Exercise and ALS

The physical or occupational therapist will make recommendations for exercise based upon each patient’s specific needs and abilities. Strengthening exercises are not generally recommended for patients with ALS as research has shown them to be ineffective in maintaining or increasing strength once muscles have been affected by the disease. Stretching and Range of motion (ROM) exercises are done to maximize flexibility and mobility of the joints on which they are performed. Joints maintain their normal range of motion by being moved. It is therefore very important to move all your joints every day. Stiff joints and shortened muscles can cause pain and can make it hard for you to do your normal daily activities. The therapist can instruct you or your caregiver in a home ROM program that you can follow through with daily. It is important to remember that as the disease progresses, the type of ROM exercises you will need may change.

There are different kinds of ROM exercises. There are active ROM exercises you can do yourself if you have the energy and muscle strength to move your joints through their complete ranges. There are self ROM exercises, which involve using a stronger arm to assist a weaker arm to perform the exercises, eliminating the need for caregiver assistance. There are passive ROM exercises, which are done by a caregiver. Often a combination of the types of ROM exercises above will be used. For instance, if a person with ALS has strong arms, but weak legs, he or she would use an active ROM program for the arms and a caregiver would perform passive ROM for the legs. Caregivers of patients with increased muscle tone (spasticity) will also need to learn techniques to decrease the tone with ROM.

It is important to realize that these exercises will not strengthen muscles that have been weakened by ALS. Once the supply of motor neurons that control a particular muscle has degenerated, it cannot be regenerated by exercise. Trying to excessively exercise muscles that are weak already will only increase your weakness and rob you of energy that you need for your daily routines and the activities you enjoy. If you find that your prescribed set of exercises tires you, talk to your therapist about other options. None of your exercises should cause you extreme pain. However, some discomfort is to be expected when tight muscles are stretched. Full ROM does not have to be achieved on the first trial and should be something you work towards. If you do experience severe pain when exercising, stop that exercise and contact your therapist. It may be that you are not doing the exercise correctly, or perhaps some modification to your exercise program must be made.
Passive Range of Motion Exercises

General instructions:

- Ideally, these exercises should be done at least once per day.
- Doing the exercises after a shower or 20 minutes of heat, can improve the elasticity of the muscles and increase the effectiveness of the stretching.
- Do each exercise 3-5 times. Move to the point of resistance and hold for 20-30 seconds.
- Keep limbs supported throughout motion.
- Move slowly, watching the patient's face for response to ROM.
- The eventual goal is full range of motion. This does not have to be achieved on the first repetition.

Lower Extremity Passive ROM Exercises

Lower extremity passive exercises are for someone else to stretch your hips, knees, and ankles if you are unable to do this yourself. These exercises should be done slowly and gently while you are lying on your back.

**Hip and Knee Flexion**
Cradle the leg by placing one hand under the bent knee. With the other hand, grasp the heel for stabilization. Lift the knee and bend it toward the chest, with the kneecap pointed toward the ceiling. Do not allow the hip to twist during this movement. The foot should stay in a straight line with the hip and not swing in or out.
**Hip Rotation**
Place one hand on the thigh and other hand just below the knee. Bend the knee halfway to the chest so that there is a 90-degree angle at the hip and knee. Pull the foot toward you and hold it, then push it away and hold it. Remember, do not go beyond the point of resistance or pain.

**Hip Abduction**
Cradle the leg by placing your hand under the knee and holding it. Place the other hand under the heel to stabilize the hip joint. Keeping the knee straight, move the leg along the surface of the bed, toward you and away from the other leg.

**Ankle Rotation**
With the knee straight and one hand holding the ankle steady, place the other hand around the foot and turn foot inward, then outward.
**Toe Flexion and Extension**

With one hand, stabilize the foot just below the toes. With the other hand, gently move each or all of the toes forward and backward.

**Heel-Cord Stretching**

Cup or cradle the heel with your hand and place your forearm against the ball of the foot. Push the ball of the foot forward, bending the foot toward the knee and stretching the muscles in the back of the leg.

Cup the heel of the foot into the palm of your hand. Gently push the foot down to “point the toes.” Do this with knee bent, and then repeat with knee straight.
**Lumbar Rotation**

Bend knees up and keeping them together, lower them to one side as far as they comfortably go. Repeat to the other side.

**Hamstring Stretch**

With the knee and heel supported slowly raise the leg up, keeping the knee straight.
Upper Extremity Passive ROM Exercises

Upper extremity passive ROM exercises are performed by someone else when the person with ALS is unable to move his arms by himself. These exercises should be done slowly and gently, and can be done with the person sitting in a chair or lying down. Do each exercise three to five times holding 20-30 seconds.

**Elbow Flexion and Extension**

Hold the upper arm with one hand and forearm with the other hand. Bend the arm at the elbow so that the hand touches the shoulder. Then straighten the arm all the way out.

**Shoulder Flexion**

Hold the wrist with one hand. With the other hand, grasp the elbow joint to stabilize it. Turn the palm inward, facing the body, and keep the elbow relatively straight. Move the arm from the side of the body over the head.
Shoulder External Rotation

Place one hand under the elbow and the other on the wrist. With the elbow bent half way, rotate the shoulder joint by moving the patient’s hand towards his or her head.
**Finger and Wrist Flexion and Extension**

Hold the forearm above the wrist with one hand and grasp the fingers with your other hand. Holding the hand in this way, bend the wrist back, while straightening the fingers out. Then bend the wrist the opposite direction, about 90 degrees, while curling the fingers into a fist.