

Chapter 9

Exercise Instructions



GUIDELINES

Exercise or other physical activity, performed under the direction of your physician and physical therapist, can be helpful to you at various stages of ALS. (See Chapter 8 for a discussion of the benefits.)

Whether you're able to carry out these activities on your own, or need the help of a PT or caregiver, their benefits will greatly enhance your everyday life with ALS.

This chapter offers detailed instructions on performing many of the exercises mentioned in Chapter 8. Most of them can be modified according to your endurance and abilities.

Don't be discouraged if some of these exercises aren't possible for you. With the help of your health care team, do those that are within your capability, and you'll see many benefits.

Whether you're biking, walking, swimming, doing range-of-motion, practicing yoga or performing other exercises, follow these precautions:

- Always consult with your health care team about the type and duration of exercise that's best for you.
- Do exercises slowly and smoothly.
- Hold stretching exercises for 5 seconds. Don't bounce.
- Rest briefly before resuming exercises if cramping or pain occurs.
- Repeat each exercise the number of times you can tolerate and find comfortable.
- Rest whenever necessary during exercise to prevent fatigue.
- Seek the advice of a PT about doing exercises properly.
- Wait at least one hour after meals before exercising.
- Exercise shouldn't cause pain. If it does, STOP!
- See page 100 for precautions and signs of dangerous fatigue.

As ALS progresses, you may experience a greater level of fatigue and be unable to continue your usual exercises without feeling exhausted. Accordingly, you'll have to change your exercise program. Even passive range-of-motion (see page 121) can improve your quality of life.

STRETCHING EXERCISES

The following exercises are intended to stretch your muscles or move the joints through their full range-of-motion. A stretching program performed daily may help to modulate muscle tightness.

SPECIAL NOTE: If tightness is present in one of your arms or legs, you'll feel resistance to the movement. Overcome this resistance by continuing slow, steady pressure to the limb. If pain occurs, stop the movement.

You can do the entire stretching exercise program in 20 minutes or less. Hold each stretch for 5 seconds and repeat a few times, up to 10 times.



Posture Check

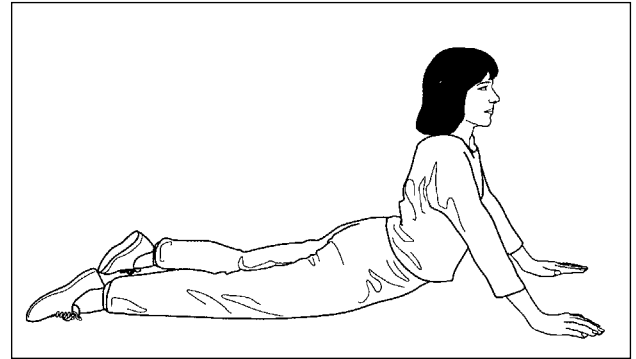
Stand with your back to a wall. Press your heels, buttocks, shoulders and head against the wall. Move the feet forward, and bend your knees so your back slides a few inches down the wall. Tighten your abdominal muscles so you can flatten your lower back against the wall. Relax. Repeat.

Back Exercises



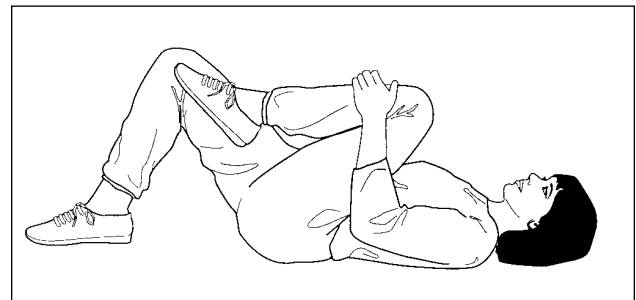
Standing extension

Stand with your hands in the small of your back. Bend backward with knees straight. Hold for 5 seconds. Return to starting position.



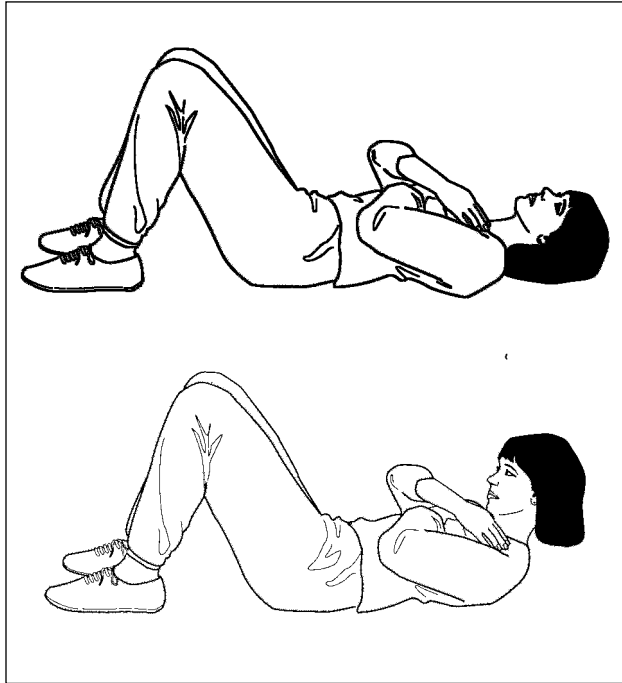
Press-ups

Lie face down, palms at shoulder level. Press the top half of your body up, using your arms. Hold for 5 seconds. Return to starting position.



Single knee to chest

Lie on your back with your knees bent. Grasp your left knee with your hands and pull back toward your left shoulder until you feel a good stretch. Slowly lower the leg back to the floor and repeat the same procedure with the right leg.



Partial sit-up

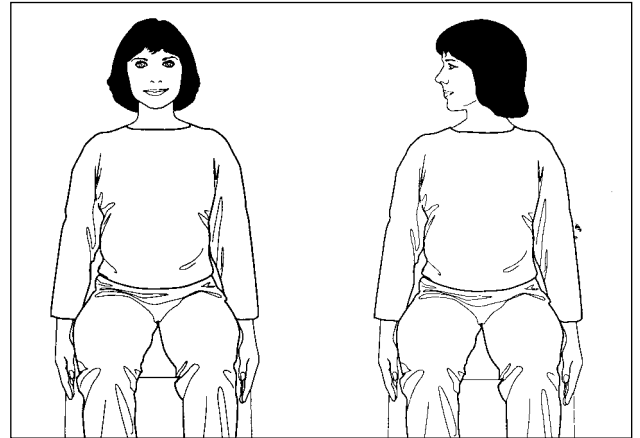
Lie on your back with your knees bent and your arms crossed over your chest. Roll your chin toward your chest and raise your head and shoulders off the floor. Relax.

Neck and Trunk Exercises

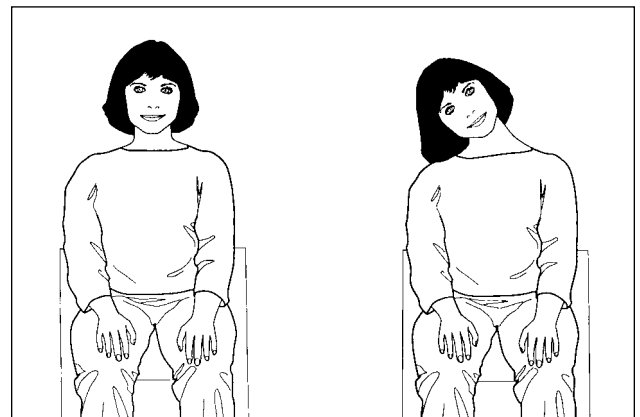
Maintaining an erect sitting posture is important in all areas of function. Weakness of the neck and trunk can affect your posture by decreasing balance and creating uneven tension between muscles. Prolonged poor posture will lead to stiffness and pain. Trunk and neck stretching exercises improve mobility of the spine, thus making posture easier to maintain.

SPECIAL NOTE; Don't do these exercises if your neck weakness is severe; that is, if you have difficulty holding your head up. As always, check with your doctor if you have any concerns.

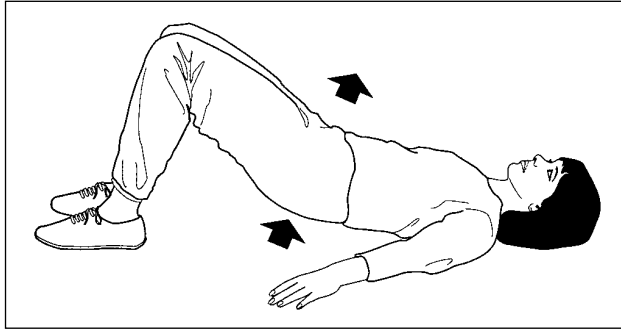
To loosen neck muscles



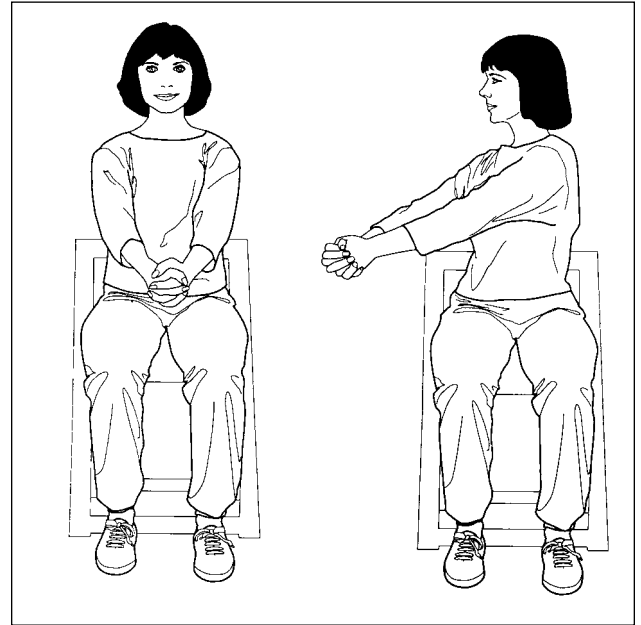
While seated, start with your body erect and your shoulders relaxed. Keep your chin level and turn your head as far as possible to the right, as if you're looking over your shoulder. Slowly rotate to the opposite side. Return to the starting position and relax.



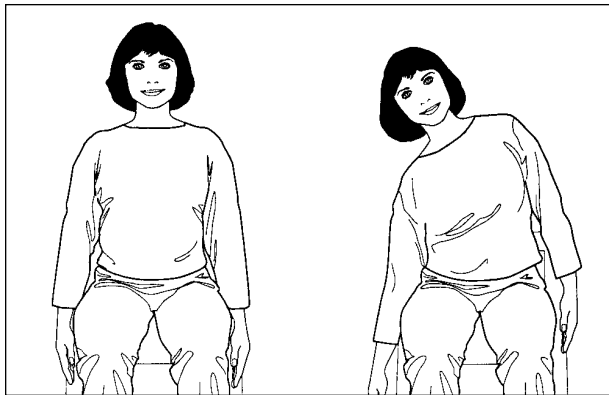
Slowly tilt your head toward the right, guiding your ear toward your shoulder. Hold, and return it to the center. Do the same on the left side.



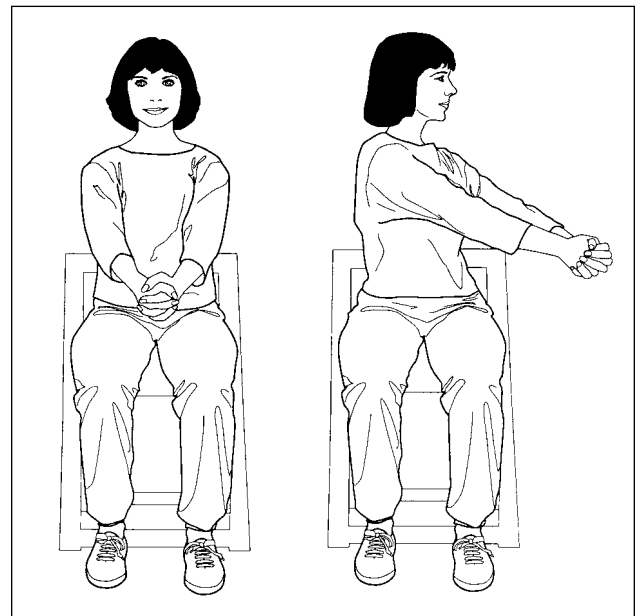
Lie on your back with your knees bent. Extend your hips and back by lifting your buttocks up to form a “bridge” position, while pushing down into the bed or floor with your feet. (If necessary, have someone hold your feet.)



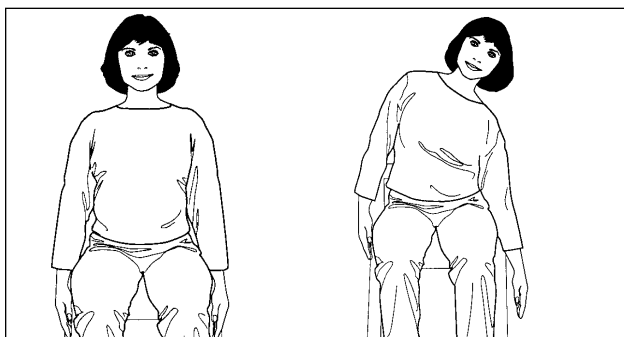
Hold your hands together in front of your abdomen. Turn your head, shoulders and arms toward the right.



While sitting in a chair with your arms hanging loosely, bend to the right.



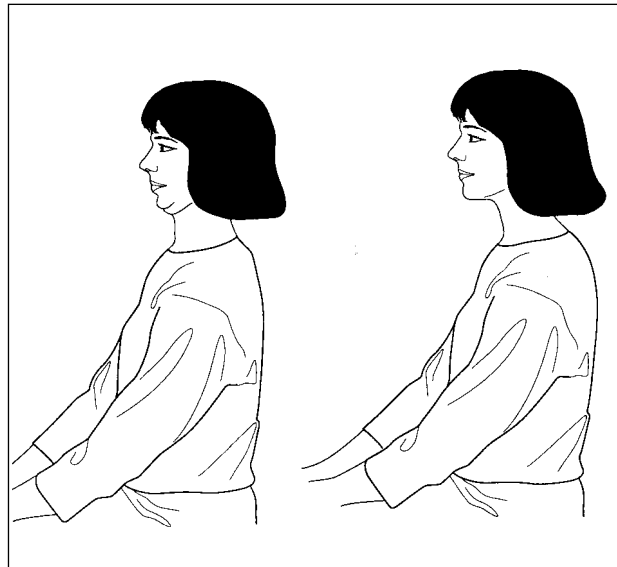
Hold your hands together. Turn your head, shoulders and arms toward the left.



With your arms in a downward position, bend to the left.



Pull your chin down toward your chest. Hold for 5 seconds. Look forward and relax.

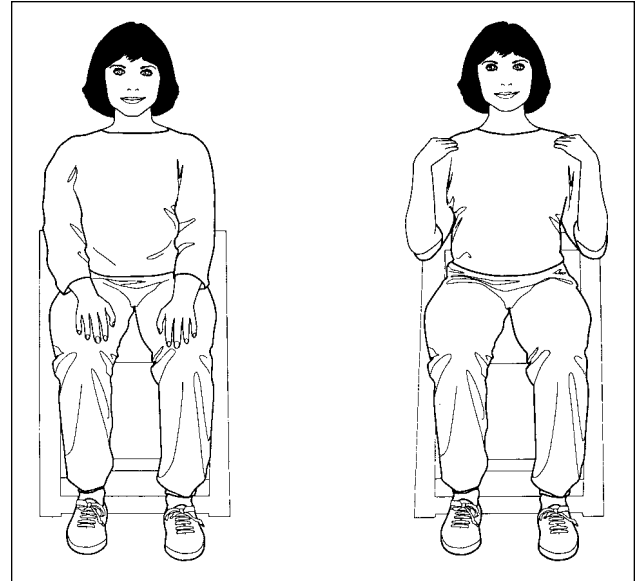


With your head erect, push your chin back as far as possible, making a double chin. You should feel the back of your neck stretching upward. Hold for 5 seconds and relax.

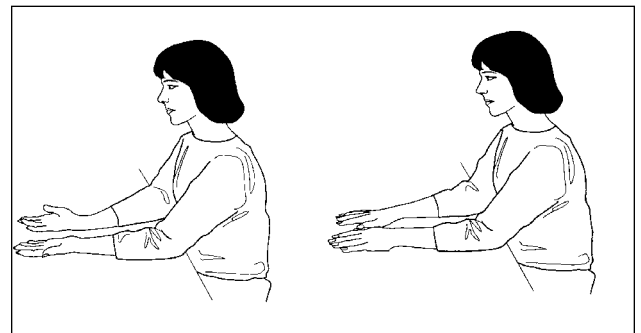
Arm Exercises

Elbow

Muscles that move the elbow are located primarily in the lower two-thirds of the upper arm.



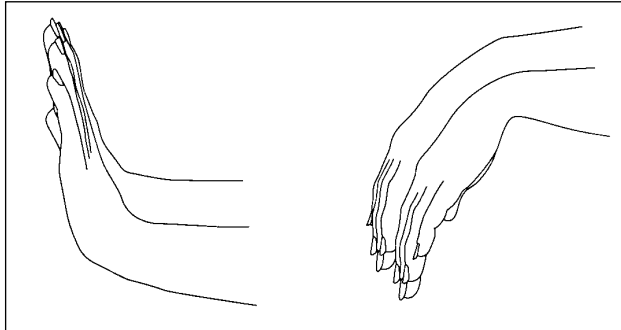
Start with your hands on your knees, bend at the elbows to touch your shoulders. Return your hands to your knees.



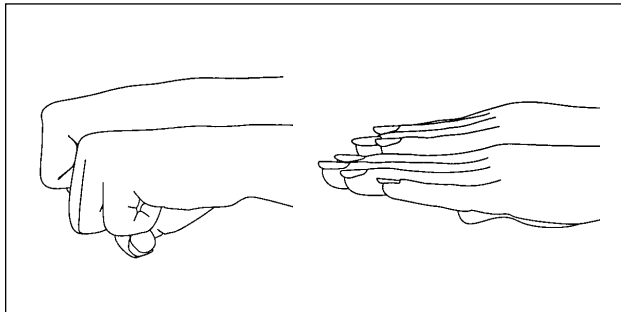
Sit with your elbow and forearm supported on a table. Turn palm up and palm down.

Wrist and Hand

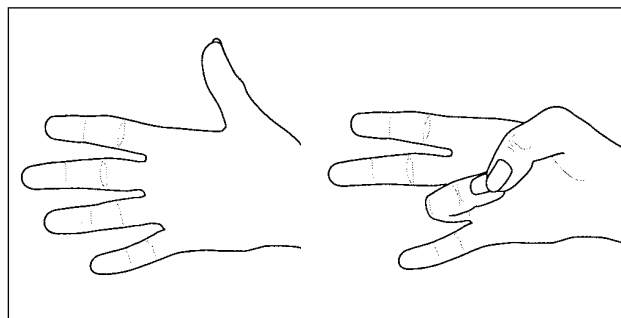
The muscles that control the wrist are located in the forearm while those that control the hand are located in both the forearm and the hand.



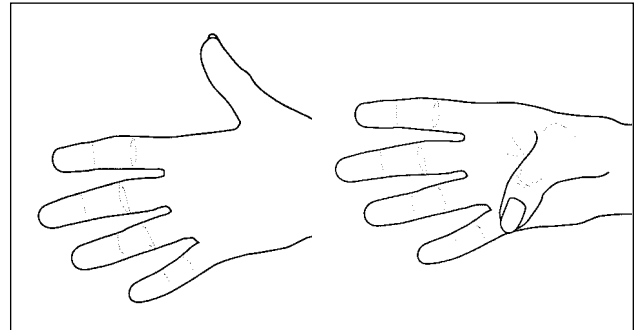
Lift your hands up and down as if waving.



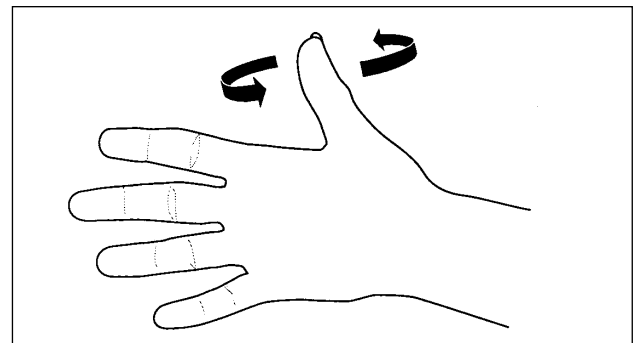
Make a fist and straighten your fingers.



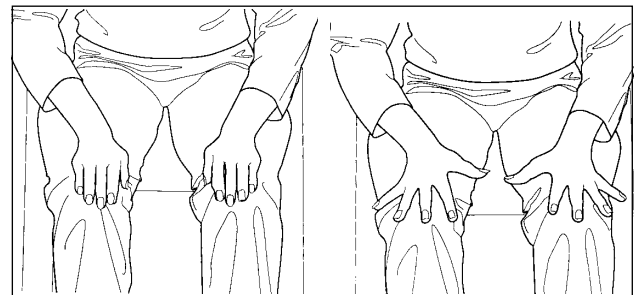
Touch the thumb to the tip of each finger.



Bring your thumb across the palm of the hand to the base of the little finger and straighten.



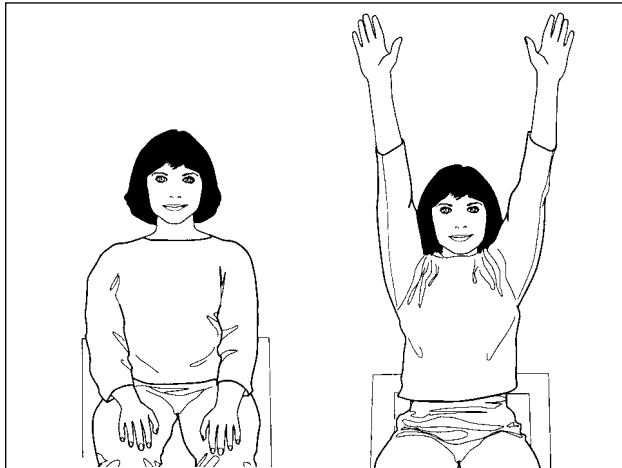
Make circles with your thumb.



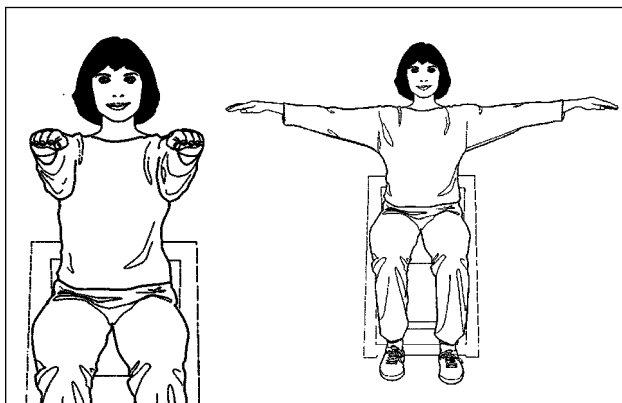
With the palms of your hand flat on your knees, spread the fingers apart, then bring them back together.

Shoulder

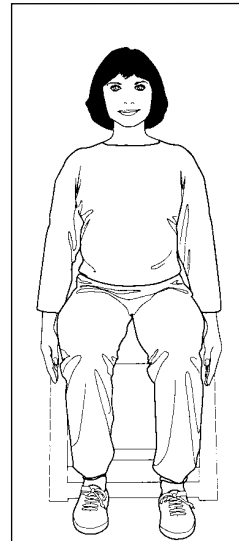
The “shoulder” consists of many muscles that extend from the neck, upper back and chest to the upper arm. Stretching can be achieved with the following simple exercises:



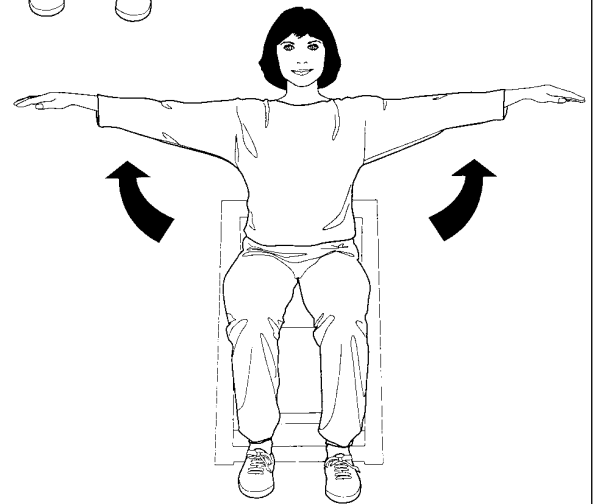
Starting with your hands on your knees and palms down, raise both arms as high as possible over your head.

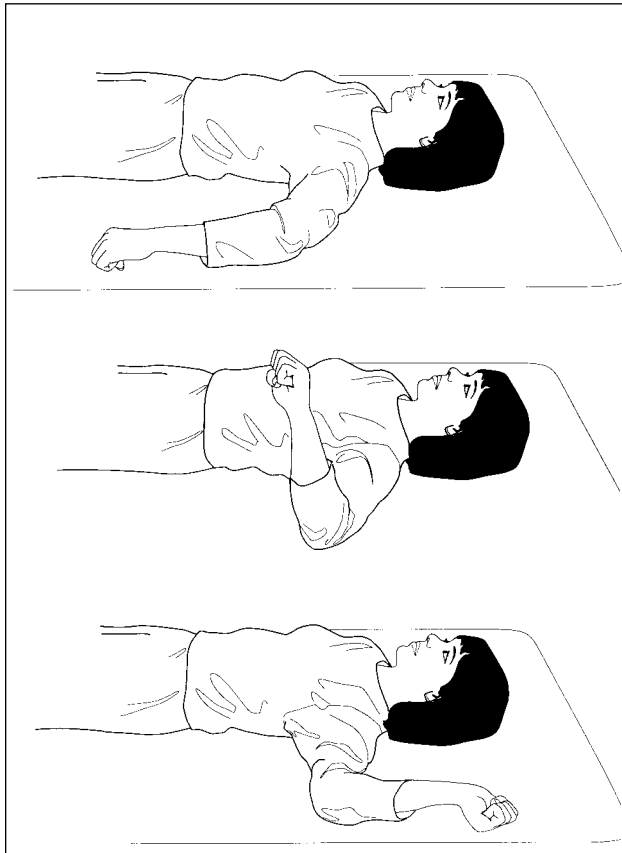


Starting with your arms straight out in front of your body at shoulder height and palms down, move your arms out to your sides. Hold for 5 seconds. Return your arms to the front.



Starting with your arms down at your sides, raise your arms out to the sides with palms down. Bring both arms over your head as high as possible.



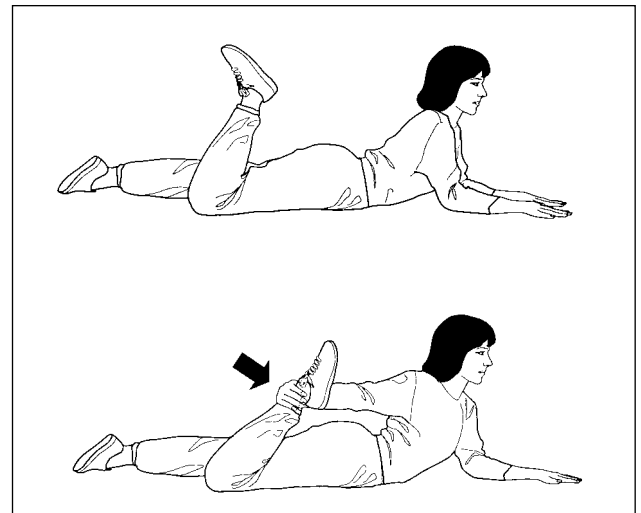


Lie on your back, arm out to your side at shoulder height, elbow bent to 90 degrees, fist pointing toward the ceiling. Bring your hand forward to the bed, palm down. Return to the starting position, then bring your hand backward to the bed, palm up. Do exercise with other arm.

Leg Exercises

Quadriceps

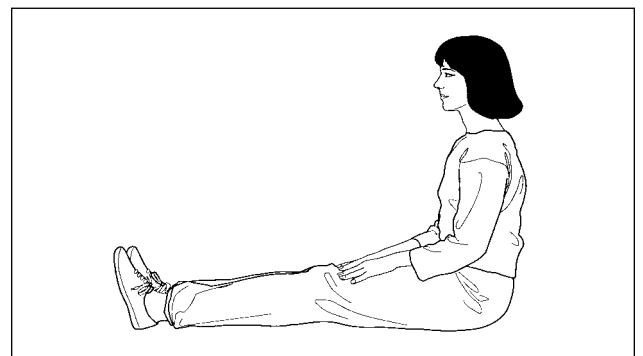
Quadriceps are the muscles in the front of your thighs that are responsible for straightening the knee and bending the hip.

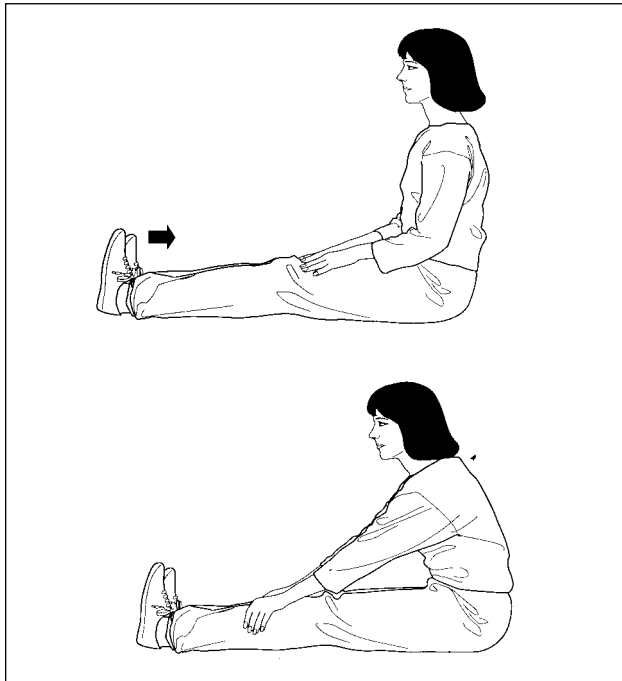


Lie on your stomach and bend your knee. Grasp your ankle with one hand and pull your heel to your buttock. Hold for 5 seconds. Relax. Repeat.

Hamstrings

The hamstrings are the large muscles on the back of the thighs extending from the buttocks to just below the knees. You'll usually feel the pull at the knees and behind the entire thigh.

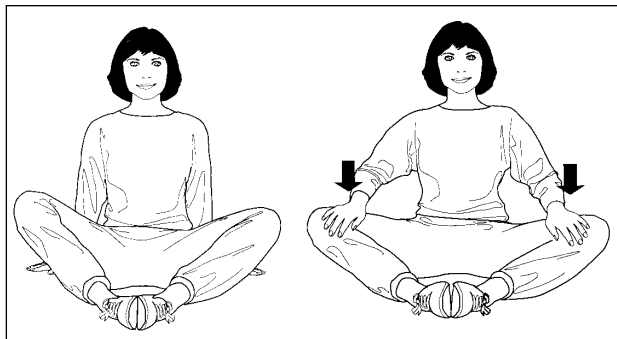




Sit on the floor with your back and legs straight. Pull your toes up. Reach toward your toes and grasp your shins with your hands. Hold for 5 seconds. Relax. Repeat.

Adductors

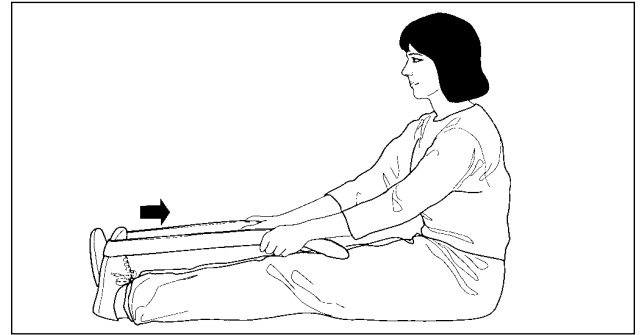
The muscles in the inner thigh that help with walking and pull your leg inward are the adductors.



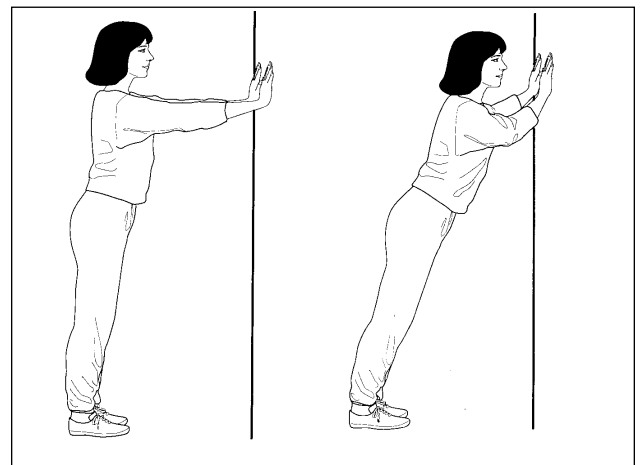
Sit in a modified "Indian style" with the soles of your feet together and pulled toward your body. Push your knees down toward the floor. Hold for 5 seconds. Relax. Repeat.

Heel cord

Also known as the Achilles tendon, the heel cord is the tapered end of the calf muscle, extending from behind your knee to your heel. This muscle is responsible for pointing the foot downward.



Sit on a firm surface with your legs straight. Place a belt or towel around the ball of the foot and pull toward you until you feel a stretch. Hold for 5 seconds. Relax. Repeat.



Stand at arm's length from a wall with your palms flat against the wall. Slowly bend your elbows and lean toward the wall. Keep your back, hips and knees straight and push your heels flat on the floor. Hold for 5 seconds. Relax. Repeat.

RANGE-OF-MOTION EXERCISES

As ALS progresses, it may be impossible for you to do all the stretching exercises. But it's vital that you continue moving all joints through a full range-of-motion, to help prevent pain and deformity.

You may be able to perform these exercises independently for a time and later need assistance. It's important to use assistance only for the portion of exercise that you're unable to perform alone. Active exercises with minor assistance allow you to use as much energy as is comfortable while gaining the benefits of stretching and range-of-motion.

Precautions

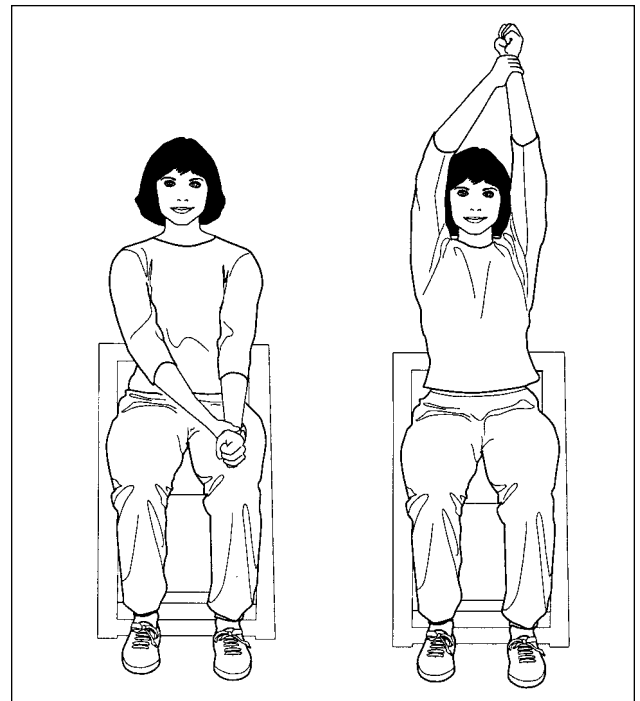
- Never move the limb past the point of resistance or pain, with one exception: the shoulders. See “Spotlight on Shoulders” on page 107 and “Shoulder” on page 118 for guidelines about stiff and painful shoulders.
- Assistance in movement should be gentle and slow.
- The caregiver or therapist should provide adequate support to the limb during movement.
- The parts to be moved should be gently and comfortably grasped as near the joint as possible.
- The motion should be slow and rhythmic and the repetition rate maintained at an even tempo.
- It's important for you to notify the caregiver if you experience pain during exercise.

- If you feel resistance to the movement because of tightness in the limb, you can overcome it by continuing slow, steady pressure to the limb. If pain occurs, stop the movement.

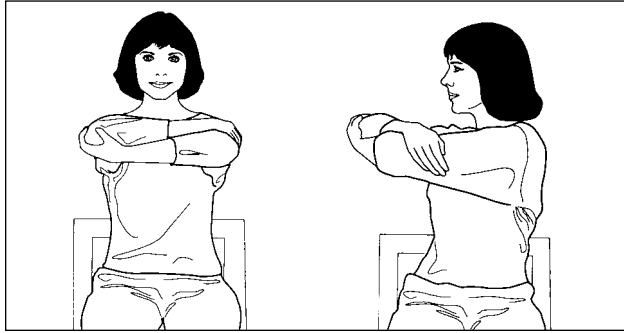
Arm Exercises

You can do these exercises when you have one arm that's significantly stronger than the other. You can perform them in a sitting position or lying on your back.

Shoulder

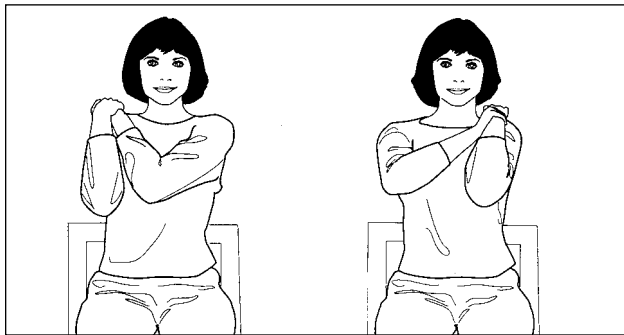


Grasp your weaker wrist with your stronger hand. Raise both arms over your head.



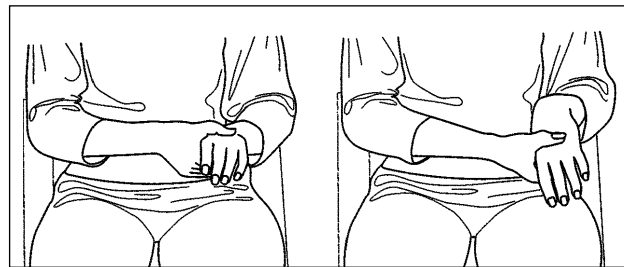
Cradle your weaker arm with your stronger arm, with your stronger hand under your weaker elbow. Raise both arms to chest height. Move your arms from side to side as far as possible.

Elbow

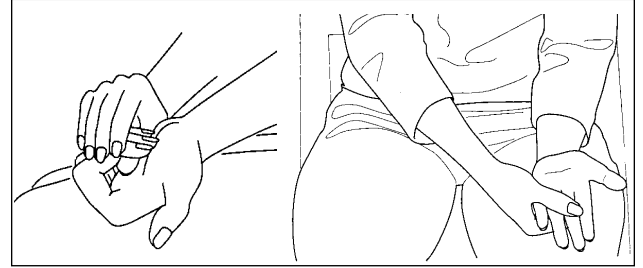


Grasp your weak wrist with your strong hand. Bring your hands to your right shoulder, then back to your knee, then to your left shoulder.

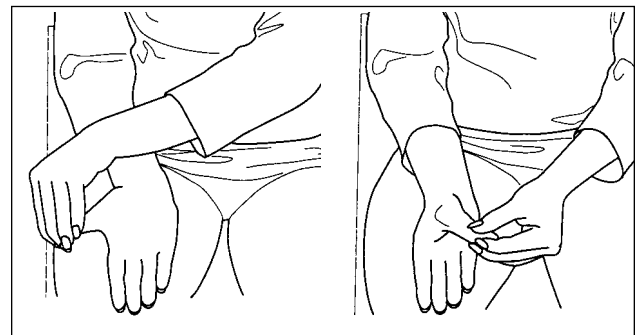
Hand and wrist



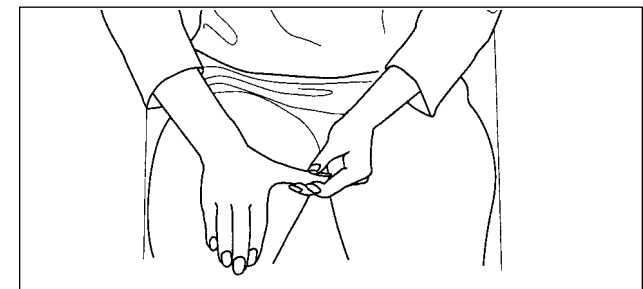
Grasp the palm of your weaker hand with your strong hand. Move your weak hand slowly up and down as if waving.



Sit with the palm of your weaker hand facing upward. Grasp the fingertips with your stronger hand. Bend the fingers inward to touch the palm. Straighten them out fully.



With the palm of your weaker hand facing upward, grasp the tip of the thumb with your stronger hand. Move the tip of your thumb over to the base of the little finger, then straighten it again.



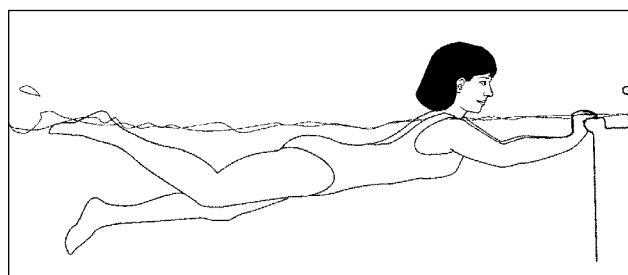
With the palm of the weaker hand facing down, grasp the thumb with the stronger hand and move the thumb out to the side as far as possible. Return to your original position.

SWIMMING & WATER-BASED EXERCISE

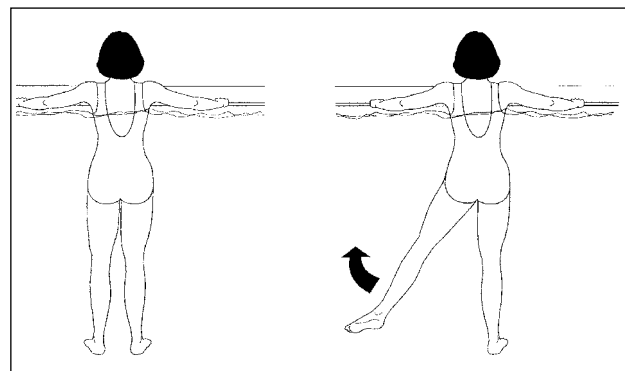
Swimming is an excellent aerobic exercise in the early stages of ALS, with minimal risk of injury to joints, muscles and tendons. Water allows for freedom of movement and reduces the energy required to perform movement.

The water temperature should be warm to reduce the incidence of cramping and premature fatigue.

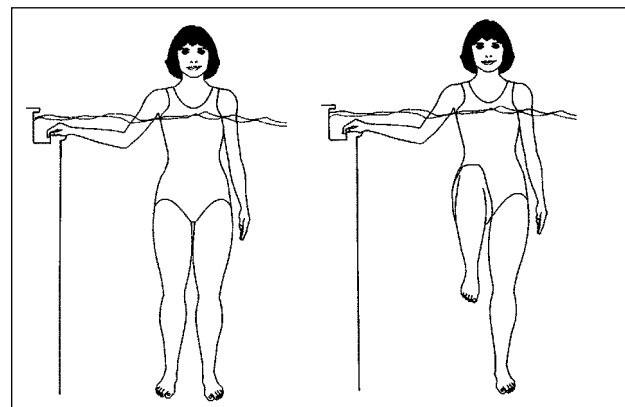
You may do the following active movements even if you can't swim laps. You should perform all of the exercises in the presence of another person for safety. You may need assistance with moving your limbs for some of the exercises.



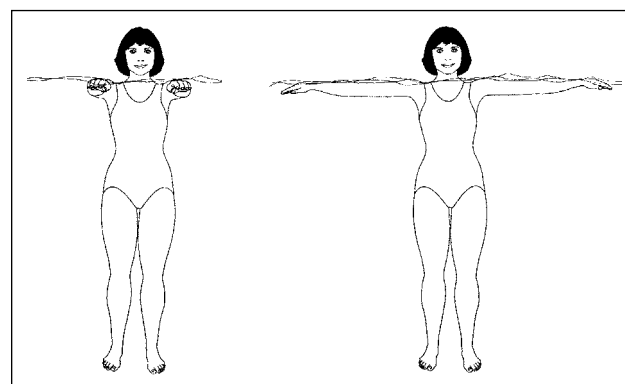
Stand facing the side of the pool. Hold on to the edge with your hands, keeping your elbows straight. Push your legs out behind you and kick up and down with your knees slightly bent.



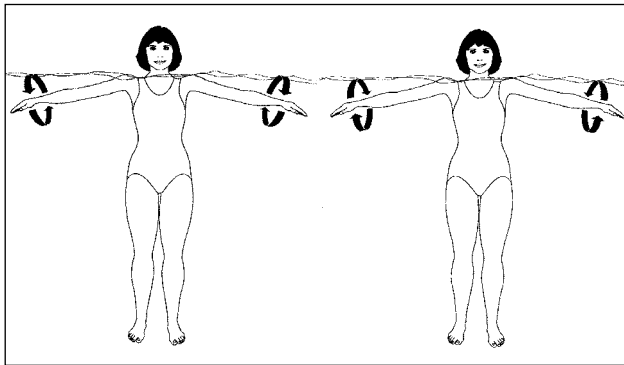
Stand facing the side of the pool. Hold on to the edge with your hands, keeping your back straight. Move one leg at a time straight out to the side, then back to the center. Repeat with the other leg.



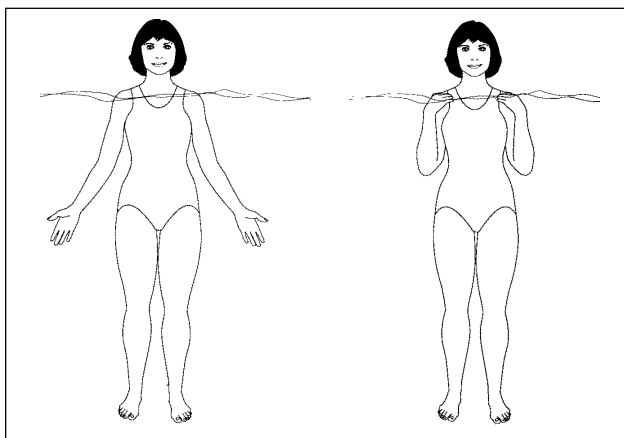
Turn sideways and hold on to the edge of the pool with one hand. Alternate legs in a marching movement, bringing your knees to waist height.



Stand with your back straight and your arms straight in front of you just below water level. Move your arms straight out to the sides, then back to the front.



Stand with your back straight and your arms straight out to the sides. Circle your arms in a clockwise motion from the shoulder, keeping your elbows straight. Reverse the motion to counter-clockwise.



Stand with your back straight, arms at your sides with the palms facing forward. Bend your arms at the elbows to touch your shoulders. Return your arms to your sides.

See page 105 for more about special aquatic workout equipment.

Spotlight on Passive Range-of-Motion

If you're unable to move against gravity, a caregiver or physical therapist can help you fully stretch your muscles and move the joints to prevent contractures associated with immobility. For maximum benefit, it's important that you continue to participate as fully as possible.

The following illustrations indicate normal range-of-motion of each joint. If strong resistance or pain occurs, stop the movement.

These instructions are written to the caregiver.

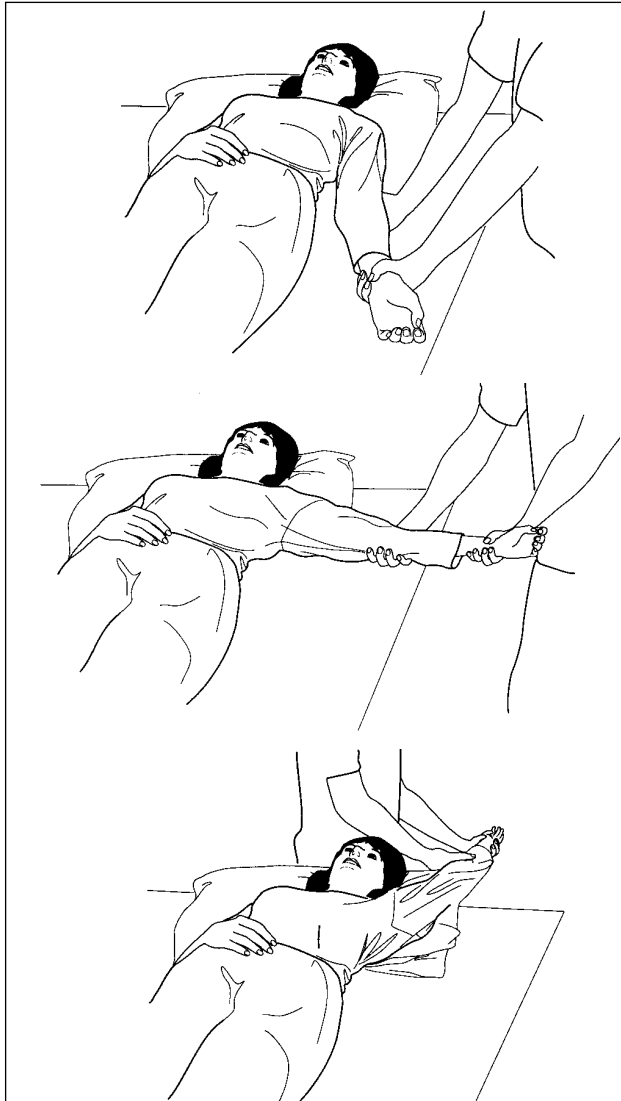
Arm Exercises

Shoulder

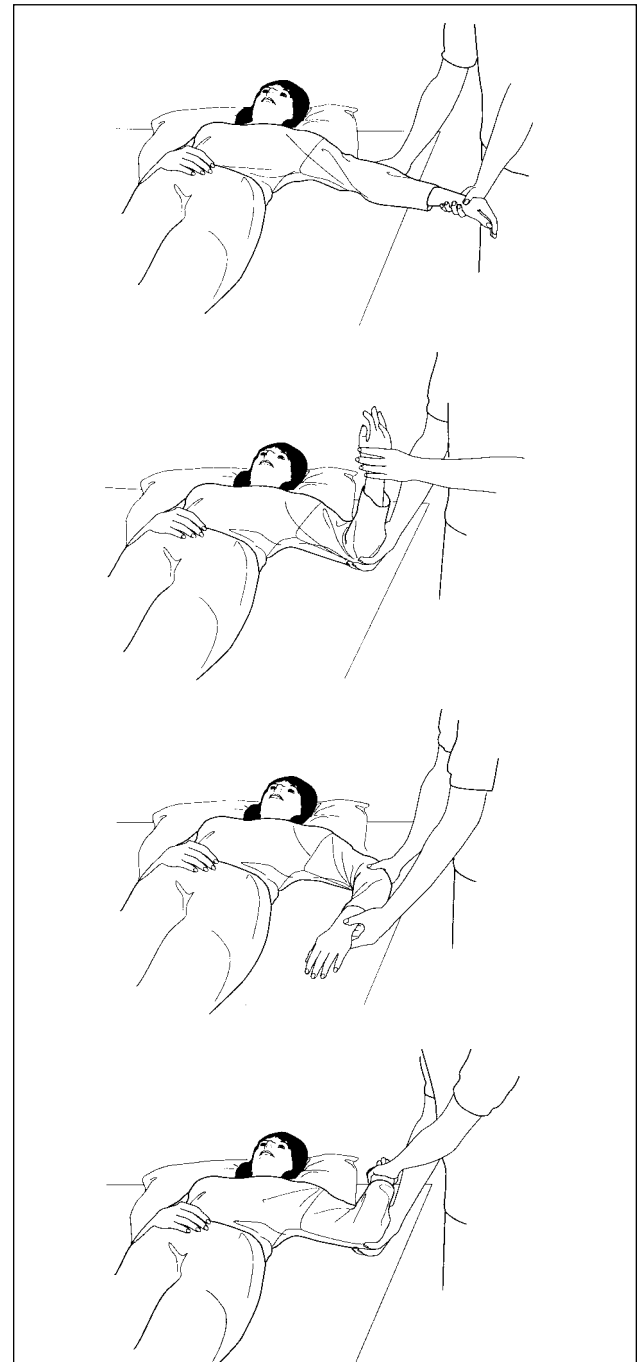


Help the person with ALS lie comfortably on his or her back. Place the person's arm at his or her side.

Supporting the elbow and wrist, pick the arm up and over the head to a position behind the ear. Return the arm to the person's side.

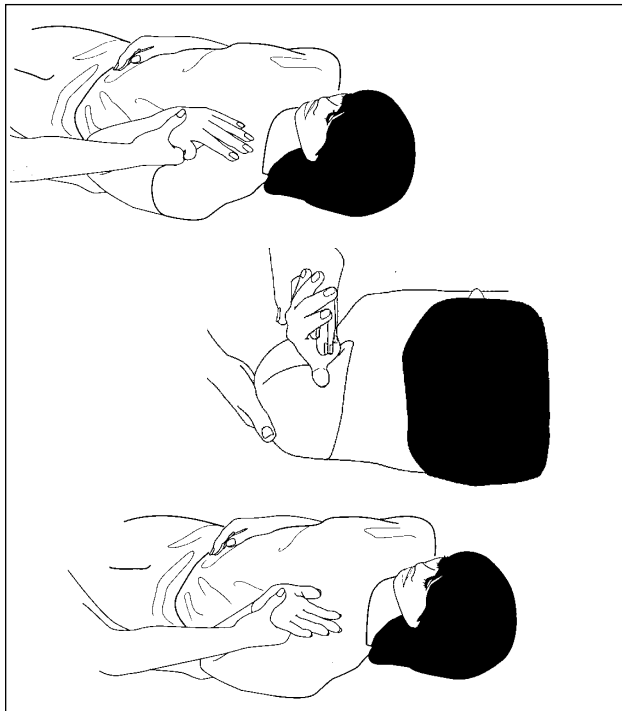


Supporting the elbow and wrist, move the arm along the bed to a position above the person's head and next to his or her ear. Return the arm to the person's side.

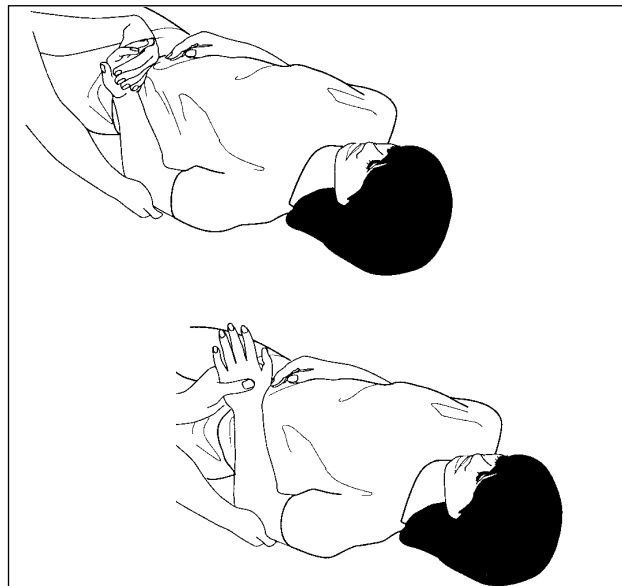


Move the arm along the bed to shoulder level. Bend the elbow to 90 degrees (hand pointing toward ceiling). Support the elbow and wrist and keep elbow stabilized. Rotate the arm until the hand and wrist touch the bed near the hip and rotate the arm back until the wrist touches the bed near the head.

Elbow

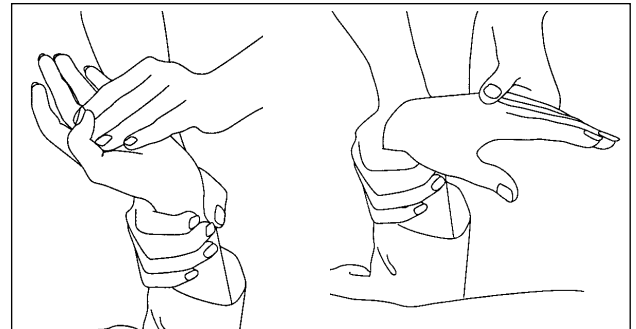


Stabilize the elbow and bend and straighten it in three positions: palm down, thumb down and palm up.

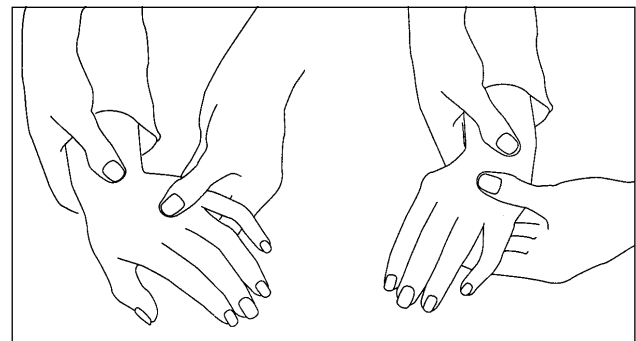


With the elbow bent at the person's side, rotate the palm toward and away from the person's face.

Wrist

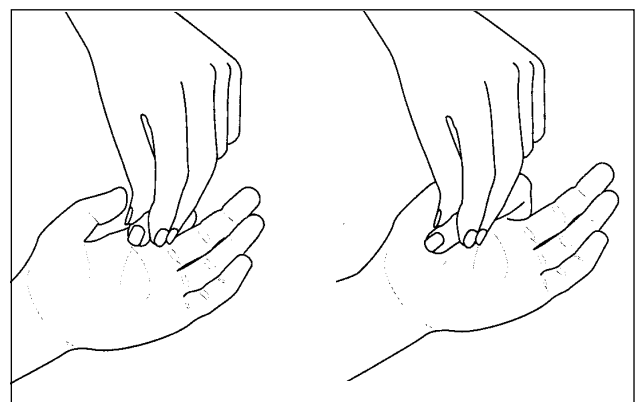


Holding the wrist and hand, bend the wrist up and down as if waving.

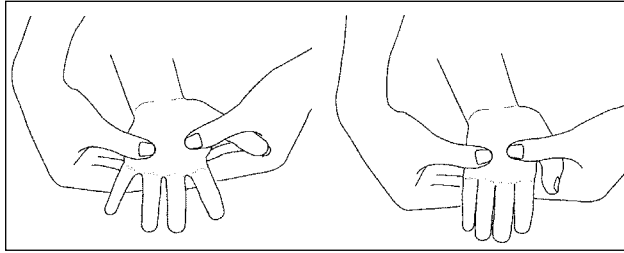


Holding the arm and hand, with the wrist straight, bend the hand to one side and then the other.

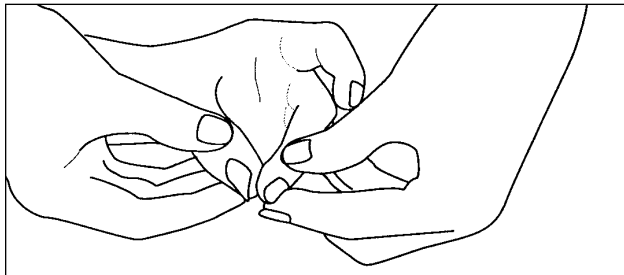
Fingers



Take each finger and pull gently to touch the base of the finger and then the heel of the hand.



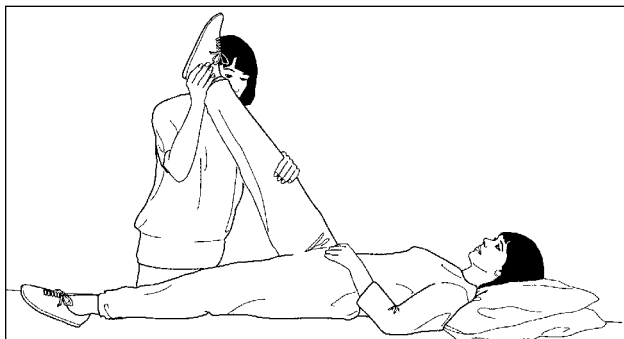
Straighten each finger. Spread the fingers apart and back together.



Touch the tip of each finger to the tip of the thumb.

Leg Exercises

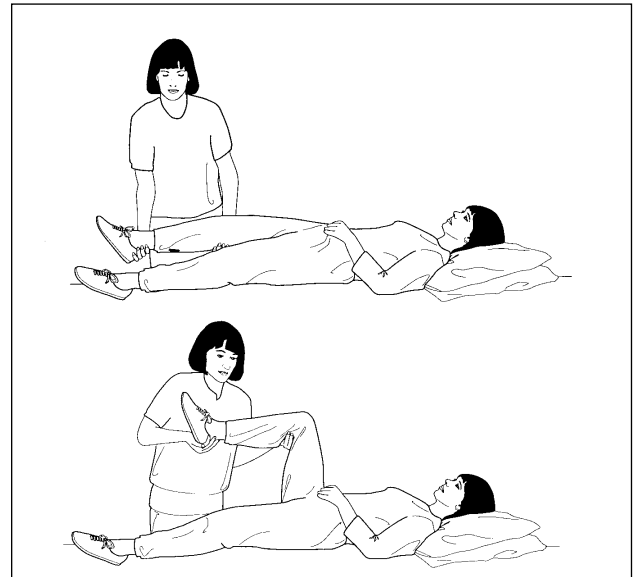
Hip



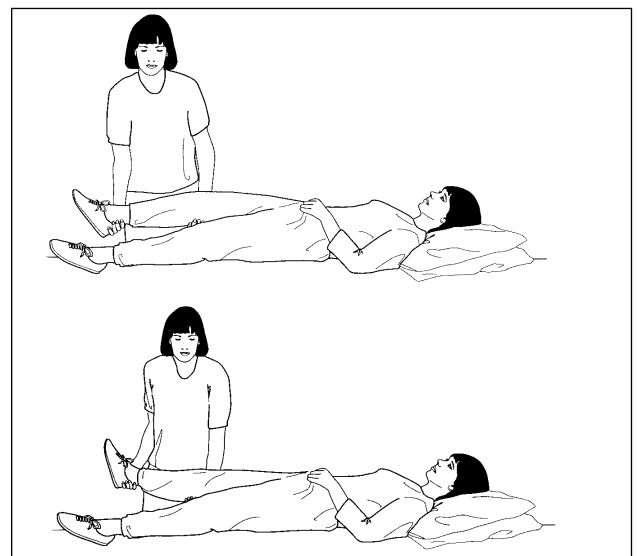
Help the person with ALS to lie on his or her back with legs straight and relaxed. Stand beside the leg to be exercised, and place one hand above the knee to keep it straight and the other hand under the heel.

Keeping the leg straight, slowly raise the leg until the person you're assisting

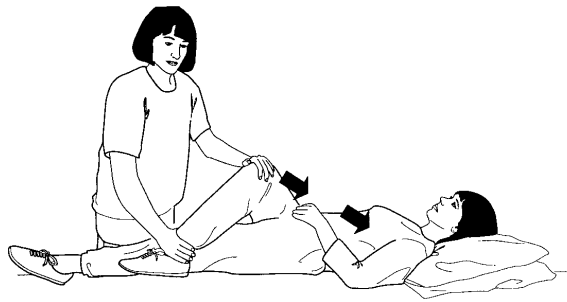
feels a stretch. Be sure to keep the other leg flat during the stretch.



Support the leg at the knee and heel, and bring the knee toward the chest. Return the leg to the bed, and repeat with the other leg.

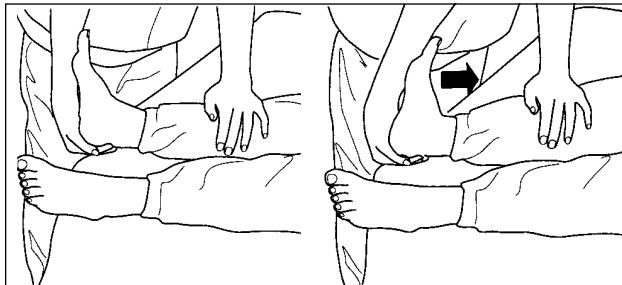


Bring the leg out to the side. Return the leg to the center. Repeat with the other leg.

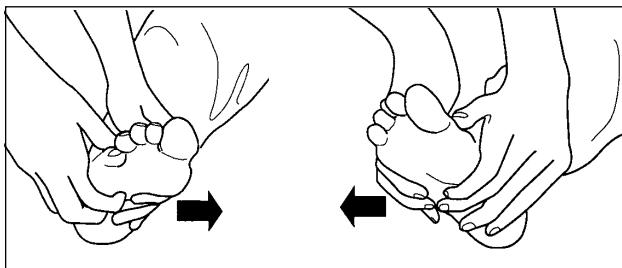


Bend the knee of one leg and cross the foot over the thigh of the other leg. Push the knee toward the opposite shoulder. Repeat with the other leg.

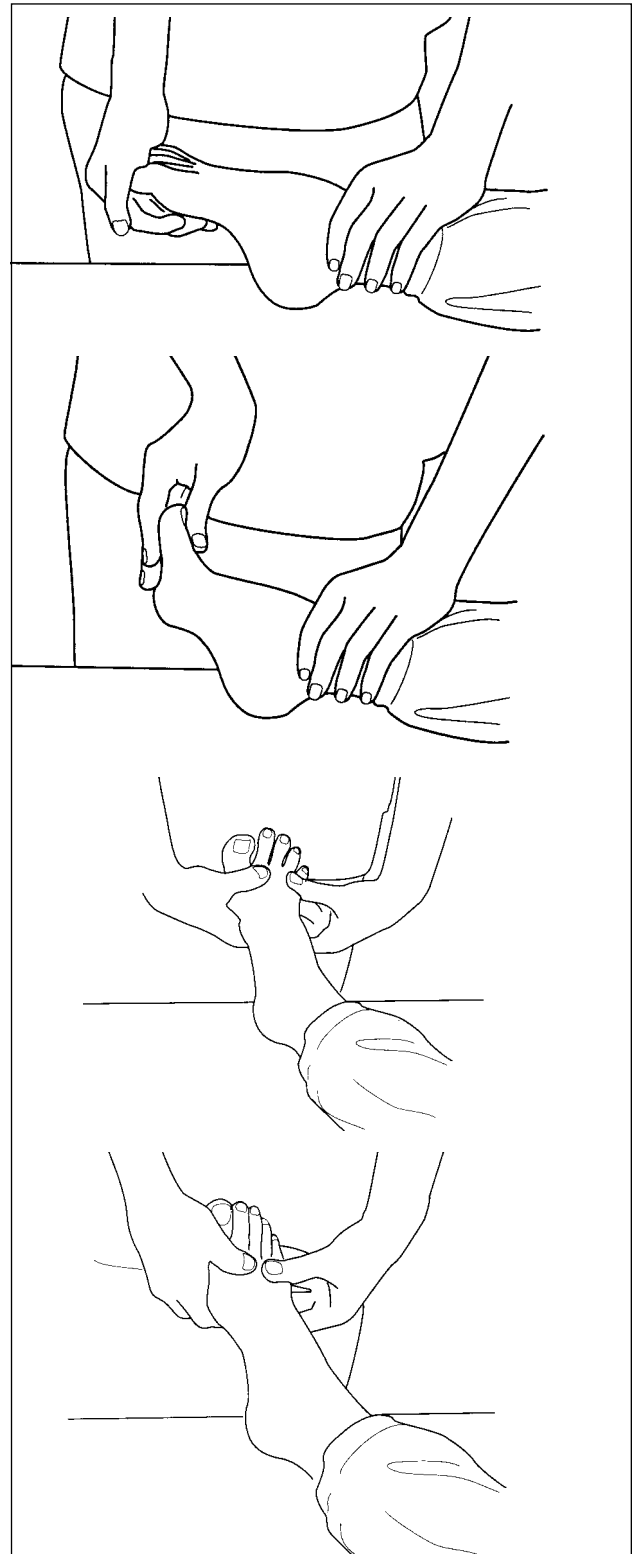
Ankle & Toes



Place one hand on the person's shin and cup the heel in your other hand. Gently bend the ankle upward by pushing against the bottom of the foot with your forearm. Don't allow the foot to turn in or out.



Grasp the foot and turn the bottom of the foot toward the inside and then the outside.



Bend and straighten each toe. Spread the toes apart and then return them to the original position.