PRESSURE ULCERS

INTRODUCTION

Pressure ulcers (also known as bed sores, decubitus ulcers, or pressure sores) are wounds in the skin that are caused by prolonged immobility. These lesions are very common. Approximately 1 million pressure ulcers occur each year in the United States and in some patient populations, the incidence of pressure ulcers has been reported to be greater than 50%.

Pressure ulcers can be relatively small and easily treated, but some can cover large areas of the body and can affect bones, muscles, and tendons. Pressure ulcers can be a source of serious infections, and the presence of a pressure ulcer significantly increases the risk of death. They can be damaging and disfiguring, and the estimated cost of treating ulcers is approximately $6 billion a year and 2.2 million hospital days.

Prolonged immobility is the basic cause of pressure ulcers. Immobility, in turn, initiates and aggravates several mechanisms of injury that start the development of a pressure ulcer. There are also risk factors that increase the chances of developing a pressure ulcer and many of these, such as diabetes, obesity, smoking, and stroke, are very common.

Fortunately, a lot is now known about pressure ulcers. We know why they happen, how to treat them, and how to prevent them. Pressure ulcers take work and time to prevent, but they can be avoided.

Learning Break: Pressure ulcers have been called bed sores, decubitus ulcers, pressure sores, and pressure ulcers. Currently, the preferred term in the medical community is pressure ulcer

OBJECTIVES

When the student has finished this module, he/she will be able to:

1. Correctly identify a definition of pressure ulcer.
2. Correctly identify the basic cause of pressure ulcers.
3. Identify three specific causes that contribute to the development of pressure ulcers.
4. Correctly identify three factors that increase the risk of developing pressure ulcers.
5. Identify a specific medical condition that increases the risk of developing pressure ulcers.
6. Correctly identify four areas of the body where pressure ulcers most commonly occur.
7. Identify three complications caused by pressure ulcers.
8. Identify three techniques that are used to prevent pressure ulcers from occurring.
9. Identify the maximum amount of time a patient should remain in one position.
10. Identify the healthcare professional who orders treatment or advanced pressure ulcers.
WHAT IS A PRESSURE ULCER?

Pressure ulcers are wounds in the skin that are caused by prolonged immobility.

This is the definition of a pressure ulcer that will be used in this module. However, pressure ulcers are more complicated than this definition makes them sound. There are multiple mechanisms that cause pressure ulcers, and there are many risk factors that increase the chances of developing a pressure ulcer. In addition, and pressure ulcers take time to develop: they go through stages from mild to very severe. This last point - the stages of development of a pressure ulcer - is very important as it has implications for detection and prevention.

The National Pressure Ulcer Advisory Panel has provided definitions of the stages of development of a pressure ulcer.

- Stage I: At Stage I, the pressure ulcer is just beginning to develop. The skin is red, warm, and may be sore. Look for these areas on bony prominences such as the elbows, heels, hips, lower back near the coccyx, and the shoulder blades. If proper treatment is applied, the skin will recover and the pressure ulcer will not get worse.

- Stage II: In Stage II, there is actual breakdown of the skin surface. The pressure ulcer looks like a blister or an ulcer. However, only the very top layer of skin, the dermis, has been damaged.

- Stage III: Stage III ulcers involve deeper skin damage that is below the level of the dermis. The wound can be very deep, but it will not extend to below the subcutaneous layer and other structures such as bones, connective tissue, muscles will not be damaged.

- Stage IV: These pressure ulcers are very serious. The ulcer is very large, the damage may go all the way to the bone, the joints may be affected, and the wound may be infected.

So, like many medical problems, pressure ulcers develop, they go through stages. They can also cause significant and irreversible harm: pressure ulcers and their complications are the direct cause of death in people who are paralyzed from the waist down. However, with relatively simple techniques and conscientious care, pressure sores can be prevented, and the progression of a Stage I or II pressure can be prevented, as well. Fortunately, most pressure ulcers are Stage I or Stage II and heal without surgical treatment.

HOW COMMON ARE PRESSURE ULCERS?

This is an easy question to answer: pressure ulcers are very common. While it is impossible to know exactly how many pressure ulcers are occurring at any one time, studies have estimated the prevalence of pressure ulcers in hospitalized patients to be
between 41-69%, and 25-66% of all people who have had a spinal cord injury will develop a pressure ulcer.

People who are at a high risk for developing a pressure ulcer are:

1) The elderly; 2) People who are in long-term care facilities; 3) People who already have a pressure ulcer, and; 4) People who have suffered a spinal cord injury. These risk factors and others that increase the chances of developing a pressure ulcer will be discussed later in the module.

**WHY DO PRESSURE ULCERS HAPPEN??**

The human body is made to move. When we are sitting still and even when we are sleeping, we move all the time. We toss and turn in while in bed, we shift positions when we are at a desk, and when we are at work or at home we get up, move about, and stretch from time to time. In ways that are obvious and in ways that are subtle, we are almost always in motion.

Immobility then is an abnormal condition and prolonged immobility is very bad for the body. Those people who cannot move at all, for even relatively short periods of time, are likely to develop illnesses and complications including but not limited to, blood clots, lung infections, damage to the bones and joints, muscle weakness - and pressure ulcers.

**Basic and Specific Causes of Pressure Ulcers**

The basic cause of pressure ulcers is immobility. Immobility can be absolute; the patient cannot move at all. Immobility can also be relative; the patient can move, but his/her ability to do so is seriously impaired.

But in either case, a pressure ulcer will develop if the level of immobility is significant. This happens for two reasons: 1) Immobility causes a pathologic process, decreased blood flow, that affects skin integrity and; 2) Immobility aggravates several phenomena, friction, pressure, and shear force, that normally would not cause harm.

So, a significant level of immobility: 1) Decreases blood flow to the tissues; 2) Causes pressure on the vulnerable tissues; 3) Causes friction, and; 4) Causes shear force. Immobility is the basic cause of pressure ulcers: decreased blood flow, pressure, friction, and shear force are the mechanisms of injury, the specific reasons why pressure ulcers develop. Pressure, friction, and shear force are more or less normal occurrences; decreased blood flow is not.

- Decreased blood flow: The body needs nutrients and oxygen and these are delivered to the organs and the tissues by the blood vessels of the circulatory system. The blood vessels are easily compressed and occluded if they are under pressure. But because we are constantly moving and changing positions, this never happens long enough for the tissues to suffer from a lack of blood.

  Example: When you are sitting in a chair, your body weight will compress and occlude some blood vessels to a degree that compromises blood flow. But because you are not sitting down for an entire day (Unlike someone in a bed who cannot move at all) and you are constantly shifting position, this occlusion and
interruption in blood flow does not cause harm. But for the bedridden, completely immobile patient, or the patient who has a greatly reduced ability to move, the amount of occlusion and the prolonged lack of blood flow can easily lead to conditions conducive to formation of a pressure ulcer.

- **Pressure:** Constant, unrelieved pressure of body weight is probably the biggest contributing cause of pressure ulcers. If the pressure of body weight is applied to one area of the body and that pressure is applied for a long period of time without interruption, the blood vessels that supply the tissues with nutrients and oxygen are occluded. If this disruption in blood flow is severe enough and lasts long enough, the tissues will die and a pressure ulcer will form.

The amount of pressure that is required to contribute to the development of a pressure ulcer will vary, depending on the area of the body, the thickness of the skin and the underlying tissues, the health of the skin and the underlying tissues, and the presence and amount of shear force and friction. It is impossible to determine how much pressure is too much and will contribute to the development of a pressure ulcer. However, it is clear that in certain vulnerable areas of the body and for people who have risk factors, the amount of pressure that can be dangerous is relatively slight. So, what might seem to be safe - the weight of someone’s arm on her/his elbow - may actually be a hazard.

- **Friction:** When you are sitting or lying down and you change positions, your skin rubs against your clothing, sheets, or whatever your body is resting against. This movement creates friction, and friction can damage skin that is already compromised by pressure and immobility. Imagine taking sandpaper or a nail file and rubbing an area of skin that is weak and sensitive: the skin would quickly become abraded. Friction is caused by movement, so it may seem contradictory to speak of friction when immobility is one of the primary causes of pressure ulcers. However, complete immobility is uncommon. Most people who develop a pressure ulcer can and do move, but they are doing so much, much less than normal. The immobility causes a compromise to the skin integrity, making it more vulnerable to the effects of friction.

- **Shear force:** Press the palms of your hands together, apply a moderate amount of pressure, and then try and slide one hand down. If the applied pressure is high enough, your hands will not move and the result will be heat, friction, and a “pulling” on the layers of tissue. This is called *shear force* or the *shear effect*, and the constant heat, friction, and tension on the tissues it produces is one of the contributing causes of the development of pressure ulcers. This description seems to imply that shear force is obvious and very noticeable. However, shear force happens in subtle way to people who are immobile or who are on prolonged bed rest. Example: If the head of the bed is elevated, gravity will naturally cause the body weight to move down, and it is easy to see how a subtle shear force would develop. It is important to remember that shear force can be easily generated if someone is immobile. If the body weight is not well distributed, even to a slight degree, shear force can result after prolonged
WHAT ARE THE RISK FACTORS FOR DEVELOPING PRESSURE ULCERS?

The basic cause of pressure ulcers is prolonged immobility, and the immobility causes the more specific mechanisms of injury, decreased blood flow, pressure, friction, and shear force. Immobility is relatively common, but not everyone who is immobile develops a pressure ulcer or develops a pressure ulcer as easily as some people do. This occurs because there are risk factors that increase the chances of developing pressure ulcers, factors that make some people more susceptible to these lesions.

Risk Factors

• Age: As we age, our skin gets weaker, dryer, thinner, more permeable to moisture, and more fragile. We also lose fat, and our circulation is not as good as it was when we were young. All of these increase the vulnerability of the skin and make the skin less able to heal and less able to withstand pressure, friction, shear force, and a decrease in blood flow. Finally, as we age we tend to be less mobile and older people are more likely to suffer illnesses that can lead to immobility, illnesses such as advanced COPD, arthritis, hip fractures, and stroke. Elderly people are also more likely have other medical conditions that can pre-dispose them to pressure ulcers; these will be discussed separately.

• Urinary incontinence: Urinary incontinence is a significant risk factor for the development of pressure ulcers. When urine is in contact with the skin and not promptly cleaned off, bacteria that can harm the skin will multiply. Also as the urine decomposes, irritating chemicals are formed that can damage the skin. Constant moisture increases the friction forces on the skin (The mechanism by which this works is not completely understood), and this is another source of damage caused by urinary incontinence. Finally, when someone is incontinent of urine, the skin is being washed far more often than it normally would be. The frequent washing removes surface fats, dries the skin, and also subtly removes microscopic skin surface layers that are protective.

• Fecal incontinence: Fecal incontinence is also a significant risk factor for the development of pressure ulcers. There are bacteria and enzymes in feces that are very, very irritating to the skin, especially to someone whose skin integrity is compromised by age, immobility, and urinary incontinence.

• Medical conditions/lifestyle factors: Cancer, dehydration, diabetes, excessive body weight, lack of pain perception, malnutrition, peripheral vascular disease, a previous pressure ulcer, a prolonged time in surgery, smoking, and stroke are all risk factors that increase the chances of developing a pressure ulcer. All of these increase the risk for developing a pressure ulcer by causing immobility, decreasing blood flow, affecting the integrity/health of the skin, or affecting pain perception. For example, the nicotine in cigarette smoke constricts the blood
vessels in the hands and feet, people who have had a stroke have decreased pain sensation and often cannot move, and dehydration and malnutrition negatively affect the health of the skin.

It has been estimated that patients who are incontinent are four times as likely to develop a pressure ulcer as are patients who are not incontinent. And urinary incontinence and fecal incontinence together seem to greatly increase the risk for developing a pressure ulcer, more than the presence of either one alone.

**Learning Break:** Diabetes is a very common disease: approximately 26 million Americans have type 2 diabetes and approximately 1 million have type 1 diabetes. Diabetes decreases the peripheral circulation and causes nerve damage that can affect pain perception. These complications of diabetes mean that people who have diabetes have a high risk for developing pressure ulcers because vulnerable areas of the skin do not get blood flow and healing mechanisms are disrupted.

Identification of patients who are at risk for the development of pressure ulcers is obviously very important, and there are several formal risk assessment scales that can be used to determine who is likely to develop a pressure ulcer. These risk assessment scales use the best available evidence in order to standardize the assessments. Using a standardized assessment scale, rather than depending on the knowledge of each individual professional, can ensure that all vulnerable patients will be assessed and identified in the same way using the same criteria.

Commonly used assessment scales include the Braden Scale, the Norton Scale and the Waterlow Scale for the assessment of adults; and the Braden Q Scale, the Glamorgan Scale, and the Strakid scale for the assessment of children. Each uses slightly different criteria: The Braden Scale, for example, assesses activity level, friction/shear, mobility, moisture, nutrition, and sensory perception. Each scale has its value, and the merits and limitations of each one will not be discussed here.

**Where Do Pressure Ulcers Happen?**

Pressure ulcers can happen in many places, but four of the most common are the heels, the hips, the base of the spine, and the elbows. They can also develop on the back of the head, the spine, the shoulders, the hips, and the ears - *anywhere there is constant pressure, and where there is very little skin above the bone*. For example, the heels, elbows, the shoulders, and the spine are all bony parts of the body and there is not much skin to pad and protect these areas. So when the body weight is pressing down on these areas, the skin can easily become damaged and a pressure ulcer can develop. Pressure that can cause a pressure sore ulcer even be caused by wrinkles in the sheets.

**WHAT ARE THE IMPLICATIONS/COMPLICATIONS OF PRESSURE ULCERS?**

Pressure ulcers are painful and disfiguring. They can also cause serious complications. Although with proper treatment most pressure ulcers will heal, the healing process can be
prolonged and pressure ulcers can be dangerous. It has been estimated that each year approximately 60,000 people die from complications of pressure ulcers. And the presence of a pressure ulcer increases the risk of death almost five times that of someone who does not have one, and if the pressure ulcer becomes infected the risk of death is even higher.

**Tissue Infections**

Infection is the most common complication associated with pressure ulcers. The presence of bacteria and other microorganisms in a pressure ulcer is almost unavoidable, but the development of an infection is not. Infection of a pressure ulcer can be especially serious in the elderly and in people who have a compromised immune system. Detecting infection in a pressure ulcer can be difficult, and for the people who are at a high risk it can be very difficult to detect because many of these people have decreased pain sensation and compromised immune systems.

**Bone Infections and Sepsis**

An infection of the bone is called osteomyelitis. Osteomyelitis is a very serious complication of pressure ulcers. It can be very difficult to detect, and it often requires surgical treatment.

Sepsis is the term for an infection that moves from a local area into the blood stream. When the bacteria enter the bloodstream, they can travel to any area of the body and infect any organ. Sepsis can cause damage to the heart, brain, kidneys, etc. and in elderly patients can often be fatal. Patients who have a pressure ulcer that is Stage II or worse are at risk for developing sepsis.

**PREVENTING PRESSURE ULCERS**

Preventing pressure ulcers will be one of your most important responsibilities when you are caring for someone who is immobile and at risk for developing a pressure ulcer. Preventing pressure ulcers requires constant vigilance, continual assessment and monitoring of the patient, and application of specific techniques. All of this is hard work, but preventing a pressure ulcer keeps the patient safe from serious complications and prevents the need for lengthy course of therapy.

Prevention of pressure ulcers is basically a three step process: 1) Identifying patients who are at risk; 2) Performing periodic assessments, and 3) Using specific techniques designed to prevent pressure ulcers. Identifying patients who are likely to develop a pressure ulcer requires you to know and understand the causes of pressure ulcers, mechanisms of injury that cause them, and risk factors associated with their development: all of these were discussed in a previous section of this module.

**Assessment**

An assessment for pressure ulcers should be done when a patient is admitted, and then a schedule for re-assessment should be established. Some patients may need to be
assessed as often as every 24 hours. The timing and frequency of the assessment will depend on the level of risk.

Check the patient, literally from head to toe. Pay special attention to high risk areas: sacrum, heels, elbows, hips, and the back of the head. If the patient is able to provide reliable feedback, ask him/her if there is pain in any of these areas or elsewhere. Examine the skin for temperature (Unusually warm or cold), color (Redness or pallor), moisture (Excessively most or dry), and for any breaks in the skin.

**Techniques for the Prevention of Pressure Ulcers**

- Position changes: Position changes reduce the pressure on vulnerable areas for people who are immobile and who are at risk for developing a pressure ulcer, and position changes are critically important. *Patients who are immobile must be moved.* They must not be allowed to remain in the same position hour after hour. Most of the time, it is recommended that a patient who cannot move by himself/herself be moved *at least* every two hours - no longer than that. Some patients may need to be moved more frequently: very often the schedule for position changes will be ordered by a physician or recommended by a physical therapist. The standard routine that is used is left side, back, right side, and then repeat. If at all possible, avoid positioning the patient so he/she is lying with the weight on vulnerable areas such as the hip, base of the spine, etc. It is also important to make sure that bony areas with very thin skin cover - the ankles for example - are not touching each other. The head of the bed should not be elevated more than 30 degrees to prevent shear force from damaging the skin. Performing position changes can be challenging in terms of time and patient comfort. However, any change is position is better than remaining completely immobile in the same position. If for some reason a complete position change cannot be done, small positions changes that take less time to accomplish should be performed. Also, position changes are vitally important once a pressure ulcer has developed: try at all costs to avoid any pressure on that area. If the pressure on a pressure ulcer is not reduced as much as possible healing will be much delayed, or not possible at all.

- Dry skin: Skin that is wet can become irritated and irritation can lead to skin damage and pressure sores. Skin that is wet from urine is especially at risk. Patients who are incontinent of urine or stool should be checked frequently and their skin should be cleaned and dried if it is wet or soiled. Only use a soap that has been approved for use in patients with delicate skin. Ordinary bar soaps can be too drying.

- Padding: There are many different ways that padding can be used to prevent pressure sores. Which ones that will be used will depend on what is available at where you work and what the patient requires. When using the various padding tools such as mattresses, pillows, foam rubber devices, padded boots or heel supports, air or water-filled pads, etc., you must remember to keep these clean and dry. They can contribute to the development of a pressure sore if they become wet.
or contaminated. It is also important to remember to make sure that there are no ridges or sharp edges on these tools that could put pressure on the skin. The same is true for bed linens. These should be free from wrinkles and ridges as much as possible. Special beds filled with air, liquids or silicone beads (much like a water bed) are often used for people who might develop a pressure ulcer or who already have one.

- Creams and lotions: Creams and lotions may help prevent pressure ulcers from developing. These can prevent urine and feces from directly contacting the skin and they can help reduce the effects of friction and shear force.

**TREATING PRESSURE ULCERS**

The treatment of a pressure ulcer will depend on what stage the ulcer is. Ulcers that are Stage I can be treated with simple, non-invasive therapies, frequent assessments, and conscientious use of the prevention techniques, especially frequent position changes and skin cleaning. Stage II ulcers will need more intensive care and possibly the use of dressings. Complicated ulcers that are Stage 3 or 4 may require surgery, special cleaning techniques and dressings, or skin grafts. This module will divide the treatment of pressure ulcer into two categories: 1) Supportive care and medical therapies, and; 2) Surgical therapies.

**Learning Break:** It is very important to try and treat pressure ulcers as soon as possible, before they develop into Stage II or Stage IV. The size and depth of a pressure ulcer is inversely related to the chances of healing: the wider and deeper the ulcer, the less chance there is that it will heal.

**Supportive Care and Medical Therapies**

When a pressure sore is still at Stage I or Stage II, supportive care in the form of the preventative measures discussed in the previous section, e.g., frequent position changes, keeping the skin free of urine and feces, can prevent a pressure sore from progressing to Stage III or Stage IV and will help these ulcers heal. The patient may also benefit from nutritional supplementation that includes extra protein and vitamins. The assessment schedule may need to be re-adjusted. Re-positioning may need to be done more frequently.

Medical therapies include various types of dressings that cover the wound and promote healing, solutions for cleansing the wound, topical medications that promote wound healing and prevent infection, and negative pressure wound therapy. For some patients, dressing alone may be used and for others a combination of the three, the cleansing solutions, the topical medications, and dressing may be prescribed.

Pressure ulcers that involve a break in the skin should be covered by a dressing. An intact skin is the body’s first line of defense against infection because the intact skin acts as a mechanical barrier that physically prevents bacteria, viruses, and other microorganisms and moisture from entering the body and causing an infection.
There are many different types of dressings that are used to cover pressure ulcers. Dressings may seem simple, and in one sense they are. They perform the basic function of covering the wound, which prevents bacteria and other microorganisms and moisture from entering the wound. However, the dressings that are used to cover a pressure ulcer also have other, more complex functions. For example, the material that many pressure ulcer dressings are composed of do prevent moisture from entering the wound, but the material also keeps the area of the wound moist to a specific degree and that promotes healing. Pressure ulcer dressings also absorb the drainage from the wound, and some are impregnated with material that breaks down dead skin and fills the dead space in the wound: both of these properties help the pressure ulcer to heal.

Solutions that are used to clean and flush out a pressure ulcer may be a simple saline solution or may be a solution that has anti-bacterial properties. Topical medications such as creams and ointments that have antibacterial properties and/or have enzymes that dissolved dead skin may also be applied a pressure ulcer.

As previously mentioned, there are many different dressings, cleaning solutions, and topical medications that can be used to treat a pressure ulcer. The choice of which one to use and whether or not to use a combination will depend on the nature of the pressure ulcer. The optimal treatment of pressure ulcers is still being developed, and at this point the benefits and disadvantages of each individual dressing, medications or solution are not clear. To put the matter in simpler terms, no one knows which of these therapies works best, and different health care facilities use the approach they feel is most beneficial. Whatever the physician or wound care nurse has prescribed, follow that treatment plan.

Learning Break: If you are responsible for using these cleaning solutions and/or applying these dressings, do not make substitutions. Some things like 3% hydrogen peroxide are suitable for simple wound cleaning but make actually be harmful to a pressure sore. Every patient with a Stage III or Stage IV pressure sore should have specific wound care instructions ordered by the physician or a wound care nurse, and you should not deviate from those instructions.

Negative pressure wound therapy has shown some promise in healing pressure ulcers. In negative pressure wound therapy, the pressure ulcer is covered with an absorbent sponge and an occlusive dressing. A vacuum tube is placed through an opening in the occlusive dressing, and the vacuum tube is applied to a vacuum pump. The vacuum pump creates negative pressure and the negative pressure increases circulation in the area and also removes wound drainage that would otherwise prevent healing.

Surgical Therapies

If a pressure sore has reached Stage III or Stage IV, the preventative techniques won’t work. Specific treatment - often surgical treatment - is needed to prevent the pressure sore from becoming permanent, to promote healing, and to prevent complications.

These treatments that are used will be ordered by a physician. Taking care of and monitoring the progress of pressure sores is also a sub-specialty of nursing. Many hospitals and health care facilities have a nurse who has special training and certification in negative pressure wound therapy.
in the area of wound care. The therapies that are used for a pressure sore will depend on many factors. The following treatments are used for Stage II and Stage IV pressure sores.

- **Debridement:** Debridement is a surgical technique. It involves cutting away dead, damaged, and infected tissue, and debridement can be used for pressure sores. It is felt that dead and damaged tissue acts as reservoir for bacteria and if that tissue is not removed, the ulcer will not heal. The tissue can be removed with a scalpel, with a high-pressure liquid, with salves/creams that dissolve the unwanted tissue, or with a combination of methods. Whirlpool baths and wet dressings can also be used; these loosen the dead tissue so it can more easily be removed.

- **Skin grafts:** A skin graft may be used if the pressure ulcer is very deep or very wide and it is felt that normal healing may not be enough to close the wound.

**SUMMARY**

Pressure ulcers are wounds in the skin that are caused by prolonged immobility. Pressure ulcers are very common, and the severity of these lesions can range from an area of the skin that is red and painful to an open wound that affects bone, muscle and tendon. Pressure ulcers that involve a break in the skin are often infected, and the infection can cause serious complications such as osteomyelitis and sepsis. Pressure ulcers usually develop in areas of the body where the skin is thin and there is a bony prominence. The heels, the hips, the base of the spine, and the elbows are most susceptible, but the back of the head, the spine, the shoulders, the hips, and the ears are also areas where pressure ulcers are commonly found.

Prolonged immobility is the basic cause of pressure ulcers, and prolonged immobility also causes and/or aggravates more specific mechanisms of injury: decreased blood flow, friction, pressure, and shear force. Some people are more susceptible to the development of pressure ulcers because of the presence of certain risk factors. These risk factors include advanced age, urinary incontinence, fecal incontinence, and medical conditions including cancer, dehydration, diabetes, excessive body weight, lack of pain perception, malnutrition, peripheral vascular disease, a previous pressure ulcer, a prolonged time in surgery, smoking, and stroke.

Prevention of pressure ulcers focuses on keeping the skin clean, dry, well nourished and well hydrated, and frequent position changes. People who are incontinent of urine or stool need to have their skin cleaned quite often. Frequent position changes is the most effective technique for preventing pressure ulcers as constant pressure on a vulnerable area is probably the single biggest factor in the development of a pressure ulcer. If a pressure ulcer has developed and it is a relatively small, simple ulcer, it is treated with supportive care and medical therapy. Deep, complicated pressure ulcers may need surgical debridement and/or a skin graft.