TRAIN FOR SUCCESS INC.
MOBILITY: FACTORS THAT INTERFERE WITH MOBILITY
2 Hr

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Purpose

The purpose of this course is to educate and reinforce the knowledge of nurses; ARNP, RN, LPN, CNA /HHA, therapists and other individuals who are working in the health care environment, as well as other students/ individuals regarding mobility and various factors that can interfere with mobility.

Objectives/ Goals:

After successful completion of this course the students will be able to:

1. Define Fracture and the various types of fractures
2. Describe hip fracture and hemiarthroplasty procedure
3. Discuss various imaging testing to confirm fractures
4. Describe first aid treatment for the individual with a fracture
5. Describe RICE therapy; the mnemonic for 4 elements used to treat soft tissue for Injuries such as treatment for sprains and strains.
6. Discuss amputation and treatment.
7. Describe arthritis, collagen disease various types and treatments
8. Discuss polymyositis, symptoms, diagnosis and treatment.
9. Describe joint replacement and plan of care, expected outcomes.
10. Discuss joint replacement, interventions and rationale

INTRODUCTION

Factors that interfere with MOBILITY

FRACTURES
A fracture is a break, usually in a bone.
If the broken bone punctures the skin, it is called an open or compound fracture.

There are different types of fractures:

When the broken bone cuts or punctures through the skin, this is called an open fracture. This is a very serious type of fracture because the skin is open and infection in the bone and the wound can develop.

A closed fracture occurs when the bone is broken but there is no open wound or puncture in the skin. A bone may also be partially fractured or completely fractured.

There are other types/ descriptions of fractures such as a comminuted fracture where the bone injury results in more than two separate bone components and others later mentioned.

The most common causes of fractures are:

•The result of trauma such as from a car accident or fall,

• Overuse of muscles can place more stress or force on the bone. This can cause a stress fracture.

•Osteoporosis - disorder that weakens the bones and makes them much easier to break. Sometimes, the victim may just be walking and hears a popping sound- due to a fracture; then he/she experiences pain and may even fall due to the fracture for example if it is in the hip or lower extremities.

Some Signs / Symptoms of a fracture are:

•Abnormal shape of the limb or joint,
• Limited mobility or unable to move the extremity/ limb,
•Joint is out-of-place,
• severe pain,
•Swelling,
•bruising or cyanosis of a limb,
•bleeding,
•Tingling and numbness.

Patients need to get medical care right away for all fractures.

- May need to wear a cast or splint,
- Sometimes the patient needs surgery to put in plates, pins or screws to keep the bone in place.

Different Types of Fractures and Bone healing complications

The following table describes various types of fractures and some bone healing complications:

Types of Fractures & Bone healing complications	Description
Greenstick Fracture	A greenstick fracture occurs when a bone bends and cracks, instead of breaking completely into separate pieces. This type of broken bone most commonly occurs in children because their bones are softer and more flexible than are the bones of adults.
Delayed Union Fracture	A delayed union is when a fracture takes longer than usual to heal.
Malunion Fracture	Malunion is a clinical term used to indicate that a fracture has healed, but that it has healed in less than an optimal position.
Nonunion Fracture	Some broken bones do not heal even when they get the best surgical or nonsurgical treatment. When the broken bone fails to heal it is called a nonunion.
Oblique Fracture	An oblique fracture is when the break has a curved or sloped pattern
Spiral Fracture	A Spiral fracture, sometimes called a torsion fracture, in which a bone has been twisted apart.
Transverse Fracture	A transverse fracture is when the broken piece of bone is at a right angle to the bone's axis.
Compound Fracture	A fracture in which a bone is sticking through the skin. Also known as an open 'fracture.
Comminuted Fracture	A comminuted fracture is when the bone breaks into several pieces.
Pathologic Fracture	A pathologic fracture is caused by a disease that weakens the bones.
Stress Fracture	A stress fracture is a hairline crack.

TREATMENT/ FIRST AID

A fracture requires medical attention. If the broken bone is the result of major trauma or injury, call 911 or the local emergency number.

Also call for emergency help if:

- The person is unresponsive, is not breathing or is not moving. Begin CPR if there is no breathing or heartbeat.
- There is heavy bleeding.
- Even gentle pressure or movement causes pain.
- The limb or joint appears deformed.
- The bone has pierced the skin.
- The extremity of the injured arm or leg, such as a toe or finger, is numb or bluish at the tip.
- You suspect a bone is broken in the neck, head or back.

  Do NOT move the person except if necessary to avoid further injury.

Take these actions immediately while waiting for medical help:

- **Stop any bleeding.** Apply pressure to the wound with a sterile bandage, a clean cloth or a clean piece of clothing.
- **Immobilize the injured area.** Do NOT try to realign the bone or push a bone that is sticking out back in. If trained in how to splint, apply a splint to the area above and below the fracture sites. Padding the splints can help reduce discomfort.
- **Apply ice packs to limit swelling and help relieve pain.** Do NOT apply ice directly to the skin. Wrap the ice in a towel, piece of cloth or some other material.
- **Treat for shock.** If the person feels faint or is breathing in short, rapid breaths and lay the person down with the head slightly lower than the trunk and, if possible, elevate the legs.

In the Emergency department, the Physician may order Imaging tests to confirm the fracture diagnosis; Imaging tests such as, an x-ray, Bone scan, or a Magnetic resonance imaging (MRI).

- **X-rays:** Sometimes, a stress fracture is not seen on a regular X-ray taken shortly after the time the victim develop signs and symptoms. It sometimes takes several weeks for evidence of stress fractures to show up on the X-rays.
- **Bone scan:** A few hours before the bone scan, the victim will receive a small dose of radioactive material through an intravenous line (I.V.). The radioactive substance will accumulate mainly in the areas where the bones are being repaired.
- **Magnetic resonance imaging (MRI):** MRI uses radio waves (a type of electromagnetic radiation) and a strong magnetic field to produce detailed images of your internal structures. MRI usually can see/ visualize stress fractures within the first week of injury, and this type of test is more capable of distinguishing between the stress fractures and soft tissue injuries.

Sometimes, after the fracture diagnosis has been made, the victim may need other tests such as :

- an angiogram, a special X-ray of the blood vessels to determine whether other tissue around the bone has been damaged,
- Computerized Axial Tomography (CAT or CT scan) which combines X-rays and computer analysis to generate detailed images of the body.

The victim may need to wear a cast or splint.
Sometimes he/she needs surgery to put in pins,
plates or screws to keep the bone aligned or in place.

Sometimes medication is limited to pain medication to help to reduce the pain and the physician may prescribe antibiotics for open fractures, to prevent infection from developing.

HIP FRACTURE

A hip fracture is a break within the upper quarter of the femur /thigh bone. The extent of the fracture depends on the forces and the factors that are involved. Hip fractures most commonly occur from falling or from direct trauma/blow to the side of the hip. Sometimes underlying medical conditions may contribute to the fracture such as osteoporosis, stress injury, cancer can weaken the bones and make the hip more susceptible to breaking.

Hip fracture surgery

Hip fracture surgery is done to fix/ repair a break in the upper part of the thigh bone. The thigh bone is called the femur. It is part of the hip joint.

The patient may receive general anesthesia before surgery. This means that the patient will be unconscious and not able to feel pain.

The patient may receive spinal anesthesia. With this type of anesthesia, medication is put into the back to numb below the waist.

The type of surgery, depends on the kind of fracture the patients have.

If the fracture is in the neck of the femur, the patient may have a hip pinning procedure.

During this procedure:
• The patient lies on a special table to allow the surgeon to use an x-ray machine to see how well the parts of the hipbone lines up.

•The surgeon makes a small incision on the side of the thigh.
•Place special screws to hold the bones in the correct position.
•The surgery may take two to four hours.

If the patient has an intertrochanteric fracture (area below femur neck), the surgeon will use special metal plate and screws to fix it. Usually there are more than one piece of bone broken in this type of fracture.

During the surgery:
• The patient lies on a special table. This allows the surgeon to use an x-ray machine to see how well the parts of the hip bone lines up.
•The surgeon makes a surgical incision on the side of the thigh.
•The metal plate / nail is attached with a few screws.
•The surgery may take about less than two hours.

The surgeon may perform a Hemiarthroplasty - partial hip replacement. Hemiarthroplasty replaces the ball part of the hip joint.

Risks of surgery:

•Avascular necrosis

Avascular necrosis occurs when the blood supply in a section of the femur is reduced or cut off for a period of time. This will cause part of the bone to die.

Other risks of surgery:

•Injury to the nerves or damage to the blood vessels
•Parts of the hip bone may not join together
•Parts of the hip bone may not join in the correct position.
•Blood clots in the lungs or legs.
•Mental confusion sometimes affects the older patients who already have a history of confusion and may also result in some increased confusion.

Older adults who fracture a hip may already have problems thinking clearly. Sometimes surgery can make this problem worse.
•Pressure ulcers or bed sores may develop from spending a prolonged period of time in bed or a chair

Before the Procedure
Patients are admitted to the hospital for the a hip fracture repair/surgery.

On the day of the surgery:
The patients are kept NPO (nothing to drink or eat after midnight) before the surgery.

Instruct patients:

•That NPO status includes no candies, chewing gum or breath mints. To rinse mouth with water if feels dry, but not to swallow (unless have special medications).
•To take the medications that the physician has instructed them to take, but only with a small sip of water.

After the hip surgery Procedure
The patients will stay in the hospital for about 3 to 5 days.
Full recovery will take from three to four months to a year.

After surgery:

• The intravenous (IV) catheter will deliver IV fluids until able to drink on their own.
•Special compression stockings placed on the legs to help improve blood flow in the legs and reduce the risk of developing blood clots, which are common after hip surgery.

•Pain medications will be ordered.
•Antibiotics may also be prescribed to prevent infection.
•A foley catheter may be inserted into the urinary bladder to drain urine. It will be removed when the patients are ready to start urinating on their own. The urinary catheter is often removed two to three days after the surgery.
•Patients will be taught and encouraged to complete coughing and deep breathing exercises and effectively using a spirometer to help prevent pneumonia.

ACTIVITY / AMBULATION

Patients will be encouraged to start moving around and complete ambulation activities as soon as the 1st day after surgery because most of the issues/ problems that may develop after hip fracture surgery can be prevented by becoming active such as getting out of bed and start ambulating as soon as possible.

•The patient will require assistance bed to a chair on the first day after surgery.
•The patient will start to walk with crutches or walker (will not be able to place too much weight on to the leg that was operated on).

DISCHARGE PLANS

The patient will be able to be discharged home when:

•They can move around safely with a walker or crutches.
•They are correctly completing the prescribed exercises to strengthen the hip and leg.
• Their home is ready.

Some patients may need short stay in rehabilitation facility after they are discharged from the hospital and before they go home. At the rehabilitation facility, they will learn how to safely do daily activities on their own. Patients might need to use crutches or a walker for a few weeks or months after surgery.

PATIENT TEACHING/ DISCHARGED HOME

The patient may have bruises around the incision site. The bruises will fade away over time. It is normal for the skin around the incision to be a little red. It is also normal to have a small amount of watery or dark bloody fluid draining from the incision for a few days.

ABNORMAL
It is not normal to have foul smell or drainage that last more than the first 3 to 4 days after surgery. It is also not normal for the wound to start hurt more after leaving the hospital.

Importance of Activity
Patients need to do the exercises the physical therapist taught them while they were at the hospital.

The physician and physical therapist will help the patients decide when they no longer need cane, crutches or a walker. Information will also be given to them regarding when to start using a stationary bicycle and swimming and other exercises to build the muscles and the bones.

INSTRUCT THE PATIENTS:

•Not to sit for more than Forty-five minutes at a time without moving around.
•DO NOT sit in low chairs that put the knees higher than the hips.
•Choose chairs with arm rests to make it easier to rise up / stand up.
•Sit with the feet flat on the floor, and point the feet and legs outward a little.
•DO NOT cross the legs.
•DO NOT bend at the waist or the hips when putting shoes or socks on.
•DO NOT bend down to pick up things from the floor.
•Use a raised toilet seat for the first few weeks.
•DO NOT sleep on the stomach or on the side of the surgery.

Home Preparation

INSTRUCT PATIENTS TO:
Have bed in low position (so that feet touch the floor when patient sits on the edge of the bed).

Maintain a safe, hazard free environment:
• Prevent falls -
Remove loose cords/wires from walk areas or hallways.
Remove loose carpets or throw rugs.
Fix uneven floors in doorway.

Use good lights.
•Make the bathroom safe:
Place hand rails in the shower /bathtub
Place hand rails next to toilet.
Place a slip-proof mat in the shower /bathtub.
•DO NOT carry anything when walking around.
Keep the hands free to help with balance.
Put things where they can be easily reached.

SOME SAFETY TIPS
• avoid stairs,
•Set up a bed on the first floor or use a bedroom on the first floor.
•Have a commode or bathroom on the same floor where the patients spend most of the day.

For the first 1 - 2 weeks, patients will need some assistance or may have physician order home health care to send a trained caregiver to the house to provide some assistance.

Wound Care
Patients may start showering about 5 - 7 days after the surgery.

Teach/ instruct patients that after shower, just to gently pat the incision site dry with a clean towel. DO NOT try to rub it dry.
DO NOT soak the wound in a bathtub, swimming pool, or hot tub until the physician gives the all clear.

Change the dressing over the incision every day (as ordered by the physician). Gently wash the wound with soap and water (or with approved substance ordered by physician) and pat it dry.
Check the incision for any signs of infection at least daily.

The signs of infection include:
•Increased redness
•Increased drainage
•Wound is opening up

Other important Self-care tips
To prevent another injury/ fracture, take steps to keep the bones strong.

• After patients have healed from the surgery and are able to do more tests, follow up with the physician to check for osteoporosis; weak, thin bones. There might be treatments available to help with weak bone.

•If the patients smoke, they need to stop; follow up with physician regarding ways to help to quit. Smoking will keep the bone from healing.

•Avoid drinking alcohol regularly.
Alcohol will cause a bad reaction from taking pain medications and drinking alcohol. Alcohol may also make it harder to recovery from surgery.

•Continue wearing the compression stockings used in the hospital until the physician order to discontinue use. Wearing the compression stockings for at least 2 or 3 weeks may help reduce blood clots after surgery.

•Teach patients to take the pain medications as prescribed.
To also move around because the activity can help to reduce the pain.

CALL THE PHYSICIAN IF EXPERIENCE:

•Chest pains
•Shortness of breath
• Increased redness at incision site
• Increased pain around the incision
•Drainage from incision
•Swelling in one of the legs (it will be red and warmer than the other leg)
•Pain in the calf
•Fever higher than 101°F (38.3°C)
•Pain that is not controlled by the pain medications
•Nosebleeds (if taking anticoagulants/ blood thinners)
•Blood in the urine or stools (if taking anticoagulants/ blood thinners)
•Frequent urination
•Burning on urination

STRAINS AND SPRAINS

Strain is an injury to a muscle or tendon, in which the muscle fibers tear as a result of over-stretching.

Strains are classified as:

- Grade 1
- Grade 11
- Grade 111

Grade 1

In grade 1 muscle strain, the muscle or tendon is overstretched. Small tears to muscle fibers may or may not occur. The individual may have mild pain with swelling or without swelling. Grade I strain is also known as mild muscle strain.

Grade 11

Grade II strain also known as moderate muscle strain, occurs when the muscle or tendon is overstretched with fibers torn but not complete. Symptoms may include increase pain and swelling. The area of the injury is tender. If blood vessels at the site of injury are damaged, then bruising may be observed. Movement of the injured area may be difficult due to the pain.

Grade 111

Grade 111 strain, is called severe muscle strain. It is the most serious of the three grades of muscle strains. Most of the muscle fibers are completely ruptured or torn. Pain, tenderness, swelling, and bruising are often present. Movement is very difficult.

TREATMENT

Moderate and severe muscle strains should be assessed by a physician / qualified health care provider.

Grade 1 muscle strain:

- RICE Therapy (rest, ice, compression, elevation) therapy may be enough to manage symptoms. See the table below.

R= Rest	Stop doing the activity that caused the problem and avoid any more damage to injured area.
I= Ice	Apply ice or cold compresses for 15-20 minutes an hour for the first 24-48 hours to reduce swelling.
C= Compression	Apply an Ace bandage or similar dressing to apply gentle pressure and prevent swelling.

E= Elevate	Keep the injured area above the level of the heart to promote drainage.

SPRAIN

Sprain is commonly known as torn ligament, is damage to one or more ligaments in a joint. Sprain is often caused by injury/ trauma or the joint being pushed beyond the functional range of motion. The ligaments are tough, elastic-like bands that connect bone to bone and hold the joints in place. The ligament can be partially torn, or it can be torn apart completely.

The severity of the sprain ranges from a minor injury usually resolves in a few days to a major rupture of one or more ligaments which will require surgical intervention /fixation and immobilization for a period of time.

Sprains are classified as:

- Grade 1
- Grade 11
- Grade 111

Grade 1 is stretching or slight tearing of the ligament with mild tenderness, stiffness and swelling. The individual may experience with minimal pain.

Grade II is a larger, incomplete tear with moderate pain, bruising and swelling.

Grade III is complete tear of the ligament or ligaments with severe swelling, pain and bruising.

TREATMENT

RICE therapy see table below:

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AMPUTATION

Patients can lose all or part of an arm or leg for various reasons.

Common causes include:

•Circulation problems from diabetes.
•Circulation problems from atherosclerosis.
•Traumatic injuries (motor vehicle accidents)
•military combat
•Cancer
•Birth defects

The most common cause is poor circulation because of the damage or narrowing of the arteries (peripheral arterial disease). Without sufficient blood flow, the body's cells cannot get oxygen and the nutrients they need from the bloodstream. Therefore the affected tissue starts to die and may lead to infection.

•Severe injury (from a vehicle accident, severe burn)
•Cancerous tumor in the bone or muscle of the limb
•Serious infection that does not get better with antibiotics or other treatments

•Thickening of nerve tissue, called a neuroma
•Frostbite

A prosthesis (an artificial limb) can sometimes replace the missing limb and can assist the patient with performing daily activities such as walking, eating, or dressing etc..

The Amputation Procedure
An amputation procedure usually requires a hospital stay of five to fourteen days or more, depending on the surgery and complications. The procedure may vary, depending on the extremity or limb being amputated and the patient's overall/general health.

GENERAL ANESTHESIA
Amputation may be done under general anesthesia (meaning the patient is asleep) or with;

SPINAL ANESTHESIA
spinal anesthesia, which numbs the body from the waist down.
When performing an amputation, the surgeon removes all damaged tissue and leaves as much healthy tissue as possible. The surgeon may use several methods to determine the location /site to cut and how much tissue to remove.

The Procedure includes;
•Checking/ assessing for a pulse close to where the surgeon is planning to cut
•Comparing the skin temperatures of the affected extremity/ limb with the temperature of a healthy limb
•Checking for areas of reddened skin
•Assessing to see if the skin near the site where the surgeon is planning to cut is still sensitive to touch.

During the procedure, the surgeon will:
•Remove the diseased tissue and / or any bone that is damaged
•Smooth uneven areas of bone
•Seal off blood vessels and nerves
•Cut and shape muscles so that the end of the limb (stump) will be able to have a prosthesis (artificial limb).

The surgeon may perform a closed amputation (close the wound by sewing the skin flaps). Or the surgeon may leave the site open for a few days in case there is a need to go back to surgery and remove additional tissues.

The surgical team places a sterile dressing on the wound and may also place a stocking over the stump to keep drainage tubes or bandages in place. The physician may place the limb in traction (device that holds it in position) or may use a splint.

Recovery From Amputation
Recovery from amputation depends on the type of procedure and the type of anesthesia used.

In the hospital:
change the dressings on the wound or teach the patient to change them.
The physician/ healthcare team monitors wound healing and any conditions that might interfere with healing, for example diabetes mellitus or hardening of the arteries.
Medications are ordered for pain management and to help prevent an infection.

If the patients have problems with phantom pain (sense of pain in amputated limb) or if the patients have problems with grief over the lost extremity, the physician will prescribe medications or counseling, as needed.

Physical therapy

Physical therapy often begins soon after surgery; begins with gentle stretching exercises. Patients often begin practice with the artificial limb, as early as 10 to 14 days after the surgery.

WOUND HEALING

The wound should be healed in about four to eight weeks. However the physical adjustment and the emotional adjustment to losing an extremity may be a long process.

Long-term recovery and rehabilitation may include:

- Prescribed exercises to help to improve muscle strength and control
- Activities to help restore the ability to carry out daily activities and to promote independence
- Use of prosthesis and assistive devices
- Emotional support, including counseling, to assist with grief over the loss of the extremity and adjustment to the new body image.

ARTHRITIS

Arthritis is a general term for a group of more than 100 diseases. The word arthritis means joint inflammation.

Inflammation is a natural reaction of the body when there is injury or disease and includes:
• swelling,
• pain,
• stiffness.

Inflammation that lasts for a prolonged period of time or may recur, as seen with arthritis and can lead to damage to the tissues. A joint is where two or more bones come together, such as the hip or knee joint.

Types of Arthritis
There are more than 100 different types of arthritis.
Some of the more common types of arthritis include:

Osteoarthritis:
Osteoarthritis is the most common type of arthritis.
Osteoarthritis occurs when the cartilage covering the end of the bones gradually wears away. Without the cushion covering /protection of the cartilage, the bones begin to rub together causing friction, pain and swelling.

Osteoarthritis may be present in any joint, but most frequently occur in the hands and weight bearing joints such as the knee, hip, and joints in the spine. Osteoarthritis occurs as the cartilage degenerates/ breaks down with age. Therefore osteoarthritis is also referred to as degenerative joint disease.

Rheumatoid arthritis:
Rheumatoid arthritis (RA) is a long lasting disease that can also affect the joints in various parts of the body, but most frequently involves the wrists, hands and the knees.

With rheumatoid arthritis, the immune system, which is the body's defense system against illness/disease, attacks the body's joints resulting in swelling of the joint lining. As the inflammation spread to the surrounding tissues, it can damage the cartilage and the bone.

In severe cases of rheumatoid arthritis (RA), other areas /locations of the body can be affected such as:
- The eyes,
- Skin and
- The nerves.

Gout
Gout is a condition that occurs when the body is unable to eliminate uric acid (a natural substance). Gout is a painful condition; the excess uric acid creates some needle like crystals within the joint and causes inflammation, swelling and severe/ extreme pain.

Gout frequently affects the:
- great toe joints (big toe),
- knee joints,
- wrist joints.

Arthritis Pain Management
Different types of arthritis have different symptoms and the symptoms vary in severity from patient to patient.
Osteoarthritis does not cause symptoms outside of the joint.

Symptoms of other types of arthritis may include but not limited to:
fever, fatigue, a rash and the signs of joint inflammation, including:
•Pain
•Swelling
•Stiffness
•Tenderness
•Redness
•Warmth
•Joint deformity

Arthritis Causes
The cause of most types of arthritis is not known. Researchers are reviewing / examining the role of heredity/ genetics, lifestyle habits/behaviors in developing arthritis.

Risk factors
There are many risk factors for the development of arthritis. Risk factors are behaviors or traits that increase an individual's chance of getting/developing an illness/ disease or that predisposes the individual to a specific condition.

Risk factors for arthritis may include but not limited to:

•Age
The risk of developing arthritis increases with age, especially osteoarthritis.

•Gender
Arthritis occurs more often in women than in men.

•Obesity
Being obese /overweight exerts extra stress/pressure on weight bearing joints, causing an increase in wear and tear therefore increasing the risk of arthritis (osteoarthritis).

•Work / Job factors
Some jobs require repetitive motion or heavy lifting that can put excess stress on the joints and cause injury, which may lead to arthritis (especially osteoarthritis).

•Genetic makeup
Some types of arthritis is found in the genes/ families (inherited).

Arthritis is very common
It has been estimated that as much as 70 million Americans (about 1 in 3) have some form of joint pain or arthritis. It is one of the major cause of serious disability resulting in lost of work time for many individuals.

Osteoarthritis affects more than 20 million Americans. Arthritis can affect individuals of all ages, but is more commonly found in older adults.

Arthritis Diagnosis
Osteoarthritis is usually diagnosed with a complete medical history, which includes:

Description of symptoms,
Physical examination,
Labs /Imaging techniques.

Imaging techniques for example:

X-rays or magnetic resonance imaging (MRI)
are often used to look at the condition of joints.

However, if the physician suspects other type of arthritis, to determine the type of arthritis other laboratory tests may be ordered such as:

Blood test,
urine test,
joint fluid test.

These laboratory tests also can help to rule out other diseases as the cause of the symptoms.

Arthritis Treatment
The goal of treatment is to provide:

- Pain relief,
- Increase joint strength and mobility
- Control of the disease (to the extent that is possible).

Treatment options include:
¬Medication,
¬exercise,
¬ heat/cold compresses,
¬using joint protection,
¬surgery and other options.

Osteoarthritis (OA)
As mentioned earlier Osteoarthritis is caused by aging joints, injury or obesity. Osteoarthritis symptoms include joint stiffness and pain, therefore the treatment will depend on the affected joint, such as the wrist, hand, neck, knee, back, and hips and involves medications and exercise. If the patient is overweight/ obese, then weight loss may improve Osteoarthritis symptoms.

COLLAGEN DISEASE

Collagen disease is a term previously used to describe some systemic autoimmune diseases such as:

Rheumatoid arthritis,
systemic lupus erythematosus, and
systemic sclerosis

However, it is now thought to be more appropriate for the diseases that are associated with defects in the collagen (a component of the connective tissue).

Connective Tissue Disease
Connective tissue diseases (a group of medical diseases).
With connective tissue disease, the connective tissues within the body are affected or are the primary target of the disease.

The connective tissues are the structural portions of the body that essentially hold the cells of the body together. The connective tissues form a matrix/ framework for the body.

The connective tissues are made up of 2 major protein molecules:

¬collagen and
¬Elastin.

Collagen protein
There are several different types of collagen protein (they vary in amount in each of the body's tissues).

Elastin protein
Elastin protein has the ability to stretch and return to the original length, for example, like a rubber / elastic band or a spring. Elastin is the major component of ligaments (tissues which attach bone to bone) and the skin.

In the patients who have connective tissue disorders /diseases, the elastin and collagen become inflamed and injured. Many connective tissue diseases indicate abnormal immune system activities with inflammation within tissues. Diseases in which weakness of collagen or inflammation tends to take place, are also called collagen diseases.

Causes of connective tissue disease
The exact causes of most connective tissue disorders/ diseases are unknown. There are genetic patterns that are considered to increase the risk for developing connective

tissue diseases. A combination of genetic factors/risks and environmental factors may contribute to the development of connective tissue disease.

Signs & Symptoms of Connective Tissue Disease

A common symptom of a connective tissue disease is:
Nonspecific fatigue.

Depending on which of the connective tissue disease is present, and how active the connective tissue disease is, a wide variety of signs and symptoms may occur.

Signs and symptoms may include:

¬Fevers,
¬Muscle, joint pain, weakness, stiffness and many other signs and symptoms.

Genetic risk factors for developing connective tissue disease

Connective tissue diseases that are due to genetic inheritance include:

Marfan syndrome can have tissue abnormalities in the;
¬ heart,
¬ aorta,
¬ lungs,
¬ eyes,
¬ skeleton.

Ehlers-Danlos syndrome
Several types may have fragile, loose skin or loose joints /hyper extensible, depending on type.

Marfan syndrome

Eyes
More than 1/2 of all individuals with Marfan syndrome experience dislocation of one or both lens of the eye.

Skeleton
Individuals with Marfan syndrome are usually very tall, slender, and loose-jointed. Because Marfan syndrome affects the long bones of the skeleton, the individual's arms, fingers, legs and toes may be "disproportionately" long in relation to the other parts of the body.

Other skeletal disorders/ problems may include:

-The breastbone (sternum) that is either indented or protruding
-Curvature of the spine (scoliosis),
-Flat feet.

Skin
Many individuals with Marfan syndrome develop stretch marks on the skin, even without any increase weight or weight changes.

Other diseases of connective tissue; such as scleroderma or systemic lupus erythematosus. These connective tissue diseases occur for reasons that are unknown but may have weaker genetic factors that predispose individuals to the development (characterized as a group by the presence of spontaneous overactivity of the immune system resulting in production of extra antibodies into circulation).

Ehlers-Danlos syndromes

Ehlers-Danlos syndromes - Group of disorders that share common features such as:

Easy bruising,
Joint hypermobility /loose joints,
Skin hyperelasticity (Skin stretches easily,
Weakness of tissues.

The Ehlers-Danlos syndromes - inherited within the genes passed from parents to offspring.

Ehlers-Danlos syndromes signs and symptoms are joints which are more flexible than normal and loose skin that stretches away from the body.

The diagnosis of Ehlers-Danlos syndrome is usually based on the clinical findings of the patient and the family history.

Ehlers-Danlos syndromes are generally treated according to the particular manifestations that are present within the individual.

Systemic lupus erythematosus

Systemic lupus erythematosus (SLE)- an autoimmune disease in which the body's immune system attacks the healthy tissue. It can affect the joints, skin, kidneys, the brain and other organs.

Causes
The underlying causes of autoimmune diseases are not fully known.
Systemic lupus erythematosus is ;
Much more common in women than men.
It may occur at any age,
Appears most often in individual between ages of 10 years old and 50 years old.
African Americans and Asians are affected more often than individuals from other races.
Systemic lupus erythematosus may also be caused by certain medications/drugs.

Symptoms
Symptoms may vary from individual to individual,
Symptoms may come and go. Almost every person with Systemic lupus erythematosus has joint pain with swelling. Some individuals develop arthritis.

The joints that are frequently affected include:
Joints of the fingers,
Joints of the hands,
Joints of the wrists,
knees joints

Other common signs/symptoms include:
•Chest pain when taking a deep breath
•Fatigue
•Fever
•General discomfort, ill feeling or malaise
•Hair loss
•Mouth sores
•Sensitivity to sunlight
•Swollen lymph nodes
•Skin rash (a butterfly shaped rash present in about 1/2 of individuals with Systemic lupus erythematosus. The rash is most frequently visible over the cheeks /bridge of the nose, but can also be widespread. It becomes worse in the sunlight.

Other symptoms depend on the part of body that is affected for example:

Brain and nervous system
When the brain and nervous system is affected, the individual may experience:
headaches,

numbness,
tingling,
seizures,
vision changes/ problems,
changes in personality.

Digestive tract
When the digestive tract is affected the individual may experience:
abdominal pain,
nausea,
vomiting.

HEART
When the Heart is affected the individual may experience:
abnormal heart rhythms /arrhythmias.

LUNGS
When the lungs are affected the individual may experience:
Difficulty breathing
Coughing up blood

SKIN
When the Skin is affected the individual may experience:
patchy skin color,
fingers that change color when cold such as Raynaud phenomenon.

KIDNEYS
When the Kidneys are affected the individuals may experience:
weight gain
swelling/ edema in the legs.

Some individuals only have skin symptoms (called discoid lupus).

Exams
To be diagnosed with Systemic lupus erythematosus, the individual needs to have 4 out of 11 common signs/symptoms of the disorder. Almost all individuals with lupus have;

- A positive test for antinuclear antibody (ANA).

However, this does not mean the individual has Systemic lupus erythematosus in most cases.

The physician/health care provider has to follow up with;

A physical exam and listen to the chest -An abnormal sound such as a pleural friction rub or heart friction rub may be heard.

A nervous system examination will also be completed.
Tests used to diagnose Systemic lupus erythematosus may include:

•Antinuclear antibody (ANA)
•CBC with differential
•Chest x-ray
•Serum creatinine
•Urinalysis

Other exams/tests to learn about the condition in depth may include:

•Antinuclear antibody (ANA) panel
•Complement components (C3 and C4)
•Coombs' test - direct
•Cryoglobulins
•ESR
•Kidney function blood tests
•Liver function blood tests
•Rheumatoid factor
•Antiphospholipid antibodies
•Kidney biopsy

Treatment
There is no cure for Systemic lupus erythematosus, the goal of treatment is to control the symptoms. For severe symptoms which involve the lungs, heart, kidneys and other organs often need treatment from various specialists.

For mild forms of the disease may be treated with:

•NSAIDs for symptoms within the joints
•Low doses corticosteroids for example prednisone
•Corticosteroid cream application for the skin rashes
•A medication used to treat malaria (hydroxychloroquine) and low-dose corticosteroids may be used for arthritis and skin symptoms
•A biologic drug (BENLYSTA) belimumab may help some individuals.

Treatments for more severe SLE may include:
•Higher dose of corticosteroids
•Immunosuppressive medications (medication which suppresses the immune system): These drugs are used if the patient does not get better with corticosteroids, or if the symptoms become worse when the patients stop taking them. The side effects from

these medications can be very severe, therefore the patients need to be closely monitored.

These medications include:
Methotrexate,
Azathioprine,
Cyclosporine,
Mycophenolate,
Cyclophosphamide.

If the patient has Systemic lupus erythematosus, it is very important for them to:
•Wear protective clothing,
•Wear sunglasses,
•Wear sunscreen whenever in the sun,
•Get preventive heart care,
•Stay current with immunizations,
•Have testing and screening for osteoporosis (thinning of the bones).

Raynaud's phenomenon

Raynaud's phenomenon - characterized by pale to blue to red sequence of color changes of the digits, especially after exposure to the cold. Raynaud's phenomenon occurs due to spasms of the blood vessels.

The cause of Raynaud's phenomenon is not known, however abnormal nerve control of the blood vessel diameter and also nerve sensitivity to the cold are suspected of being involved.

Symptoms of Raynaud's phenomenon
Symptoms of Raynaud's phenomenon depend on the:
- severity,
- frequency,
- duration of the blood vessel spasm.

There is no blood testing for the diagnosing of Raynaud's phenomenon.
Treatment of Raynaud's phenomenon involves:
¬protection of the digits,
¬medications,
¬ avoiding stress (emotional),
¬Avoid smoking,
¬avoid Low/ cold temperature

Raynaud's phenomenon is a condition that results in a particular series of discolorations of the fingers and the toes after the individual has been exposure to changes in temperature; cold or hot and/ or emotional events.

Skin discoloration occurs due to abnormal spasms of the blood vessels which leads to reduction in blood supply to the tissues.

INITIALLY "WHITE"
With early effects, the digits involved becomes white due to the diminished blood flow/supply.

Then the digits then turn "BLUE" color due to the prolonged period of lack of oxygen.

Then the blood vessels reopen and cause a local flushing of the tissues, which turns the digits to a " RED" color.

Three phase color sequence "white - blue - red", occur most often due to the exposure to the cold temperature (is characteristic of Raynaud's phenomenon).

Raynaud's phenomenon most often affects women,
Individuals can have Raynaud's phenomenon alone,
Individuals can have Raynaud's phenomenonas a part of other rheumatic diseases,
Raynaud's phenomenon observed in children is essentially identical to Raynaud's phenomenon observed in adults.

Raynaud's disease (Primary)
When it occurs alone, it is called Raynaud's disease or primary Raynaud's phenomenon.

Secondary Raynaud's phenomenon
When it accompanies other diseases, it is referred to as secondary Raynaud's phenomenon.

INSTRUCT PATIENTS WHAT TO AVOID !!!

Some medications should be avoided.
Medications that will worsen or aggravate symptoms of Raynaud's phenomenon by leading to increased blood vessel spasms include:

¬over-the-counter cold preparations
¬over-the-counter weight-control preparations

For example such as pseudoephedrine; Actifed, Chlor-Trimeton, CoTylenol, Sudafed.

¬Beta blockers, medications used for treating Hypertension (high blood pressure) or heart disease, can worsen Raynaud's phenomenon.

Some medications include Atenolol (Tenormin), metoprolol (Lopressor), nadolol (Corgard), and propranolol.

Treating Raynaud's phenomenon

Raynaud's disease /Primary Raynaud's and Raynaud's phenomenon/ secondary Raynaud's have no cure, but treatments can reduce the amount and the severity of Raynaud's attacks.

Treatments include:
- lifestyle changes,
- medications,
- surgery (rare).

Most individuals who have primary Raynaud's (Raynaud's disease) can manage the condition with just making lifestyle changes. Individuals who have secondary Raynaud's may need medications along with lifestyle changes. Others may need injections or surgery (rarely).

If the patient has Raynaud's and develop any sores on the toes, fingers or other parts of the body timely treatment is needed to help prevent permanent damage to the affected areas.

Lifestyle Changes

Lifestyle changes can help the individual avoid things that may trigger a Raynaud's attack.

Some examples of triggers include:
cold temperatures,
emotional stress,
workplace factors,
recreational factors,
contact with some chemicals,
contact with certain medications.

INSTRUCT PATIENTS
To protect themselves from the Cold Temperatures by:

•Wearing a hat,
Wearing mittens, instead of gloves,
Wearing scarf,
Wearing a coat (with snug cuffs),
Wearing warm socks and shoes when the weather is cold.

Layer the clothing for additional warmth;
Place hand and foot warmers in the mittens, socks, boots and pockets.
Some warmers are small heat packs, and others are battery-operated.
Wear mittens or gloves when taking meals or items out of the refrigerator or freezer.
Dress warmly when in an air-conditioned location.
Turn down the air conditioning .
Warm up the car before driving in cold weather.

Avoid Other Triggers
Instruct patients to avoid things that make them upset or stressed out.
Encourage patients to learn ways to handle stress that they cannot avoid.

Handle stress by:
Participating in physical activity (helps some individuals cope with stress).
listen to relaxing music
Focus on something that is peaceful/ calm to reduce stress.
Some individuals use meditation.
Avoid workplace triggers
Avoid recreational triggers.
Wear proper protective equipment if working with chemicals.

Physical activity can increase the blood flow and help keep the individual warm.
Limit the use of caffeine and limit alcohol intake. These substances may trigger Raynaud's attacks.
If the patients smoke, encourage them to quit.
Smoking makes Raynaud's worse.
Avoid second hand smoking.

Some medications trigger

Some medications can trigger Raynaud's attacks.
Some examples include:
•Migraine headache medications that has ergotamine. This substance causes the arteries to become narrow.
•Some cancer medications, such as cisplatin and vinblastine.

•Over-the-counter allergy or cold medications or diet supplements. Some of these medications can cause narrowing of the arteries.
•Beta blockers. These medications slow the heart rate and lower the blood pressure.
•Birth control pills. These medications can affect blood flow.

Some steps to take to help stop Raynaud's attacks when they occur.
For example:
Move to a warmer location for example if outside during cold weather, go indoors.
Warm up the hands or feet. Place hands under the armpits.
Soak hands or feet in warm water.
Massage the fingers and the toes.
Move arms in circle.
Get out of The stressful situation
Try relaxation techniques.

INSTRUCT PATIENTS
If they have Raynaud's, they need to protect their hands and feet.
Protect them from bruises, cuts and other injuries.
Wear properly fitting shoes and avoid walking barefoot.
Use lotion to prevent the skin from drying or cracking.
Avoid tight jewelry, rings, wristbands.

Medications and Surgery
If lifestyle changes do not control Raynaud's, the patients may need medications or surgery. Medications are used to increase/ improve blood flow to the fingers and toes.
Examples of medications used to treat Raynaud's include:
¬calcium channel blockers,
¬alpha blockers,
¬prescription skin creams,
¬ACE inhibitors (used less often).

Sometimes, individuals with severe Raynaud's may develop skin sores or gangrene (rare). Gangrene - death or decay of body tissues. If gangrene occurs, antibiotics and /or surgery to cut out the damaged tissue may be completed. In very severe cases, the affected digit (toe or finger) may need to be removed.

Another treatment for severe Raynaud's is to:
Block the nerves in the feet or the hands, that control the arteries.
This may help to prevent Raynaud's attacks. This treatment is completed using injections or surgery.

The surgery often relieves the symptoms (sometimes for only a few years).
The injections may need to be repeated if the symptoms persist or if the symptoms return.

POLYMYOSITIS

•Polymyositis and Dermatomyositis (PM/DM) are chronic inflammatory diseases of muscle.
•Muscle weakness is the most common symptom of PM/DM.
•The cause of PM/DM is unknown.
•Diagnosis of PM/DM involves physical examination of muscle strength, blood tests for muscle enzymes, electrical tests of muscle and nerves, and is confirmed by muscle biopsy.
•Treatment of PM/DM involves high doses of cortisone-related medications, immune suppression, and physical therapy.

Polymyositis

Polymyositis is a disease of muscle featuring inflammation of the muscle fibers. The cause of the disease is not known. It begins when white blood cells, the immune cells of inflammation, spontaneously invade muscles. The muscles affected are typically those closest to the trunk or torso. This results in weakness that can be severe.

Polymyositis is a chronic illness featuring progressive muscle weakness with periods of increased symptoms, called flares or relapses, and minimal or no symptoms, known as remissions.

Polymyositis is slightly more common in females. It affects all age groups, although its onset is most common in middle childhood and in the 20s. Polymyositis occurs throughout the world.

Polymyositis can be associated with skin rash and is then referred to as dermatomyositis. Dermatomyositis in children is referred to as juvenile dermatomyositis.

Amyopathic dermatomyositis is the term used to describe people who have skin changes compatible with dermatomyositis but do not have diseased muscle involvement.

Polymyositis can also affect other areas of the body and is, therefore, referred to as a systemic illness. Occasionally, it is associated with cancer or with other diseases of

connective tissue (such as systemic lupus erythematosus, scleroderma, and rheumatoid arthritis). No cause of polymyositis has been isolated by scientific researchers.

symptoms of polymyositis

¬Weakness of muscles is the most common symptom of polymyositis.
¬The muscles involved usually are those that are closest to the trunk of the body. The onset can be gradual or rapid. This results in varying degrees of loss of muscle power and atrophy.
¬The loss of strength can be noticed as difficulty getting up from chairs, walking, climbing stairs, or lifting above the shoulders.
¬Trouble with swallowing and weakness lifting the head from the pillow can occur.
¬Occasionally, the muscles ache and are tender to the touch.
¬Patients can also feel fatigue, a general feeling of discomfort, and have weight loss and/or low-grade fever.
¬With skin involvement (dermatomyositis) the eyes can be surrounded by a violet discoloration with swelling.
¬There can be scaly reddish discoloration over the knuckles, elbows, and knees (Gottron's sign).
¬There can also be reddish rash on the face, neck, and upper chest.
¬Hard lumps of calcium deposits can develop in the fatty layer of the skin, most commonly in childhood dermatomyositis.
¬Heart and lung involvement can lead to irregular heart rhythm, heart failure, and inflammation of the lungs with shortness of breath.

(Dermatomyositis is an idiopathic inflammatory myopathy with characteristic cutaneous findings that occur in children and adults. This systemic disorder most frequently affects the skin and muscles but may also affect the joints; the esophagus; the lungs; and, less commonly, the heart).

DIAGNOSING POLYMYOSITIS

¬The characteristic features of polymyositis include weakness of the muscles closest to the trunk of the body,
¬abnormal elevation of muscle enzymes,
¬Electromyograph (EMG) findings,
¬Magnetic resonance imaging (MRI) findings, and
¬abnormalities detected with muscle biopsy.
Blood testing usually (but not always) reveals:
¬Abnormally high levels of muscle enzymes, CPK or creatinine phosphokinase, aldolase, SGOT, SGPT, and LDH.
These enzymes are released into the blood by muscle that is being damaged by inflammation. They can also be used as measures of the activity of the inflammation.

¬Other routine blood and urine tests can also look for internal organ abnormalities.
¬Chest X-rays,
¬mammograms,
¬PAP smears, and
¬other screening tests might be considered.
¬Autoantibodies can often be found in the blood of people with polymyositis. These include antinuclear antibodies (ANAs) and myositis-specific antibodies (such as Jo-1 antibody).

Treating polymyositis

Initially, polymyositis is treated with high doses of corticosteroids.
Corticosteroids are cortisone medications for example:
prednisone and
prednisolone).

These are medications related to cortisone and can be administered
- by mouth (PO) or
- intravenously (IV).

They are administered because they can have a powerful effect to reduce/ decrease the inflammation within the muscles. They usually are required to be administered for years, and the continued use will be based on what the physicians finds related to the examination, symptoms and muscle enzyme laboratory /blood test.

Corticosteroids have several side effects

In high dosage they may cause:
- an increase in appetite
- increase in weight,
- puffiness of the face,
- easy bruising.
- sweats,
- facial-hair growth,
- upset stomach,
- sensitive emotions,
- leg edema/ swelling,
- acne,
- cataracts,
- osteoporosis,
- hypertension (high blood pressure),
- worsening of diabetes,
- increase risk of infection.

A rare complication of cortisone medications is:
- severe bone damage / avascular necrosis, which can damage and destroy the large joints, for example the hips and shoulders joints.

Also suddenly stopping the corticosteroids can cause flares of the disease and result in other side effects, such as
- nausea,
- vomiting,
- hypotension (decreased blood pressure).

Corticosteroids do not always adequately improve polymyositis.
For these patients, immunosuppressive medications are considered.
These medications can be effective by suppressing the immune response that attracts the white blood cells of inflammation to the muscles.

Various types are now frequently used while others are still experimental;

Methotrexate (Rheumatrex, Trexall) may be taken:
- by mouth or
- by injection.

Azathioprine (Imuran) is an oral (PO) medication.

Both of these medications can cause liver and bone marrow side effects and require regular blood monitoring.

- Cyclophosphamide (Cytoxan),
- chlorambucil (Leukeran), and
-cyclosporine(Sandimmune) have all been used for serious complications of severe disease, such as pulmonary fibrosis (scarring of the lungs).
They can also have severe side effects which must be considered with each patient individually.

Treatment with intravenous (IV) infusion of immunoglobulins (IVIG) has been shown to be effective in severe cases of polymyositis that are resistive to other treatments.

Patients with calcium deposits/ calcinosis, from dermatomyositis can sometimes benefit by taking diltiazem (Cardizem) to reduce the size of the calcium deposits. This effect occurs slowly, often over years, and is not always effective.

The complications of calcium deposits within muscles and the soft tissues occurs more frequently in children than in the adults.

PHYSICAL THERAPY

Physical therapy with gradual muscle strengthening is a very important part of the treatment of polymyositis.

When to commence and the continued degree of exercise or range of motion (ROM) of the extremities is customized for every patient.
Patients can do well with early medical treatment of the disease and the disease flares.

The disease often becomes inactive and the rehabilitation of atrophied muscle becomes a long term project. Monitoring for signs of cancer, heart, and lung disease is very important.

Some tests used include:
EKG,
lung function testing,
X-ray.

Joint replacements

Joint replacements are indicated for:

Irreversibly damaged joints with loss of function with unrelieved pain,
Selected fractures,
Joint instability
Congenital hip disorders.

Total Joint Replacement may be performed on any joint except the spine.

Hip replacement and knee replacements are the most common procedures.

The prosthesis may be metallic or polyethylene, or a combination. Implanted with a methylmethacrylate cement,
or it may be a porous, coated implant that encourages bony ingrowth.

Diagnostic Studies often include:

X-rays may reveal/ indicate:

Destruction of articular cartilage,
Bony demineralization,
Fractures,

Soft-tissue swelling; narrowing of joint space,
Joint subluxations
Joint deformity.

Bone scan, CT/MRI

may determine the extent of degeneration or rule out malignancy.

Some Nursing Priorities include:

Prevent complications.
Promote optimal mobility.
Alleviate pain.
Provide information about diagnosis,
Provide information about prognosis,
Provide information about treatment needs.

After Joint Replacement

Caring for the patient with Impaired Physical Mobility

Impaired Physical Mobility may be related to:
•Pain / discomfort, musculoskeletal impairment
•Surgery/restrictive therapies

Evidenced by:
•Reluctance to attempt movement,
•difficulty moving within the physical environment
•Reports of pain or discomfort on movement
•Limited Range of Motion (ROM); decreased muscle strength/ decreased control

Some Desired Outcomes:
•Maintain position of function, as evidenced by absence of contracture.
•Display increased strength and function of affected limb and joint.
•Participate in Activities of Daily Living (ADLs)
•Participate in rehabilitation program.

INTERVENTIONS/ RATIONALES

INTERVENTIONS
Maintain affected joint in prescribed position and body in alignment when in bed.

RATIONALE
Provides for stabilization of prosthesis and reduces risk of injury during recovery from effects of anesthesia.

INTERVENTIONS
Medicate before procedures
Medicate before activities.

RATIONALE
Analgesics, muscle relaxants, narcotics decrease pain, reduce muscle tension and spasm, and will encourage /facilitate patient's participation in therapy.

INTERVENTIONS
Turn on unoperated side using appropriate number of personnel to assist and maintaining operated extremity in prescribed alignment.
Support position with wedges or pillows.

RATIONALE
Prevents dislocation of hip prosthesis and prolonged skin or tissue pressure.
Reduces risk of tissue ischemia and breakdown.

INTERVENTIONS
Demonstrate/ Instruct and assist patient with transfer techniques and the use of mobility aids, such as walker, trapeze.

RATIONALE
Facilitates self care and the patient’s independence.
Proper transfer techniques will prevent shearing abrasions of skin and will help to prevent falls.

INTERVENTIONS
Determine upper body strength as appropriate.
Involve patient in the exercise program.

RATIONALE
Replacement of lower extremity joint requires increased use of upper extremities for transfer activities and the use of ambulation devices.

INTERVENTIONS
Inspect the skin and observe for abnormalities, reddened areas.
Keep linens dry, wrinkle-free.
Protect operative heel, elevating whole length of leg with pillow.

RATIONALE
Prevents skin breakdown and ease skin irritation.

INTERVENTIONS
Perform / assist with range of motion exercises to unaffected joints.

RATIONALE
Patients with degenerative joint disease can quickly lose joint function during periods of rest or restricted activity.

INTERVENTIONS
Promote / encourage participation in rehabilitative exercise program.

RATIONALE
Participation in rehabilitative exercise program will strengthen muscle groups, increasing muscle mass and muscle tone, stimulates circulation therefore preventing decubitus (Pressure ulcer).

Active use of the joint may be painful but will not injure the joint. Continuous passive motion (CPM) exercise may be initiated on the knee joint postoperatively.

Knee replacement surgery is common for the management of arthritis but can cause knee stiffness. Knee stiffness can make it very difficult for individuals to perform some activities for example, standing up from a seated position. Continuous passive motion (CPM) is a way of providing regular movement to the knee using a machine.

INTERVENTIONS
Observe appropriate limitations based on the specific joint.
Avoid marked flexion and/or rotation of the hip and flexion or hyperextension of leg
Adhere to weight bearing restrictions
wear knee immobilizer as indicated.

RATIONALE
Joint stress must be avoided at all times during stabilization period to prevent dislocation of new prosthesis.

INTERVENTIONS
Investigate ALL reports of sudden increase in pain and shortening of limb, also changes in skin color, temperature, sensation.

RATIONALE
Indicates abnormalities such as; slippage of prosthesis which requires medical evaluation and interventions.

INTERVENTIONS
Encourage patients to participate in Activities of Daily Living (ADLs).

RATIONALE
Enhances self-esteem and promotes a sense of control and independence.

INTERVENTIONS
Provide positive reinforcement to the patients for their efforts.

RATIONALE
This will promote positive attitude and will encourage involvement in the therapy.

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