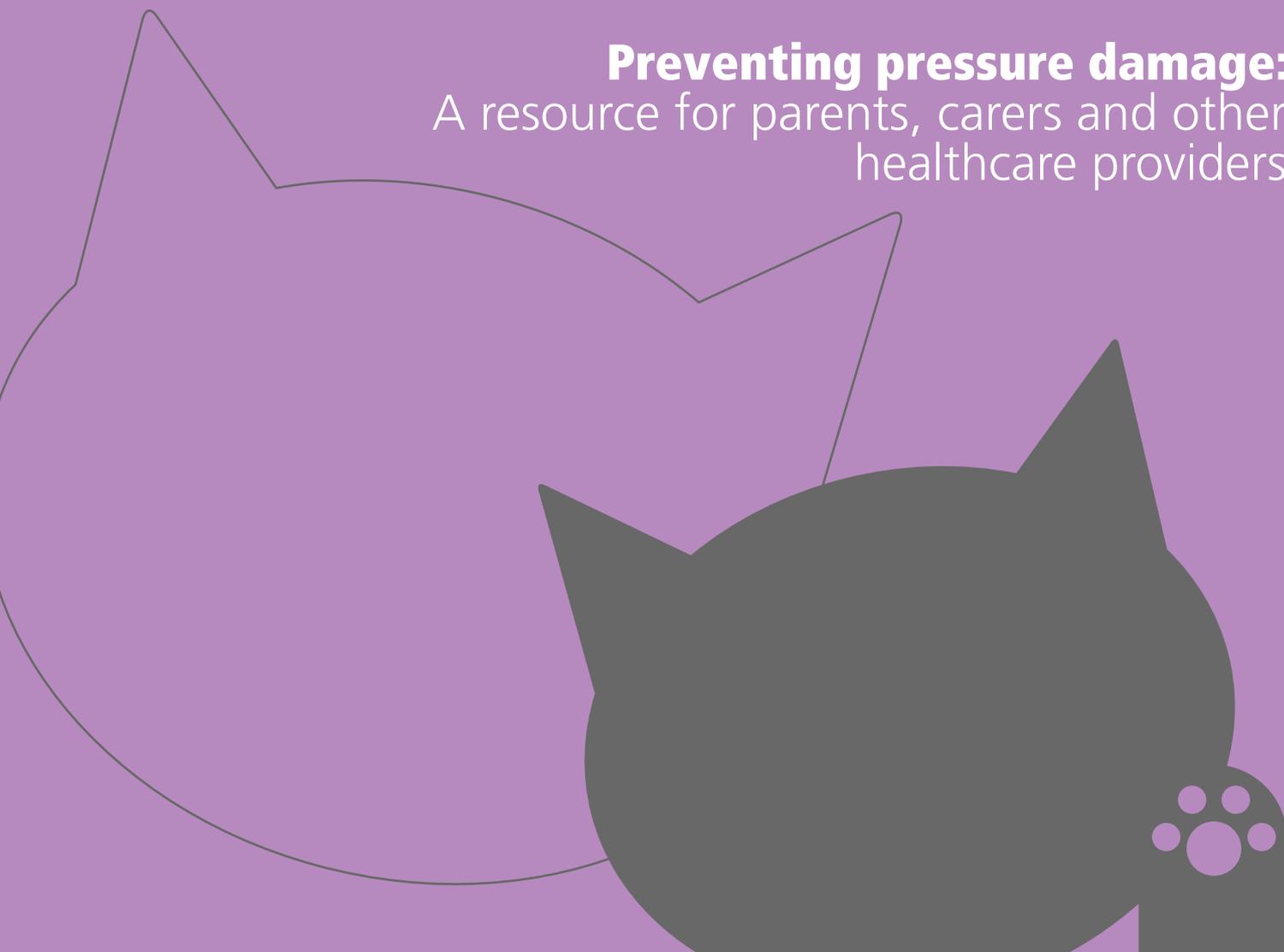
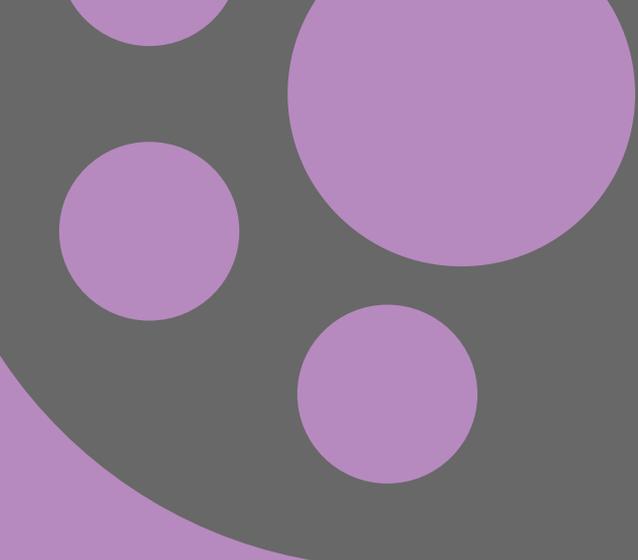


Caring for Children with **Complex Needs**

Children and Their Skin **C.A.T.S.**

Preventing pressure damage:
A resource for parents, carers and other
healthcare providers





This Resource has been produced by Nottinghamshire Healthcare NHS Foundation Trust's Tissue Viability Team. It has been designed as a training aid for parents, carers and other healthcare professionals.

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not-tr.tissueviability@nhs.net

**A PDF of this booklet and the accompanying training
film and can be found at:**

www.caringfor.co.uk

Introducing...



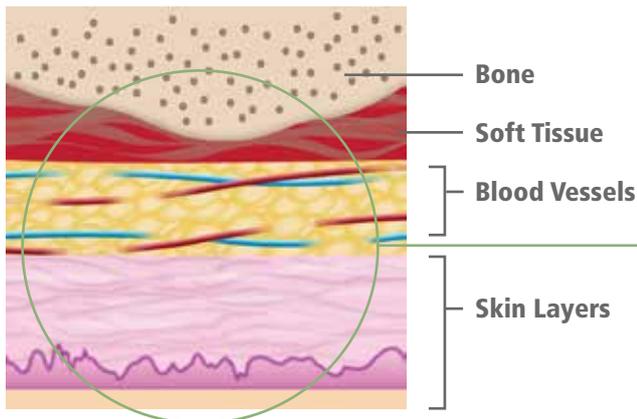
An easy way to remember how to prevent pressure damage affecting your child.

But before we meet the K.I.T.E.N.S. we need to understand what pressure damage is and the risk factors

Pressure damage or pressure ulcers used to be called 'bed sores' and most people usually associate these with the elderly and frail in long-term care. Anyone can develop a pressure ulcer, especially children with complex needs. Pressure damage affects the skin and underlying tissues, and because it has not fully developed yet, children's skin is particularly vulnerable.

The 'sciency' bit!

Normal Skin Structure



There are two ways a pressure ulcer can occur.

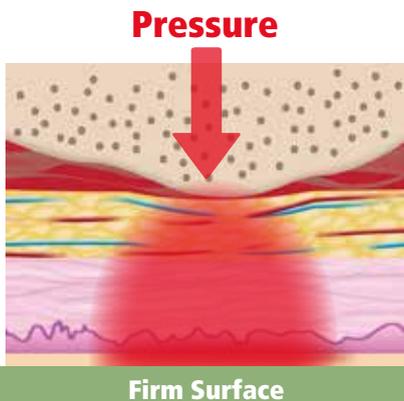
Firstly from direct pressure and secondly by a combination of pressure with shear or friction.

In both cases the most vulnerable parts of the body are bony areas or 'bony prominences' and we will identify all these vulnerable areas later in this booklet.

Pressure

A pressure ulcer will usually develop when there is direct pressure from a firm surface to a bony area of your child's body for a prolonged period of time.

This is because a bony area presses down through the tissue layers against the hard surface, pinching the blood vessels and restricting blood flow, oxygen and nutrients getting to that area. If the pressure is not relieved the tissues start to break down causing a pressure ulcer to develop.

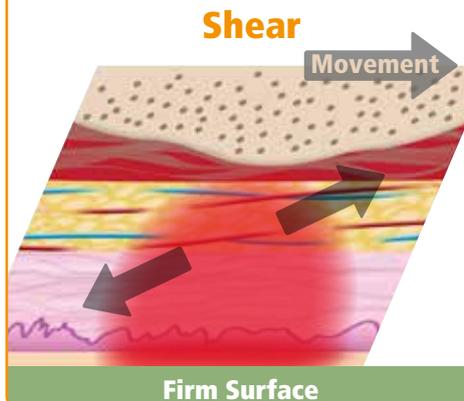


Shear and Friction

Shear and friction cause damage to the skin and underlying tissues making the area more vulnerable to pressure damage. As with pressure, shear and friction damage usually happens over a bony part of your child's body.

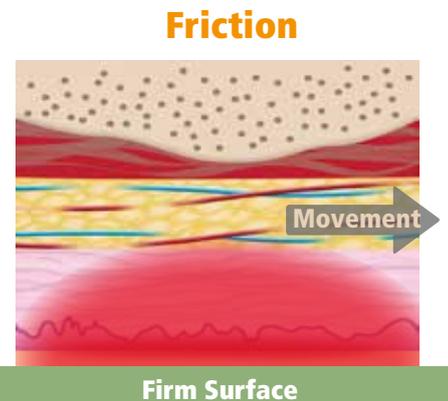
Shear

When 'shear' occurs, the surface of the skin and underlying bone move in opposite directions. This 'shear' movement stretches and tears the internal tissues causing the damage. A typical example would be if your child regularly slouches or slips down in their chair, so their skin stays static but the underlying bones and tissues move considerably more.



Friction

Friction damage occurs when the skin rubs against a surface - such as a head support or splints. The rubbing action of skin against a surface causes skin stripping where the top layers of your child's skin are damaged. This leaves a superficial graze wound, which when coupled with prolonged pressure, can easily turn into a deep pressure ulcer.



So in a nutshell

Pressure damage occurs mainly over bony areas when there is prolonged contact with a firm surface. These areas are more vulnerable to pressure damage when there are shear and friction forces present which damage the skin and underlying tissues.

Risk Factors

Right - we have done the science bit so now let's link that to where the risks come from so we can understand why children with complex needs are at risk of developing pressure ulcers.

Risk of prolonged pressure to vulnerable parts of the body

Damaged or weakened skin now more vulnerable to pressure damage

Cannot tell pressure damage is occurring or let you know something is wrong or that they are in pain

Consider your child or the children you care for and think about the following risk factors:

**Restricted mobility?
Cannot reposition themselves independently?
Spend long periods in bed or in a wheelchair?
Use medical devices or equipment?**

**Are they incontinent?
Do they sweat a lot?
Have previous skin damage?**

**Unable to communicate?
Unable to feel parts of their body?**

We know every child is different, but there are some common vulnerable areas of the body to be mindful of. Take time to think about your child and all the situations they encounter each day so that you can identify all the possible risks of pressure damage.

Identifying and Preventing Pressure Damage

We believe prevention is better than cure so we are going to show you, step by step, how to prevent pressure damage affecting your child. It's easy to remember if you use the simple acronym:



K - Keep Moving

I - Incontinence and Moisture

T - Top to Toe Skin Inspection

E - Equipment and Medical Devices

N - Nutrition and Hydration

S - Seek Advice

- Keep Moving

Floor play is an important activity for your child especially if they have good upper arm strength. However, make sure they are not damaging their skin with shear or friction forces, by rubbing their skin on the floor. Check your child's skin regularly when they are on the floor, and if they are developing red marks then its time to give floor play a little break for a short time to let their skin recover.

Keep moving means just that! We know prolonged pressure over bony and vulnerable areas of your child's body can cause a pressure ulcer to develop. So repositioning your child regularly will allow the return of blood and nutrients to any areas affected by pressure.

The best ways to reduce pressure are:

- **Move your child regularly to offload vulnerable areas as much as possible: at least every 2 hours during the day.**
- **Avoid prolonged pressure from equipment and devices, i.e. rotate tubing sites.**
- **Relieve the pressure from your child's feet and heels.**
- **Remember, when there is a sleep system in place, check your child's skin every 2 hours if they are in bed all day plus first thing in the morning and before bed time.**
- **You can change your child's position when they are in bed to alternate sides to relieve pressure by using cushions for support.**

- Incontinence and Moisture

The most common form of moisture damage is associated with incontinence, caused by constant exposure to wee or poo, which can be very painful. However, there are other sources of moisture that can cause skin damage which are often overlooked:

- Sweat - think about where skin is in contact with skin such as contracted limbs and skin folds
- Fluid leaking from an existing wound
- Saliva
- Mucus - such as from the nose, PEG sites and tracheostomy plates

It is very important not to use an oil based cream especially for areas affected by incontinence. This is because oil based creams clog up the pad or nappy preventing it from soaking up the moisture away from your child's body.

Moisture associated skin damage, also know as moisture lesions and nappy rash, is caused by the skin being exposed to a source of moisture for a prolonged period of time. This prolonged exposure will cause the skin to become red and sore and can eventually lead to broken skin if left untreated.

All these can expose your child's skin to moisture for prolonged periods of time and cause moisture lesions to develop. And as we have already learnt, damaged and weakened skin also greatly increases the risk of your child developing a pressure ulcer.

A good skin care regime should be in place to maintain healthy skin and will help prevent moisture damage. Soap products should be avoided as these can cause irritation.

For incontinence, where the skin is in constant contact with wee or poo, you should use water based emollients to clean the area instead of soap. For more advice on this consult your local pharmacist. Also, you should carry out regular nappy or pad changes and implement a frequent toileting regime to minimise the time your child's skin is in contact with wee or poo.

For saliva and mucus keep your child's skin dry and clean to ensure the skin stays healthy and keep the area well moisturised. Try to keep the area as dry as possible. Always pat dry and avoid rubbing. Once dry, a good water based barrier cream should be used to protect your child's skin from further contact with moisture.



- Top to Toe Skin Inspection



A skin inspection can be done whilst you are giving personal care. Look at your child's skin whilst they are in the bath or shower, during a nappy or pad change or whilst changing their clothing. It is important to check your child's skin every day but it would be helpful to know what to look for and where to look.

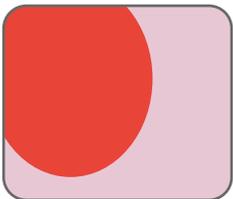


What are you looking for?

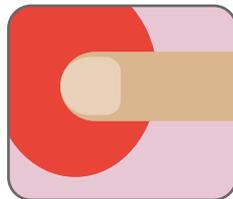
The first sign of skin damage you may find is usually a red mark. If you find a red mark there is a simple test you can perform to identify whether this is the first sign of pressure damage. It is called the **Blanch Test** and this is how you do it:

Blanch Test

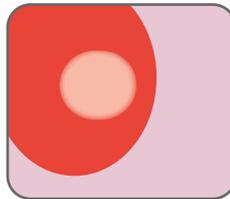
Press your finger lightly on the red area and hold for 5 seconds. Then lift your finger away - it's as simple as that!



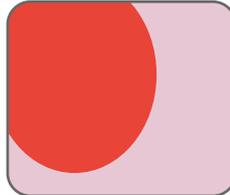
Red mark on your child's skin



Press your finger lightly for 5 seconds



If your child's skin has gone pale (blanched) and then returned to red then this is not pressure damage - but check to see if there is moisture present, as it could indicate moisture damage.



If your child's skin stays red and does not change colour then this is pressure damage.

Other signs of pressure damage you should look for - especially if your child has darker coloured skin:

- Purple discolouration
- Soft boggy areas
- Firmness
- Feeling warmer or cooler to touch

If any of these signs are present and you are concerned that your child is developing pressure damage then seek medical advice as soon as possible.

Where should you be looking?

As we have already learnt, the bony areas of the body are particularly vulnerable. So let's just go from top to toe:

Top to Toe Skin Inspection



The head - especially the back of the head, ears, chin and cheeks

Shoulder blades

Elbows

Spine - particularly if protruding

Buttocks - check all around the bottom

Hips

Knees - also check the sides and back of the knees

Ankles

Heels

Toes

Something else you need to consider when checking your child's skin is whether they have medical devices and equipment attached to their body. These areas can be at risk of developing a medical device related pressure ulcer. So let's go top to toe once more.

- Ears, nose and cheeks - if tubing is present, for example nasal cannulas
- Around the face - if oxygen and nippy masks are used
- Tracheostomy sites
- Arms and legs - especially if in plaster casts or hip spica casts, as they can be rubbing their skin. Common signs to identify if your child may be developing skin damage under a cast could be a burning or itching sensation. The cast may feel warmer over a bony area such as the heels and ankles. There may be an unpleasant smell or discharge coming from the cast. If the cast becomes loose or feels too tight then seek advice from your healthcare professional. It is also important to remember to try and offload heels whilst a cast in place to prevent your child from developing a pressure ulcer. Also, avoid getting small objects in the cast.
- Hoists and transfer aids where they are in contact with the skin. It is important that any seams from the hoist sling are not underneath your child when they are sitting or lying on a sling, as this may cause pressure damage. Make sure the sling has no wrinkles if left underneath your child, and avoid trapping the skin.
- PEG flanges and tubing sites
- Catheter tubing sites
- Knees - if using standing aids
- Heels - especially if splints are used
- Braces - where they are in contact with the skin



E - Equipment and Medical Devices

There is equipment available to reduce your child's risk of pressure damage which includes:

- **Special pressure reducing mattresses**
- **Pressure reducing cushions**
- **Foot protectors**

If your child has an air mattress, oxygen or uses emollient and creams, the fire services strongly advise that you **MUST NOT SMOKE** anywhere near these. They can be highly flammable, increasing the risk of fire and fatalities.

If your child is using one of these pieces of equipment always remember to check for:

- **Faults, such as alarms and deflating mattresses**
- **Weight settings being correctly set**
- **Cushions bottoming out (Picture example)**
- **Consider how long you have had the equipment. Is it still fit for purpose?**

Some of the things you can do to prevent equipment related skin damage are:

- **Frequently reposition tubing if possible**
- **Keep your child's skin clean and dry. Remember good skin hygiene can prevent moisture damage. Use an appropriate moisture barrier product if necessary**
- **Prevent your child from lying or sitting on any tubing if possible**
- **Prevent your child's skin from breaking down by using appropriate pressure reducing equipment**

If you have any concerns contact a healthcare professional for advice.



N - Nutrition and Hydration

Your child needs a good variety of nutritious foods in order to stay as healthy as possible. A good intake of vitamins, calcium and protein is needed to provide enough energy for children to grow and remain active. Vitamins from a healthy diet are also important to help fight infection, illnesses and diseases. They help with brain development, encourage healing of wounds and of course maintain healthy skin. If your child has a wound, getting protein into their diet will help to repair and maintain healthy skin.

Children with complex needs may require more specialist advice with regards to their diet. Some examples would be:

- Children with PEG feeds
- Children who need extra calories and protein to support healing
- Severely disabled children who may have paraplegia, immobility or chronic illness may require a diet with a lower calorific value

It is just as important to make sure your child is getting enough fluids to help their skin stay hydrated and to stop it from becoming dry and fragile, leading to more risk of damage.

So what are the risks of your child developing pressure damage in relation to diet? The following complications are all risk factors for children with complex needs:

- **Malnutrition - Insufficient nutrients lead to weak skin and immune system**
- **Dehydration - This causes dry, brittle skin**
- **Nutritional deficiency - A poor diet lacks the vitamins to maintain healthy skin**
- **Unplanned weight loss – This causes loose, weakened skin**
- **Obesity - Higher levels of sweat increase the risk of moisture damage and the risk of pressure, shear and friction occurring.**

From what we now know about pressure damage, if your child has complex needs and does not have an adequate diet they will have an increased risk of developing pressure damage.



- Seek Advice

If you feel that your child is affected by one or more of the issues discussed in this booklet, in particular:

- pressure problems
- equipment issues
- dietary concerns

seek specialist advice. You can contact your GP or speak to any healthcare professional assigned to your child's care.

There are also other ways that children's skin can become damaged, most commonly these include:

- Moisture damage
- Burns or scalds
- Sunburn

For information and advice on burns and scalds visit the Children's Burns Trust website:

www.cbtrust.org.uk

A child must always have good protection from the sun, for further information and advice visit:

www.nhs.uk/conditions/pregnancy-and-baby/safety-in-the-sun

For fire safety:

www.firefacts.org





Caring for Children with Complex Needs

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This document is also available in other languages and formats upon request.

Su richiesta, questo documento è disponibile in altre lingue e in altri formati.

Sur demande, ce document peut être fourni en d'autres langues et formats.

Na życzenie, dokument ten można uzyskać w innych językach i formatach.

यह दस्तावेज़ अनुरोध किए जाने पर अन्य भाषाओं और प्रारूपों में उपलब्ध है।

ਇਹ ਦਸਤਾਵੇਜ਼ ਬੇਨਤੀ ਕੀਤੇ ਜਾਣ ਤੇ ਹੋਰ ਭਾਸ਼ਾਵਾਂ ਅਤੇ ਰੂਪਾਂ ਵਿੱਚ ਉਪਲਬਧ ਹੈ।

در صورت درخواست این سند به زبانها و شکلهای مختلف در اختیار شما قرار می گیرد.

یہ دستاویز دیگر زبانوں اور مطلوبہ شکلوں (فارمیٹ) میں بھی دستیاب ہے

هذه الوثيقة متاحة بلغات أخرى وباشكال غير الكتابة المقروءة وذلك عند الطلب