



# Skin Integrity

## The Basics of Skincare

### Training Support Pack

### A Framework For Study Reflection

*This resource has been accredited by the RCN Accreditation Unit until 20/05/2011*





# **Skin Integrity The Basics of Skincare**

## **A Framework For Study Reflection**

**Barbara Page & Sheila Robertson 2008**



This resource has been accredited by the RCN Accreditation Unit 20/05/2011



# Promoting Skin Integrity

The basics of skin care .....

- Emollients
- Emollients
- Emollients

This presentation is on the basics of skin care with the emphasis on the importance of **healthy skin** and of how you, who are at the forefront of assessing and caring for your patient, can make a difference in your area of practice.

# Skin



- Facts & functions
- Skin assessment
- Documentation/communication
- Promoting healthy skin
- Emollient therapy

During this presentation, we shall consider these five points, looking at each in more depth as we progress.

# Skin Facts .....



- ❑ The largest organ of the body
- ❑ Weighs approx 2.5kg (16% body weight)
- ❑ Covers an area approx 2 sq metres
- ❑ Contains over 1 million nerve endings
- ❑ Has ability to regenerate itself
- ❑ Cell renewal takes approx 28 days
- ❑ Contains approx 20% of total body water

As the largest organ of the body, there is obviously a huge variation in physical shapes and sizes dependent on individuals and age comparisons.

When trying to visualise an area of 2 square metres it may be helpful to consider a snooker table which apparently is an approximation to the size of an average adults skin coverage!

This is obviously not research based.

Consider the one million nerve endings and these being the receptors for pain and touch. This demonstrates what a sensory organ your skin is.

Not many organs have the ability to regenerate and this is a very positive aspect of skin management. We can see and feel the progress being made, however it is important to stress the time taken to repair skin, with re-growth from the basal cell layer upwards taking approximately one month.

# Structure of the Skin

## Epidermis: Outer layer

- ❑ Stratum corneum mainly composed of keratinocytes, 4 layers
- ❑ Basal/Prickle/Granular/Horny

## Dermis: Inner layer

- ❑ Thick layer beneath the epidermis consisting of supportive connective tissue
- ❑ Collagen/Elastin

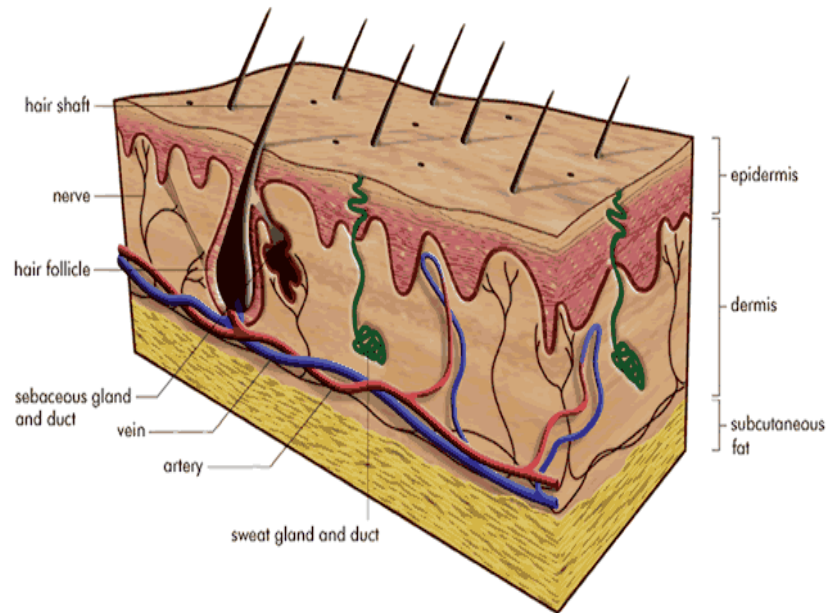
The **Epidermis** is made up of millions of tiny cells called **Keratinocytes**. These cells are constantly growing outward towards the surface where they flatten, die and flake off, the process takes about 30 days. This is the skin's natural exfoliation (to see this, press sellotape on your skin, removed the tape will be cloudy with these dead cells). This layer is known as the **Stratum Corneum**. It is only as thick as tissue paper and is the skin's main barrier. Under this lie tightly packed layers of skin cells, pigment cells and defence cells. The cells of the epidermis are held together by a greasy glue consisting of a complex mixture of **LIPIDS**.

The **Dermis** is tough because of the fibres of collagen and elastin giving the skin its strength and elasticity. As we age so the collagen fibres become thinner leading to more fragile skin that has the potential to break and bruise more easily.

Ref. Holden C. et al (2002) Advised best practice for the use of emollients in eczema and other dry skin condition. Journal Dermatology Treatment 13(3): 103-06



# Structure of the Skin



It is helpful to consider the complex structures which are contained within the Epidermis and Dermis layers of the skin.

We do not however expect you to memorise all the anatomical details, but as a visual aid you may find this diagram helpful in your clinical practice.

Ref. Skin: its structure, function and related pathology in Hughes, E & Van Onselen, J 2001 Dermatology nursing – a practical guide Edinburgh: Churchill Livingstone 1-6

## Appendix 1

# Function of the Skin



- Barrier**
- Temperature control
- Sensory
- Vitamin D synthesis
- Communication & display

There are **5** key functions of the skin:

**Barrier** - this is the main function we will focus on in this session.

**Temperature Control** - conserves heat and conversely helps to cool us down.

**Sensory** - each square centimetre of skin contains 200 nerve endings - touch - pain - hot - cold.

**Vitamin D synthesis** - this happens in the skin through complex chemical action when the skin is exposed to UV light.

**Communication & display** - psychological and social standing is affected by how our skin looks and how we feel about it and can have a profound effect on the Quality of Life of a person - young or old.

# Skin Assessment - Senses

## Touch - Vital

Healthy skin should be smooth and supple but **not** hot

- Dry & rough - moisture loss/fluid intake
- Hot & smooth - inflammation/infection
- Skin turgor - poor nutrition
- Skin folds - sub mammary & groins
- Toe webs - site/entry of infection

**An accurate skin assessment is particularly important.** You should consider the entire body, not just an area which an individual presents to you. There may be other areas involved, which can be detected by undertaking a full assessment and history. Using your basic senses - 4 out of 5 senses are used when assessing the skin:

**Touch** - the skin will provide vital information about the integrity and warmth. Healthy skin should feel smooth, supple but **not** hot  
Consider - is the skin.

**Dry and rough** - Losing moisture, consider fluid intake.

**Hot and smooth** - could indicate inflammation or infection.

**Skin turgor** - what does it feel like - this is important as poor nutrition and poor fluid intake can be identified by this simple observation.

**Skin folds** - Look in the flexures, sub mammary or groin for signs of fungal or bacterial infection.

**Check between the toes** - may be a site of entry of infection eg cellulitis.

# Skin Assessment - Senses



## Sight

The skin will provide visual clues - especially if the person cannot communicate

- Skin broken
- Skin scratched
- Unusual lesions

Should the skin be broken or scratched, consider loss of barrier function and penetration of infection.

Any unusual or non-healing lesions should be highlighted and referred on to the appropriate discipline for advice/consultation.

# Skin Assessment - Senses

## Smell

Important to recognise

- Poor hygiene
- Incontinence
- Fungal/bacterial infection can smell

We all develop our sense of smell and over time can recognise intuitively the different organisms that are causing body odour or infection. This is a very useful sense and skill to have. Following your intuition, further investigations may be necessary eg skin swab for bacteria, skin scraping for mycology.

# Skin Assessment - Senses



## Listening

This will help to find out more about the person

- Pain
- Discomfort
- Body Language

Active listening is vitally important when assessing the person and their skin. Body language and actions can give us so much information.

- Does physical touching of the skin cause pain?
- How do people describe the sensation which they are experiencing in their skin?

# Dry Skin



Mild dry skin is easier to treat. However if left untreated, will exacerbate the condition leading to disruptions in skin integrity and function. Severe dry skin compromises the barrier function of the skin which can lead to the risk of inflammation and infection.

# Documentation & Communication



- ❑ Ensure accurate documentation
- ❑ Effective and timely communication is vital to the wellbeing of the patient

Documentation will vary in our different work environments, however we are all acutely aware of how important these two points are if we are to be seen to be assessing the skin effectively.

There is little to be gained from identifying these visual clues and then not documenting or transferring the information as appropriate.

Ref. Nursing and Midwifery Council: Guidelines for Records and Record Keeping (2004)



# Essential Components of Observation



- Assessment
- Documentation
- Communication

To summarise it is important that recognition is given to these 3 essential components of observational practice.

Following your initial assessment it is vital that using the above practice you document your findings and recognise when referral would be the most appropriate outcome, whether to a senior colleague or a specialist service.

We have covered these very important points in the previous slides.

# Emollients



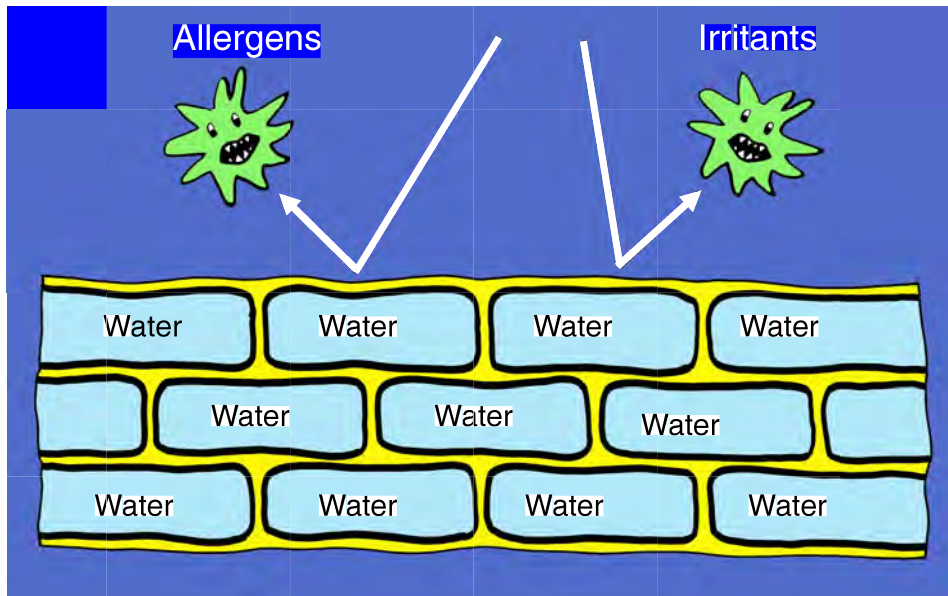
**“Emollients are oils and lipids that spread easily on skin, providing partial occlusion that hydrates and improves the appearance of the Stratum Corneum.”**

Rawlings A.V. et al., Dermatologic Therapy, Vol. 17, 2004, 49-56

Basically emollient means soothing, calming substance.

Ref. Rawlings AV, et al (2004) Moisturizer technology versus clinical performance Dermatologic Therapy Vol 17(suppl 1): 49-56

# Healthy Skin



© 2001 Elliott/Cork/Cork

## Normal healthy skin

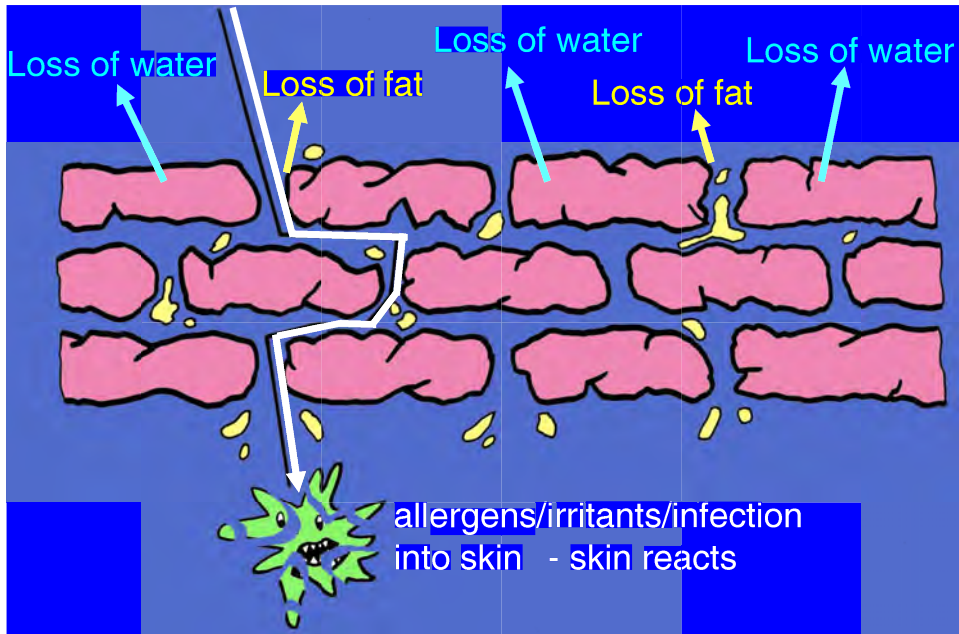
Looking at the top layer of skin which is known as the epidermis or the “cell factory” of the skin where cells develop through a number of stages until they form the stratum corneum.

From base to surface this takes around 28 days.....much slower as the skin ages. The skin cells produce natural lipids which hold the skin cells together.

If we can relate this simply to a brick wall ..... bricks are the cells ..... mortar, the natural lipids ..... surface is intact, like a smooth coping stone on top of the wall.

What happens when the surface layer (stratum corneum/coping stone) is not intact? ..... there is a loss of barrier function.

# Loss of Skin Barrier

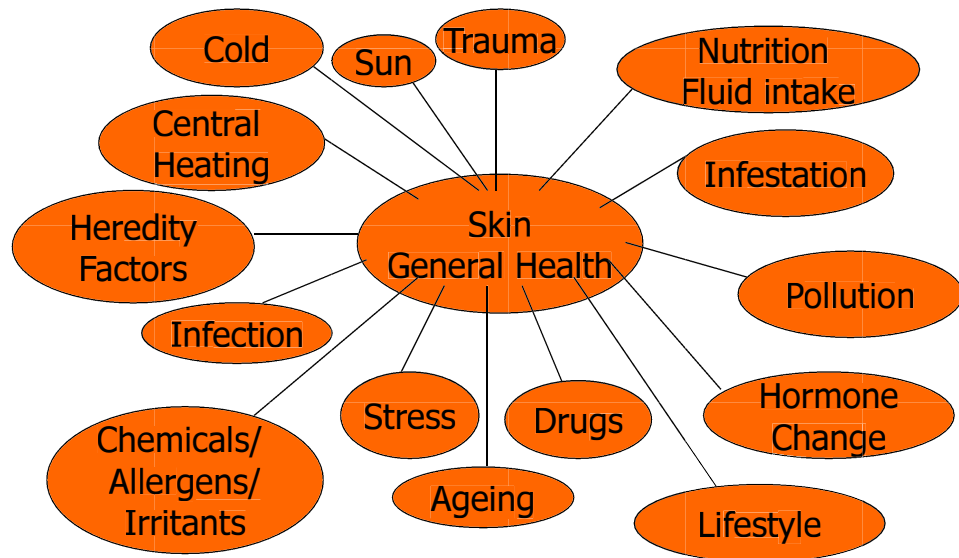


© 2001 Elliott/Cork/Cork

Loss of skin barrier..... entry point for:

- Allergens
- Irritants
- Infection

# Internal and External Factors Affecting Skin



Multiple factors can affect the skin both internal and external.

There will be other points which you may consider important, dependent on where you are working and your client base.

Are there any other points which you can offer from your area of work, which might be included in the above slide?

# Emollients Play a Vital Role in the Management of Skin Disease



- Definition and function
- Classification
- When to apply
- How to apply
- Which emollient

Emollients are the most important part of any skin care

- Help to maintain barrier function
- Have an intrinsic anti-inflammatory action
- Been used by dermatologists for over 5,000 years

We shall consider each of these points individually in respect of emollients.

Ref. Cork M.J. 1997 The Importance of skin barrier function.  
Journal of Dermatological Treatment 8: s7-13

# Emollient ...Definition and Function

- Medical term for moisturiser
- Safe
- Simple
- Effective
- Steroid sparing
- Intrinsic anti-inflammatory action

If patients prefer to use the term moisturiser it is important that we use their terminology to be fully understood.

Emollients in general are very safe and simple products, however it is important that we recognise that any individual may develop an irritant or allergic response to any product applied topically to their skin, just as they can with systemic medication.

The application of an effective emollient regimen, will lessen the amount of topical corticosteroid which will be required to reduce an inflammatory response.

Ref. Lucky A.W et al, (1997) Use of an emollient as a steroid-sparing agent in the treatment of mild to moderate atopic dermatitis in children. Paediatric Dermatology 14(4): 321-24

## Emollient also help to .....

- Replace water lost from the skin
- Lubricate the skin
- Reduce scaling
- Seal the Stratum Corneum

The main therapeutic outcome of applying emollients is to help replace water lost from the skin thus restoring the epidermal barrier.

Applying an emollient immediately flattens the keratinocytes lying on the surface of the Stratum Corneum which makes the skin feel smooth, less dry and scaly.

Applying this emollient seal to the Stratum Corneum replaces the “coping stone” along the top of the brick wall example used earlier, which prevents the irritants and allergens from entering.



# Classification of Emollients

## ❑ Lotions/Gels

Contain more water and less fat than creams

## ❑ Creams

Contain a mixture of water and fat

## ❑ Ointments

Do not contain water

Lotions and gels are very light and more suitable to apply to hairy areas eg scalp or chest of a male.

Creams contain preservatives which contain potential sensitisers - refer to your emollient chart to identify if a problem occurs with an emollient therapy.

Ointments do not contain any preservatives - they are the preferred option for a very dry skin.

A cream could be considered for day time use and a greasier ointment based product for night time to give optimum therapy.

Ref. Potential Skin Sensitisers as Ingredients of Moisturisers.  
Mims for Nurses-District Nurse Formulary (2008) Haymarket Medical Media Ltd.

## Classification cont .....

- ❑ **Bath oils**  
Clean and hydrate - trap water in skin
- ❑ **Soap substitutes**  
Not astringent - not alkaline - **do not dry out the skin**

**Aqueous Cream should not be applied as a left on emollient only as a soap substitute**

It is recommended that to provide the optimum emollient regimen for the skin, a bath oil, soap substitute and topical emollient are introduced as a 3 stage approach to effective treatment for complete emollient therapy.

Ref. Davis R, Treatment issues relating to dermatology in Hughes,E & Van Onselen, J 2001  
Dermatology nursing – a practical guide. Edinburgh: Churchill Livingstone 41-45

Ref. Cork MJ, Timmins J. Holden C et al An audit of adverse drug reactions to aqueous cream in children with atopic eczema *Pharmaceutical Journal* 2003; 271: 747-748

# Emollient ...When to Apply

- As frequently and liberally as possible
- At least 3 times per day
- After bathing when the skin is still moist

The frequency of application will vary dependent on each individual. For some people twice a day may be the maximum that can be accommodated, whereas a baby is a captive audience and can have emollients reapplied at every nappy change.

Emollients do not necessarily have to be applied thickly to be effective. A little and often to prevent the skin drying is very effective.

# Emollient ...How to Apply Effectively



- ❑ Bathing
- ❑ Generously but gently
- ❑ Do not rub vigorously - may cause itching or irritation
- ❑ Smooth emollient along arms, legs and body following the natural hair growth

When the skin is moist following bathing, the pores are open and will absorb more emollient than when the skin is cool and dry. This is ultimately the best time to apply an emollient.

It is not necessary for emollients to be rubbed into the skin. A small amount smoothed onto the skin and left, will be absorbed very quickly.

Remember again the number of nerve endings in the skin and how the process of rubbing could promote an experience of itching.

When applying emollient, the direction of application, following the natural hair growth is very important. Particularly with ointment based emollients, the process of rubbing against the hair growth can produce a folliculitis.

# Emollient Base .....



Important point to remember .....

- Use a **cream** base for **moist/wet** skin
- Use an **ointment** base for **dry/cracked** skin

This is practical point to remember, however it is readily proved in clinical practice should you forget.

For those of you with a patient with Varicose Eczema, where an ointment based emollient is recommended, should the lower limb be weeping and moist with exudate, the ointment will simply slide off the leg and land at the patients feet.

A cream base will be required in the first instance, until the skin of the limb dries and then an ointment base can be substituted to improve the barrier effect.

# Emollient .....the Choice



- ❑ Paramount importance
- ❑ Cosmetic acceptability essential
- ❑ Compromise between efficiency and cosmetic acceptability

It is important to consider what an individual can practically cope with and still function within their everyday life style.

- ❑ A variety of products may be required to provide the optimum regimen
- ❑ Consider size of packaging and lighter products for day time, greasier for night time
- ❑ School, work and hobbies must all be considered

# Quantities of Emollient



For an adult with dry or compromised skin

- Bath additives 300mls per month
- Creams or ointments 2000g per month

Ref. BMA and Royal Pharmaceutical Society of Great Britain (2007) British National Formulary. BMA and Royal Pharmaceutical Society of Great Britain, London Page 575

# Emollient Chart

## Appendix 2

### Standard weight cream emollients: absorbed well, good patient acceptability

Product name	DIPROBASE	E45	CETRABEN	AVEENO	HYDROMOL	OILATUM
Emollient property	Yes	Yes	Yes	Yes	Yes	Yes
Soap Substitute	Yes	Yes	Yes	Yes	Yes	Yes
Formulation	Cream	Cream/Lotion	Cream	Cream/Lotion	Cream	Cream
Pump dispenser	Yes	Yes	Yes	No	Yes	Yes
Tubes	Yes	Yes	Yes	Yes	Yes	Yes
Possible sensitisers	Yes	Yes	Yes	Yes	Yes	Yes
Additional tips	Can smell when under occlusion	Uses hypo-allergic lanolin medilan	Easily absorbed no added fragrance	Oatmeal can help reduce itching	Good occlusive film reduces moisture loss	Good occlusive film reduces moisture loss

### Medium weight cream emollients: absorbed well, good patient acceptability

Product name	UNGEUENTUM M	DOUBLEBASE	HYDROUS OINTMENT
Emollient property	Yes	Yes	Yes
Soap Substitute	Yes	Yes	Yes
Formulation	Cream/ointment mix	Cream/ointment mix	Oily Cream
Pump dispenser	Yes	Yes	No
Tubes	Yes	Yes	Yes
Possible sensitisers	Yes	No	No
Additional tips	Cream but moisturises like ointment	Teenagers like! Cool for babies	Used widely in plastics as emollient

### Ointment Emollients: improved efficacy but less well accepted

Product name	50:50 WSP/LP	EMULSIFYING OINTMENT	YELLOW SOFT PARAFFIN	DIPROBASE OINTMENT	EPADERM OINTMENT	HYDROMOL OINTMENT
Emollient property	Yes	Difficult to use	Yes	Yes	Yes	Yes
Soap Substitute	No	Yes	No	No	Yes	Yes
Bath Emollient	No	Yes	No	No	Yes	Yes
Formulation	Ointment	Ointment	Vaseline	Ointment	Ointment	Ointment
Pump dispenser	No	No	No	No	No	No
Tubes	Smaller tubs	Smaller tubs	Smaller tubs	50g tubes	125gm tubs	125gm tubs
Possible sensitisers	No	Yes	No	No	Yes	No
Additional tips	For lichenification	Can mix to a cream	Sticky	Feels greasy	Can mix to a cream	Can mix to a cream

- Beware: infection in pots of emollient as they have no preservatives in them



This chart has been reproduced in laminated form within your pack, allowing you to take the information back to your clinical setting for future reference.

It highlights the different weights of emollients, how they are packaged ie. pump dispenser or tube and what quantities they can be prescribed in.

We shall cover all aspects contained within this chart in our practical workshop on topical emollients.

## Appendix 2



# Emollient Chart

**Bath Emollients to pour into water**

Product name	HYDROMOL BATH	OILATUM BATH / JUNIOR	E45 BATH	CETRABEN BATH	DIPROBATH	AVEENO BATH/ & COLLOIDAL	BALNEUM BATH
Emollient property	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Soap Substitute	Yes	Yes	No	Yes	No	Yes	Yes
Possible sensitisers	None	Yes	None	None	None	None in colloidal	Yes
Additional tips	-	Used medilan	More moisturising	-	-	Not slippery, bath toys stay cleaner	-

**Emollients and Bath Emollients: with added extras**

Product name	DERMOL 500/200	DERMOL 600	DERMOL CREAM	OILATUM PLUS BATH	BALNEUM PLUS BATH	BALNEUM PLUS CREAM	CALMURID CREAM	AQUADRATE CREAM
Emollient property	Yes	No	Yes	No	No	Yes	Yes	Yes
Soap Substitute	Yes	No	Yes	No	No	No	No	No
Bath Emollient	No / for shower	Yes	No	Yes	Yes	No	No	No
Formulation	Lotion	Bath Emollient	Cream	Bath Emollient	Bath Emollient	Cream	Cream	Cream
Pump Dispenser	Yes	N/A	No	N/A	N/A	Yes	Yes	No
Tubes	No	N/A	No	N/A	N/A	Yes	Yes	Yes
Possible sensitisers	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Additional tips	Antibacterial	Antibacterial	Antibacterial	Antibacterial	Antipruritic	Antipruritic/ Urea	Urea/ Lactic Acid	Urea

\* Beware irritant reactions to antibacterial agents. Use products containing these for limited period only, rotating back to plain product

**Soap Substitutes: not listed elsewhere**

Product name	AQUEOUS CREAM	E45 WASH CREAM	OILATUM GEL
Emollient property	Should not be used as an emollient in children	Yes	Yes, apply to wet skin
Soap Substitute	Yes	Yes	Yes
Bath Emollient	No	No	Shower emollient
Formulation	Cream	Cream	Gel
Additional tips	Proven irritant reactions to sodium lauryl sulphate in children	-	Good for "hairy" areas
Pump dispenser	No	250ml	No
Tubes	Yes	No	Yes
Possible sensitisers	Yes	None	Yes



The lettering in red highlights the need to be careful when using pots of emollient that bacteria gain ready access to products if cleanliness issues are not considered - especially in the home setting when several individuals may be assisting with application.

Also considered is the potential sensitisers which may cause reactions in some individuals.

## Appendix 2

# Which Emollient?



The very best emollient for any individual is .....

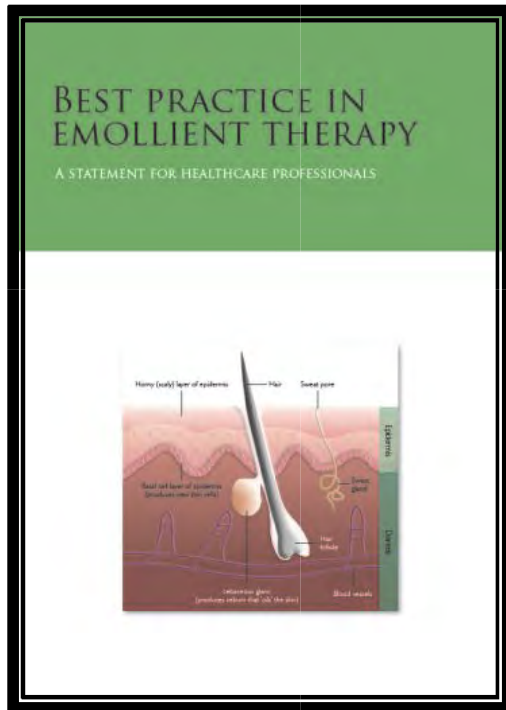
- The one they prefer**

This slide is quite self explanatory.

Far better that an individual choose the emollient they like and it will be used, than a healthcare professional make a decision on what will be used and it then sits in the bathroom cabinet.

Several products may have to be sampled before the preferred product is identified.

# Best Practice in Emollient Therapy



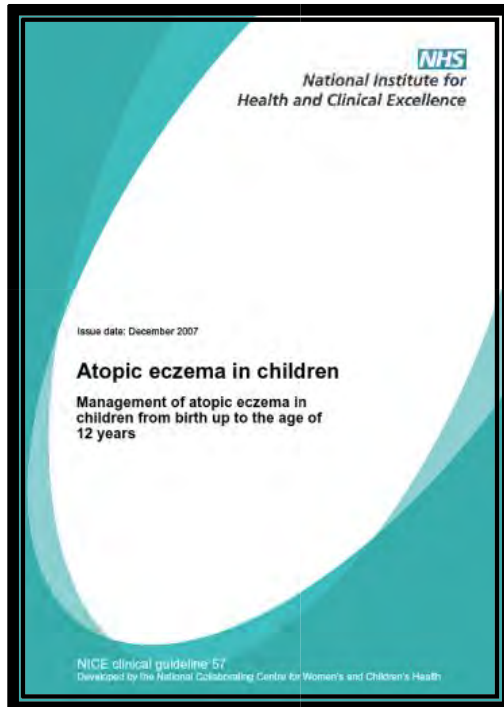
This document is included within your delegate pack.

This document has been developed to give guidance to healthcare workers on the effective use of emollients. This guide is the result of an international collaborative effort to provide clear practical and where possible evidence - based information about emollients and their use.

The first section provides background info about emollients and how they work.

The second section consists of five statements that give practical guidance about emollients and how they should be used.

# Nice Guidelines Dec 2007



This document is included in your delegate pack.

This clinical guideline concerns the management of atopic eczema in children from birth up to the age of 12 years. It has been developed with the aim of providing guidance on:

- Diagnosis and assessment of the impact of the condition
- Management during and between flares
- Information and education for children and their parents or carers about the condition