

## Avoiding Significant Reductions in Blood Pressure Post- exercise

The following information is to provide strategies to help you prevent your blood pressure from dropping below normal resting values after exercise. The medical term for this is post-exercise hypotension. A slight decrease can be beneficial but reductions that result in symptoms need to be investigated by your doctor before initiating exercise and the following precautions followed.

### What are the Symptoms of Post-exercise Hypotension?

The reduction in blood pressure after exercise can be large enough to lead to symptoms and in rare cases a fainting spell. This is because when there is a significant drop in blood pressure, it can affect the amount of blood delivered to the brain. This does not happen to everyone, but is more likely to occur early after a stroke when the brain has less protection against large fluctuations in blood pressure.

The symptoms can include dizziness, nausea, faintness, blurring vision, hearing difficulties, and fatigue that can occur up to 3 hours after exercise. Some people may not experience these symptoms even when there is a reduction in blood pressure.

It should be emphasized that people who experience post-exercise symptoms should be investigated for other serious issues.

### What can I do to Help Prevent Post-exercise Hypotension?

#### Stay Hydrated:

- Ensure adequate hydration prior to and during exercise and replace fluids post exercise. After a stroke you sometimes lose the feeling of thirst. Therefore, do not rely on a feeling of being thirsty as an indication of when you need to drink water.
- Put a slice of lemon in the water to help you to drink more throughout the day.
- Certain medications, such as diuretics (also called water pills; an example is Hydrochlorothiazide, and Furosemide/Lasix), blood pressure medication, and some anti-diabetes medications (such as Jardiance) can make it harder to stay hydrated. People with kidney disease are more likely to become dehydrated.

## **Avoid a Large Meal before Exercise**

- Avoid a large carbohydrate meal before exercise and allow at least 2 hours after having meal before initiating exercise.

## **Avoid Exercising in the Morning and in the Heat**

- Avoid exercising in the morning and in hot and humid conditions.

## **Exercise in 5 to 10 Minute Intervals**

- Exercise intervals of 5 to 10 minutes each, alternating with active recovery periods of 2 to 3 minutes should be performed when other strategies do not work.
- Active recovery includes seated/standing activity that engages the muscles in the legs as they act like a pump to help blood return to the heart (see below for more details).

## **Avoid High Intensity Exercise unless Under Supervision**

- Very high intensity exercise (vigorous) is more likely to result in a larger drop in blood pressure after exercise. High intensity exercise would make you out of breath and you would not be able to talk easily.

## **Always Cool-down after Exercise**

- **Cool-down:** A 5-minute gradual cool down period of progressively lighter intensity exercise should be performed. Your exercise supervisor may suggest a 10 minute cool down if your normal resting blood pressure tends to be high or low and/or you experience symptoms after exercise.
- **Cool-down on a Stationary Cycle:** Gradually reducing the amount of resistance on the cycle should be the primary way to reduce workload in the cool-down period. You should try to maintain the pedaling cadence to allow more frequent muscle pump activity that helps return to the blood to the heart and then brain.

## **Keep Moving Periodically for at least 30 Minutes after Exercise**

- Avoid standing in one spot without moving or sitting down for a prolonged period of time after exercise. This will allow the blood to pool in the legs and not enough will be delivered back to the heart and then brain. It can also make the blood a little stickier and easier to clot.
- One way to avoid the blood from pooling in the legs is to do repeated rhythmic squats or heel raises as shown in the figures below. The repeated contraction of the leg muscles helps to pump the blood back to the heart and then brain.
- Period activity should be performed for at least 10 minutes and up to 30 minutes following completion of exercise.

## **How will My Blood Pressure be Monitored?**

Your exercise supervisor will have your blood pressure monitored periodically.

Alternatively, you can measure your blood pressure at home by following the guidelines provided in the on-line material in this section. Report the measurements to your health care professional.

- Blood pressure may be measured at rest, after cool down, then 5, 15, and 30 minutes later at the discretion of the health care professional.
- The lowest BP may occur approximately 15 to 30 minutes after exercise and could be low for a few hours.

## Activity to do After Exercise or While Taking a Rest Break from Exercise:

You can do one or a combination of the following activities recommended to you by your health care professional. **We suggest doing a combination of these exercises so that you don't overwork the muscles. Do seated heel raises if you have symptoms. Do not do standing exercises if you feel dizzy or unstable.**

Note: Even passive movement of the limb (for example if someone is moving your limb for you without your assistance) can help keep the blood flowing back to the heart and then brain.

### 1) Heel Raises

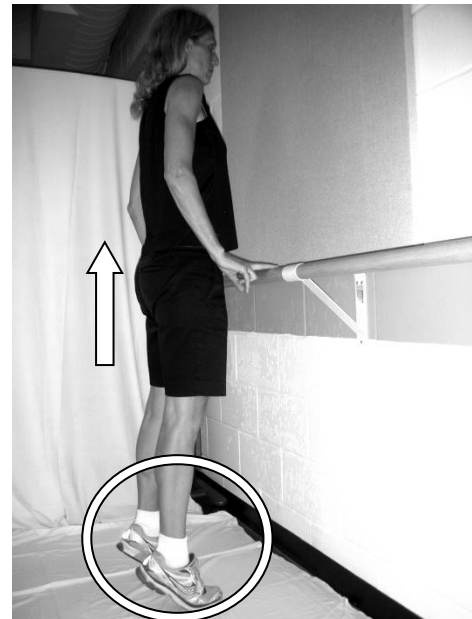
**Benefit:** Helps to move blood towards the heart and then to the brain.

Start and End Position



Stand with your feet shoulder width apart. Use the counter for support if you need it.

Middle Position



Slowly raise your heels as high as you can. Then slowly lower your heels and repeat.

**Perform 5 repetitions every minute for the first 5 minutes after exercise or during a break from exercise.**

**Then do 5 repetitions every 5 minutes for the next 25 minutes.**

Lift your body up towards ceiling and not forward.

Try to make sure your weight is distributed evenly between your feet. Don't rely on the stronger side too much.

**You can do this while seated** during transportation home (passenger in the car or on public transportation).

## 2) Seated Toe Press with Resistance Band

### Benefit:

Start and End Position



Middle Position



1. Loop the resistance band around the ball of one foot with toes pointed up.
2. Grasp the other end of the resistance band with the stronger hand.
3. Slowly point toes forward as far as you can go.

**Perform 10 repetitions on each leg every minute for the first 5 minutes after exercise or during a break from exercise.**

**Then do 10 repetitions on each leg every 5 minutes for the next 25 minutes.**

### 3) Half-Squat

**Benefit:** Improve balance and sitting to standing performance (such as getting out of a car)

Start and End Position



Stand with feet shoulder width apart. Turn toes slightly out.

Put a chair behind you for safety.

Middle Position



Keeping your **feet flat on the floor**, push your buttocks back and bend at the hips to slowly lower your body so that your knees are almost at a 90-degree angle. Knees should not go past the toes.

Then stand up straight again.

**Do 3 repetitions every minute for the first 5 minutes after exercise or during a break from exercise.**

**Then do 3 repetitions every 5 minutes for the next 25 minutes.**

**Tip:** If this is too difficult, only lower your body down a quarter of the way. Keep knees only slightly bent.

Keep your weight even over both legs. If you find the stronger leg doing most of the work, then place the weaker leg slightly behind the stronger leg.