes, the materials strength and its biological acceptability.

**TYPES OF ALLERGIC REACTIONS**

**PRODUCED BY GLOVES**

**IRRITATION**

This is a non-allergic condition, the effects of which are usually reversible. When latex gloves are used, a rash may occur on the back of the hands that is characteristically dry and itchy. These symptoms are usually resolved once contact with latex is discontinued.

**Delayed hypersensitivity (Type IV)**

This reaction is predominantly caused by an allergy to the residues of accelerating agents used in the manufacturing process of gloves.

Also known as allergic contact dermatitis, the severity of this type of allergy varies enormously. It is often characterised by a red rash on the back of the hands and



to minimising glove-related problems amongst the wearer and patient.

**PREVALENCE OF LATEX ALLERGY**

Type IV reactions have been identified as the most common, but increasingly, Type I reactions are now being reported. This has coincided with the increased use of latex rubber gloves in the health care environment. Amongst the population at large, the prevalence is around 1%. In a healthcare environment where there is frequent, prolonged or intimate contact with latex devices, the prevalence rises to around 3% , but it has been reported as high as 10%. It is important to remember that patients can also be at risk.

**ACTION AT THE HOME LEVEL**

- ◆ Staff should be made aware of the problems associated with latex – A poster is available from Gompels HealthCare which provides a starting point.
- ◆ A benchmark review of adverse reactions amongst staff should be carried out to establish the level of problem in the home.
- ◆ The protein and allergen levels of the gloves should be available in the home as a COSHH sheet.
- ◆ Staff should be encouraged to report

**Skin Structure**

Ideally our skin's moisture content should not be less than 10% and not more than 22%. Perspiration inside a glove means that the hands can be wet for long periods of time. The natural oils in the skin are washed out by a mixture of perspiration, soap and water, this leads to dry hands and increased susceptibility to infections. Conditioning cream at the end of the working day can help to maintain healthy skin.

reactions, depending on procedures, this can be on a specialised form or in an incident book.

- ◆ Some homes and groups have a powder free only policy. Whilst this should reduce the incidence of problems considerably, it is not a complete solution.

**ACTION FOR THE CARER**

Depending on the severity of allergy, staff are advised initially to switch to powder-free gloves with low extractable protein levels and to monitor their symptoms.

If this is not effective, switching to non-latex gloves such as vinyl is recommended (or Nitrile where added strength is required).

If there is any doubt or symptoms persist, medical advice should be sought because the consequences can be severe.

**ACTION FOR THE PATIENT**

- ◆ Staff must be aware of the potential dangers posed by natural latex devices to patients.
- ◆ Admission procedures should include a question about latex allergy.
- ◆ Anecdotal accounts of swelling or itching of lips after dental or internal examinations may be signs of allergy.
- ◆ People with food allergies are generally more at risk

Since June 1998, all medical gloves are required to carry the CE marking. Although it is impossible to say what levels of extractable proteins are acceptable, levels should at least be below 50ug/g.

**RISK MANAGEMENT**

The needs for the protection of the carer and the patient should be balanced with the risks associated with the use of



**Recommended Use**

Sterile	Non Sterile
All invasive procedures	Non-invasive procedures
All acute wounds healing by first intention	- changing pads
	- washing patients
	- general cleaning
Catheterisation	Chronic wounds
	- leg ulcers
	- pressure sores
	- fungating wounds
	- abscess cavities
	- stoma sites

gloves. However, it is generally accepted that gloves should be worn when there is a likelihood of hand contact or exposure to:

- ◆ Blood
- ◆ Body fluids
- ◆ Non-intact skin or mucous membranes
- ◆ Contaminated items or surfaces
- ◆ Hazardous substances

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**Health and Safety Risk Assessment Form – Glove Usage**

Name: \_\_\_\_\_  
 Nursing Home Name: \_\_\_\_\_  
 Wing/Floor: \_\_\_\_\_  
 Date: \_\_\_\_\_

The control of substances hazardous to health (COSHH) regulations (1994) impose statutory obligation on employers to carry out risk assessments for hazardous substances, implement suitable control measures and carry out any necessary health surveillance.

	Please ✓ appropriate box		
	Yes	No	
Have you seen the home policy for glove usage?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Are gloves freely available in the home?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Are the gloves available in the home of the correct size for you?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Do you feel the gloves available are suitable for the purpose you use them?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Do you use gloves whenever contact is likely with ...?			
Blood	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Body fluids	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Sterile equipment	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Substances hazardous to health	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Are you aware that the gloves you use may cause you sensitivities or allergic reactions?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Have you ever experienced any itchiness or redness on your hands whilst using gloves?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Have you ever experienced any itchiness or soreness on your hands 12-48 hours after using gloves?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Have you ever experienced a red rash on the back of your hands or between your fingers after using gloves?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Has the skin of your hands ever become leathery or shown any signs of papules or blisters after using gloves?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Have you ever suffered from breathing difficulties after using gloves?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Do you suffer from allergic reactions from foods like nuts, bananas or kiwis?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Are you aware that patients may also suffer as a result of contact with gloves?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	