

## After a Spinal Cord Injury: Cardiovascular System Changes

After a spinal cord injury, there are changes that happen in your circulatory system. Your heart rate will be slower and your blood pressure will be lower. The blood flow in your body slows down, especially in your legs. Normally, when a person walks, the muscles in the legs push against the blood vessels helping the blood to flow back up to the heart. This does not happen when the legs cannot move.

**Edema:** Edema is another name for swelling. Your legs and feet may get swollen by the end of the day. This happens because the muscles in the legs are not pumping the blood back to the heart so fluid collects in the lower legs and feet.

Signs of edema are:

- Pressure indentation from shoes and socks
- Increase in your weight
- Less urine output

If your legs and feet are swollen, you can:

- Wear T.E.D. stockings (compression stockings). The best time to put T.E.D. stockings on is early in the morning before your legs or feet are swollen.
- Raise your legs on pillows in bed so they are higher than your heart
- Raise the leg rests on your wheelchair
- Watch your salt intake

If you have swelling, your shoes, socks or T.E.D. stockings may become tight so you will need to check your skin for redness or skin breakdown. If you have any signs of skin redness or breakdown, call your doctor.

**Orthostatic Hypotension:** This happens because there is a quick drop in your blood pressure when you sit, stand or change positions. It occurs most often when you first get up in your wheelchair or on a tilt table. You may feel dizzy, lightheaded or feel like you are going to faint.

To stop this from happening, you can:

- Wear T.E.D. stockings and/or Ace® wraps and an abdominal binder before getting out of bed
- Sit or stand slowly
- If you're in bed, raise the head of the bed slowly to an upright position
- Sit in an upright position for about 5 minutes before getting into your wheelchair

If you are in a wheelchair, have someone tilt the wheelchair back until your head and neck are almost parallel to the floor. Once you feel better, gradually come back to a sitting position. This will help raise your blood pressure and the faint feeling will go away.

**Temperature Regulation:** A person that does not have a spinal cord injury is able to keep their body temperature at about 98.6°F. When it's hot, their body cools off when they sweat. When it is cold, they shiver which helps keep the body warm. When a person has a spinal cord injury, their body temperature will change based on the temperature of the environment.

**Hot Weather:** The paralyzed part of your body does not sweat so you can easily overheat on a hot humid day, when sitting in a hot car too long or if you have too many blankets on.

Signs that you are overheated:

- Skin feels hot, dry and appears pink or red
- High body temperature
- Pulse is fast and may be weak and irregular
- Feel dizzy
- Feel weak
- Headache
- Feel sick to your stomach

Things you can do to help prevent getting overheated:

- Stay out of direct sunlight
- Wear light-weight clothes
- Wear a hat
- Drink plenty of water
- Place a cold wet towel around the back of your neck
- Bring a spray bottle to spray water on your body to cool off

If you get overheated:

- Get out of the sun or hot room
- Go to a cool place
- Drink plenty of water; do not drink fruit juices, alcohol or caffeine
- Sponge off with cool water; shower if possible
- Lay down until you feel better
- Go to the hospital if you do not to feel better

**Cold Weather:** The paralyzed part of your body does not shiver so your body can get too cold. Your feet and fingers can get frostbitten. You may get too cold if you are out in cold weather without warm clothes, sit in a cold car too long or from being in cold water for too long.

Signs that you are too cold:

- Drop in body temperature
- Cold, red or pale skin
- Fast heart rate
- Slow breathing
- Confusion
- May feel irritable
- Loss of interest
- Slow, slurred speech
- Feel tired
- Clumsy movements

**Things you can do to prevent getting too cold:**

- Do not stay in cold weather or cold places too long
- Dress warm; layer clothing
- Wear warm socks
- Winter jacket
- Wear a hat
- Wear gloves or mittens
- Wear boots or shoes
- Drink warm fluids

**If you get too cold, you can do the following:**

- Go to a warm place
- If your clothes are wet, take them off
- Dry your body if it's wet
- Put on layers of warm clothes
- Put on a hat
- Cover up with blankets
- Place a heating pad (set on low heat) or warm compresses on your chest, stomach, groin or neck; use towel between pad/compresses and your body
- Take your temperature
- Go to the hospital if your body temperature is low or if your symptoms do not get better

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 11/2016 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing HF#7578.