

# **PRINCIPLES OF CAREGIVING: AGING AND PHYSICAL DISABILITIES**

## **CHAPTER 5 – TRANSFERS AND POSITIONING**

### **CONTENTS**

- A. Principles of Body Mechanics for Back Safety
- B. Transferring
  - 1. Basic Principles
  - 2. Gait Belt
  - 3. Transferring Out of Bed to a Standing Position
  - 4. Transfer from Wheelchair to Chair
  - 5. Mechanical Lift
  - 6. Transfer or Slide Board
- C. Ambulation (Walking)
- D. Turning and Positioning
  - 1. Preventing Pressure Sores
  - 2. Preventing Contractures
  - 3. Positioning in Bed
  - 4. Positioning in Wheelchair or Chair
  - 5. Range of Motion (ROM) Exercises
- E. Assistive Devices
  - 1. Canes
  - 2. Walkers
  - 3. Wheelchairs

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## OBJECTIVES

1. Identify and demonstrate good body mechanics related to transferring and walking with an individual.
2. Explain the importance of repositioning and list techniques for preventing skin damage and pressure ulcers.
3. Describe common assistive devices and techniques for using them safely.
4. Demonstrate the safe use of selected assistive devices.

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## SKILLS

- Assistance with ambulation
- Application and use of gait belt
- Technique for positioning a person in bed
- Technique for positioning a person in a wheelchair
- Transfer from chair to wheelchair
- Transfer out of bed

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## KEY TERMS

Ambulation	Mechanical Lift
Body mechanics	Range of motion (ROM) exercises
Center of gravity	Transfer
Contractures	Transfer board
Gait belt (transfer belt)	Walker
Leverage	Wheelchair



**REMEMBER!** Safe transfers and following proper procedures will protect your health and safety and the people you care for. Assistive devices and equipment can help with ADLs but they need to be used correctly. If you do not use equipment correctly, you and the person you care for may be at risk. This chapter covers proper procedures for transfers and positioning and use of assistive devices and equipment. However, there are many different types of equipment being used by our clients.

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## A. PRINCIPLES OF BODY MECHANICS FOR BACK SAFETY

Using correct body mechanics is an important part of a DCW's job because:

- The individual with a disability depends on the DCW for hands-on assistance. If the DCW does not take care of his/her back with correct body mechanics, the DCW will not be able to provide that assistance.
- Not using correct body mechanics puts the safety of the client and DCW at risk.
- Some injuries cause permanent disabilities.

Just as lifting, pushing, and pulling loads can damage your back, so can bending or reaching while working in an individual's home. As a DCW, you may have witnessed firsthand the pain and misery a back injury can cause. The good news is that you can learn some simple ways to reduce the risk of injury.

### Body mechanics principles

- **Proper footwear:** DCWs should always wear proper footwear. Wear closed, non-slip shoes.
- **Center of gravity over base of support:** Be aware of center of gravity over base of support in working with a client. Usually a person's center of gravity is right behind a person's navel (belly button). A good base of support is being in a standing position where the feet are slightly apart and knees slightly bent.
- **Principles of body leverage:** Using leg and arm muscles is important, as is applying body leverage. Mirror posture of the client. Use body as a whole and not just one part.



**Call your supervisor to get more training or clarification on any transfer skill or use of equipment.**

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## B. TRANSFERRING

### 1. Basic Principles

A move as basic as getting in and out of a chair can be difficult for an individual with a disability, depending on his/her age, flexibility, and strength. Techniques for assisting an individual with transfers can vary. Some persons require a high level of assistance (maximum assist). The DCW will have to use assistive devices, such as a gait belt or a mechanical lift. Other persons will need less assistance (minimum assist), making the devices optional. The height and stability of the chair or other sitting surface also plays a role in the successful transfer. A slightly raised seat is preferable to one that is low or deep. A chair that has armrests is also preferable.

#### Levels of assistance in transfers

- **Maximum assist**
  - Mechanical lift.
  - Gait belt with person who is 50% or less weight bearing.
- **Moderate assist**
  - Gait belt with person who is 50% or more weight bearing.
  - Verbal cues with moderate physical assist.
- **Minimum assist**
  - Gait belt optional.
  - Hands on with person who is 85 - 90% weight bearing.
  - Verbally and physically guiding the client.
  - Stand by assist (this is to ensure safety).

#### General guidelines for assistance with transfers

While procedures can vary for certain kinds of transfers, there are general guidelines that apply when assisting with any transfer:

- Explain each step of the transfer and allow the person to complete it slowly.
- Verbally instruct the client on the sequence of the transfer (“Move to the front of the chair,” etc.).
- When assisting in the transfer of a person **do not** grab, pull or lift by the person’s arm joints (elbows, shoulders, wrists) as this can cause a joint injury.
- **Know your limits!** Don’t transfer anyone heavier than what you can handle.
- If the person is unable to stand or is too weak to stand, the DCW should use a mechanical lift for transfers. If this is not in the service plan or you do not know how to use a mechanical lift, ask your supervisor for instructions on what to do.

**!** At no time should the client put her or his hands around the DCW's neck during a transfer.

## 2. Gait Belt

A *gait belt*, sometimes called transfer belt, provides the DCW with secure points to hold onto while assisting clients in walking and transfer activities.

Before using, ensure the client can safely wear a gait belt. You may not be able to use one if the person:

- Has had recent surgery or incisions (within the last 6-8 weeks) in the abdominal and back areas.
- Has an ostomy (for example, a colostomy), G-tube, hernias, severe COPD, post-surgical incisions, monitoring equipment, tubes or lines that could be interfered with by the pressure.
- Is pregnant. Applying a gait belt to a pregnant woman could cause injury to the unborn child.

If it is determined the client cannot safely use a gait belt, the DCW should contact the supervisor for instruction on agency specific policy and procedures.



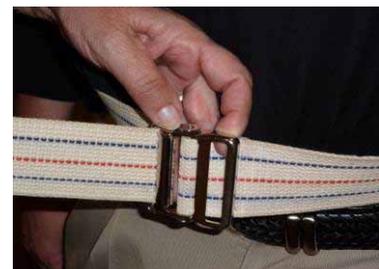
### Procedure: Use of Gait Belt

#### Supplies

Gait belt (with metal teeth or quick release buckle)

#### Description of procedure

1. Tell the person what you are going to do.
2. Position the person to make application of the belt easier. The person needs to move forward and sit on the edge of the chair.
3. Place the gait belt around the client's waist, above the pelvic bone and below the rib cage. Always place the gait belt on top of clothing, and for females make sure breast tissue is above the belt.
4. Pass the metal tip of the belt end through the teeth of the buckle first and then through the other side of the buckle.
5. Adjust it so it is snug, but not uncomfortable for the client. You should be able to slip your open flat hand between the belt and the client.



6. Tuck the excess end of the belt through the waist band.
7. The strap should lay flat across the buckle.
8. ALWAYS verify proper closure before use.
9. ALWAYS grasp the transfer belt from underneath.
10. Remove the gait belt when not in use, or loosen it.



**Practical tips**

- It is important that you ask permission before applying a gait belt because you are about to invade the client's personal space. Maintain client's rights by informing him/her of all procedures prior to actions.
- Gait belts come in various lengths. Use an appropriate size for the client.
- Belts with padded handles are easier to grip and increase security and control.
- Use a rocking and pulling motion rather than lifting when using a belt.
- DCW should walk slightly behind the client with a hand under the bottom of the belt.
- On some gait belts, the seam and label will be on the outside, on other belts it is on the inside. Don't assume that the manufacturer's label is on the inside. Start by putting the end of the belt through the teeth first.

***Don't forget!***

- Apply gait belt over clothing, NEVER apply to bare skin.
- Check female clients to make sure no breast tissue is caught in belt.
- Use good body mechanics when transferring a client with a gait belt.



### 3. Procedure: Transferring Out of Bed to Standing Position

#### Supplies

Non-slip shoes/socks.

#### Description of procedure

- a. Tell the client what you are planning to do.
- b. If the person is in an hospital bed:
  - Raise the head of the bed.
  - Assist in having the person extend his/her legs over the edge of the bed.
  - Support the person's back and shoulders (not the neck) if needed, and help him/her to a sitting position.
- c. If the person is in a standard bed:
  - Have the client roll onto his/her side, facing you, elbows bent, knees flexed.
  - Assist in having the person extend his/her legs over the edge of the bed.
  - Instruct client to use his/her forearm to raise up and the opposite hand to push up to a sitting position while you support the back and shoulders (**not the neck**), if needed.
  - You may also need to place your arm under the person's knees and help him/her to a sitting position.
- d. Allow client to sit on the edge of the bed for a minute or two, to regain sense of balance. Make sure the person does not slip off the edge of the bed.
- e. Assist with putting on non-skid footwear (sneakers, slippers, tread socks are good choices).
- f. If bed was raised or lowered, make sure to adjust to a height in which the client's feet can touch the floor comfortably.
- g. Instruct client to place feet flat on the floor.
- h. Ensure the client is oriented and stable before assisting to stand.
- i. Keep one hand on the client's elbow and the other behind the client's back when standing.



#### Practical tips

- Be sure to have supplies ready. Do not leave client on the edge of the bed while you go find slippers or a robe.
- Remember to support limbs and back during procedure.

- **BE OBSERVANT!** It is common for the blood pressure to drop when going from a prone to a sitting position, causing light-headedness or dizziness. Watch the client for changes in condition, such as color changes, respiratory changes, and other signs of distress.
- Use good body mechanics when turning a rolling, moving, and standing. Protect your back.
- Encourage the client to help as much as he/she possibly can. This helps maintain independence.

***Don't forget!***

- Don't forget to lower the bed if a mechanical bed is being used.
- Do not pull client by arms, hands, wrists, etc. Support back and knees to prevent injury.
- Do not let the client place his hands or arms around your neck while you assist.



**4. Procedure: Transfer from Wheelchair to Chair**

A move as basic as getting in and out of a chair can be difficult for an individual with a disability. Techniques for assisting an individual with transfers can vary from minimum assist to maximum assist. While procedures can vary for certain kinds of transfers, there are general guidelines that apply when assisting with any transfer.

**Supplies**

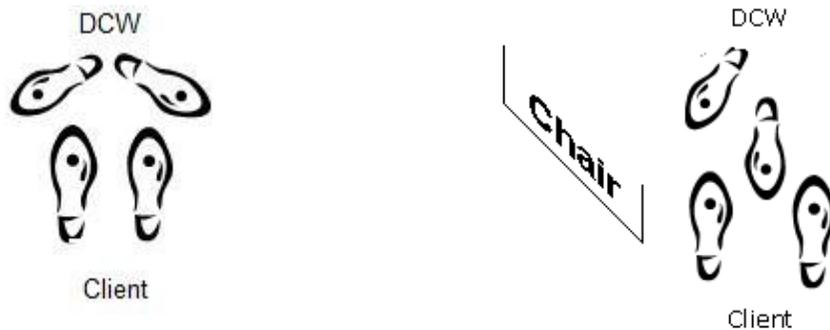
- Wheelchair, chair.
- Gait belt.

**Description of procedure**

*Person is 50% or more weight bearing (moderate assist).*

1. Ensure the client can safely wear a gait belt (refer to Section B.2, Gait Belt).
2. Explain the gait belt procedure to the client.
3. Ask the client's permission to use the gait belt. Explain that the belt is a safety device and will be removed as soon as the transfer is complete.
4. Tell the client what you are going to do.
5. Lock the wheels of wheelchair.
6. Put the footrest in the up position and swing the footrest to the side or remove.
7. Take off the armrest closest to the chair (or drop armrest, if possible).
8. Place chair at a 45-degree angle to the wheelchair.

9. Have the client move to the front of wheelchair seat.
10. Use gait belt secured around client's waist to assist him/her out of the wheelchair
11. Foot placement (depending on the client's disability or preference):
  - Place both of your feet in front of the client's feet with your toes pointed outward.
  - Place one foot slightly in front of the other one. The foot in front will be placed between the client's feet.



12. Have the client either hold onto your shoulders or waist, **not around your neck!**
13. Grasp the gait belt on both sides with fingers under belt.
14. Bend at knees and hips. Using body leverage lift with legs, not back.
15. Assist the client to a standing position, mirroring posture of person.
16. Have the client stand for a minute, shifting weight from one foot to other.
17. Pick up your feet and move them facing the chair as the client takes baby steps to a standing position in front of chair.
18. Ask the client if he/she feels the chair seat on the back of his/her legs.
19. Have the client put his/her hands on the armrests.
20. Assist the client to a seated position, mirroring the client's posture.

**Practical tips**

- The DCW should always wear the proper footwear (closed, non-slip, flat shoe).
- Use smooth fluid motions.
- Don't rush the transfer procedure.

- Don't transfer a person who is too heavy for this type of body transfer. Ask your supervisor for further training.

***Don't forget!***

- Keep body in proper alignment and use proper body mechanics.
- Move feet with the pivot, do not twist.
- Be sure to use the gait belt properly.



**At no time should the client put her or his hands around the DCW's neck during a transfer.**

## 5. Mechanical Lift

A *mechanical lift* is used to transfer a person from a bed to a wheelchair, a wheelchair to a couch, etc., and **not** to transport from one room to another. There are different models. You will probably learn to operate one type of lift in this class. When you work with a client who uses a mechanical lift, be sure to practice using it. If it is a different model, ask for instructions. **Never** operate any device that you have not been trained to use.

### Parts of the mechanical lift

- Spreader bars.
- Steering handles.
- Caster wheels.
- Hydraulic sleeve.
- Boom.
- Cradle.
- Valve or Pin stop.
- Sling types:
  - Canvas/mesh.
  - One piece.
  - Commode cut out.
  - Split or U shape.



**There are many different lifts and slings. Be sure to get instructions before using *any* lift.**



### **Procedure: Use of Mechanical Lift**

- a. Examine the mechanical lift to make sure the lift is in proper working condition.
- b. Tell the person step-by-step what is going to be done.
- c. Have the bed flat when transferring a person.
- d. Roll the person onto his/her side, away from you, and place the smooth side of the sling touching the person. Then roll the person back toward you onto his/her back. The sling is now under the person. Be sure to use correct body mechanics when rolling the person.
- e. Move the lift into position. Use the spreader bar handle to open the spreader bars to give a wider base of support when rolling the lift with the person in the sling.
- f. If using a sling with chains, insert chain hooks from inside the sling to outside so the hooks will not scratch the person.
- g. If using a sling with color coded straps, attach to cradle so that strap color used is the same on each side of the cradle, e.g., purple on each side.
- h. Secure the person's arms inside the sling. If the person cannot do this alone, this can be done by rolling the bottom of the person's T-shirt over the person's arm or using a hand towel wrapped around the person's arm like a muff.
- i. Pump the handle until person is raised just free of the bed. Rotate the client to face the hydraulic sleeve with feet straddling the sleeve.
- j. Use the steering handle to pull the lift from the bed and maneuver to a chair or wheelchair. Slowly release the valve and lower the person while putting your hand on the person's knee and gently move the person so the person is touching the back of the chair. This step will help the client to have correct placement in the chair.
- k. Check to see if the person is positioned correctly in the chair. Unhook the chains or straps and move the lift out of the way. Leave the sling under the person unless directed differently.



**Transition from Body Transfer to Hoyer Lift**

*I have been providing care to my Mom for the last twelve years. I love my Mom and I want to be there for her as she was always there for me. Mom is in her mid eighties and she is still spry and takes a lot of pride to be independent. Mom at first only needed some assistance in getting up. Then, she needed to use a walker. She was able to maneuver around pretty good. As time went by, Mom needed to use a wheel chair. I never really noticed the additional hands-on I was doing. As time went on, my body started to feel the aches and pains from the transfers. I talked to my supervisor and she set up a home visit. We both agreed that having a Hoyer Lift would keep me from further stress on my body and also keep my Mom safe in doing transfers. I have to say the first time I thought about using a Hoyer Lift, I felt it was quite intimidating. Both my Mom and I experienced some grieving going on because it was another challenge we needed to face. My Mom's physical independence was slowly being taken away. Both Mom and I talked about our feelings on this transition. I am blessed that my Mom understands the importance of me taking care of myself. She understood what would happen to us if I injured myself. We are a team, and a team we will continue to be.*



**6. Transfer or Slide Board**

A *transfer board*, or slide board, is made out of plastic or wood and can be used to transfer from surfaces equal in height such as from a wheelchair to a commode or a car seat. It is particularly useful for individuals who are unable to stand but have upper extremity strength. There are many types of transfer boards. The one to use will depend on the person's weight and functional ability.



To use, the person will shift his/her weight to one side and the person or the DCW will place one end of the board under the person's hip and thigh. The other end is placed on the surface being transferred to. The person will pull himself/herself over the board until situated on the other surface. Then the person shifts his/her weight again and the board can be pulled out.

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## C. AMBULATION (WALKING)

*Ambulation* simply means to walk or move from one place to another. Every client will be different in his or her level of need for assistance, and it will differ in how you help each one. We have heard the old saying that there are no two people alike. There are also no two disabilities that are alike. The question becomes how do we do this when the individual we are assisting cannot do it on his/her own?

There are several benefits to ambulation, some of which include:

- Relieves stress and anxiety.
- Improves and/or maintains muscle strength.
- Improves circulation.
- Decreases problems with digestion and elimination.
- Improves appetite.



### Procedure: Assistance with Ambulation

#### Supplies

- Gait belt and/or other walking aids, like a cane or a walker.
- Non-slip, properly fitting footwear.

#### Description of procedure

1. Before you begin, familiarize yourself with the expectations and requirements of the service plan. Contact your supervisor if you need clarification.
2. Ensure the client can safely wear a gait belt. See Section B.2, Gait Belt for procedure and contraindications.
3. Communicate procedure to client before you begin.
4. Apply non-skid, properly fitting footwear.
5. Have the client's walking aid available, if required.
6. Apply gait belt (see Section B.2, Gait Belt).
7. Make sure that the client has his/her feet firmly on the floor.
8. Use an underhand grasp on the gait belt for greater safety.
9. Assist client to a standing position as described in previous skills.



10. Walk behind and to one side of the client during ambulation. Hold on to the belt from directly behind him. Be aware to support weaker side, if applicable.
  - Right side: Stand between the 4 and 5 o'clock positions.
  - Left side: Stand between the 7 and 8 o'clock positions.
11. Let the client set the pace. Walk in step with the client, maintaining a firm grasp on gait belt.
12. Watch for signs of fatigue.



### **Ambulation with a cane**

The handle of the cane should be at a height that would be equivalent to where the client's wrist of his strong hand would fall if his/her hand was placed at his/her side when standing in an upright position. The client should be using the cane on his/her strong side, and the DCW should be walking on the client's weak side for assistance.

### **Ambulation with a walker**

The correct walker height is determined the same way as was listed for a cane. When assisting a client with ambulation when using a walker, it is important that the client stay inside the frame of the walker. Make sure it has been properly fitted for the individual. The DCW should always walk on the client's weak side to provide additional support as needed.



**Note:** In the instance a client does collapse or loses his/her footing, it is acceptable to ease the person gently to the floor. The DCW should not try to carry the person, hold him up or catch him if he starts to fall.

### **Practical tips**

- Communicate expectations with the client at all times.
- Encourage the client to assist as much as possible.
- Be aware of, and remove, tripping hazards: electrical cords, throw rugs, clutter, etc.
- Make sure that you are standing on the person's weak side, if applicable.
- Be observant. The client may tire easily and can only handle short walks.
- Ensure assistive devices fit properly. Notify your supervisor with concerns.
- The tips on the canes wear out over time and it may be necessary to replace them periodically.
- Don't rush the client to meet your schedule.

***Don't forget!***

- Keep a firm grasp on gait belt **at all times**.
- Don't assume that once the client is up and moving, he/she will continue to be stable. Always be prepared for a fall.

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## **D. TURNING AND POSITIONING**

Some individuals spend many hours in bed or in a chair or wheelchair. Some people can shift or turn on their own, but others will need assistance. The DCW is responsible for reminding the individual to change position regularly and to provide assistance when needed. This will help prevent skin breakdown and muscle stiffness. Some people may need assistance with repositioning or exercises to prevent contractures. After turning or after a transfer, it is important to ensure proper positioning for the individual.

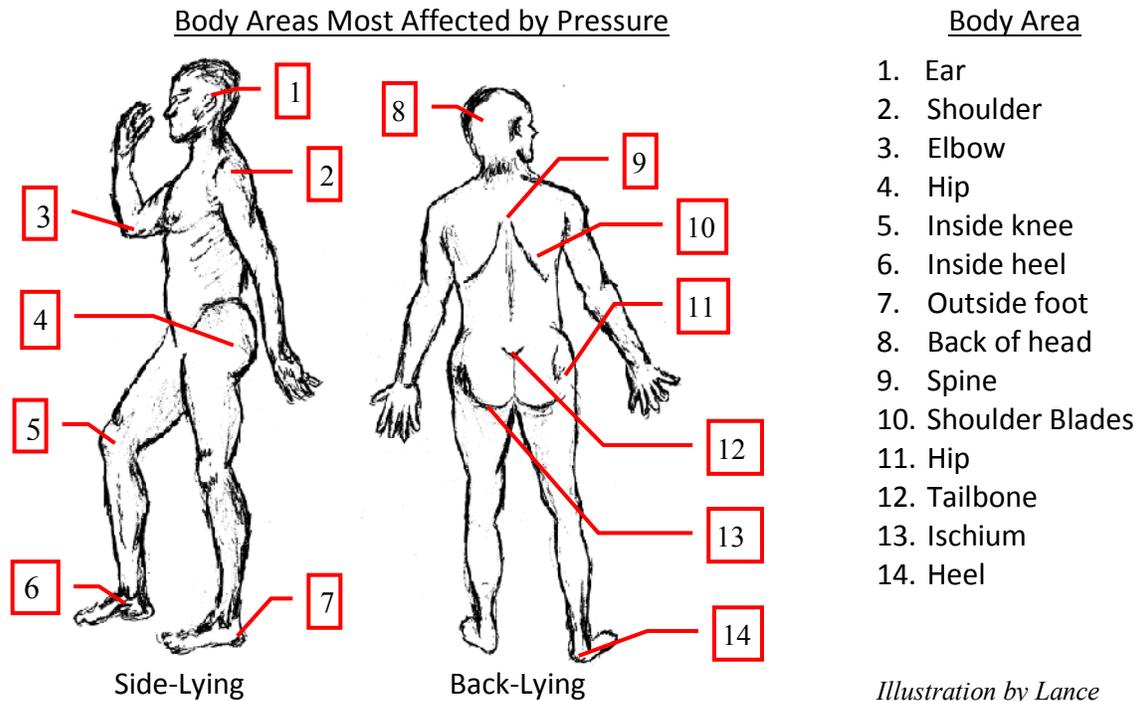
### **1. Preventing Pressure Ulcers**

A person sitting a long time may slide down in the chair. The DCW needs to assist the individual with repositioning. If the person is sitting in a wheelchair, make sure the wheels are locked before repositioning the individual. Even with a good sitting position, the person should be encouraged to shift weight frequently. This will help prevent soreness and pressure ulcers on the skin. Also encourage the use of pressure relieving cushions made specifically for wheelchairs (no pillows or plastic donuts).

When a person remains in bed for a long time, it is also important to turn and shift weight. Some individuals just need to be reminded; others need assistance. The person can alternate positions from being on the back (supine) to the side (lateral) or face down (prone).

A client who cannot change positions on his/her own must have the **DCW change his/her position** in bed **at least every two hours**.

For further information, see Section B, Skin Care, under Chapter 4, Personal Care in this course training manual.



## 2. Preventing Contractures

A contracture is a stiffening of a muscle due to immobilization. Following a stroke or other injury, muscles can remain inactive for long periods of time. During this period of time, the muscle atrophies (gets smaller and shorter), sometimes to the point that it can no longer be used. Contractures can form in the hands, fingers, arms, hips, knees and calves, as well as other areas of the body.

When a person with a disability is sitting, make sure he/she is sitting upright to prevent contractures from forming in the chest muscles and the front of the shoulders. Make sure that both feet are flat on the floor, and encourage the person to keep palms open and down in a relaxed manner, possibly against a table or armrest. This will prevent contractures from developing in the hand. For example, after a brain injury putting a rolled washcloth in the person's hand may help prevent hand contractures, and will also help with hygiene tasks.

Once a contracture has developed, it can be difficult and painful to treat. It severely restricts a person's movement and independence. DCWs can help prevent contractures through proper positioning, exercise and equipment.

## 3. Positioning In Bed

Proper alignment of a client while in bed can be essential to the client's comfort and proper rest. The DCW must conscientiously assist in maintaining good body alignment, proactively address pressure points, and be alert to supporting the natural curves of

the body. These curves need to be supported to prevent undesired pressure that may lead to uncomfortable areas or pressure ulcers.

Proper positioning:

- Helps the client feel more comfortable.
- Relieves strain.
- Helps the body function more efficiently.
- Prevents complications with skin breakdown and pressure ulcers.



## **Procedure: Positioning in Bed**

### **Supplies**

Blankets, pillows of assorted sizes.

### **Description of procedure**

1. Provide for client's privacy.
2. Communicate expectation/procedure to client (how is the client most comfortable, are there any pressure concerns, ask about personal preferences).
3. Raise bed to comfortable position, lower side rail (if mechanical bed is available).
4. Roll client to a new preferred comfortable position (support upper torso and head).
  - Supine: flat on the back.
  - Fowler's: on the back with head raised slightly.
  - Lateral: on either side (but not resting directly on hip).
  - Prone: on the stomach.
5. Place pillows or soft rolled towels under such areas as:
  - The client's head, shoulders, the small of the back.
  - The arms and elbows.
  - The client's thighs (tucked under to prevent external hip rotation).
  - The ankles, calves and knees, to raise the heels off the bed. Do not just raise the ankles without supporting the knees and calves.
6. The knees may be flexed and supported with a small pillow or blanket roll.
7. A small pillow or roll may be added at the feet to prevent foot drop.

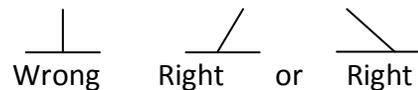
## Positioning in Bed



Supine Position, on the back, with pillows used for support; heels off the bed. Note pillow under head is placed under shoulders, and under ankles, calves and knees.



Lateral Position, on the side, with pillows used for support-- person should not be placed at 90 degree angle (hip to bed) but rather slightly side lying either to front or to back



### 4. Positioning in Wheelchair or Chair

When a person with a disability is sitting in a wheelchair or chair, make sure she/he is sitting upright to prevent the risk of contractures and pressure ulcers. A proper sitting position places the person in good, comfortable alignment. Good alignment involves head, shoulders, and hips squarely over the axle of the wheel.

**Try this before doing the procedure:** Slouch in a chair. Then try to reposition to the back of the chair without using hands. You will find yourself automatically rolling back and forth, shifting one leg, then the other. This motion of backing up in a chair (first one side, then the other) is used in this technique of repositioning.



#### Procedure: Positioning in Wheelchair/Chair

##### Description of procedure

1. Explain to the client what steps you are going to do to reposition him/her.
2. Have wheelchair locked with caster wheels in forward position This can be accomplished by moving the wheelchair backwards. The front caster wheels swivel forward, which gives the wheelchair a better base of support.
3. Swing foot rest to side, or remove if possible.



*Incorrect*                      *Correct*  
**Position for Front Wheels**

4. Stand in front of the person with the left leg of the person between your legs.
5. Have the client lean forward with the person putting his/her head above *your* left hip. This places most of the person's weight on his/her right buttock side. Your left arm should come across the person's back to provide stability.
6. Place your right arm under the thigh of the person's left leg while placing slight pressure against the person's left knee with your knee. It is best to use the wide area above your knee to press against the client's knee.
7. With a fluid motion, use your entire body to gently push the person toward the back part of the wheelchair.
8. Let the client sit up and then repeat the same procedure for the person's other side.
9. You might need to do this several times (both left side and right side) for the correct alignment of the client in the wheelchair.



#### **Practical tips**

- Always explain to the person what is being done.
- Make sure wheels are locked.
- Make sure the person's weight is on the side *opposite* the side that is to be re-positioned.
- Use your entire body when positioning.

#### ***Don't forget!***

- Always use proper body mechanics. Poor body mechanics can injure both you and the client.
- Do not rush the procedure. You may need to do this procedure a couple of times to get the client all the way back in the chair.
- DO NOT lift client over the back of the handles of the wheelchair.

**Note:** If doing this procedure with someone in a chair, make sure the back of the chair is secured so that the chair does not move when repositioning the client. Then follow steps 4 through 8 above.

## 5. Range of Motion (ROM) Exercises

Range of motion exercises are the best defense against the formation of contractures. A physical therapist, home health nurse or other health care professional should recommend helpful ROM exercises for an individual with disabilities to do at home. These exercises will concentrate on the joints. Each motion should be repeated, slowly and gently, and never beyond the point of pain. **Never exercise a joint that is swollen or red.**

Some individuals will be able to do ROM exercises independently with nothing more than encouragement and direction. Some will need assistance, possibly helping them to lift, stretch and move limbs and joints, or being physically cued on how to perform the exercise. Others who are very limited physically may be dependent on the DCW to actually move them through the exercises. Regardless of how much assistance is required, the person will benefit from the movement by allowing them to maintain more range of motion.

- *Active* ROM exercises are done by the person.
- *Passive* ROM exercises are done by the caregiver.



**Refer to the service plan or ask your supervisor for instructions before assisting with any exercises.**

This website from the University of Washington School of Medicine has additional information about range of motion exercises:

[http://www.orthop.washington.edu/uw/livingwith/tabID\\_3376/ItemID\\_83/PageID\\_87/Articles/Default.aspx](http://www.orthop.washington.edu/uw/livingwith/tabID_3376/ItemID_83/PageID_87/Articles/Default.aspx)

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## E. ASSISTIVE DEVICES

### 1. Canes

As people grow older, important daily activities like walking, dressing, bathing, and eating may become increasingly difficult to manage. Many older people depend on assistive devices to help carry out these activities.

In choosing a cane, metal is preferred over a wooden cane since wood can splinter or crack. The handle of the cane should be as high as the wrist of the hand opposite the person's weak side. While standing and holding the handle of the cane, the elbow should be at a 20 to 30 degree angle. The quad cane, so named because it has four feet, adds more stability to a cane to help the user maintain balance and equilibrium while walking. Tips on the end of cane legs provide traction and absorb shock, thereby cushioning the hand. A convenient option is a wrist strap attached to the handle of a cane allowing the hand to be free without having to set down the cane. It also prevents a person from dropping the cane.

#### **Important considerations for effective cane use**

- A person should not use a cane on stairs without using a handrail or the support of another person on the opposite side. Most quad canes and other wide base canes are not safe for use on stairs.
- Because they slip easily, a person should not, in general, use canes on snowy or icy surfaces. However, metal or rubber tips that grip the ice may give more protection against slipping and falling.
- Make sure the cane tips are not worn down. Replacement cane tips are readily available in larger drug stores.

### 2. Walkers

Walkers rank second behind canes in amount of users, numbering almost two million people in the U.S. Since their introduction over two hundred years ago, walkers have changed greatly. Able to support up to 50% of a person's weight, walkers are more stable than canes. Walkers are helpful for people with arthritis, weak knees or ankles, or balance problems.

The most basic walker design, the standard walker, is the type most often used in therapy. To operate, a person lifts the walker, moves it forward, and puts it back down with each step. Because they require lifting, extended use may cause strain on the wrists, shoulders, and arms.

#### **Important considerations for effective walker use**

- A professional, such as a physician or physical therapist, should help choose or prescribe a walker, and then demonstrate how to walk correctly with it.

- Walker height is best when the arm bends at the elbow in a 20 to 30 degree angle. This is achieved by having the top of the handle of the walker at the same height as the bend of the person’s wrist.
- To prevent tripping or falling, the person should:
  - Always look ahead, not at the feet.
  - Walk inside the walker. Avoid pushing the walker too far ahead, as if it were a shopping cart.
  - Use walkers only in well-lit areas. Cluttered and crowded areas, throw rugs, and wires running across the floor should be avoided.
  - Wear appropriate footwear. Properly fitting shoes with rubber soles are best. Loose fitting footwear such as slippers, or slippery-soled shoes should be avoided.
  - Avoid using the walker on stairs.

Small rooms, such as bathrooms, may prevent safe walker use. One solution is to install grab bars. If using a wheeled walker, a person may also reverse the wheels so that the wheels are on the inside of the walker, thereby saving 2-3 inches of space. If getting through a narrow doorway is an issue, the person might install swing-away or expandable door hinges that swing the bathroom door out of the doorway.

### Types of Walkers



A. Standard



B. Wheeled



C. Rolling

Unlike the standard walker (image A above), the user merely pushes the two-wheeled walker (B) forward. No lifting is necessary, so the walking style is more natural. Some have auto-glide features that allow the rear legs to skim the surface. Another option may be to insert tennis balls on the bottom of the legs to allow them to glide easier.

Three or four-wheeled rolling walkers (C) require less energy and strength to use. Gliding over carpets and thresholds is easier, and they may provide better performance in turning. Three and four-wheeled walkers often have hand brakes. Wheel size and walker weight vary greatly in different models of wheeled walkers. All are heavier than standard walkers. Because many wheeled walkers do not fold, they may be more difficult to transport. They move easily in all directions, so caution must be used to not let the walker inadvertently roll away while trying to sit on the bench seat. Make sure the person is instructed to set the hand brake before sitting down.

### 3. Wheelchairs

Today, more older Americans use wheelchairs than any other age group. Unfortunately, many people are not aware of the wide variety of wheelchairs to fit different needs and only know about the standard, heavy-duty wheelchair. Many people pick up wheelchairs from garage sales, or receive them as gifts from well-meaning friends. This may result in a poor fit between the user and the wheelchair, which can cause skin problems. It is important to consult with an expert before selecting a wheelchair. People often use wheelchairs for extended periods a day, so it is important that the wheelchair be comfortable.



The most frequently prescribed wheelchair is the standard wheelchair. Standard chairs are heavy, usually weighing over forty pounds. People who need to transport or store their wheelchairs might prefer lightweight wheelchairs. These lightweight chairs are much lighter than the typical standard chair and require less strength and energy to move.

Power or electric wheelchairs are powered by batteries and require much less physical strength to move than standard (manual) chairs. They provide independence for people who are unable to propel themselves in manual chairs. Since these wheelchairs have to carry heavy batteries and power systems, the frames are generally sturdier than manual chair frames. Because of the extra equipment, power chairs may be a bit wider, are very heavy and do not fold. Most power chairs will require a van with a special lift for transportation. The wheelchair supplier should explain how and when to charge the batteries. With regular use, a battery should last a minimum of one year before replacement may be necessary. Wheelchair batteries differ from car batteries, and should be bought only from a wheelchair supplier.

Scooters are also powered by batteries and resemble a horizontal platform with three wheels and a chair. Scooters are useful for people who can walk short distances but need help for long distances. Some scooters can be taken apart easily for transportation in the trunk of a vehicle.

#### **Wheelchair accessories**

Check with companies that sell wheelchairs for these and other accessories.

- Safety flags are available to make the person and the person's wheelchair more visible to drivers, should it be used while crossing streets.
- Lights can also be added for extra safety, especially for night use.
- Bumpers, footrest pads, and sun canopies are also available.