



Fact Sheet 1

The Importance of Clothing in Eczema

There is plenty of helpful information on managing eczema but strangely one important aspect is often forgotten. What type of clothing should be worn next to the skin?

Traditionally the advice has always been cotton. This was primarily based on subjective instinct rather than objective evidence. The argument ran that cotton is natural and feels soft and therefore should be kind to eczema.

But in recent years instinct has been replaced by research and knowledge. New fabrics have been developed and traditional advice has been challenged. As a result there is now a growing body of objective information about clothing and its effect on eczema.

The purpose of this fact sheet is to provide a summary of that information and advice on which fabrics may be good or bad for eczema.

Types of Fabric

Fabrics can be divided into two groups - synthetic or natural.

Synthetic fabrics are produced by the chemical processing of petroleum. They are practical, hard wearing, do not fade and easy to wash and dry. Examples include nylon, polyester and rayon. They are occasionally combined with natural fibres.

Unfortunately, despite these practical advantages they are not the fabric of choice for eczematous skin. Comparative clinical studies between synthetic fabrics and cotton in eczema suggest that synthetic materials tend to cause more itch and discomfort. A recent (2009) study looking at causes of flares of eczema in children identified nylon clothing as a significant irritant. (Others included unfamiliar pets, sweating and shampoo).

Rayon forms the basis of medical "Wet" and "Dry" wrap garments where the fabric is used as occlusive layer to enhance the activity of emollients. However it must only be used under medical supervision.

Natural fabrics are derived from either plant fibres, eg cotton and linen, or animal fibres, eg wool and silk.

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Wool, as you might expect, has been shown to irritate eczema. Studies have shown that the intensity of itching from wool fibres increases in relation to the coarseness of the wool.

Cotton is soft, relatively smooth and naturally abundant. Intuitively, it would seem a good fabric to wear next to eczematous skin. However, it has an important flaw in its structure. Cotton yarn is spun from many short (1-3cm) fibres with flat irregular edges. It is also poor at absorbing moisture and slow to dry. These properties can be a problem if you suffer from eczema.

Temperature regulation can often be affected in eczema leading to overheating and sweating. When cotton comes into contact with moisture the short fibres within the thread extend and contract as they try to absorb moisture producing a subtle rubbing movement. This abrasive movement and prolonged contact with a damp material can irritate eczema.

Natural silk is made up of a two filaments (threads) of a material called fibroin glued together with a sticky substance called sericin which, when woven tightly gives silk its characteristic shine. In contrast to the short stubby fibres of cotton, each silk thread is made up of long smooth filaments that do not cause friction on the skin. But natural silk also has a structural flaw. The sticky sericin component can cause allergic reactions and closely woven products commonly sold in department stores do not allow the passage of air and moisture through them. Consequently silk has not been recommended in the past.

The therapeutic Role of Clothing in Eczema

Scratching eczema makes it worse and clothing provides a barrier to scratching. However, it is important that the clothing is not itself an irritant.

Ideally, a fabric worn next to eczematous skin should be low friction, assist temperature control, absorb moisture and provide an effective barrier to scratching.

Cotton

For years cotton has been the fabric of choice. It is smooth, hypoallergenic and provides an effective barrier to scratching. However, it is poor at absorbing moisture and we now know its microscopic structure is potentially abrasive.

Silk

Treated *sericin-free silk* has been safely used to stitch up wounds in surgery for many years. Sericin-free silk is also smooth, hypoallergenic, and provides an effective barrier to scratching. In addition it can be knitted, not woven, which allows air and moisture to pass through it. It has greater ability to absorb moisture than cotton without feeling damp, and helps maintain the body temperature by reducing excessive sweating and moisture loss.

Recently a selection of clothing products based on sericin-free silk (DermaSilk®) has been developed for use in eczema and many of them are now available on prescription. DermaSilk also has an "antimicrobial shield" permanently bonded to it which kills germs and protects the fabric from contamination by bacteria and fungi. These garments can be used over long periods of time and need to be worn regularly to gain full benefit. Their role is to support other medications such as creams and ointments, and they help in the reduction of itch and scratching. Clinical trials have shown they are more effective than cotton in the management of eczema.

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“Silver” clothing

Several companies produce cotton or synthetic garments with interwoven silver threads or ionic silver built into them. These are being sold as being developed for use in eczema. The silver gradually leaks on to the skin from the fabric. This kills the surrounding bacteria, particularly *Staphylococcus aureus* which is abundant in eczema. There is some evidence to show that the antibacterial effect of the silver helps improve the eczema. However, there is concern about the safety of prolonged skin contact with silver especially in infants and toddlers as silver can accumulate in the body and does not find its way out.

Wet and Dry Wrapping

The inflammation of the skin in eczema fluctuates and during severe flares may benefit from a technique known as wet or dry wrapping.

The technique basically involves applying large amounts of emollient to the skin, wrapping the area in a bandage or garment, and leaving the wrapping on the skin for a period of 8-12 hours. Dry Wrapping involves just a single dry layer of fabric and wet wrapping involves a dampened layer of fabric which is covered by a second dry layer.

Both variations of the technique require training from a healthcare professional and strong motivation as they are very labour intensive. Garments or bandages that are used in this form of treatment are usually made from synthetic materials such as rayon and are designed to assist in the penetration of moisturisers and steroids into the skin of the wearer. Product names include Comfast, Cosifit Skinnies and Tubifast.

Summary

The type of clothing that you wear next to eczema affected skin can have a dramatic effect on the way in which your eczema responds to treatment and this fact is becoming increasingly recognised by Healthcare Professionals.

The choice of clothing is often limited for children but a good under layer should allow you to wear almost anything on top so they should not stand out in the crowd.

Natural fibres are generally preferable to synthetics but some do have potential drawbacks so care must be taken to select the right fabric and product.

Improvements in textile technology are producing therapeutic Garments which can support the effects of creams etc and these are becoming widely available on prescription. Not all are used in the same way or for the same level of severity and some require considerable effort on the part of the family to achieve good results.

Information supplied by Espère Healthcare Ltd, distributors in the UK & Ireland for DermaSilk Therapeutic Clothing and DermaTherapy Bedding

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