

BODY MECHANICS

Health care workers perform a variety of movements during the course of the day - standing, sitting, reaching, bending, turning, lifting, pushing and pulling. If done with proper body alignment and movement, your work will be easier. You will reduce the chance of injury to your patient and yourself and will present a more professional appearance as you work.

A. BODY ALIGNMENT

Maintaining good posture through proper body alignment does more than help make an individual look good. It allows you to maintain balance and reduces muscle strain by distributing the total body weight around a central point called the *center of gravity*. A weight-bearing line, called the *line of gravity* passes through the ear, the shoulder, the hip and the ankle. If each of these points is in alignment, the body parts are in balance and can work most efficiently because the minimum amount of work is required of the muscles.

B. GUIDELINES FOR BODY MECHANICS: Providing health care requires physical activity. To eliminate unnecessary strain the following general guidelines should be observed:

- ◆ Maintain alignment and balance.
 - Start from a good base of support to provide stability.
 - Avoid twisting your back by keeping your feet pointed in the same direction as you move.
 - Prevent straining of the back muscles by keeping your trunk in good alignment.
- ◆ Work at a comfortable height.
 - The most comfortable height for most people is between the waist level and a level about 6 inches below the hip joint.
 - Working at too low a level causes strain on muscles and produces fatigue.
 - Working at too high a surface adds to the demand on arms and shoulders, producing muscle strain and fatigue.
- ◆ Keep the work close to your body.
 - Reduce strain and fatigue by working close enough to your body to avoid stretching or reaching.
 - Carry objects with their line of gravity within your base of support.
- ◆ Use smooth, coordinated movements.
 - Smooth, coordinated movements can avoid discomfort, pain or injury to the body.

C. STANDING: To maintain good posture and balance when standing:

- ◆ Place your feet in a parallel position about 6-8 inches apart directly under your shoulders.
- ◆ Distribute your weight evenly on both feet.
- ◆ Keep knees slightly bent.
- ◆ Keep the abdomen up and in.
- ◆ Keep the head erect.

Making sure the head, shoulders and feet are in a straight line helps balance the segments of the body so that no one portion bears more weight and stress than necessary. Keeping the knees slightly bent creates a shock-absorber effect and prevents jolting movements of the entire body. Contracting and lifting the abdominal muscles tightens the "girdle" which helps to support the abdominal organs and reduce back strain.

D. SITTING

To ensure correct alignment of the body when sitting, begin by standing directly in front of the chair with one leg touching the front of the chair and other leg slightly forward. As you lower your body into the chair, bend the knees and hips keeping the upper body erect. If the chair seat is deep, slide back to a comfortable position. To avoid strain when getting up from a seated position, reverse the order and stand. If it is necessary to be seated for long periods of time, choose a chair with good lumbar support. Shift positions often to prevent back fatigue.

E. REACHING: To the extent possible, arrange items needed during the course of your work so the need to reach will be reduced. If an item is above your comfortable reach:

Position a footstool to enable you to reach in front of you for the object instead of directly overhead.

- ◆ Stand on the footstool with your feet spread apart.
- ◆ Advance one foot slightly forward in the direction of the reach.
- ◆ Stabilize your body by tightening your muscles.
- ◆ Lower the object with smooth, coordinated movements.
- ◆ Avoid twisting as you reach for and lower the object and as you step down from the stool.

If, when seated, it is necessary to reach downward to pick up an object:

- ◆ Turn your entire body in the direction of the reach.
- ◆ Keep your back in a balanced position.
- ◆ Support your upper body with one hand placed on your thigh or the chair arm as you reach.

F. BENDING: Emptying containers, retrieving dropped items and cleaning up spills require bending. To avoid unnecessary strain:

- ◆ Place your feet apart with one foot advanced.
- ◆ Lower your body by flexing hip and knee joints and keeping your upright position.
- ◆ Shift your body weight forward so that it rests on the advanced foot and on the ball of the rear foot.
- ◆ Raise your body to standing position by extending the hip and knee joints while keeping your body aligned and balanced.

G. OTHER BODY MOVEMENTS: Guidelines for safely carrying out other body movements include:

Pivot turn:

- ◆ Stand with your feet apart and your knees slightly flexed.
- ◆ Stabilize or set the trunk and pelvic muscles.
- ◆ Stabilize or set the thigh and leg muscles.
- ◆ Pivot or make a rotating turn of about 90 degrees on the balls of your feet, in the direction you wish to turn.

Lifting and carrying objects:

- ◆ Start with the stable base position.
- ◆ Grasp the object firmly on either side of its approximate center of gravity.
- ◆ Set your abdominal muscles and arm muscles, then lift the object and bring it close to your body.
- ◆ Carry the object as close to the midline of the body as possible.
- ◆ Shift the object occasionally during the period that is being held.
- ◆ Put the object down periodically.

Pushing and Pulling:

- ◆ Start with a stable base of support.
- ◆ Stand close to the object to be pushed or pulled.
- ◆ Position feet: place them at least 8 inches apart, with one advanced forward in the direction you are working.
- ◆ "Tighten" the trunk and leg muscles.
- ◆ To push: lean toward the object to be moved.

- ◆ Push or pull by letting your quadriceps do most of the work.

Be sure to practice correct body mechanics during each work day. They allow you to reduce your risk of injury, to look more professional and to feel less fatigued.

H. TRANSFERS

The inabilities and abilities that are identified at the time of assessment will determine the amount and kind of assistance required during a transfer. The patient / client should only be given the assistance that she/he actually needs. The principal guideline for assistance is to provide safety and protection during the transfer. In the case of an especially obese patient, two persons might be required.

Basic concepts for all Transfers after evaluating the situation:

- ◆ Stand as close to the patient as possible. This means standing in front of the patient to assist with a sitting transfer. For standing transfers that require extensive assistance, stand in front of the patient so that you can actually support and protect her. If she needs only minimal assistance in the standing transfer, you may stand at the side, preferably at the weaker side.
- ◆ Stand with a broad base of support. In other words, your feet should be kept apart, with one foot slightly ahead of the other. This will improve your balance and also permit a shift of weight with greater ease.
- ◆ Assist the patient at the waist rather than pulling his arms or shoulders. The use of the belt of the man's pants or a transfer belt allows a good grip without causing the patient pain.
- ◆ Bend your hips and knees, keeping your back straight, while actually assisting the patient to move from one surface to another.
- ◆ Make sure that the patient can see the surface to which he is transferred.
- ◆ Always move your body in the direction in which the transfer is taking place.
- ◆ Make sure the patient is wearing shoes (and a brace if this has been prescribed in order to prevent possible slipping, foot injury or turning an ankle).
- ◆ If the patient is learning to do an independent transfer, it is important that you teach the procedure step by step.

The Bed to Wheelchair Transfer:

- ◆ Evaluate the situation.
- ◆ Position the equipment; lock the wheelchair.
- ◆ Slide patient close to side of bed.
- ◆ Hold patient close.
- ◆ Keep your feet apart, provide stable base.
- ◆ Lift with your legs. Bend your elbows and keep patient close to you.
- ◆ Lift patient to standing position - support patient's knees with your knees.
- ◆ Move your feet, turn patient and lower into chair.

The Bed to Gurney Transfer:

- ◆ Evaluate the situation.
- ◆ Position the equipment; use a turning sheet.
- ◆ Get help if you need it,
- ◆ Lift in unison (counting out loud may help).
- ◆ Avoid sudden, jerky movements.
- ◆ One attendant on each side of bed grasps turning sheet at patient's shoulders and buttocks.
- ◆ Pull turning sheet tight. Move patient across the bed.

I. EQUIPMENT

Always use a Walking Belt or Gait Belt when necessary. Preferred Healthcare offers Gait Belts at no cost to their

employees.

Please contact Preferred Healthcare if you have lost or never received your Gait Belt.