

0716A: Pressure Sores



Pressure sores (also known as pressure ulcers, bed sores or decubitus ulcers) occur when the skin, and soft tissues under the skin, is injured, due to pressure, friction, shear or moisture on the skin.

Pressure can lead to pressure sores when a person's skin and soft tissues become squeezed between the person's bones and a surface of some kind, such as a mattress or wheelchair seat. This squeezing, or "pressure," leads to less blood flow to that tissue, and as a result, less oxygen to the cells of the tissue. If this pressure is not removed, the cells that make up the tissue die, the skin begins to break down and a pressure sore occurs. If the skin breaks open and is no longer able to protect the inner body, bacteria may enter this opening and cause an infection.



For people who cannot move themselves or who do not feel the urge to change position, pressure sores are a constant threat. A person who cannot move can develop a pressure sore in as little as 1-2 hours.

Friction — takes place when a resident is pulled up and down in bed, or across bed sheets and other surfaces. The friction caused between the skin and another surface can actually scrape off the top layer of the skin involved, leading to a friction burn. The friction burn, combined with pressure and moisture (sweat, urine, etc.), can result in a pressure sore.

Shearing — Takes place when a person's skin moves in one direction and the bones underneath that skin move in the opposite direction, tearing very small blood vessels along the way. The simple act of sliding down in a bed or chair, can lead to shearing on a fragile resident's body. Shearing can also cause the skin to fold over itself, especially if the skin is losing its stretch. An example of this type of shearing would be when a resident, who is lying down with the head of his or her bed raised, slides down the bed. Any folding over of the skin can cut off the blood supply to the skin in that area and lead to pressure sores.

Skin moisture — Long-term contact with moisture, most often due to perspiration, urine, or feces, will weaken and then damage the surface of the skin, creating a higher risk for pressure sores. Moisture will also cause traction that affects the skin much like

pressure does. Traction occurs when the resident's moist skin sticks to something, a bed sheet for example, and then is pulled when the person is moved. Blood flow is reduced to the area and this can lead to pressure sores.

Pressure sores can lead to large sores, infections, severe pain, itching, long hospitalizations and even death. They can be costly to treat and slow to heal. There are four locations on a person's body that are the most likely to develop pressure sores: the tailbone, the heel, the hip, and the buttocks.



*As a care provider, you are responsible for the well being of the residents in your care. Pressure sores are **preventable** with quick response from you, if you see a change in, or breakdown of, a resident's skin.*

People who are at-risk for pressure sores

Residents with one or more of the following issues are at high risk for pressure sores:

- Help needed with moving arms, legs, or body; turning in bed, and/or changing position when sitting (as with paralysis, coma, intense illness, injury or sleepiness brought on by medication). People living with spinal cord injuries are at greatest risk for pressure sores.
- Not having control over bowel movements and/or urination. Continual moisture can irritate or soften skin and make it more likely to break down, leading to pressure sores. Bacteria from fecal matter can cause serious infections and lead to life-threatening complications. Even those residents with above normal perspiration can be at risk for pressure sores if they are not kept clean and dry.
- Serious weight loss, that results in loose skin; or those who are very overweight. Residents with either situation may have skin folds that can lead to pressure sores.
- Eating less than half of the meals/snacks served and/or not eating a healthy diet with enough protein. Poor nutrition can lead to unhealthy skin and slow healing. A resident with a poor diet, especially one lacking protein, zinc and vitamin C, is at higher risk for developing pressure sores. A resident with a poor diet is also more likely to have re-occurring pressure sores and more severe infections than are people with healthier diets.

- Lack of fluid has been shown to double the risk of pressure ulcers. Dehydration results in a loss of padding over bony points in the body, such as the tailbone and ankles, etc.
- Discolored, torn or swollen skin over bony areas. Wounds are always changing and it is important to keep an eye on **anything** changing in or on a resident.
- Some older residents have thinner, less elastic skin that injures easily. Even with the best nutrition and good overall health, an older adult's wounds will heal more slowly, simply because the repair rate of cells declines with age.
- Smoking decreases blood flow to the skin. Smokers have a higher risk of developing pressure sores than nonsmokers, and they tend to develop more severe wounds that heal slower. Nicotine weakens circulation of the blood and reduces the amount of oxygen in the blood as well. The risk for developing a pressure sore grows with aging and number of cigarettes smoked.
- More than one illness or health condition occurs at the same time, such as diabetes and a stroke, or cancer and pneumonia, for example. Certain health problems such as diabetes and diseases of the heart have an effect on blood circulation, so parts of the body may not receive the blood it needs, increasing the risk of skin cell damage. A fever may also put extra strain on areas of the skin that are already at risk for pressure sores.
- Prior history of pressure sore. If a resident has had a pressure sore that has healed, he or she is likely to have that healed spot open again. The scar tissue from the earlier pressure sore will never be as strong as the unbroken skin on the resident.
- Decreased ability to sense what is happening around oneself, or the inability to respond to the environment, is a known cause of pressure sores. This loss of awareness is usually due to a spinal cord injury or a disease. Also, a failure to feel pain means the resident is not aware when he or she is uncomfortable and needs to change position, or has a pressure sore forming. For example, if a resident rubs his or her knees together and can not feel it, he or she will likely form pressure sores in that area.



- Residents who are less aware mentally due to disease, trauma or medications are often at higher risk for pressure sores.
- Residents are also at higher risk if their caregivers are not educated about the causes of pressure sores or not watchful in checking for a change in the skin that could quickly become a pressure sore. The following caregiver issues can put a resident at higher risk for pressure sores:
 - » Inability to identify risk;
 - » Lack of pressure sore prevention education for the staff;
 - » Poor resident handling practices that put residents at risk for pressure sores;
 - » Medication use by residents is not satisfactorily monitored or responded to by staff, in order to remove the second hand risk for pressure sores; or
 - » Meals are not well balanced, leading to a need for good nutrition in frail residents, especially those with high potential for pressure sores.



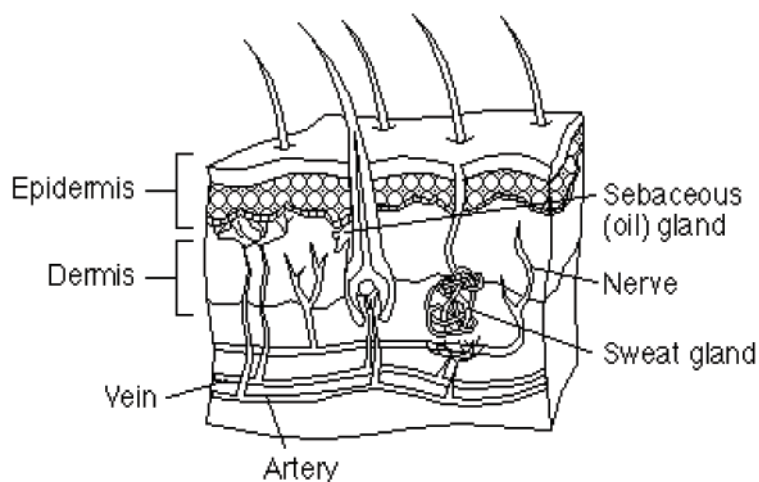
It is necessary for care providers to make daily inspections of the skin of those residents who are at-risk for pressure sores. A person who cannot move can develop a pressure sore in as little as 1-2 hours.



*If you see that a resident in your care is beginning to develop a pressure sore, and the sore **does not improve within the first day**, DO NOT WAIT! Contact the resident's health care provider **immediately!***

The make-up of skin

The following drawing of a section of human skin shows the various pieces that make up this part of our body. As you will see as you look at the drawings that follow this one, a great deal of damage can occur due to pressure sores, and this damage can occur quickly.

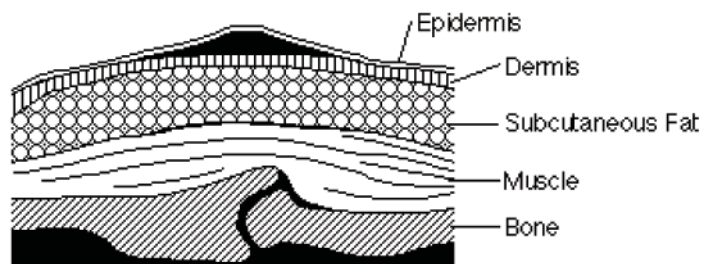


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How are the stages of pressure sores identified?

Pressure sores are categorized within four stages of seriousness, based on the amount of tissue, bone and muscle that is damaged, as seen below. Pressure sores can differ in size, shape and how they appear on the surface.

STAGE I.



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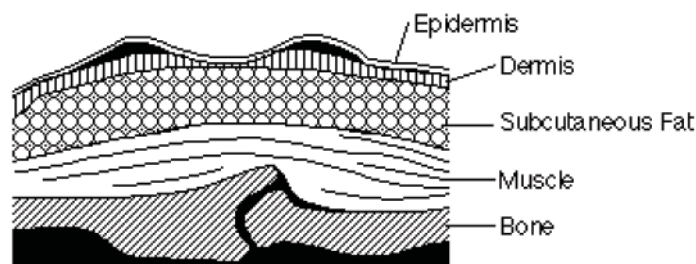
A Stage I pressure sore is itchy, painful, tender and warm to the touch. The first symptom — your best warning signal — is a reddened area on the skin. It may look like a bruise with the skin's surface being either spongy or firm to the touch. You can check for damage to the area by pressing on the area very gently and then letting go. If the skin returns to a normal color within about 15 minutes, the resident's skin is not damaged at this time. But, this does not mean that you should not be concerned. Although you will not see breaks or tears in the skin at this point, the entire area will be at high risk of further breakdown.



Pressure sores in Stage I are more difficult to see on residents with darker colored skin. Care providers should watch for purplish, bluish, flakey or ashen areas on the skin that are confined to a small area; heat (if skin tissue becomes damaged, the heat will be replaced by coolness); swelling; and firmness of the skin tissue. Be sure to compare the area of concern with the bordering or normal looking skin on the resident's body. A flashlight can be useful in determining pressure sores on darkly colored skin because the extra light can help a care provider see color differences that are not visible in normal light.

Pressure sores can be difficult to spot in the early stages, so use your eyes, hands and ears. Along with evaluating the color of the skin in the area of concern, watch for rashes, cuts, bruises, scrapes or indentations from seams or elastic binding. Check also for blisters, bumps, insect bites, dry flaky skin or pimples. As noted before, use a gentle touch to help detect pressure sores, especially over bony areas and when dealing with dark skin. Is the area boggy? Is it stiff? Is there a thickening or change in texture? Is it warm? Is it cooler? More importantly, **is it different from yesterday?** Also, be sure to listen to the resident, especially if he or she is telling you that he or she is not comfortable in some way. Reported pain can lead us to pressure sores. If the resident is in pain, especially if he or she says the pain is on his or her heel or elbow, **pay attention.** Itchiness might also lead you to a developing sore.

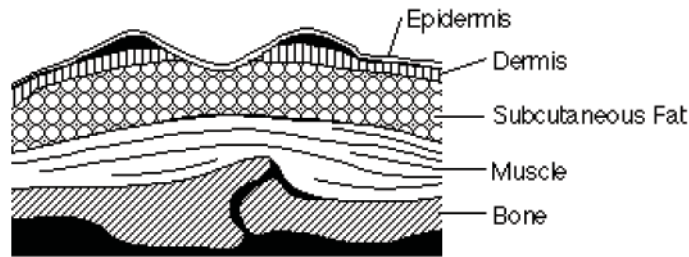
STAGE II.



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In a Stage II pressure sore, the epidermis, or outer skin, will break open, wear away, or form an area that is painful and tender. The sore will often look like an abrasion, a blister or a shallow crater. There may be drainage and the tissue surrounding the break will often be pale, red or swollen. In this stage, the sore can expand into the deeper layers of skin. Some skin may be damaged beyond repair or die at this stage, but if treated promptly, the Stage II sore will heal without problem.

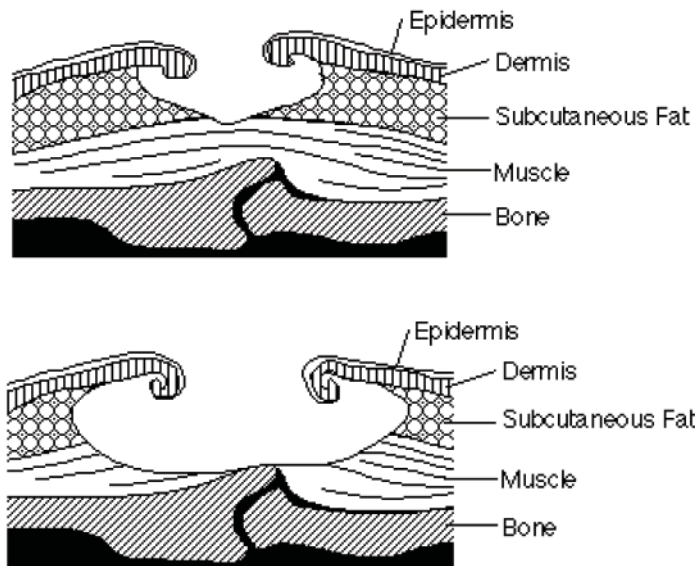
STAGE III.



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In Stage III, the pressure sore extends from the epidermis into the dermis and the subcutaneous fat layers beneath, forming what looks like a small crater. The risk for infection is high. Foul smelling drainage may be noticed, as will dead skin and tissue.

STAGE IV.



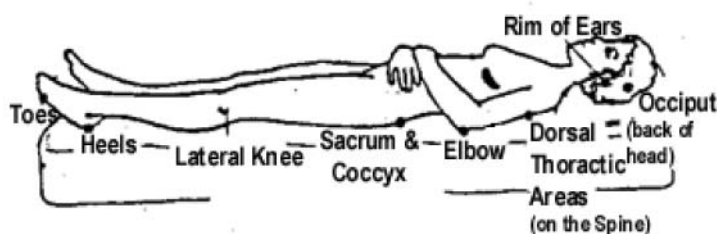
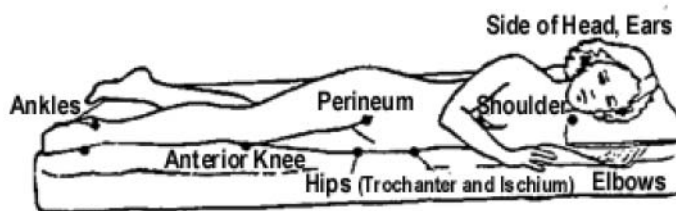
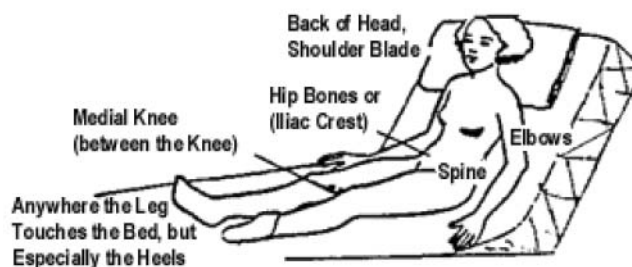
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In Stage IV, the pressure sore is at its most serious. There will be a large loss of skin at the pressure sore site, along with damage to the muscle, bone, tendons and joints underneath. Foul smelling drainage is quite possible and deep tunnels may be noted. There may also be serious complications for the resident at this point, such as infection of the bone (osteomyelitis), or infection of the blood (sepsis), if not treated properly. It is very difficult to heal Stage IV pressure sores.

Typical locations of pressure sores

As noted above, pressure sores tend to be found where a person's skin and soft tissues becomes squeezed for a period of time between the person's bones and a surface of some kind, such as a mattress or wheelchair seat. The following illustrations show locations on a body where pressure sores are often found.

WHEN A RESIDENT IS PRIMARILY BED-BOUND

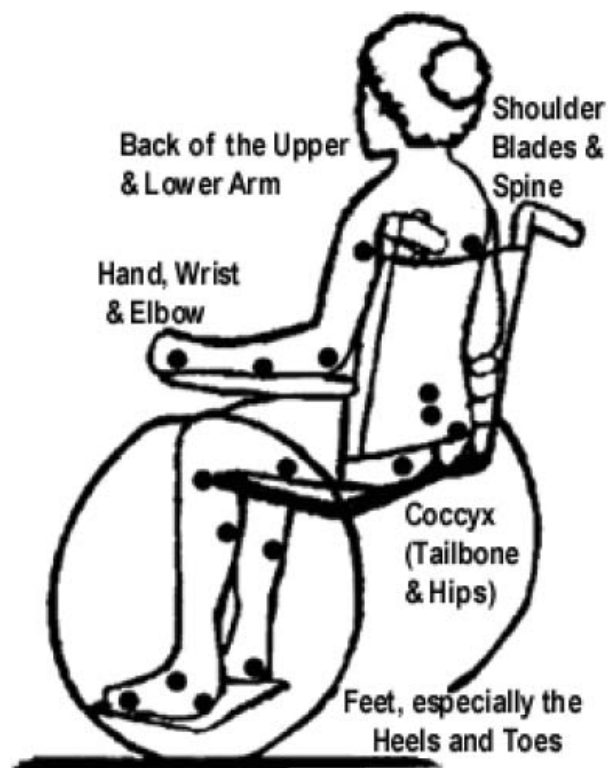


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According to information from the Mayo Clinic, if a resident is bed-bound, watch for pressure sores in any of these areas:

- The back or sides of the head;
- The rims of his or her ears;
- The shoulder or shoulder blades;
- The hipbones, lower back or tailbone; and
- The backs or sides of the knees, heels, ankles and toes.

WHEELCHAIR-BOUND RESIDENTS



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Again according to information from the Mayo Clinic, residents who use wheelchairs are more likely to develop pressure sores on:

- Their tailbone or buttocks;
- Their shoulder blades and spine; and
- On the backs of their arms and legs, especially where they rest against the chair.



Preventing pressure sores



Pressure sores are easier to prevent than to treat, but that doesn't mean that prevention is easy or uncomplicated. Although wounds can develop in spite of the very best care, it is still possible to prevent them and prevention should be the goal.

The following care should be provided to prevent the development of pressure sores:

1. **Inspect the bed- or chair-bound resident's skin daily**, especially around bony areas that stick out slightly below the skin.

In areas where the resident's sense of feel may be reduced, like on the feet of a diabetic, daily skin inspection is of high importance. Make this inspection part of the daily routine, such as after the resident's shower, while changing clothes in the morning, or in the evening while helping the resident get ready for bed.

Bruises or scrapes can occur from bumps, falls, crashing feet into doors or walls, or dragging a resident's buttocks while transferring from one surface to another. If the resident has little to no feeling in his or her buttocks, heels or ankles, for example, the resident may not realize that an injury has occurred. Add to this the possibility that the resident's blood flows at a slower rate than normal, so he or she does not heal as quickly as he or she used to and you have the ingredients for a pressure sore.

Be especially watchful of residents with spasticity issues. Spasticity may cause a resident's arms and/or legs to bump uncontrollably against an object, or to fall off his or her armrest or footrest and be injured. Spasms may cause the resident's skin to rub against the sheets on his or her bed, for example, leading to open sores.

Consider knit leggings as skin protectors for your residents. Depending on the resident, they can be used for arms and/or legs. You can also use sweaters on residents who need to have their arms covered in order to protect their fragile skin.

2. **Relieving pressure to prevent pressure sores**

It is important to keep the resident's blood flowing to all areas of his or her skin to reduce the development of pressure sores. One important way to do this is to make up a written "turning schedule" or a "turn clock" (with position changes written next to the times for the resident to be repositioned). Kitchen timers work well as turn clocks.



If the resident is **bed-bound**, follow these guidelines:

- » If the resident is **bed-bound**, but can move his or her body both easily and often, just monitor the resident to make sure that he or she has moved into a new position every **three to four hours**.
- » If the resident is bed-bound, but can only move his or her arms and legs, and not his or her body, you and or your staff should make sure to move him or her every **two** hours.
- » If the resident is unable to move any part of him or herself, turn him or her every **two hours**, or more often as directed by the doctor. This resident may also need to use a therapeutic pressure management mattress to prevent pressure sores. A resident who uses a therapeutic pressure management mattress, however, should still be turned and repositioned on a regular schedule.
- » You can also use positioning devices such as foam wedges or pillows to keep residents in a 30-degree inclined position when repositioned to either side. Check with a contract nurse or the resident's doctor for instructions on the correct way to use these devices.
- » Pad the bony parts of the resident's body. Pillows placed between the legs, behind the back, and underneath each arm can help maintain a pressure relieving position. A pillow between the knees can also increase airflow between the legs. If the resident has trouble staying on his or her sides, use foam wedges to help hold positions.

- » Keep the **bottom sheet** on the resident's bed pulled tight, to prevent wrinkles in the sheets that can cause pressure sores on the resident's skin. Make sure the **top sheet** is *not tucked in tight* at the bottom of the bed, or around the resident, to help prevent the development of pressure sores.
- » Reposition bed-bound resident(s) even during the night, if they cannot move themselves. Discuss this with the resident's doctor, so you know how often the doctor wants the resident repositioned.
- » Lifting devices, such as trapezes or bed linen, can lessen the friction that can occur when moving residents from their beds. If a lifting device is used, make sure that you know the proper way to use it **before** you use it with a resident.
- » Sprinkle the residents' sheets with cornstarch to reduce friction, but make sure the cornstarch does not make residents' skin too dry. If the cornstarch dries out the residents' skin, stop using it.
- » Use a turning sheet when repositioning. Do not drag the resident. Again, make sure you are shown the correct way to use the turning sheet **before** using it with a resident.
- » The heel is at high risk for pressure sores because it has very little padding between the bone and the skin with which to absorb pressure from the bed. *(See more on how to protect the residents' heels below.)*

If the resident is in a **wheelchair**, follow these guidelines:

- » If the resident is unable to move him or herself while in a wheelchair, design a timetable for repositioning this person every 15 - 30 minutes.
- » Never position the resident's body to that he or she is sitting directly on a pressure sore.
- » Make sure that the resident's wheelchair cushion is positioned correctly in the wheelchair and is working properly. The resident should always sit on his or her wheelchair cushion when using the wheelchair.



- » For residents who are able to move themselves while in a wheelchair, remind them to shift, or reposition, their weight every 15 minutes. One way to do this, called the “forward lean” (e.g. bringing one’s chest towards one’s knees/lap), is the most effective and easiest way of shifting one’s weight while in a wheelchair.
- » Assess postural alignment, distribution of weight, balance, stability, and pressure reduction capabilities of all seating surfaces used by residents (wheelchair, recliner, dining chair, etc.)
- » Keep the top of the resident’s thighs horizontal to the ground and his or her ankles in a comfortable position on the floor or footrest of the wheelchair. Also rest the resident’s elbows, forearms, and wrists on the wheelchair’s arm supports.

Sitting or lying on a hard object

Sitting or lying on a hard object can lead to a pressure sore. The list below contains examples of objects to watch out for:

- Safety pins
- Curlers or bobby pins
- Buttons on mattresses
- Buttons on jeans or slacks
- Bulky seams
- Objects placed in pants’ pocket(s)
- Catheter connectors
- Catheter clamps
- Wrinkled bed sheets
- Crumbs in the resident’s bed



SHEAR

- Raise the head of a resident's bed as little as possible to avoid shearing; while keeping in mind other medical conditions the resident may have. A 30-degree elevation or lower is suggested.
- If the head of the resident's bed is raised higher than 30 degrees, keep a close eye on the skin located on the resident's tailbone. After elevating the head of the bed, gently lift the resident's body away from the surface of the bed to free any skin tension that might have been created and to reduce any shearing forces.
- If the head of the bed needs to be higher during mealtime, place pillows or foam wedges at the resident's hips and shoulders to keep up the resident's placement in the bed.
- Use transfer methods that lessen shear (e.g., nylon sliders, transfer board, trapeze, mechanical lifts). Avoid leaving slings under the resident.

FRICTION

Friction burns happen when soft surfaces, like skin, rub against harder or rougher surfaces, like a sheet. As described above, do not drag a resident across sheets or other surfaces.

- Protect the residents' heels from friction burns (e.g. using clear films, socks, pillows, foam blocks, heel booties, etc.).
- Examine the residents' heels every day.
- Gently use a non-alcohol based moisturizers on the residents' heels twice a day.
- Ask the resident's doctor about a prescription for a clear, film bandage for the resident's heels if they begin to show reddened friction or pressure sore areas.
- Have the resident wear padded, properly fitting, tennis shoes during wheelchair use. Be sure the shoes do not rub on the resident's feet.
- When turning bed-bound residents, make sure to reposition the resident's heels to avoid friction burns.

- Many residents have calluses on their feet and hands, but be aware of **new calluses**. New calluses may be revealing that the resident is suffering from excess friction or pressure.
- Completely remove any pressure on the resident's heels when he or she is in bed. Support the length of the resident's legs with a pillow and allow his or her heels to drop over the end of the pillow.
- If needed, seek advice from an occupational therapist for heel positioning devices and ideas.
- Keep away from multiple layers of sheets, mattress pads, overlays, etc. as these will get in the way of the mattress' function to spread out the pressure from the resident's body.
- Never use donut-shaped cushions. These devices reduce blood flow to skin tissue and lead to skin damage.
- Avoid artificial **sheepskin** mattress pads for pressure reduction. They do not work.
- Call an occupational therapist to carry out a seating assessment on any household furniture or wheelchairs your resident may be using.
- Consult the resident's health care provider about a preventative or therapeutic pressure management mattress/seat cushion, if needed.
- Keep the resident's skin clean and dry (free of sweat, wound drainage, urine, and feces). Moisture of any kind can cause chafing of the skin. Extended wetness can lead to the loss of layers of skin, resulting in a pressure sore. Reduce drying, cracking and extra moisture.
- Gently clean (don't scrub) the resident's skin at the time of soiling with a pH-balanced cleanser (e.g., Dove, Basis or Oil of Olay) and **warm** (not hot) water. **Pat** (don't rub) **the skin dry**.
- Stay away from all cleansers that can dry the skin, such as harsh soaps or alcohol-based products. Soaps that can be used on a baby's skin are fine. Read the product's label to discover what ingredients go into that product. If alcohol is one of the ingredients in a product, it will be listed on the label.
- Stay away from using talcum powder on the resident's skin, because it can promote the growth of yeast on the skin. Talcum powder can also "cake up," keeping moisture in and leading to skin breakdown.

- Use mattress pads and disposable briefs that are absorbent, to wick incontinence moisture away from the skin.
- If the resident is often wet due to dripping urine, use a light petroleum-based ointment on his or her skin, to block the urine from sitting on his or her skin. Check the resident's incontinence briefs regularly.
- If the resident is incontinent from both stool and urine combined, check the resident's incontinence briefs and skin at regular times throughout the day. Put a protective ointment on the resident's skin under the briefs.
- If the resident is incontinent of urine take that resident to the toilet on a regular schedule.
- Do not rub or massage a resident's skin, particularly over red or bony areas of the resident's body.
- Be aware that band-aids can cause a buildup of moisture around the wound that you are trying to protect. Moisture delays healing.
- Keep an eye on older residents' skin folds. Watch for redness or open wounds that can take place deep within the fold. Clean the folds carefully with a soft cloth and change pads and briefs often to keep the skin dry. If needed, use antifungal powder in folds. Remember to check those folds that are less obvious to the eye.

3. Keep the residents' skin moisturized. Remain aware of the residents' exposure to dry, cold weather and gently use non-alcohol based lotion to keep his or her skin lightly moisturized. Examples of good moisturizers are Aquaphor and Eucerin. Very dry skin can become weak, therefore becoming more and more defenseless to pressure sore development.

4. Provide good nutrition. To keep the residents' skin healthy, provide a well-balanced diet that includes an assortment of foods from all the different food groups (e.g., dairy, meats, fruits and vegetables (fresh if possible), grains/breads, and liquids). If a resident has a pressure sore, the health care provider or registered dietitian will want to look at increasing his or her intake of the following foods as they help to promote healing:

- » Protein (lean meats, dairy foods, beans);
- » Carbohydrates (breads, cereals);

- » Vitamin A (liver, whole milk, colorful fruits and vegetables);
- » Vitamin C (oranges, grapefruits, strawberries, tomatoes, sweet red peppers, broccoli, potatoes);
- » Vitamin E (vegetable oils, nuts, green leafy vegetables, fortified cereals);
- » Zinc (oysters, red meat, poultry, beans, nuts, whole grains, fortified breakfast cereals, dairy products); and
- » Iron (meats, fish, poultry, lentils, beans). Extra iron may be needed if your resident is anemic and the doctor will need to provide an order for that.



Good nutrition is important because it helps the body heal. A resident who does not eat enough calories, including protein and other nutrients, won't be able to heal, no matter how hard the care provider works to prevent/treat pressure sores.

A registered dietitian can design an eating plan that will supply the nutrients that residents need. Even if a resident does not have much of an appetite, it is still important for that resident to get enough calories, protein, vitamins and minerals. These suggestions may also help:

- » Try offering smaller meals with less time in between them.
- » If the resident never seems to feel hungry, try feeding him or her on a schedule, versus using his or her feelings of hunger to control when he or she eats.
- » Take advantage of the time during the day that residents feel their best. Many people are most hungry in the morning, when they are rested. Fix a bit larger meal at that time if the resident tends to be hungrier then.
- » Limit liquids during meals. Liquids can fill a resident up and prevent him or her from eating higher calorie foods. Liquid, particularly water, is important to the body, so don't limit the resident's drinking of water or other liquids overall, just have him or her drink the chosen liquid 30-60 minutes after eating his or her meal(s). Liquids help keep the skin soft and flexible.

- » Talk with a registered dietitian or speech therapist for residents who have trouble swallowing. Ask about healthy soups and supplemental nutrition drinks. High-calorie liquids such as milkshakes might be interesting to the residents as well.
- » Think about protein substitutes for residents who do not want to eat meat. Offer cottage cheese, peanut butter, yogurt or custards to the residents. Beans and nuts are good sources of protein, but they may be hard to digest for some residents.
- » Don't rush the residents' meals and provide assistance during meals if any residents need it. Poor nutrition has been linked to the development of pressure sores, so we want to make mealtime pleasing to all residents, if possible.
- » A resident who time and again eats less than $\frac{3}{4}$ of each of his/her meals may benefit from a nutritional supplement such as Ensure, Boost, Carnation Instant Breakfast or Resource. Check with the resident's health care provider or registered dietitian to ensure the correct type is ordered.
- » Offer liquids to residents when you go into their rooms to turn or reposition them, or while administering medications, etc. A cup of some type of liquid (e.g., tea, broth, cocoa) might taste good to the residents while they are watching a movie or working on a puzzle or craft, for example. You might also offer healthy snacks at this time, such as a cup of cottage cheese with peaches in it, or a small bowl of warm cooked apples with a bit of cinnamon mixed in.
- » Make sure the residents' teeth are in good condition and that any dentures fit properly. If the residents' teeth are decayed, the resident may not feel like eating. Also, if the resident wears dentures, be sure to clean them often and check them to make sure they fit correctly. After teeth are removed, the bones under the gums change and this will go on over time, so that dentures that used to fit will become loose as time goes by.
- » Be sure to keep resident preferences and special needs in mind. If a resident does not like a certain food, he or she may not want to eat it. That is okay. If the resident needs a special diet, such as a low salt or diabetic diet, talk with a dietitian at the hospital, so you can provide the diet that the resident needs while still providing healthy, well-balanced and pleasing food for the resident.

5. Keep the resident(s) active. One of the best ways to help the residents lower their risk of developing pressure sores is to help them continue to or better their ability to move around. A resident who is able to move around by him or herself should be encouraged to continue to move from the bed to a chair and to stand and walk. Residents who are bed-bound can profit from gentle exercises that move arms, legs, feet, head, etc. Check with a therapist (physical, occupational or recreational) at your local hospital or clinic for tips on a variety of gentle movements and how to do them with the residents you have in your home.

6. Are the residents using the best equipment? Does the equipment being used fit the resident(s) correctly? Here are some things you can check:

- » **Wheelchair** — Does the wheelchair hold up the resident's back? Are the footrests the right height? Is the resident using the best wheelchair cushion for his or her needs? Is the wheelchair the right size for the resident?
- » **Bed** — Is the resident sleeping on a good mattress? Is the mattress the right height from the ground so the resident is able to touch the floor with his or her feet when he or she tries to get up from the bed? Are the **bottom** sheets the right size for the bed? Do they fit tightly on top of the mattress? Are the **top** covers the right size for the bed? Are they big enough to cover the resident without being tucked in tightly around the mattress or the resident when he or she is in bed?
- » **Leg bags** — Are the straps too tight on the resident's legs?
- » **Splints/braces** — Do the splints or braces fit the resident right? Is the resident's skin inspected after he or she wears a splint or brace?

7. Temperature — Severe temperatures call for extra caution in protecting a resident's skin:

- Heat — Burns can occur from heat, friction, chemicals or tape. Possible sources of burns include:
 - » Sunburn,
 - » Hot water, as in a bathtub or shower,
 - » Carrying hot foods or placing liquids on your lap, such as holding a bowl of soup on your lap while watching television,

- » The kitchen stove during the cooking process,
- » Picking up or touching hot foods or drinks, such as pizza or fried chicken,
- » Electrical appliances, such as hair dryers or irons, that get hot to the touch after being used for a while,
- » Electric blankets, hot water bottles or heating pads that can overheat and cause a burn to the skin if left on one area of the skin for too long a time,
- » Sunlamps that can burn the skin, similar to getting sunburned, if the person does not move from under the sunlamp for too long a time,
- » Cigarettes.

When riding in a car, keep the resident's feet away from the heat outlet and check vinyl-type seats before the resident sits on them, to make sure they aren't too hot. If you take the residents camping, for example, protect their feet by having them sit a safe distance from the campfire.

- **Fever** — The stress on a person's skin can change with the higher body temperatures caused by fevers. Check the resident's skin carefully when he or she is sick or has a fever.
- **Cold** — Be sure to remind residents to dress warmly when they go outside in the winter, to prevent frostbite. Dressing in layers of clothing will provide extra warmth. Ice packs are also a source of frostbite if they are not used correctly. Do not set frozen foods, like a frosty bowl of ice cream, on a resident's lap.

8. A resident's clothing should fit properly. If clothing is too loose it can form wrinkles that put pressure on a resident's skin when he or she is sitting down. If clothing is too tight, it can slow down a resident's blood circulation. Pressure causing poor blood circulation, followed by pressure sores, can also come from unlikely origins. For example, residents who are wheelchair- or bed-bound should not sit on rivets and/or the thick seams of denim and other heavy fabrics used for the resident's pants or shoes. In general, make sure to carefully check a resident's skin after he or she wears new shoes or clothing.

9. Other issues that can lead to pressure sores are:

- » **Smoking:** Smokers are at higher risk for pressure sores than non-smokers because nicotine causes blood vessels to reduce in size, slowing blood circulation and reducing the amount of oxygen in the blood. This limits blood, oxygen and nutrients from flowing through the body as needed. Smokers often develop sores, in general, that are more serious and slower to heal than nonsmokers
- » **Edema**, or swelling, is caused by fluid build-up in parts of the body, such as hands, feet and legs. These body parts are involved because they are located below heart level and are not moved as often as needed. Skin in these areas becomes thin, lighter in color, and more easily injured if the person's circulation is poor. Often raising the person's legs and hands during the day; doing regular range of motion (ROM) or stretching exercises with the doctor's approval; and/or wearing compression stockings can help to prevent edema.
- » **Anemia** is a decline in red blood cells. Oxygen is required for healthy skin and it is carried to the skin (and other parts of the body) inside red blood cells. If the number of red blood cells reduces, less oxygen will be carried to the skin, and those skin cells may then become unhealthy or even die. A resident with anemia should make an appointment to see his or her doctor or nurse practitioner.
- » **Vascular disease** is a narrowing of the blood vessels, often caused by diabetes, smoking, high blood pressure, or high levels of cholesterol. Vascular disease leads to less blood flow to the skin, which then leads to unhealthy and/or dying skin cells.
- » **Medications** such as sedatives and hypnotics often make a resident overly sleepy. This can reduce the resident's ability to move around independently. Medications given for pain may cause a person to stay in a position that is more comfortable for them. The urge to move helps us remove the pressure on certain parts of our bodies. Without the constant urge to move, pressure builds and skin can become damaged. Non-steroidal anti-inflammatory drugs also reduce pain and slow down the body's ability to heal a pressure-induced injury, such as a pressure sore.



If you notice that a resident has, or is developing, a pressure sore, call the resident's doctor or nurse practitioner right away.

What to tell the resident's doctor or nurse practitioner

Inform him or her of what you have noticed, including:

- Location of the sore: Where is the sore located on the resident's body?
- What it looks like: Is it red? Is it swollen? Are the edges one color and the center of the sore another color?
- Is the sore warmer than the surrounding skin?
- How big is the sore in inches? Give size in inches for both length and width.
- Does the sore smell?
- Is the skin on the sore broken? Is the sore draining?
- Does the sore look infected?
- Does the resident have a fever?



The purpose of treatment is to heal the pressure sore and reduce harm to both the area around the sore and the resident's overall health.



Treatment of pressure sores

Treatment focuses on keeping the pressure sore from getting worse and on making the skin healthy again. The caregiver's role in the treatment of pressure sores is to:

- Follow the doctor's or nurse practitioner's instructions;
- Remove pressure on the area of the pressure sore by changing the resident's position often;
- Wash your hands with antibacterial soap first and then provide care to the resident. All cleansers for the pressure sore itself will be ordered by the doctor or nurse practitioner. Do **NOT** handle the pressure sore yourself without delegation from a contract nurse.

Note: Do not use antiseptics, such as hydrogen peroxide or iodine, on pressure sores or other types of open wounds. These products can further damage the skin, kill new skin and slow healing in general.

- If you are delegated by a contract nurse to do any wound care, be sure to handle the pressure sore area with great care. Pressure sores are usually painful, but not everyone will talk about feelings of pain;
- Make sure the resident eats a well-balanced diet, to help his or her skin heal. Protein is needed for growth and repair of body cells and helps the body fight infection. Include 2-3 servings of high protein foods each day, such as: meat, fish, poultry, eggs, dairy products, dried beans and peas, tofu, nuts and nut butters;
- If you have any concerns with the resident's ability to eat or with what foods to prepare, call a registered dietician for suggestions;
- Keep healthy skin dry and clean to prevent pressure sores; and
- Keep the resident's bed and clothing dry and clean.

Healing times

Many factors go into the healing time of a pressure sore, including how serious the sore was to begin with, the type of treatment used on the sore, and the location on the person's body where the pressure sore was found. Also involved in the healing time are the person's age, general health, diet and ability to move him or herself without help. According to Aetna's Inteli-Health group, there is a very good chance that a Stage II pressure sore will heal within one to six weeks in a fairly healthy older person who eats well and is able to move. Stage III and Stage IV pressure sores may take six weeks to three months to heal in this same type of person. Often, however, pressure sores can take longer to heal because the people who have them may not be able to move unaided, they may have poor health, or they may be uninterested or unable to eat. Thirty percent of Stage II pressure sores, 50 percent of Stage III pressure sores, and 70 percent of Stage IV pressure sores take longer than six months to heal. Imagine the complications that can take place with a severe pressure sore that remains open for more than six months. Imagine the pain that person is continually in. Six months is a very long time.

Pressure sores can also become an on-going problem for continually ill people who have multiple risk factors, such as incontinence, the inability to move and circulatory problems. For this group, the fight against pressure sores can seem insurmountable.

Complications

Pressure sores that become infected heal more slowly and can spread a dangerous infection to the rest of your body. If you notice any of the signs of infection listed below, be sure to call the resident's doctor or nurse practitioner ***immediately***.

- The resident develops a fever and/or chills;
- The resident feels an out-of-the-ordinary increase in the pain or swelling of the sore;
- The pressure sore develops increased redness, warmth, or black areas within the sore;
- The pressure sore begins to smell and/or develops yellow or greenish drainage; or
- The pressure sore is not showing progress in healing after several weeks of treatment.

Signs that the infection may have spread beyond the original sore itself include the following symptoms:

- Fever or chills;
- Mental uncertainty or difficulty concentrating;
- A rapid heartbeat; and/or
- Weakness.

Pressure sores can lead to serious, even life-threatening complications, such as blood poisoning (septicemia). Pressure sores can also lead to bone infections and bacterial infections that may resist normal antibiotics.

Documentation of sores and treatment

The resident's progress notes should explain:

- The sore, the date you first saw it, what it looked and felt like, the location of the sore on the resident's body, the size of the sore (how wide and how long), etc;
- The date the resident was taken to the doctor for treatment, explain what that treatment involved, who provided the treatment, and how often the pressure sore was treated;
- Changes (good or bad) that you noticed in the sore after treatment began; and
- Care that you gave to the resident to improve that person's healing (e.g., nutrition, incontinence care, repositioning, etc).

Screening tips relating to pressure sores

As a care provider, you have an important responsibility in the prevention of pressure sores. The first step toward prevention takes place during your pre-admission screening. Ask the potential resident, his or her family, preceding caregivers, or the case manager to supply you with the following information before you decide whether or not to admit the person:

1. Has the person had a pressure sore in the past? A history of pressure sores is often a sign of future pressure sores.
2. Is the person able to get up and walk? Can the person change position by him- or herself? People who are unable to walk or change the position of their body by themselves are at higher risk for pressure sore development. These people take extra caregiving time and energy because they have to be repositioned frequently in order to prevent pressure sores from occurring.
3. Is the person incontinent of bowel and/or bladder? The existence of urine and feces on the skin raises the risk of developing pressure sores.
4. Does the person eat his or her meals or snacks completely? People who eat well have healthier skin and are better at resisting pressure sore development. If they do develop a pressure sore; they heal faster.

Conclusion

Pressure sores can be prevented in most residents. A strong effort of quality, well-timed repositioning by care providers, high-quality nutrition and quick discovery of any reddened areas can lessen the number and significance of most pressure sores. This effort will pay off in better health for the residents.

Resources

DHS's Safe Medication Administration: www.tinyurl.com/p863p2g

DHS's Ensuring Quality Care tools and resources:
www.tinyurl.com/APD-EQCTools-Resources

Training credit

You will need to take and pass a test to receive a certificate for training hours. Tests are open book. Tests cannot be taken with assistance. Tests results will be sent via email from spd.hsu@state.or.us.

You must score 100% to receive training credit. All tests are graded in the order received. Processing tests can take up to 8 weeks.

Ordering tests

Fill out the test order form and submit payment to SOQ-Self-study Program, PO Box 14530, Salem OR 97309. Test order form is found at: www.tinyurl.com/DHS-AFHTraining. The test order form allows for an individual to order multiple different tests.

Tests are valid for 12 months from the date of purchase. Once a self-study test is ordered it is not transferable to another individual. **No refunds will be given.**

Questions or inquires?

Send questions or inquiries to: spd.hsu@state.or.us