Positioning, Turning, and Transferring

April 2019

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The North Dakota Statewide Developmental Disabilities Community Staff Training Program
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INTRODUCTION

Movement is important for our health and well-being. We all spend a good deal of our day sitting, standing, walking, lying down. Even when we are sleeping, we frequently change body positions. We move our arms and legs throughout the day to accomplish many tasks. For many of us, the ability to move freely about our environment is done independently with little thought given to it. Our central nervous system serves as a guide for our muscles, bones, joints and tendons to work together to produce movement.

Due to birth trauma, accidents, brain damage, and other injuries, some people may be unable to move or control their muscles in the same way. Their movements might be limited.

Some of the people that you support may require some assistance with moving from one place to another (being transferred) or being moved in other ways, (e.g., being turned in their bed at night, being moved in and out of their bed, and requiring help to get on and off the toilet). The amount of work this requires can lead to caregiver fatigue, muscle strain and/or injury. Learning the correct way to provide this support can reduce the strain for the people providing support.

Because of damage to the central nervous system, some people are unable to sufficiently control their body parts to produce coordinated movements. A person’s inability to control his/her own body usually results in limited, voluntary movement. Limited movement can have serious consequences. When your body is immobile for short periods of time, you will feel signs of discomfort, such as an arm or leg “falling asleep”. This indicates inadequate circulation. Taken to the extreme, limited movement can cause improper functioning of a person’s internal systems or organs, as well as, produce deformities of the muscles and bones.

Limited movement can also interfere with a person’s ability to learn and develop – intellectually, socially and vocationally.

If the person that you are supporting has limited movement, it will be important to:

- Help the person assume and maintain a variety of positions, in their bed, wheelchair, etc.
- Be sure that the person is sitting or lying comfortably and that they are correctly positioned, so deformities are prevented.
- Be sure that the person is positioned properly, so they can eat, look about the environment, be ready for learning and allow as normal of movement, as possible.

If a person is properly positioned, this can affect how others view the person. If the body position is “off” or “distorted”, others may view the person as different, more “disabled” or incapable of doing things. Correct positioning is important for the person as it can positively influence others’ attitudes about them and their abilities.
Physical Therapist and Occupational Therapist

Physical and Occupational therapists are specialists who work with individuals with physical challenges. These professionals address issues such as the management of contractures; techniques for position, turning, and transferring; the use of adaptive devices, assistive technology, mobility devices, and other equipment; and ways to maximize independent access to environments.

Physical therapists (PTs) typically address gross motor activities such as sitting or walking, and Occupational Therapists (OTs) work more with fine motor activities such as manipulation of objects with the hands (e.g., fastening buttons on a shirt and tying shoes). Referrals may be made through the team process according to agency policies. A doctor will then write a referral for the client if they feel that the client may benefit from consultation or direct therapy services from an OT or a PT. Therapists often can train direct service providers in techniques specific to the individual’s needs. Throughout this training module, references are made to issues that must be addressed by a clinical specialist (a PT or an OT).

Posture

Our ability to move allows us to assume many different body positions. We can lie down, sit up, and stand, to name only a few. The total alignment of the body in any position is called posture. The ideal posture is one in which the head is centered and upright above the body, the spine is straight, and the arms and legs are balanced on either side of the body. This ideal, balanced alignment of body parts is referred to as symmetrical posture.

If we could draw a straight line lengthwise through the body, the body parts would appear balanced on either side of the line. (This imaginary straight line is referred to as midline).

An asymmetrical posture is opposite of a symmetrical one. Body parts are unbalanced. The position of the head affects the position of other body parts. When the head is not centered, the spine can curve, and the arms and legs assume unbalanced positions along the midline. If a person is allowed to remain in asymmetrical postures, functional movement will be inhibited, and deformities can occur. Positioning will be important for everyone.
Lesson 1: The Basics of Movement

Objectives:

- Describe abnormal and normal muscle tone, limited movement (range of motion) and symmetrical and asymmetrical postures.
- Describe the effects of a person’s movement if they have abnormal muscle tone, asymmetrical posture and limited range of movement.
- Understand the negative effects of limited movement on bones, joints, tendons and muscles.

Typical and Atypical Movement

After childhood, “typical” movement is, for the most part, voluntary, purposeful and coordinated. Most people are able to move how and whenever they want, walking, running, skipping, riding bike and playing outside. Typical movements make bones and muscles stronger. Most people have typical movement.

Some people, due to brain damage or injury, may show “atypical” movement. Their movements may look uncoordinated, be involuntary (not able to be controlled), and/or not purposeful. If all body parts are not working right, normal body movements may be inhibited. This can lead to interference in a person’s ability to participate in everyday activities.

Roles of Body Parts

We move because of our central nervous system, our muscles, bones, joints, and tendons working cooperatively together. Each part is dependent on all the other parts. Stated very simply, the central nervous system triggers the muscles, which along with the tendons pull on bones to move the joints. It is an intricate, coordinated effort, in which each individual part plays its own unique role.

Bones

Muscles are attached to the bones. Bones form the framework of the body and act as levers during movement. The muscles essentially pull and push the bones, so they can move in the direction needed.

Muscles

Muscles are made of tissue, which is capable of contracting (shortening) and relaxing (lengthening). In the picture, the biceps muscle contracts and bends the elbow, while the triceps muscle (back of arm) is relaxing.

One muscle by itself cannot produce movement. Each muscle must work in pairs. When one muscle of the pair is relaxing, the other is usually contracting. This is what produces movement.
Muscle Tone

Muscle tone varies from individual to individual. Healthy muscles possess a certain amount of constant tension, called muscle tone. Muscle tone allows each of us to attain and maintain our postures and to bend and straighten our body parts.

Even when healthy muscles seem to be completely relaxed, there is a certain amount of tension or tone. If there is not enough muscle tone to support our body, our body parts would collapse (hypotonicity). If there is too much tone, the body parts can appear rigid (hypertonicity). Excessive tone can make it difficult to flex and/or extend at the joints, and in turn interferes with the person being able to move appropriately.

Hypertonicity

Muscles which have too much tone are described as HYPERTONIC (HYPER means more). A person with hypertonicity has a difficult time controlling movement and changing positions because the rigid state of the muscles resist movement. The critical factor in hypertonicity is the muscles’ inability to relax appropriately. The muscles contract too much and too often and need assistance in relaxing.

TRY THIS…
You can experience hypertonicity.
Straighten your arm.
Keep your arm straight and tighten the muscles in your arm.

NOW…….
Try to bend your arm.
Try to put your hand to your mouth as if trying to feed yourself.

Hypotonicity

Hypotonia (HYPO means less) is a medical term used to describe decreased muscle tone or tension. A person with hypotonicity has a difficult time controlling movement because the relaxed state of the muscles does not provide enough support and strength to move bones. With hypotonicity, a person has difficulty in attaining a desired position and maintaining a position. The person may appear floppy. Hypotonic muscles are too relaxed (without enough contraction).

Fluctuating Tone

This occurs when the muscle tone or tension is not consistent. Muscles will relax and contract involuntarily and will be too tight or too loose at times. It is a common disorder associated with people who have cerebral palsy. Like hypertonicity and hypotonicity, this constant state of fluctuating tone makes it difficult for a person to attain and maintain desired positions. This can
cause body parts to move involuntarily and can be observed as continuous uncontrolled movement of head, arms, trunk, and/or legs.

**Potential Problems**

![Diagram showing the relationship between Abnormal Muscle Tone, which limits your ability to move about, and Affects your posture, which limits your range of motion.]

**Range of Motion**

There is a “normal” or full range of motion for each joint in our bodies. When we have correct muscle tone and healthy bones, joints, and tendons, we can move our body parts in many different directions – up, down and around. Range of motion of an individual joint is measured by its degree of movement. If a person cannot move his or her body parts through the standard range of motion, or if the body part cannot be moved by someone else through the full range of motion, we say the person has **limited range of motion**. This is most often the result of abnormal muscle tone or deformities.

**Range of Motion Exercises**

Range of motion (ROM) exercises are done to preserve flexibility and mobility of the joints on which they are performed. These exercises reduce stiffness and help to keep joints limber. Joints maintain their normal range of motion by being moved. It is important for many clients who have difficulty in moving their bodies to move their joints every day. Stiff joints can cause pain and limit everyday activities.

The type of Range of Motion (ROM) exercises that will be most effective for an individual is best determined by a therapist who can evaluate the person and write up an exercise program. Each program is individualized. Range of Motion exercises should be done slowly with every motion and moved only to the point of resistance. If a person has spasticity (high muscle tone),
it is necessary to perform the exercises slowly and hold at the end of the range. Arms and legs should be supported throughout the motion. Do not force the movement. Watch the person’s face for their response to the exercises.

1. Active ROM Exercises – Stretching exercise that you can perform yourself when you have the muscle ability to do so and you can still move the joints through their complete ranges.
2. Passive ROM Exercises – These are carried out by a support staff when the person is unable to (does not have the muscle strength) to do any of the movements themselves. For instance, this is done for people who may be paralyzed and cannot move on their own.
3. Active Assistive ROM Exercises - Person may be able to partially assist in carrying out the exercises and the support staff will need to assist to move the arm or leg even further through the range (i.e., person may not have the muscle strength to move it completely).

Shoulder flexion – Range of Motion

Hip and knee flexion – Range of Motion

Developmental Issues

Immobility prevents a person from interacting with their environment. Mobility impacts physical, emotional, social and cognitive development especially in children who learn through physical interactions with objects in their environments (e.g., playing on equipment on a playground, playing sports or getting themselves dressed, independently). Being mobile gives one a sense of control over your life which is a basic human need. It helps to build confidence and self-esteem. Other people’s perceptions of a person are also affected by the person’s ability to move about their environment independently. Immobility can have a profound impact on the person’s opportunities for relationships and full participation. Use of assistive technology can greatly impact a person’s life. For instance, using a power wheelchair to independently move about the environment can be very liberating for someone who has always had to depend on someone to move them before.
**Limited Movement**

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**Health Issues**

Lack of movement affects the function of many body organ systems including the digestive system and the circulatory system. Pressure ulcers or pneumonia can also occur.

**Physical Impairments:**

- Muscles which are not sufficiently exercised will eventually shrink in size. This muscle shrinkage is called **atrophy**. When muscles atrophy, they lose their ability to contract (shorten) and relax (lengthen). As muscle size decreases, so does muscle strength. When strength decreases, and muscles don’t function properly, this will affect a person’s ability to participate in movement.

- Bones can be affected in a similar way. The mineral-producing and bone-producing materials begin to deteriorate. When bones are not sufficiently used, they **become weak, brittle, and more easily broken**. Further, if a child’s movement is significantly limited, the bones will not grow properly.

- Lack of movement can cause shortening of the tendons. The result of tendons beginning to shorten is decreased flexibility in bending, straightening, and turning. Limited movement can result in a **contracture**. A contracture is a permanent shortening of a muscle or a joint. Any joint can become contracted.

- Immobility (lack of movement) can also cause joints to become unstable and/or dislocate. These two problems, instability and dislocation, can be aggravated by improper moving or carrying of persons who do not move well by themselves or who have been immobile for long periods of times.

**When Supporting Others**

People who have abnormal muscle tone, weakness, atypical reflexes (due to brain injury) will have difficulty with mobility and need help to change positions and transfer from one surface to another.

A physical and occupational therapist may make recommendations for seating and positioning, exercises or wearing of splints and braces. It is important to follow the program as it is written for each person.
Additional strategies are as follows:

- Keep the head supported, centered (in midline) when seated.
- Avoid jerky movements or loud noises which can cause a person to have sudden, uncontrolled movements.
- Let the person “know” you are there. Don’t touch or grasp a person unless they know that you are doing so.
- When moving the person, use “key points” of control – shoulders and hips are the easiest. Do not pull on arms and legs. Do not pull to a sitting position by pulling on the arms.

Summary

Movement is necessary to the normal growth and development and even survival of all people. Symmetrical posture, balanced muscle tone, and a flexible range of motion are all necessary conditions for efficient movement. If any one of these conditions is impaired, it can have serious effects on individual body parts and result in abnormal movement and impairments.

It will be important for you to follow each person’s plan as it is written by a physical or occupational therapist, for the person’s needs to be met. As a direct support professional, it is important for you to recognize what the person needs and to offer assistance.
Lesson 1: Review Questions

1. If a person has limited movement due to their disability, it will be extremely important for the support staff to ______________ them correctly whether they are lying in bed or sitting in their wheelchair.

2. Clinical specialists who work with individuals with disabilities are called __________ _______ and ____________ ________.

3. Muscles that have too little tone are described as ________________.

4. Muscles that have too much tone and are rigid, are described as ________________.

5. Atypical movement of a client may be uncoordinated, not purposeful and ____________.

6. Muscles must work in ________________.

7. When one muscle shortens, the other muscle ________________.

8. __________________ form the framework of the body and act as levers during movement.

9. The ideal, balanced alignment of body parts in which the head is centered and upright above the body and the spine is straight is called ________________ posture.

10. _______________ posture is the opposite of symmetrical posture.

11. Healthy muscles possess a certain amount of constant tension, called ____________ ________.

12. If a person cannot move his or her body parts through the standard range of motion, we say the person has ____________ _________.

13. List three detrimental (harmful) effects of limited movement:

14. Muscles which are not sufficiently exercised shrink in size or ________________.

15. When bones are not sufficiently used, they become ________________, ________, and more easily broken.

16. Without proper exercise, limited movement can result in a ________________ or permanently flexed joint due to shortened tendons and atrophied muscles.

17. Range of motion exercises should be performed ________________ and only moved to the point of resistance.
Lesson 2: Basic Principles of Body Mechanics

Objectives:

- Demonstrate correct body mechanics when lifting, turning, or transferring
- Identify incorrect body mechanics

Safety

Eighty-five percent of the population experiences back or neck pain at least once in their lives due to failure to use proper body mechanics and using improper lifting techniques. Many people wrongly assume that they need to only use these techniques when they are lifting very heavy people or objects. However, repeatedly lifting lightweight objects incorrectly, can also lead to back and neck injuries.

Use of proper body mechanics not only ensures the safety of the person assisting with the move, but also the safety of the person being moved. This is important because the person lifting is responsible for any injury to the person being assisted. The most common injury to people doing the lifting is musculoskeletal due to “overexertion”, repetitive movements or manually lifting and moving people.

Body Mechanics

When we lift we need to think about good body mechanics. This means maximizing the strongest areas of your body and minimizing the weakest ones. By keeping your back straight during lifting and bending your knees, you can take advantage of this.

- Legs are designed for POWER! Use your strong thigh muscles!
- Spine is designed for flexibility/mobility. A healthy spine has 3 natural curves supported by an intricate system of strong and flexible muscles and joints. When balanced and in alignment, the spine and disks allow for movement and provide shock absorption.

Every object, including the human body, has a “center of gravity”, or point where the weight (mass) of the object is centered. On the human body, the center of gravity is in the hip area. During lifting, additional stability can be achieved when a person lowers their center of gravity by bending the knees and lowering the hips to the level of the surface supporting the object to be lifted.
General Lifting Guidelines

1. Never lift more than you can comfortably handle.
2. Create a base of support and increased stability first. Stand with your feet at shoulder width apart and place one foot a half-step ahead of the other one. You will be able to more easily shift your weight over your feet while maintaining the body’s center of gravity over its base of support. (See diagram).
3. DO NOT use your back to do the heavy lifting. Your back muscles are meant for flexibility, not strength. USE YOUR LEG MUSCLES.

Back Supports

Support staff who do frequent lifting or who have experienced back injuries may consider a back support. These devices help maintain proper back position and give abdominal support. HOWEVER, continuous use can result in weakening of the back muscles. It is best worn primarily for lifting. A back-support brace does NOT replace the need for good body mechanics.

Improper Techniques Which Can Lead to Injury

If a person bends forward at the hips during lifting, the small muscles of the back must do the work of lifting the object, as well as, the combined weight of their own head and trunk!! This results in a force much heavier than that of the object being lifted. In addition, using only back muscles applies stress to the small joints of the spine, increasing the risk for back injuries.

Rotation (Twisting)
Rotation of the trunk during lifting should also be avoided as this adds unnecessary stress to spinal structures. Individuals should shift the position of their feet to turn, rather than twisting the trunk. When you twist you engage the smaller, weaker muscles of your back. Many workers take lifting “shortcuts” which may appear to be easier or save time. Often individuals who have not experienced back pain do not think “body mechanics” rules apply to them. However, many times a
back injury is not the result of a single event, but a history of back abuse through improper lifting techniques.

**AVOID the Following IMPROPER Techniques**

- Don’t lift with the legs straight and bent forward at the waist. This posture places significant stress on the lower back.
- Don’t use fast, jerking motions. Trying to work too fast is not conducive to smooth, slow, steady proper movements.
- Don’t bend and twist at the same time. Not pivoting the feet and failing to squat when lifting causes maximum stress on the lower back.
- Don’t handle the load too far away. The stress of the load increases from 7-10 x when a load is at arm’s length! (See picture at right).
- Don’t fail to plan. Failure to test the load, clear the travel path, and minimize the distance of the lift often leads to additional stress on the back.
- Don’t fail to communicate. Failure to coordinate the move when two people are lifting can result in unnecessary injury. Avoid startling the person you are moving. Explain the steps and ask them to help you if they can.
- Don’t overestimate your strength. Never try to lift someone that weighs more than you can safely handle by yourself. Get help.

**Basic Principles of Body Mechanics**

The following rules of basic body mechanics should serve as a guide to safe and efficient lifts, turns, and transfers. No matter what task is being performed, you should practice these basic principles throughout the maneuver. Familiarize yourself with the principles and prior to initiating any lift, review a mental checklist of these basic principles:

- **Explain what you are going to do and ask the person to help.** If the person can bear weight or assist with the move, encourage them to do so. Explaining each step of the procedure will help relax the person, alleviate any fears they might have, help prevent startle reflexes and reduce chances of injury.

- **Test the weight.** Prior to moving person or object, test the weight of the load to make sure it can be moved safely. Always ask for assistance, if needed. Use mechanical devices, if they are available and part of the person’s program.
Plan the move. Minimize the distance of the lift, clear the travel path and make sure it is dry (not wet and slippery). Provide firm, stable surfaces and, if possible, transfer between surfaces of equal height. Lock the brakes on wheelchairs and remove arm rests and foot rests, if possible. Have all positioning equipment within reach prior to beginning the move.

Use a wide, balanced stance with one foot ahead of the other. Your feet provide the base of support when lifting. Wear low heeled, non-skid shoes and position your feet shoulder width apart with one foot slightly in front of the other.

Keep the lower back in its normal, arched position while lifting. Bend at the knees. With the back in its normal, arched position, the forces are more evenly distributed on the support structures (spine) when lifting.

Bring the load as close to the body as possible. Throughout the move, keep your arms and the object or person as close to your body as possible.

Keep the chin tucked and head and trunk upright. This helps to keep the arch in the lower back during lifting.

Tighten the stomach muscles as the lift begins. This helps to keep the arch in the lower back during lifting.

Lift with the legs and stand up in a smooth, even motion. When lifting, you should maximize the use of the powerful buttock and leg muscles. If you bend at the knees and perform the lift with your legs, you decrease the amount of strain on the small muscles of the back. Use your whole body when pushing, pulling, or lifting, not just your back and arms.

Move the feet (pivot) if a directional change is necessary. Throughout the move, your back, feet and trunk should all move together in the same direction, going to the same place. When a turn is necessary, shift your feet and take small steps rather than twisting at the waist. Keep your feet pointed in the direction in which you are moving.

Communicate if two or more individuals are involved in the movement. It is a good idea to count “1, 2, 3…” with the person who is helping you lift. This helps ensure the movement for the person being lifted will be smooth, rather than sudden or jerking.

Pull or push objects rather than lift whenever possible. It is safer and easier that way.

Teach and preach. Help others use the rules of good body mechanics.

Carefully practicing these basic principles will greatly decrease the risk of pulled muscles, as well as, other injuries associated with lifting and carrying.
Exercises to Increase Your Flexibility, Improve Strength and Help You Relieve Stress

Your back is under a lot of stress if you frequently assist with lifts, turns, and transfers. It’s very important to maintain good posture, always, and to develop strong muscles to support the demands placed on your body during these procedures. Regular exercise decreases your risk of back and neck injury.

Here are a few exercises that can easily be done at work to improve your posture, strengthen your trunk and legs, improve your flexibility in key areas and relieve stress. They only take a few minutes and will give you an energy boost. No exercise should cause lingering pain. Exercise for the neck or back should not cause pain in the arms or legs. Exercises may be done in one session or at various times throughout the day.

Do each exercise slowly to a comfortable stretch, hold for five seconds and then slowly relax. Exhaling a deep breath as you stretch will enhance the stretch. (Weber, 2000).

**DEEP BREATHING:** Inhale and Exhale slowly and deeply 10 times. Focus on tense back and neck muscles becoming loose and limp while you breathe deeply.

**CHIN TUCKS:** To stretch your neck and upper back muscles and to improve your posture, do chin tucks by pulling you head straight back, so that your ears are in line with your shoulders. Keep your jaw and eyes level. Do not tip your chin up or down when doing this exercise. Hold for five seconds.

**NECK SIDE TILTS:** Looking straight ahead, tilt your head to bring your right ear down to your shoulder. Hold for five seconds. Repeat over the other shoulder.

**ROTATIONS WITH CHIN TUCK:** From a chin tuck position, look over your right shoulder, hold for five seconds. Now look over your left shoulder. Hold for five seconds.

**SHOULDER SQUEEZE:** This exercise stretches shoulder muscles and the front of the chest and improves posture. Place your arms in front of you with your elbows bent and with palms facing forward. Pull your arms back, squeezing your shoulder blades together. Hold this stretch for 3-5 seconds.

**PELVIC TILT:** To stretch your lower back muscles and strengthen your stomach muscles, firmly tighten your abdomen and buttock muscles, tilting your pelvis to flatten your lower back, while standing against a wall. Hold for 5 seconds, relax, and repeat.

**WALL SLIDE:** To strengthen your back, hip and leg muscles, sink slowly to a half sitting position with your back against a wall and feet shoulder width apart. Hold for 5 seconds and return to standing. As you get stronger, try to hold the position longer, working up to a couple of minutes. This stretch is useful if it is difficult for you to use your legs with lifting, instead of your back, when lifting.
**Calf Stretches:** Stand with one foot approximately one step ahead of the other foot. While keeping the rear knee extended and allowing the front knee to flex (bend), lean forward from the rear ankle placing your hands on the wall or furniture in front of you. Hold 20-30 seconds. Repeat with the other leg.

**Hamstring Stretches (Back of thigh muscle):** Place foot on a chair with your knee almost straight, slowly lean forward reaching down your shin until a gently stretch is felt in the back of your thigh. Hold for 20-30 seconds and repeat with the other leg.

**Trunk Rotations:** Stand about a foot from the wall with your feet shoulder width apart. Keeping your feet flat, turn clockwise slowly until a gentle stretch is felt in your trunk and place your hands on a wall or door frame and hold for 5-10 seconds. If it’s too hard of a stretch, you can turn back to midline and reposition your feet. Slowly repeat in the other direction. Shift your feet, if necessary.

**Upper Back Stretch:** Lean backward, emphasizing extension of the upper back in a comfortable stretch. Hold for 5 seconds.

**Lower Back Stretch:** To stretch and relax your lower back sit with your knees apart and bend forward reaching for the floor until a gentle stretch is felt in your lower back. Hold 10-15 seconds. Come back up. Relax and Repeat.

Think through your daily activities. If you use a flexed (bent) posture much of your day while sitting or bending, stretch in ways to reverse stressful postures. For example:

- To counteract tension which builds up in your neck and upper back muscles, breathe deeply and slowly to relax, stretch by bending your upper back and neck backward, and stretch your neck in various directions.
- Don’t forget wall slides which will build up your leg strength.
- Stretch out by bending backwards to counteract the effects of being in a hunched or flexed position.
- Chin tucks will improve neck flexibility, strength and posture. When used during lifting it also helps to maintain spine in a proper position.

**Source:** Nancy Weber, UniMed Medical Center Outpatient Therapy Services
SUMMARY

The key principles of Body Mechanics are:

- Plan the move.
- Stand with your feet apart, knees slightly flexed, one foot forward, and your head and trunk upright and in midline.
- Get close to the object or person you plan to lift.
- Tighten your stomach muscles.
- Tuck your chin and keep your spine in a neutral position with your lower back slightly arched.
- Lift with your legs. Use your strong thigh muscles.
- Move your feet in the direction of movement. Shift your feet and take small steps rather than twisting at the waist.
- Carry weight as close to your own center of gravity as possible.
- Coordinate your movements, if lifting with another person. Count “1-2-3 lift”.

![Wrong Way vs Right Way](image-url)
Lesson 2: Review Questions

1. The spine is designed for _________ and the ___________ are designed for strength.

2. On the human body, the center of gravity is in the _________ or lower abdomen.

3. During lifting, additional stability can be attained by bending your _________ and lowering the _______________ to the level of the surface supporting the object to be lifted.

4. Describe how the feet should be positioned during a lifting procedure.

5. List five improper techniques that can lead to back injury.

6. It is better to shift the position of your ___________ rather than twisting the trunk during lifting.

7. When improperly holding a ‘load’ at arm’s length, the stress of the load _________ 7 to 10 times.

8. What steps should be taken prior to lifting or transferring?

9. Why is it important to explain what you are going to do to the person being assisted?

10. Avoid doing transfers on a slippery surface, make sure the floor is ______________.

11. During the lift, your back should be in its normal, ___________ position.

12. The ‘load’ should be positioned ___________ to the body.

13. When lifting, keep the ___________ tucked and the back and trunk upright/straight.

14. Pull or push rather than ______________, whenever possible.

15. Describe two benefits of exercise for people who transfer people or objects.

16. Exercises can be done in one session or at various times throughout the day. However, stretching is _________ beneficial if it’s done more often in shorter amounts of time.
Lesson 3: Positioning

Objectives:
- List at least three reasons for proper positioning
- Describe practices to utilize when working with persons who have physical disabilities
- Demonstrate how to properly position someone in the following positions: Sitting, Side-lying, Supine, Prone-resting
- Explain when adaptive positioning equipment might be required
- Describe what to do if you think that adaptive positioning equipment is required
- Describe what to do if a person is not maintaining a well-aligned posture

Reasons for proper positioning
Correct positioning is important because it:
- Increases the efficiency of functional movement (person is able to move better)
- Influences the perception of others toward the person
- Promotes comfort and well-being
- Helps the client’s body parts, internal organs and systems to function in a healthy way
- Can prevent contractures and pressure sores (ulcers) from happening

Under normal conditions, you can independently choose and assume a variety of position which allow you to accomplish almost any task. You can constantly adjust your head, trunk, arms, and legs to attain and maintain a symmetrical posture. If you have sore muscles or your body gets tired of being in one position for too long, you can adjust.

For persons with disabilities, it’s often a different story. Persons with significant disabilities often rely on others to move them in a variety of positions and provide them with functional movement. Some may require only a little assistance in getting from one position or place to another, while others must rely entirely on someone else.

Movement Efficiency
Your body’s position affects what you can do and how well you can do it. Have you ever been lying on your back and at the same time tried to drink from a glass of water? It doesn’t work very well, does it? Have you ever been lying on your side and tried to write? Oh, you can do it, but can you read what you’ve written?

Different everyday tasks – eating, drinking, learning, watching TV, sleeping – can be done best in different positions, such as, sitting, lying, and standing. Overall, you can accomplish the widest variety of tasks in the upright position. For instance, in the sitting position you can eat, drink, read, write, play table games, etc. With a lot of work, you might be able to accomplish these same things lying down, but they’re certainly a lot easier while sitting or standing.

People with physical disabilities sometimes have a difficult time making their muscles and bones do what they want them to do, when they want them to do it. However, just like you, they want
the opportunity to experience the world around them and to feel the joy of succeeding. The positions they are placed in can do a lot towards helping them do things independently.

Perceptions of Others

Your body’s position affects what other people think you can do, as well as, how well they think you can do it. Have you ever visited someone who has been lying in a hospital bed for several days, dressed in a hospital gown with nothing to do? You tend to see that person as sick and helpless. Then one day you walk into the room and the person is sitting up in a chair, wearing a bathrobe, and is looking at a magazine. Do you see the person as sick, or well? Helpless, or more capable?

People with physical disabilities may look “different” if they are wearing braces, sitting in a wheelchair, or moving in unusual ways. If the person with a disability is lying down rather than sitting or slumped in a wheelchair rather than sitting in a well-aligned posture, other people will tend to see and treat him/her as “different”. But if the person with physical disabilities can be assisted to sit in an upright position, with well-aligned posture, it can positively influence other people’s perceptions and attitudes.

Healthy Functioning

Your body’s position affects how well your body parts, internal organs, and internal systems function. If you stay in one position too long, you usually begin to feel uncomfortable. On long car trips you begin to feel lethargic, your muscles ache, and your movement is stiff. Just being able to change a position or move about can help.

If you’ve ever been lying in bed for several days because of an illness or accident, you know the effects of immobility are even more extreme. You may feel dizzy when you try to sit up, and your digestion, breathing, and circulation systems all slow down. You can develop skin (pressure) sores from lack of air circulating to your skin or from pressure over concentrated points on your body. Skin breakdown and pressure sores can significantly alter participation in normal activities; they may prevent maintaining functional positions, such as, sitting in a wheelchair during the lengthy healing process (it can take weeks to heal or longer). However, pressure sores are completely preventable with appropriate care and an adequate schedule for repositioning to provide pressure relief.

The same if true for individuals who have physical disabilities, but they run the additional risk of developing permanent contractures. The more limited a person’s movement, the greater the risk of deformity. All bodies require movement and a variety of positions to function with efficiency. As you continue with this lesson, you will learn how to assist people, so they can attain and maintain proper positioning.

Guidelines for Assisting People with Disabilities

Positioning requires you to touch or handle another person. The following guidelines will make your job easier and the experience safer and more pleasant for the person you are assisting:

- Approach the individual calmly and from a side where they can see you coming. An unexpected touch can startle the person and caused an increase in their muscle tone.
• Talk to the person with a calm voice, explain what you are doing and why you are doing it.
• Provide support to head, shoulders, and trunk when moving the person.
• Use slow, smooth movements when moving body parts.
• Encourage participation and independence when assisting with positioning, turning, and transferring. This allows the person the opportunity to develop control of his/her own movement.
• Give verbal instructions and cue the person to reinforce how you want them to move.
• Everyone who assists the person should use the same positioning, turning and transfer methods. This consistency will build a sense of security and enhance independence.

Relaxing a Person Whose Muscles are Rigid/Stiff

Positioning a person’s head in midline will usually help muscle tone begin to relax enough so that you can complete the correct position. However, sometimes it may be necessary for you to help the person relax their muscle tone before changing their position. If you feel too much resistance in the muscles during positioning, you may need to perform one of the following relaxation techniques before positioning.

• While the person is lying on their side, face his/her back and place one hand on the shoulder and the other one on the hip. Gently move the shoulder in one direction as you move the hip in the other direction. Continue this alternating movement, until you feel the muscles relax.
• In the same position, with your hands placed in the same way, gently rock him/her back and forth until you feel the tone relaxing.

Basic Principles of Positioning Include:

• Preserve the dignity of the person and promote cooperation
• Try for symmetrical alignment – Head is centered and upright above the body, the spine is straight, and the arms and legs are balanced on either side of the body.
• Provide the proper amount of support to head, shoulders, trunk, and hips.
• Individual should be comfortable once they are re-positioned.
• Allow the individual freedom of movement and avoid providing excessive support.
• Positioning should be done on a regular basis when the person cannot easily move themselves.

Following are illustrations of correct posture for each position and a description of how individual body parts should be placed in each position. A physical or occupational therapist will determine which positions will be most appropriate for each person. Remember, these are recommended guidelines only and not all people will be able to be positioned exactly as these guidelines suggest. Again, a therapist can recommend variations for specific people.
Sitting Position

Besides standing, sitting allows a person the most opportunities for functional movement. The person can easily see what’s happening around him or her and has better use of arms and hands.

To maintain a correct sitting position, most individuals with significant physical disabilities will require a special chair (wheelchair) which has been fitted to their specific needs. The following chart describes the general guideline for the sitting position.

If you suspect that a person’s chair is not supporting the person properly, you may use this chart as a guide and consult with a clinical specialist (physical or occupational therapist) to advise you about how to correct the problem.

<table>
<thead>
<tr>
<th>Body Parts</th>
<th>How to Position</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Transfer person to their chair/wheelchair. Support the feet, forearms, and head in correct alignment.</td>
<td></td>
</tr>
<tr>
<td>Head</td>
<td>Individual may use a headrest to support their head. Make sure head is centered and upright.</td>
<td>![Headrest Illustration]</td>
</tr>
<tr>
<td>Trunk/Hips</td>
<td>Hips should be back in chair and centered. Spine should be straight. May have lateral supports on either side of chair to help with this.</td>
<td></td>
</tr>
<tr>
<td>Arms</td>
<td>Support forearms with a wheelchair tray, secured in its proper place. Hands should be free so that they can easily be brought together.</td>
<td>![Arms Illustration]</td>
</tr>
</tbody>
</table>
Hips, Legs and Feet

Make sure that hips and thighs are symmetrical and flexed, at least, 90 degrees. A lap belt may be used for safety. The belt should be attached to the chair at the buttocks area and angled up to cross at the hips. Lap belts should NOT be placed at the waist as client could slide under them. Knees should be flexed to 90 degrees. Position feet on a support surface, such as, footrests. Individuals may use foot straps. Make sure feet are properly aligned.

During activities, such as, mealtime, continue to monitor the alignment of the pelvis, trunk, shoulders, arms and feet. Adjust as needed. REMEMBER, prolonged sitting can increase the risk of skin problems (breakdown), as well as, contractures at the hips, knees and ankles.

Side-Lying Position

The side-lying position is the most functional of all lying positions because it allows some use of the hands and arms together. It can also prevent some abnormal reflexes.

<table>
<thead>
<tr>
<th>Body Parts</th>
<th>How to Position</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Position the person on their right or left side.</td>
<td><img src="image" alt="Illustration" /></td>
</tr>
<tr>
<td>Head</td>
<td>Center the head in midline and support it with a pillow high enough to maintain the head parallel to the bed.</td>
<td><img src="image" alt="Illustration" /></td>
</tr>
<tr>
<td>Trunk</td>
<td>Align trunk symmetrically with spine straight. Place a firm pillow, approximately 2-3 inches from the back. Move individual’s trunk gently toward pillow so his back is at a 45 angle with the mattress.</td>
<td><img src="image" alt="Illustration" /></td>
</tr>
<tr>
<td>Arms</td>
<td>Bottom shoulder should be slightly forward of top shoulder and resting on mattress. A small pillow can be placed under the arm and hand.</td>
<td><img src="image" alt="Illustration" /></td>
</tr>
<tr>
<td>Hips and Legs</td>
<td>Hips should be in a symmetrical position. The top knee can be flexed (bent) up. Place a pillow between legs to support the ankle, knees and leg. This will help to prevent skin breakdown.</td>
<td><img src="image" alt="Illustration" /></td>
</tr>
</tbody>
</table>
### Prone (Lying on stomach) Resting Position

<table>
<thead>
<tr>
<th>Body Parts</th>
<th>How to Position</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>The bed is flat. Place a small pillow under the head. Head is turned to the side.</td>
<td></td>
</tr>
<tr>
<td>Trunk</td>
<td>Align trunk in a symmetrical position with spine straight. A small pillow can be placed under stomach.</td>
<td></td>
</tr>
<tr>
<td>Arms</td>
<td>Arms are flexed at the elbow with hands near head.</td>
<td></td>
</tr>
<tr>
<td>Hips and Legs</td>
<td>Be sure ankles are elevated high enough to prevent undue pressure on the toes. Separate legs with a pillow, if person fails to keep legs apart.</td>
<td></td>
</tr>
</tbody>
</table>

### Supine (“Up” or Back-lying) Position

The supine or back lying position, allows the individual to take pressure off their buttocks. It should never be used when a person is eating or drinking.

<table>
<thead>
<tr>
<th>Body Parts</th>
<th>How to Position</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>Place the person on her/his back in bed. They should be centered in the middle of the bed. Tilt head slightly forward and center it. Support the head with a pillow.</td>
<td></td>
</tr>
<tr>
<td>Trunk</td>
<td>Align the trunk symmetrically with the spine straight. Align hips as symmetrically as possible.</td>
<td></td>
</tr>
<tr>
<td>Arms</td>
<td>Small pillows can be placed under the arms on each side to support them, with palms down. They can be at the side or flexed and placed on their stomach.</td>
<td></td>
</tr>
<tr>
<td>Hips and Legs</td>
<td>Separate legs to approximately a hand span at the knees. A pillow under the lower legs/knees can be placed. Other positioning devices, such as heel cups</td>
<td>See above.</td>
</tr>
</tbody>
</table>
or sheepskin may be used to prevent heels from rubbing on the sheets.

**Prone Developmental** – This is also called “Prone Prop” position

<table>
<thead>
<tr>
<th>Body Parts</th>
<th>How to Position</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>Place person on their stomach. Head is up and not supported.</td>
<td></td>
</tr>
<tr>
<td>Trunk and Arms</td>
<td>Align the trunk symmetrically with the spine straight. The person may or may not use a wedge/pillow beneath their chest and under their armpits. Follow the program as indicated.</td>
<td></td>
</tr>
<tr>
<td>Hips</td>
<td>Note position of hips. Place them as symmetrical and extended as possible.</td>
<td></td>
</tr>
<tr>
<td>Legs</td>
<td>Separate legs approximately a hand span at the knees. Person may or may not have a rolled towel or pillow beneath ankles so that toes are perpendicular to surface. Be sure ankles are elevated high enough to prevent undue pressure on toes. Follow positioning program.</td>
<td></td>
</tr>
</tbody>
</table>
Positioning and Adaptive Positioning Equipment

The positions listed on the preceding pages are meant to serve as general guidelines. Some people may have more specific, positioning devices to use. They may have splints or braces, foam wedges, rolled blankets, sheets and other positioning devices.

Always follow the therapist/doctor’s orders for the correct positioning for the person.

Those responsible for implementing and monitoring the positioning programs need to recognize when positioning techniques and/or devices are not working and ask for additional help. If for any reason, you notice that the person does not maintain a well-aligned, functional position you should attempt to correctly re-position that person or change positions. If this does not work, contact your supervisor or follow your agencies policies for contacting a licensed clinical specialist (physical therapist or occupational therapist). A consultation may be needed.

As a general rule, extra supports or positioning equipment may be needed if you notice that the person:

- Cannot maintain or attain a correct position
- Cannot move functionally and, at the same time, maintain good posture
- Has a difficult time moving to perform some tasks

The goal of positioning is to promote comfort and well-being. Breathing will be easier, along with better circulation. Pressure sores (ulcers) and contractures can be prevented with regular positioning for those individuals who cannot easily move themselves. Positioning allows the
person to move better and complete tasks more efficiently. Last, but not least, good positioning can also influence the perception of others towards that person.

Remember:

**In side-lying and back-lying positions:**

- Is the person’s head maintained in the center at midline?
- Is the trunk symmetrical, with the spine straight?
- Does the person have as much use of their hands, as possible?
- Are the hips/legs supported?

**In the stomach-lying (prone) position:**

- Is the person’s head turned to one side?
- Is the trunk symmetrical, with the spine straight?
- Are the hips/legs supported and symmetrical?
- Is the general tone relaxed?

**In the sitting position, look at the person and determine:**

- Are the hips, knees and ankles flexed to 90 degrees?
- Are the feet flat and supported?
- Are the hips symmetrical, centered in chair and as far back as possible?
- Trunk is symmetrical, and the spine is straight?
- Are the forearms and elbows easily resting on a surface (lap tray or arm rest)?
Lesson 3: Review Questions

1. List, at least, three reasons why proper positioning is good for persons with limited movement. ________________, ________________, ________________

2. Immobility can cause your internal systems, such as, digestive, circulatory and respiratory systems to ________________

3. When positioning, turning and transferring an individual, what are some things that the support staff should do to make the experience safer and more pleasant for the person? ________________

4. Describe what to do if a person’s muscles feel stiff/rigid or resistant when you are trying to assist with a position change.

5. How can pressure sores (ulcers) be prevented?

6. Some of the basic principles of positioning include:
   -- Preserve an individual’s ______________ while you assist them.
   -- Promote ______________ alignment. Head centered, spine straight.
   -- Provide the proper amount of ______________ to head, shoulders, hips and feet.

7. Who determines which positions will be most appropriate for each person?

8. Besides standing, which position allows a person the most functional movement?

9. When a person is sitting, what body parts should be supported in correct alignment? Name three. ________________, ________________, ________________

10. Lap belts should be attached to a wheelchair at the buttocks area and angled up across the ______________, not at the ________________

11. For good positioning, knees, hips and elbows should be flexed to ______________ degrees.

12. What lying position is the most functional of the positions, because it allows some use of the hands and arms and it prevents some abnormal reflexes?

13. Under what circumstances, should a rolled pillow be placed beneath the knees in the supine or back-lying position?

14. Name a position that should NEVER be used for eating or drinking.
15. What precaution should be taken to prevent undue pressure on the toes when a person is positioned in the prone (lying on tummy) position?

16. When is it appropriate to position a person in the prone-developmental (prone prop) position?

17. What should you do if you notice that a person has not maintained a well-aligned, functional position?

18. What is the name of the position called where the individual bears weight on their forearms? _______________. Under the supervision of a clinical specialist (physical or occupational therapist), it might be used to help to develop _______________.

19. Criteria for evaluating a person’s correct positioning and the need for adaptive equipment include:

   In the side-lying and back-lying positions, look at the person and determine whether or not
   o The head is maintained in ________________.
   o The trunk is maintained in ________________ with the spine straight.
   o The person has as much use of their ______________, as possible.
   o The hips and legs are maintained in a ________________ position.

   In the stomach-lying position, look at the person and determine whether or not
   o The head is ________________.
   o The trunk is symmetrical with the spine ________________.
   o The hips and legs are in a ________________ position.
   o The person’s general muscle tone is ________________.

   In the sitting position, look at the person and determine whether or not
   o The head is upright and centered at ________________.
   o The trunk is ________________ with the spine straight.
   o The hips are symmetrical and as ________________ as possible in the seat.
   o The hips, knees, and ankles are flexed to ________ ________________.
   o The feet are ________________ on a supportive surface (such as footrests).
   o Forearms and elbows can easily rest on a ________________.
Lesson 4: Guidelines for Turning

Objectives:

- List four indications that a person's position needs to be changed.
- List signs of pressure sores.
- Understand general rules and techniques to safely turn a person in a lying position.

When to Change a Person's Position

It's best to consult with a clinical specialist about the frequency of position changes for each person. For instance, some people can safely remain sitting in an adapted chair for several hours a day, while others might need to lie down periodically. Some general rules to safely assist a person with physical disabilities include:

- When in the lying position a person should be repositioned at least every two hours.
- If the person cannot maintain a correctly aligned position, they should be repositioned in a different position.
- The person's position should be appropriate for whatever task/activity s/he needs to perform. If the task changes, check to make sure the person's position is appropriate.
- A person's position should be adjusted if s/he expresses any discomfort.

Pressure Ulcers

Pressure ulcers occur when bones close to the surface of the skin press the skin and body tissue against the bed sheets reducing the flow of blood and oxygen. The backs of the heels and shoulders, the tailbone, hips, knees, and buttocks are most susceptible. People who can move about independently do not form pressure sores because we change our positions when we begin to feel uncomfortable. The average person shifts their weight in a position every five to ten minutes. People who are immobile or who have lowered awareness and understanding may not be able to move or feel sensation.

In general a person's position should be changed or modified at least every two hours to prevent the development of pressure ulcers. Factors which may indicate a need for more frequent position changes are:

- Hardness or firmness of supporting surface
• Presence of scar tissue or skin lesions in weight bearing areas
• Lack of muscle mass making bones more prominent
• Excess body weight
• Fair skin
• Age
• Poor nutrition
• Inability or difficulty in moving
• Lack of sensation

Wrinkles in bed linens, crumbs in bed and motions such as sliding down in bed cause shearing force on the body tissue and contribute to the formation of pressure sores. Moisture from perspiration or urine weaken the skin and makes it more susceptible to pressure sores. Skin breakdown and pressure sores can significantly alter a person's activities during the lengthy healing process. However, pressure sores are completely preventable with proper care and an adequate schedule for repositioning.

Pressure sores are not immediately evident. Initially, the underlying tissues may be damaged without evidence of the injury appearing on the surface. With continued exposure to excessive pressure, the sore progresses until the top layers of the skin blister or crack, exposing a large and deep sore. Pressure sores can become serious health threatening conditions. Therefore, it's important that skin subject to pressure be thoroughly checked for early warning signs at least daily. Normally skin blanches or turns white under pressure. A change in the person's status may necessitate more frequent checks.

If the person complains of pain or if you see any of the following, adjust the person's position and report the change you noticed.

• Areas that stay red for more than 10-15 minutes after the pressure is removed
• Skin that feels warm to the touch
• Swelling

Report breaks in the skin immediately to your supervisor so medical help can be sought.

**Turning**

To provide a variety of positions and experiences for people with significant physical disabilities, you will often be required to turn them from one position to another. Turning techniques should be recommended by a clinical specialist. However, there are general rules and techniques that will help you safely turn a person from one lying position to another. Know your own limits, be sure that you have adequate help if you are unsure if you can complete the technique alone. It's recommended that two people assist with turning most adults and larger children.
Before you actually begin to turn, take a few minutes to prepare. Greet the person, tell them what you are going to do, encourage them to help and reinforce their cooperation. Take steps to respect the privacy and dignity of the person being moved by closing the door. Have positioning devices (pillows, sandbags, etc.) within easy reach. Be sure you are standing close to the person.

A sheet or blanket folded lengthwise can be used to help move or turn a person. When used for this purpose, it is often referred to as a draw sheet. A draw sheet helps decrease the strain on people trying to move a large or heavy individual. It is also helpful for moving people with serious physical disabilities because it can reduce the risk of unnecessarily pulling, pushing, or bending sensitive body parts. Sliding the person can promote skin breakdown as the skin is rubbed on the bed sheets. The draw sheet may be used for:

- sliding the person to the edge of the bed in preparation for turning,
- sliding the person toward or away from the head of the bed, or
- turning the person.

A draw sheet is placed across the bed so that when the person lies on it, their shoulders and hips are on the draw sheet. It may be adjusted to support the head as well. The sheet should extend over each side of the bed. (These ends can be tucked under the mattress when not in use.) Use colored or patterned sheets to avoid the person's surroundings taking on a “sick” hospital-like appearance.

If the person lacks head control, be sure the head is supported throughout the turn. You may find it helpful to leave the pillow in place throughout the turning process. Be sure the nose and mouth are unobstructed throughout the turn. When the person has a high level of muscle tone, it may be beneficial to support the upper body with the head positioned forward and the neck slightly flexed as this posture tends to reduce muscle tone.

Place the person's arms close to his or her body. Place the arms straight and as close to the side of the body as possible. This arm position is appropriate for all turns. There are other arm positions which will also work. For example, you might cross the arms over the chest, bend arms toward shoulders, etc. Some arm positions are more comfortable than others, depending on the person and the intended position. You may need to adjust the arm position based on the person's physical condition. Be sure the person does not have to place too much weight on his or her arms. Keep the person's legs together.
After explaining what you’re going to do, roll the draw sheet into a tight roll a few inches from the edge of the person's body. Roll the sheet under for more stability when lifting. Grasp the draw sheet at the shoulders and the hips. Position your feet shoulder width apart. On the count of three, both people assisting with the lift move the person on the draw sheet in the desired direction while shifting their weight from one foot to the other. Shifting or rocking from one foot to the other allows the muscles in the legs to do the work rather than the arms and shoulders. This shifting motion also helps avoids twisting the back while lifting.

When the person is in the desired position in the bed, turn the person with your hands or use the sheet to turn. Place your hands on the shoulders and hips when performing the turn. Roll the person as you would a log. Keep the arms close to the body, and keep the legs close together. Maintain physical contact with the person throughout the turn. If necessary, use your hand to stabilize the person until you can properly place stabilization devices.

Tuck in the draw sheet and smooth out wrinkles to prevent irritation to the skin. You will find turning people from one lying position to another can be done safely and efficiently if you use the proper techniques.
Lesson 4: Review Questions

1. It's best to consult with a ___________________ about the frequency of position changes for each person.
2. When in the lying position a person should be repositioned at least every ___ hours.
3. If the person cannot maintain a correctly aligned position, they should be ________________.
4. The person's position should be appropriate for whatever ___________________ s/he needs to perform.
5. A person's position should be adjusted if s/he expresses any ___________________.
6. List some factors that may indicate a need for more frequent position changes:
7. ________________ occur when bones close to the surface of the skin press the skin and body tissue against the bed sheets reducing the flow of blood and oxygen.
8. What areas of the body are most susceptible to pressure sores?
9. What are some ways to prevent the formation of pressure sores?
10. It's important that skin subject to pressure be thoroughly checked for early warning signs at least ________________.
11. What are signs of pressure sores?
12. Breaks in the skin should be reported ________________.
13. What are the advantages of using a draw sheet to assist with turning?
14. During a turn, the persons arms and legs should be positioned ________________.
15. ___________________ allows the muscles in the legs to do the work rather than the arms and shoulders. This also helps avoids twisting the back while lifting.
LESSON 5: TRANSFER TECHNIQUES

Objectives:

- Identify how to find out the proper techniques for transferring a particular person.
- Describe general guidelines for the correct:
  - one-person bed-to-chair transfer
  - one-person chair-to-bed transfer
  - two-person floor-to-chair transfer
  - Use of a mechanical lift

Introduction

Several factors affect how individual transfers should be performed: the weight and size of the person being transferred, the degree of hypertonicity or hypotonicity, the presence of abnormal and retained reflexes, the amount of weight the person with disabilities can bear, etc. To promote efficiency and prevent injury, the best rule to follow is: Ask a clinical specialist to recommend and demonstrate transfer techniques which are based on the needs and abilities of each person.

Manual Transfers

There are some general transfer techniques that apply to most situations. However, check your agency policy to see what is allowed. Some agencies do not allow any manual lifting. If you are allowed to do manual transfers, check each person’s plan to see if the needs of each person you support require adjustments in any of the steps.

Remember to apply the principles of good body mechanics throughout all transfers. Improper lifting and carrying can not only cause injury to the individual being transferred, it can also cause serious injury to you. Because of the person’s unequal weight distribution and the positions and locations where transferring is required, it is possible for people doing transfers to hurt their backs when transferring someone. Do not take chances. If you have a history of back injury, you should not be involved in lifting and carrying people unless you have consulted with your physician.

Before beginning any transfer:

- Evaluate the situation – Determine the person's abilities and the type and amount of assistance needed.
- Get help if needed – Transfers are always easier to perform with two people, and it's much easier to ask for assistance before beginning the transfer and then during the transfer.
- Check your foot position and the alignment of your back.
- Move as close to the object or person you are lifting as you can, and if possible, position so that the person can see where they are going.
During the transfer keep these things in mind:

- Use your legs to lift.
- Shift your weight and pivot on the balls of your feet.
- Keep the movement as smooth as possible. Sudden movements can trigger a reflex.
- If the person has more significant impairment on one side of the body, plan the transfer so they will be moving toward their most stable side.

**One-Person Transfer from Bed to Chair**

This procedure can be used to transfer a person who bears some weight or a small child between the bed and wheelchair or between the wheelchair and the toilet. There are numerous variations of this transfer technique. Transfer belts provide the greatest safety. The belt allows you to control movement of the person during the transfer. An increasing number of settings are requiring that personnel use the transfer belt to transfer individuals.

Before you begin the transfer, explain what you are going to do. Position the chair so that one side of the chair is flush against the bed and the front of the chair is within arm’s reach. If you are using a wheelchair, remove the arm rest nearest the bed and remove or fold the foot rests so they are out of your path of movement.

Position the person so that s/he is facing you, in a side-lying position, at the edge of the bed. Position yourself close to the edge of the bed with your feet spread approximately shoulder width apart.

Slide one arm under the person's head and cradle the upper part of the person's body. Allow their head to rest in the fold of your arm and place the palm of your hand flat on their back. Place your other arm over and around the person's knees, and grasp the back of the person's bottom knee. You're now ready to lift the person.

This is a critical movement. The risk of injury and accidents is greatest when lifting, so make sure you're prepared.

- Are your feet spread shoulder width apart?
- Are your knees bent?
- Is your lower back in its normal arched position?
With one continuous motion, simultaneously pull the person's legs toward you and down, and raise the person's shoulders. This will raise them to a sitting position at the side of the bed. If the person has the ability, encourage him/her to participate in the process of coming to a sitting position by assisting them to prop up on their elbow and push up from a side-lying position with their forearm and hand as you help them move into an upright position.

Straddle the person's knees and keep their upper body close to your own, to maintain a sitting position. If necessary, allow the person's head to rest on your shoulder. Whenever the person has the ability, allow them to assist in the transfer process, by placing their hands on the bed and requesting that they help stabilize themselves. Do not release your hand on the person, even though they are assisting you. With one hand, position the person's feet so that they are flat on the floor and ready to bear weight as the person comes to a standing position.

With one hand, pull the chair close to your knee. If it's a wheelchair, lock both wheels. Encourage the person to assume as much of the lifting and weight bearing as s/he can comfortably handle. If using a transfer belt, place the belt snugly around the individual's waist. Check to be certain that it is securely fastened.

Keeping the person's upper body close to yours, slide your arms under their arms, (a) grasping them under the hip/buttock area; or (b) grasping the center of the transfer belt. Request that the person lean forward and push up from the bed or have them hold onto your upper arms. Do not allow individuals to hold onto you by placing their arms around your neck as this will put you at risk of a back or neck injury.

Bend your knees and hips so that your shoulders are no higher than the person's shoulders. Gently pull your arms toward you to obtain firm contact between the person's upper body and your own.

Your feet should be shoulder width apart with one foot back. Bend your knee to maintain contact with the person's leg. Place your weight on the other foot. Request that the person lean forward so that his/her head and knees are positioned directly above their feet. Ask the person to assist you, when directed, by pushing up with their legs. Say "stand" and shift your weight from the forward to backward foot while pulling the person forward and upward with belt (or with your hands on their back under their shoulder blades), or grasp the transfer belt on both sides of the person's waist. Complete this procedure in one continuous smooth movement.
Pivot toward the chair, and ask the person to reach back for the arm of the chair with one hand and to get ready to sit down in the chair. Gently lower the person into the chair, bending your knees and not your waist. Properly position the person in the sitting position.

**Sliding Board Transfer**

A sliding board transfer, is when a board, made specifically for this purpose, is used to assist a person to and from a wheelchair. A **sliding board** is a piece of equipment that can be used if a person is not able to use their legs to complete a **transfer** between surfaces or if a standing **transfer** is not safe to perform. The **board** is used to make a solid “bridge” between the two surfaces that a person can slide across to **transfer** between them. This method promotes a person's sense of independence and places significantly less physical stress on the person assisting.

- If range of motion allows, cross the person's legs and have them lean to the side of the chair away from the bed, taking weight off the hip;
- Place the board underneath the hip on the bottom of the buttocks and uncross the legs;
- Remove the armrest from the chair on the side the person will be transferring; and
- Have the person lean forward and, to whatever degree possible, help you “scoot” them out, across the board to the bed.

**Two-Person Transfer from Floor to Chair**

Two people or a mechanical lift are needed for most transfers of adults or large children. Sometimes, as in the case of a fall, it is necessary to lift a person from the floor to a chair. Use the following steps as a guide when transferring an adult from the floor to a chair.
Place the chair so it faces the direction of the person's feet. It should be opposite the person's hips and as close as possible without interfering with your work area. If you're using a wheelchair, remove the armrest nearest the mat, fold the foot rests up and lock the wheels. Position the person in a side-lying position facing away from you. The person's back is approximately 9-10 inches from the side of the mat closest to the chair.

Leader: Kneel with both knees touching the person's back. Slide one arm under their head and grasp the bottom shoulder. Place the other arm across the person's chest and grasp the back of the bottom arm, just above the elbow.

Assistant: Kneel in front of the person's knees and place one hand on the person's top hip. Wrap the other arm over and around the person's knees and grasp the bottom leg just above the knees. Flex the person's knees toward his/her chest.

With the leader giving the count, simultaneously:
Assistant: Keep the person's knees flexed. Push down on the person's top hip and at the same time pull the knees up and turn them away from you, until they are in an upright and flexed position.

Leader: Pull and lift the person's upper body until s/he is sitting parallel to the edge of the mat.

Leader: Kneel closely behind and close to the person's back. Slide your arms under their arms and across the chest. Grasp the person's opposite arms just below the elbows. Gently pull their arms in until they press against the lower rib cage and his/her back is touching your chest.

Assistant: Squat alongside of the person, facing the direction toward which you will be moving. Position your feet so that one foot is in front of the other. Support the legs by placing one hand under the thighs, well above the knees. The other hand should be positioned under the lower legs.

Leader: Change your position from kneeling to squatting. Place one foot in front of the other, in the direction toward which you will be moving.
Leader and Assistant: With the leader giving the count and with your backs straight, keep the person close to your body and lift him/her free of the mat. Lift the person straight up until you are standing upright and the buttocks are higher than the chair.

On signal, lower the person into the chair, by bending your hips and knees. Properly position the person in the sitting position.

**Special Situations**

**Bathroom and automobile transfers,** more than any others, must be tailored to meet the needs of specific places and people. Bathroom sizes and arrangements vary widely and so do automobiles. However, do not allow these unique conditions to set roadblocks for people getting out and about. Ask your clinical specialist to recommend the best automobile and bathroom transfers for the people with whom you work. Here are some general lateral transfer guidelines:

- Move wheelchairs as close as possible.
- Maintain a solid base of support.
- Avoid swinging the person.
- Pivot carefully and keep your feet under you at all times.
A gait belt is made of canvas or other heavy material, and is used to help people stand, sit, or walk, it is also sometimes called a transfer belt. The belt is placed snugly around the person's lower waist. This is to avoid injury to the ribs and soft tissue just under the ribs. It should be securely fastened to prevent it from sliding up. A gait belt, as with any kind of special equipment should only be used with approval from a specialist.

When transferring a person to a shower chair in a tub, begin with the person in a seated position in a chair parallel to the tub. From this point a regular sitting or standing transfer is performed. Lift the person's legs into the tub and assist them to slide over to the center of the tub. To avoid burns always turn the cold water on first and off last and try not to turn the water directly onto the transferred person until the water reaches the desired temperature. Respect the person's privacy during this procedure. It's typically simpler to remove the person's clothing before the transfer but provide a towel for cover up to preserve dignity.

The procedure for transferring from the chair to the toilet will vary depending on the space available in the bathroom and the person's ability to assist with the transfer. Always position the chair as close to the toilet as possible. The person's clothing is raised and lowered while in the chair rather than on the toilet. It works best if both the chair and the toilet seat are the same height. The sitting transfer is then applied to move the person from the chair to the toilet and then back to the chair again. For most adults who cannot bear weight or assist with the transfer, a mechanical lift is the safest way to transfer from chair to toilet or for showering.

A van lift is the safest way to transfer most adults who cannot bear weight or assist in the transfer from chair to vehicle. A one-person transfer can be used if the person can bear some weight or is very small. When transferring to and from a car, it's easier to use the passenger side of the front seat as it has more room than the back seat. The car seat should be moved back and the wheelchair positioned as closely as possible and parallel to the car seat. Try to avoid transferring from a curb, as the height difference between the car seat and the chair will be significant. Remember … lift with your knees … not your back. Help the person lift their feet into the car and position correctly.
Mechanical Lifts

Many agencies use assistive equipment and devices whenever possible. The use of mechanical aids can provide a safe and comfortable method of transfer for support staff and the person requiring assistance if done by trained staff. Using a mechanical lift can reduce injuries to staff that are due to overexertion associated with lifting and transferring people. Never use a mechanical lift unless you are trained on how correctly and safely use it. As with all transfer methods, the advice of a clinical specialist and agency policies and procedures should be followed.

Some agencies require that use of a mechanical lift always be performed by two people - one to support the person being moved and the other to move the lift to the desired location. Always follow your agency policies on using equipment, and never use mechanical lifts if you have not been trained on their proper use. Training should focus on how to use the lifting equipment for residents with a range of physical limitations and should include hands-on practice. Support staff should be required to demonstrate that they are proficient in the use of the equipment prior to being placed in charge of using it.

Various types of mechanical lifts are used to lift and transfer. A common lift used is the Hoyer lift which is a mechanical lift used with people that are either partially able or completely unable to participate in a transfer. Hoyer lifts are equipped with a canvas sling which is like a hammock that fits underneath the people being transferred. The canvas is attached to straps that have chains and a hooking device on them, to attach to the canvas. Some Hoyer lifts are capable of lifting weight up to 300 or more pounds.

General guidelines for use of a Hoyer lift include:

Before using the mechanical lift, ensure that it is in working order and that the hooks, chains, straps, and canvas seat are in good repair. Always use a sling which is the correct size and in good repair. If the sling is one piece, the bottom should be at the knees; if the sling is in two pieces, the narrow piece should be at midback and the wide piece under the thighs. Roll the person to one side and position the sling under the person's back and thighs. Roll the person to the other side and pull the sling through.
Assist him/her into a back-lying position. Cross his/her arms across the chest. Center the boom over the person so that the chains can be attached with the hooks facing outward. The short chain is for the sling back and the long chain is for the leg portion of the sling.

Position the wheelchair parallel to the bed. Lock the brakes and remove the armrest on the side of the bed. Elevate the person just enough to clear the bed and guide his/her legs over the side.

Move the person and the lift to straddle the wheelchair. Guide the person to the center of the wheelchair as you lower the lift. Pull the person's hips back into the wheelchair. Protect his/her head as the boom is being lowered. Ask the person to keep their arms folded during the transfer. This keeps the device balanced and prevents their arms from striking against the chair or being pinched by the chains.

Unhook the chains and either remove the sling, if the person will be in the chair for an extended period of time or adjust it to remove the wrinkles. Be sure the person is positioned properly in the wheelchair.

**Transporting People Who Use Manual Wheelchairs**

Wheelchairs may be used for either short-term or long-term transportation of individuals unable to ambulate (walk) by themselves, or for those whom ambulation is medically inadvisable. Consider the following guidelines concerning wheelchair use:

- Self-mobilization: Can the person move themselves? If yes, encourage them to transport themselves as much as possible.
- The person's sitting position: Before starting check for the following:
o Are the person's hips all the way back in the wheelchair?
o Does the lap belt need to be attached?
o Are foot rests in place and are the person's feet on the footrests?
o Are the individual's arms on the armrests or in his/her lap away from the wheels?

- Make sure that brakes are locked prior to assisting a person into or out of a wheelchair.
- Holding On: Grasp both push handles on the wheel-chair firmly.
- Starting and stopping: Always start and stop slowly, take corners slowly, and maintain a steady pace while moving. This is to avoid jostling the person or throwing him/her off balance.
- Surface levels: Be alert for changes in surface levels (e.g. doorjambs, the floor of an elevator). Hitting a half inch rise at standard wheelchair speed can bend the front casters and pitch the person forward.
- Opening Doors: Never open doors by pushing with the front of a wheelchair. This can damage the wheelchair's footrests, the person's feet, and/or the door. Stop the wheelchair, open the door by hand, and bring the wheelchair through. If the door does not stay open on its own, hold it with one hand or your backside. Do not let the door bang the side of the wheelchair.
- Inclines and ramps: The person's weight should always be pushing back toward you on inclines and ramps. Going uphill means pushing the person; to go downhill, turn the chair around and walk backwards. In this manner, the person's weight will be pushing back toward you.
- Outdoor surfaces: Be alert for anything that can trap front casters or cause the wheelchair to tilt, such as holes, cracks, stones, sand, or soft shoulders.
- Curbs:
  o Up curbs: Stop at the curb, raise the front casters by pressing down on the foot level, roll the front casters onto the sidewalk, and roll the large wheels over the curb by lifting slightly on the push handles as you push forward.
  o Down curbs: Always come down curbs facing backwards with the large wheels coming first. Maintain some upward pressure on the push handles as you pull the wheelchair toward you.

Summary
Remember that in every transfer there are three basic considerations.

- First, know the person. How will a particular person's characteristics affect the method of transfer? Consider factors like weight and size, muscle tone, retained or abnormal reflexes and the ability to bear weight.
- Second, know yourself. What are your capabilities for lifting and transferring? Have you been properly trained?
- Third, know your technique and use good body mechanics while carrying it out.

Your skill carrying out transfers can make a safe transfer possible for you and the people you support.
Lesson 5: Review Questions

1. Who is at risk of injury during a transfer?

2. During transfers you should: Use your _____________ to lift. __________ your weight and pivot on the balls of your feet. Keep the movement as _______________ as possible.

3. If the person has more significant impairment on one side of the body, plan the transfer so they will be moving toward ____________________.

4. A ____________________ allows you to control movement of the person during the transfer.

5. Before beginning a lift, the person assisting should check their own body positioning for the following:

   Are your feet ______________________?

   Are your ______________________ bent?

   Is your lower back in its ______________________?

6. Why is it important to not allow the person you are assisting to hold onto you by placing their arms around your neck?

7. Bend your knees so that your ____________ are no higher than the person’s shoulders.

8. A __________________________ can be an efficient tool for moving larger individuals or those who have significant difficulty in assisting with a transfer.

9. How many people are needed to assist with a transfer when a mechanical lift is used?

10. Where should a transfer belt be positioned?
11. When is a one person transfer appropriate for assisting someone into a vehicle?

12. When assisting a person in a wheelchair on inclines and ramps, the person's weight should always be _________________. Going uphill means pushing the person; to go downhill, _________________. 
Glossary

Asymmetrical: One side (of a body) is different from the other side. The two sides do like look the same, e.g., client may be sitting asymmetrically and will need to be repositioned.

Atrophy: A wasting away of muscles due to underuse or non-use.

Body Mechanics: A term used to describe the way we move as we go about our daily lives.

Clinical Specialist: This can refer to a physical therapist or an occupational therapist.

Contracture: Abnormal shortening of the muscle tissue leading to a permanent change in joint position.

Fluctuating Tone: Muscles that move between too much and too little tone or tension. Fluctuating tone makes it difficult for a person to attain and maintain desired positions.

Gait Belt (Transfer Belt): A gait belt is a device, worn around the waist, used by caregivers to transfer a client with mobility issues, safely, from one position/location to another. It is helpful to use when ambulating patients who have problems with balance.

Hypertonic: A rigid state of muscles that resists movement.

Hypotonic: This refers to muscles that have too little tone or tension. Muscles are in a relaxed state. The person may appear floppy.

Limited Range of Motion: If a person cannot move their body parts through the full range of motion, they are said to have limited range of motion.

Mechanical Lift (Hoyer Lift): A device (it can be electrical or manual) used to assist in transfers of individuals who are not able to bear weight and need to be moved from their bed to wheelchair or commode/shower chair.

Midline: An imaginary line down the center (of a person’s body).

Occupational Therapist: Occupational therapists treat injured, ill, or people with disabilities through the therapeutic use of everyday activities. They help people develop, recover, improve, as well as maintain the skills needed for daily living and working.

Physical Therapist: Helps to promote mobility and function of client following injuries, surgeries or developmental delays.

Pressure Sore (Ulcer): This occurs when bones close to the surface of the skin press the skin and

Prone-Developmental Position (Propped Stomach): This is a position that a client uses to lie on their stomach, while bearing weight on their forearms.

Prone Resting Position: This refers to the client lying face down on the bed or on the tummy with their head to one side.
**Sliding Board:** This is a board used to slide a person between two transfer surfaces. For instance, moving a client from their wheelchair to their bed. The client slides along the board and does not need to stand or walk.

**Supine (Back lying) Position:** This refers to a client lying on his back.

**Symmetrical posture:** This is the ideal balanced alignment of body parts. Head is centered and above the body, the spine is straight, and the arms and legs are balanced on either side of the body.
References


Feedback Answer Keys

Lesson 1:

1. Position
2. Physical Therapists and Occupational Therapists
3. Hypotonic
4. Hypertonic
5. Involuntary
6. Pairs
7. Lengthens
8. Bones
9. Symmetrical
10. Asymmetrical
11. Muscle tone
12. Limited movement
13. Restricts a person's opportunities to learn and develop cognitively, socially, and vocationally; affects the ability of the internal organs to function adequately; and may cause physical impairments which limit movement further and cause permanent damage.
14. Atrophy
15. Weak, brittle
16. Contracture
17. Slowly

Lesson 2:

1. Flexibility, legs
2. Hips
3. Knees, hips
4. Feet should be shoulder-width apart and one foot placed slightly in front of the other one.
5. Keeping legs straight; Bending over with your back; Jerking movements; Twisting when lifting; Holding the load too far away; Poor planning; Not testing the load before you lift.
6. Feet
7. Increases
8. Prepare and set up your area, have equipment ready, lock surfaces.
9. The person will feel more comfortable and be able to assist if they know what you are doing with them.
10. Dry.
11. Arched.
12. Close
13. Chin
14. Lifting
15. Builds strength; Keeps them flexible; Is an energy boost
16. Most
Lesson 3:

1. To promote comfort and well-being; Better for internal systems, like circulatory and digestive systems; Can prevent pressure sores (ulcers); Can prevent contractures; The person is able to move better and complete tasks more efficiently and/or Good positioning influences the perception of others towards that person.
2. Not work properly or inefficiently.
3. Explain what you are doing; Approach them calmly; Speak in a calm voice
4. When the person is lying on their side in bed, stand behind their back, place one hand on the shoulder and the other one on the hip. Gently move the shoulder in one direction as you move the hip in the other. Continue this alternating movement until you feel the muscle tone (stiffness) relaxing OR In the same position, with your hands placed in the same way, gently rock him/her back and forth until you feel the tone relaxing.
5. Move the person every two hours or per their specific scheduled turning times; be observant for red marks that last longer than 15 minutes after a person has been turned.
6. Dignity; Symmetrical; Support
7. The clinical specialist (physical or occupational therapist)
8. Sitting
9. Feet; Arms; Head
10. Hips; Waist
11. 90 (degrees)
12. Side-lying
13. When it is indicated by the clinical specialist to do so.
14. Back lying
15. Place a small pillow below the ankles.
16. When instructed to do so by the physical or occupational therapist.
17. Re-position them or change them to a different position.
18. Prone Prop or Prone Developmental; Neck strength
19. Side lying and back-lying:
   a. Midline or in the center; a symmetrical position or straight; arms; supported, a pillow between the knees/ankles;
   b. Turned to one side; spine is straight, hips and legs in supported position, relaxed;
   c. Midline, symmetrical, far back, 90 degrees, flat, a surface (lap tray)

Lesson 4:

1. Clinical specialist
2. 2
3. Repositioned in a different position
4. Task/activity
5. Discomfort
6. Hardness or firmness of supporting surface; presence of scar tissue or skin lesions in weight bearing areas; lack of muscle mass making bones more prominent; excess body weight; fair skin; age; poor nutrition; inability or difficulty in moving; lack of sensation.
Lesson 5:

1. The person being transferred and the person doing the transferring.
2. Legs, shift, smooth
3. Their most stable side.
4. Transfer or gait belt
5. Check own positioning for:
   a. Are your feet shoulder width apart?
   b. Are your knees bent?
   c. Is your lower back in its normal arched position?
6. This puts you at risk of a back or neck injury.
7. Shoulders
8. Sliding board
9. Two (or per agency policy)
10. Around the lower waist
11. When the person is small and can bear some weight on their own.
12. Pushing back toward you; turn the chair around and walk backwards.