OBJECTIVES:

At the end of this class, you will be able to:

1. Define terms relating to paralysis.
2. Discuss the causes of paralysis.
3. List some of the complications.
4. Detail the care of the person with paralysis

INTRODUCTION

The Christopher & Dana Reeve Foundation states that there are nearly 1 in 50 people living with paralysis. This is 33% more than it was previously thought. The chances are that you know someone that is affected by it. It is a serious problem that often needs some degree of care and support for the person for their entire life. (Reeve Foundation, 2010)

Paralysis is a complete loss of muscle function in one or more muscle groups. The person will not be able to use these muscles. They may also not be able to feel things like pain and touch. They may lose both sensory and motor function.

Paralysis is mostly caused by damage to the body’s nervous system (brain and the spinal cord). The cause can be a spinal cord injury, a stroke, an injury like a closed head injury from a car accident, polio, ALS (Lou Gehrig’s disease), botulism which is found in some foods, spina bifida, multiple sclerosis (MS), snake bites, and Guillain-Barré syndrome. Some medicines, like curare, also paralyze a person. This is used when a person is on a ventilator that does the breathing for the person.

Paralysis can be in only one area or it can affect many areas. For example, a person with a stroke may be affected only on their left side. And, a person with a bad head injury may not have any use of their arms or their legs. Still others may have paralysis of the breathing muscles. These people will die unless they are put on a ventilator for breathing.
SOME DEFINITIONS

"Paraplegia" is the paralysis of the legs. This word means "half-striking". It happens when there is a spinal cord injury. Paralysis will happen below the injury. For example, if the person has a neck injury, they may be paralyzed from the neck down. If the injury is of the lower back, then the area below it (the legs) will be affected. These injuries can be "complete" or "incomplete". A person will have no feeling or function if it is "complete". The person will still have some feeling and function when it is "incomplete". The word "quadriplegia" means paralysis of the legs as well as the arms. The person is affected with all 4 limbs.

"Hemiplegia" is the word for the loss of function to one side of the body. For example, a person that has had a stroke in the left side of their brain may be affected on the right side of their body. When a person has a stroke in the right side of the brain, they may have hemiplegia of the left side of their body. "Hemiparesis" is the weakness of one side of the body. These conditions can occur in older people when they have a stroke. It can also happen to young children and babies. Cerebral palsy is one cause for babies and young children.

Some people may be able to walk a little with the help of a walker. Others may have to get around using a wheelchair. Still more people will not be able to control their urine and bowel movements. They may have to have a urine catheter or take an enema.

THE COMPLICATIONS

The person is at risk for a number of problems, including:

- Pressure ulcers
- Pain
• Pneumonia

The person may get a pressure ulcer for a number of reasons. They may not be able to move around in bed or the chair. They need the help of others, including the nursing assistant, to move them in the bed or in the chair. They must be moved at least every 2 hours. They may also not feel that pressure is building up. Again, they must be moved at least every 2 hours.

The person may also have pain. This pain is caused by nerves that have been injured. At times, this can be very, very bad and painful.

Pneumonia is also a problem among many people. This may happen for a number of reasons. The person may not have strong breathing muscles. The person may not be moving around in bed. These things cause breathing problems and pneumonia.

THE CAUSES AND TREATMENT

The most common cause is a stroke. Other causes are spinal cord injury, head injuries and other problems of the central nervous system (the brain and the spinal cord), like cancer, infection, and MS. Still more causes are not known.

As said before, if an injury happens on the right side of the brain, the left side will be affected. And, if the injury happens on the left side of the brain, the right side of the body will be affected.

A person with paralysis on one side of the body may have:

• Trouble walking
• Loss of balance
• Stiff joints
• Loss of calcium to the bones from the lack of weight bearing activity, bed rest and the lack of mobility
• Fractures because of the loss of calcium
• Trouble using the little muscles of the hands to do things like holding things and pinching things
• Muscle spasms
• Trouble with speech and talking
• Trouble swallowing food and liquids
• Emotional problems like anger and depression

This can not be cured, but the person may be able to lead a good quality life with things like:

• Drugs to decrease the muscle spasms
• Physical therapy for range of motion (ROM), increasing strength and to prevent contracted muscles
• Occupational therapy for ADL help with things like combing hair, eating and brushing one’s teeth
• Speech therapy
• Splints and braces
• A G tube if the person cannot swallow any food and drinks
• Thick liquid fluids made to a “honey like” thickness
• Blended, puree foods

Some of the problems that may happen are contractures, muscle spasms, deformity of the joints, pressure ulcers and blood clots. Many of these people are on bed rest with periods of time up in a chair or moving about with the help of a wheel chair.
A person with paralysis to all of their limbs (both legs and both arms) will often have both motor (movement) problems and sensory (feeling) problems.

It is caused by damage to the brain or the spinal cord at the neck. When this happens, the entire length of the body from the neck down to the feet is affected. It can happen from a serious injury, like a car crash or a bad fall or a diving accident, and from things like polio and spina bifida.

This person may have the same problems listed above AND:

- Loss of bowel and bladder control
- Sexual problems
- Problems with digestion
- Breathing problems
- Urine infections because the person has no control over the bowel and/or they have a urine catheter
- Loss of automatic body control over heart rate, blood pressure and body temperature
- Pain
- Shrinking muscles (atrophy)
- Kidney stones
- Gallbladder stones

These people are even more prone to things like pressure sores, fractures, stiff joints, spasms, respiratory problems, infections, clots and heart problems. Some of these people are not able to even breathe on their own. They may need a ventilator.

**STROKES**

Stroke is the third highest cause of death in America. It is also the highest cause of a disability in the United States. A stroke is also called a CVA.

Strokes stop the flow of oxygen to the brain cells. The blood flow is stopped when a blood clot enters the brain or when bleeding occurs in the brain. Brain cells die when the brain does not get the oxygen it needs to stay healthy and to work properly.

A body function done by a certain part of the brain is affected when this part of the brain dies or is hurt with a stroke.
For example, when the speech center of the brain is hurt by a stroke, the person may not be able to speak. Some people may not be able to walk when the part of the brain that controls walking is hurt with a stroke. Others may not be able to lift their arm.

When a person has a numb, weak or paralyzed face, leg or arm, it could be a sign of a stroke. This can come on very quickly. It often happens to only one side of the body. For example, the person may not be able to use their right arm and their right leg.

There are two types of stroke- ischemic stroke and hemorrhagic stroke. The first type happens when a person has atherosclerosis, or the buildup of matter on the inside of their arteries. This was once called "hard arteries". A piece can break off or the blood can be cut off by this matter, thus causing a CVA. The second kind happens when a brain blood breaks and bleeds into the head. Cells get damaged when a blood vessel in the brain bursts and leaks. This kind of CVA is most often caused by the patient’s high blood pressure (hypertension).

A loss of function, or weakness, to the left side of the body occurs when a person has a stroke to the right side of the brain. Likewise, when a person has a stroke on the left side of the body, losses of function will occur on the right side of the body. Paralysis and weakness to one side of the body is called hemiplegia.

Rehabilitation aims to restore some function to the person’s body. It helps increase the body’s ability to have a new part of the brain take over the lost function. It helps the person to increase their muscle strength, balance, gait, speech, confidence and communication abilities. It also helps to prevent pressure sores and contractions.
Rehabilitation usually begins right after a stroke. It continues for weeks or months after a stroke. It is given in a rehab center, in the patient’s own home, in a hospital and in a nursing home.

Occupational therapists, physical therapists, speech and language therapists, recreation therapists, dietitians, doctors, nurses, nursing assistants, restorative and rehabilitation aides are members of the rehab team for stroke patients.

Nursing assistants who take care of people after a stroke should help the person with their activities of daily living, as planned by the occupational therapist and other members of the rehab team. They should help them with dressing, brushing their teeth and using any assistive devices that they have.

Some of the assistive devices that a physical therapist uses to help the person walk are:

- Canes
- Walkers
- Gait belts

Some of the orthotic devices that a physical therapist uses to support, align and prevent bodily deformities are:

- Braces
- Splints
Speech and language therapists assist their patients with communication. They also help patients with a swallowing disorder, something that often happens after a stroke.

These therapists also use assistive devices. For example, they may use a word board so that a patient can communicate their needs to others without the spoken word. This really helps people who can not speak after their CVA.

Nursing assistants must:

- Prevent falls and make sure that the patient is safe. (Take our class called “Preventing Falls” for more information about falls and falls prevention.)
- Encourage and support the patient. It is important for all health care staff to give the stroke patient, and their family members, encouragement and support. This is a very difficult time for them. Rehab is also mentally and physically exhausting.
- Encourage as much independence as possible.
- Feed the hemiplegia patients by placing the food on the good side of the mouth. (Take our class called “Feeding Residents and Patients” for more information on feeding patients and residents after a stroke.)
- Provide good skin care. (Take our class called “Preventing Pressure Ulcers” for more information about skin care after a stroke)
- Assist the patient with their assistive and supportive devices.
- Follow the ordered bowel and bladder retraining program.
- Help the person with their activities of daily living. Help them bathe, get dressed and eat.
- Assist the patient with mobility and ambulation.
- Do range of motion exercises with the person.
- Encourage and support the patient after the stroke.

To learn more about strokes, take our class that is titled “Mini Med School: Stroke”

SPINAL CORD INJURY
There are about 5,000 cervical spinal cord injuries per year in the United States so it is a serious problem. One of the best ways to avoid problems is to find out that a person has had a neck spine injury as soon as it happens. About 1 in 20 neck fractures is missed. This leads to more and more damage as time goes on.

The problems depend on how bad the injury was and how high up in the spinal cord it happened. No motor or sensory function is left below the injury with a complete injury. Some motor and/or sensory function will remain with an incomplete injury. Most people with an incomplete injury will have some walking ability.

Neck injuries usually affect areas below the neck. The person, therefore, has trouble breathing and may need a ventilator. The person is not able to use the arms, hands and legs. This is the worst of all spinal cord injuries.

Chest level injuries lead to the loss of trunk body control so the person may need help with sitting correctly. Low back injuries may only affect the legs, urine and bowel function.

Different treatments are used for these types of injury. Some of these include drugs and treatments with cold. There is no cure at this time but stem cells in the future may be of great help.

**HEAD INJURIES**

The brain has 2 halves. They are:

- The right side, or hemisphere, and
- The left side.

Each side of the brain does a special job. The right side of the brain puts together bits of information. The left side of the brain breaks up large amounts of information into smaller bits. It also helps us to speak.

The right side of the brain will be hurt when a person has a head injury on the right side of the head. The person may not be able to put bits of information together. The left side of the brain will be hurt when a person has a head injury on the left side of the head. The person may not be able to speak or break information down into small bits. These people can be more depressed than those who have damage to the right side of the brain.

Movement is controlled by a long, narrow area of the brain that goes from the top of the head and down to the area where the right and left ears are. If you injury the left side of the brain in this motor area, you will not be able to move the right side of the body. You will not be able to move the left side of the body if you injure the motor area on the right side of the brain.

Head injuries can lead to brain injuries. Head injury can happen when the bones of the skull are broken, when the bones of the skull poke through the brain, and when the brain moves back and forth in the skull causing bruises, bleeding and swelling. Every area of the brain can get damage with a head injury depending on where the trauma has happened.

Both the front and the back of the brain can be injured when a person is in a car accident and they slam the front of their head on the dashboard and then jerk back into the seat. There are
several types of head, or brain, injuries. Some are more serious than others. To learn more
about head and brain injuries, take our course titled "Traumatic Head and Brain Injuries."

Some people have problems for only a short time after the brain injury. Others have problems
for the rest of their life.

Some of the problems that a person may have are:

- memory problems and confusion,
- poor cognition,
- behavior problems,
- blindness,
- not able to speak,
- paralysis, and
- headaches.

CARING FOR THE PERSON WITH PARALYSIS

These people have physical and emotional needs. Some of the physical needs are:

- Safety and the prevention of falls and other accidents. To learn more about falls, take
  our course entitled "Preventing Falls".
- Good skin care to prevent pressure ulcers. To learn more about pressure ulcers, take
  out course entitled "Preventing Pressure Ulcers".
- Mobility.
- Activities of daily living (ADL) help.

Many of these patients have safety needs because they are not mobile or they have trouble
with transfers, walking and other things. Many of these patients have a need for good skin
care because they may not even move about in bed or the chair and they may not feel any
pressure to their skin areas. Lastly, many of these patients have mobility needs. Some of
these needs are small. Physical therapists give the person with paralysis these kinds of
exercise:

- range of motion,
- muscle strengthening,
- general conditioning,
- coordination,
- transfer training, and
- ambulation help.

Nursing assistants should help their patients and residents with their exercises, as planned by
the physical therapist and other members of the rehab team. For example, nursing assistants
should help their patients and residents with range of motion and ambulation help.

Many people with paralysis may not be able to do some or all of the activities of daily living.
There are many things that can help these people. They can use a computer, move about the
house in a special wheelchair that is activated with the head and even drive a car.
Occupational therapists help the person to perform the activities of daily living (ADLs). They
also give the person things to use like special forks and plates. Some of the activities of daily
living that the occupational therapist helps the person do are:

- Dressing
- Grooming
- Mouth care
• Bathing and/or showering
• Feeding self
• Cooking meals
• Getting around and caring for the home

Some people need special assistive devices to do the activities of daily living. For example, a person may need special gripping devices to pick items up off the floor. Others may need special forks and eating utensils to better pick up food from their plate. Some may need special plates with high sides to hold food on the plate when a person has trouble with a spoon or a fork. Still others may need to have their clothing made with larger buttons or Velcro strips when they cannot dress using small buttons and zippers on their clothes.

Occupational therapists teach residents, patients and their family members how to use these special things so that the person can be as independent as possible with the activities of daily living.

Nursing assistants should help their patients and residents with their activities of daily living, as planned by the occupational therapist and other members of the rehab team. For example, nursing assistants should help their patients and residents with dressing, brushing their teeth and using any special devices that they have.

SUMMARY

Nursing assistants play an important part of care. They must be able to take care of the person’s physical and emotional needs. These people may need a lot of emotional help and a lot of physical care. The whole team must work together so that the person can have the best possible quality of life. The team must also make sure that the person remains safe and without any injuries.