

Physical Therapy and Exercise Guidelines

Exercise and physical therapy are important to help you regain your strength and endurance during the recovery process. Exercising helps relieve joint stiffness, muscle weakness, fatigue, and low energy levels that can occur when you are inactive. Continue the walking, biking, and exercise routines you may have started during your transplant period. Slowly increase the intensity and amount of this exercise to strengthen your endurance.

Recommended Precautions

- **Avoid exercise if you have a fever or don't feel well.** Exercise can further raise your body temperature and deplete your energy.
- **Avoid general exercise if you have *platelet* counts below 10,000.**
- **Avoid resistive/aggressive exercise if you have *platelet* counts below 20,000.** Low *platelets* place you at risk for abnormal bleeding and bruising.
 - Examples of resistive/aggressive exercise are: biking with resistance; running; weight training; TheraBand exercises; high repetition (more than 5) of body weight exercises (lunges, squats, stairs etc.); exercises that make you hold your breath.
- **Avoid exercise with a *hematocrit* of less than 20.** A low *hematocrit* can make you feel tired and lightheaded.
- **Follow your infection precautions by wearing a mask/gloves** if you are in a public place.
- **Avoid gyms** until cleared by your care team.
- **Talk with your care team if you have any changes in your condition that you feel limits your ability to exercise** or if you have any questions about whether it is safe for you to perform a certain activity or exercise.

Activity Programs

1. **Aerobic Walking Program:** Walking is a safe and effective activity to improve the fitness and endurance of your heart and muscles.
 - Start with a comfortable distance and pace, taking rest breaks if needed. It is important that exercise is somewhat challenging so that it benefits you, but not so much that you will be too tired afterwards or have difficulty recovering.

- Try to choose a route that or is close to home (or indoors), relatively flat, and has plenty of benches or places to rest along the way. Exercise under comfortable conditions, avoiding extreme heat or cold.
- Walk with someone for safety.
- Breathe easily while exercising and do not hold your breath. Holding your breath can increase the work placed on your heart and decrease the oxygen supply to your muscles. You should be able to comfortably hold a conversation while exercising. If you become short of breath, either stop and catch your breath, or slow down.

STOP any activity and sit down if you have any of these symptoms:

<ul style="list-style-type: none"> • Shortness of breath • Chest pain or angina • Faintness or lightheadedness • Palpitations 	<ul style="list-style-type: none"> • Muscle cramps • Nausea • Cold sweat • Excessive fatigue
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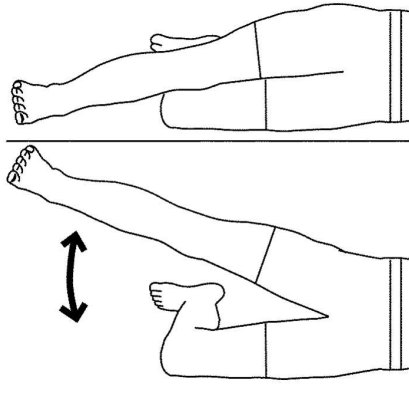
- Wear proper shoes with a rubber sole and backing as well as loose-fitting clothing.
- For the first week after transplant, perform your walking program with the same time and frequency as the previous week. Increase the amount of time you walk or your speed if you are feeling well and if your exertion is easy. If you are unable to increase your distance or speed due to fatigue or increased difficulty, it is fine to remain at that level until you can progress.

Example: If you were walking 10-15 minutes at the end of your transplant period:

- Warm up with 1-2 minutes of seated exercises or leisurely walking.
 - Week 1: Walk for 10-15 minutes, 2-3 times/day
 - Week 2: Walk for 15-20 minutes, 2-3 times/day
 - Week 3: Walk for 20-25 minutes, 2-3 times/day
 - Week 4: Walk for 25-30 minutes, 2-3 times/day
- Cool down with 1-2 minutes of seated exercises or leisurely walking.
- The end goal is to walk for 30 to 45 minutes, 5 to 7 days per week.
- When you are ready for more, try walking small hills or walking up flights of stairs. If you feel that the activity has been too much or you feel too tired, decrease the time or the distance. If you wish to start running or a higher intensity exercise program, consult with your care team first.

2. **Exercise Program:** Below are some examples of leg exercises you can do to strengthen your legs. If you were given an exercise program by a physical therapist during transplant, continue that program.

Lower Extremity Strengthening Exercises
Perform 2 sets of 10 repetitions twice a day

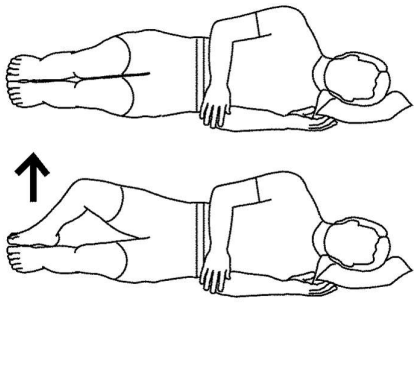


Side Lying Hip Abduction

- Lie on your side with your lower knee bent for stability.
- Keep your other leg straight and kneecap pointed forward.
- Slowly lift leg upward, keeping it straight.
- Slowly return to start position and repeat.
- Repeat exercise lying on your other side.

Do not roll trunk forward or backward. Do not hold your breath.

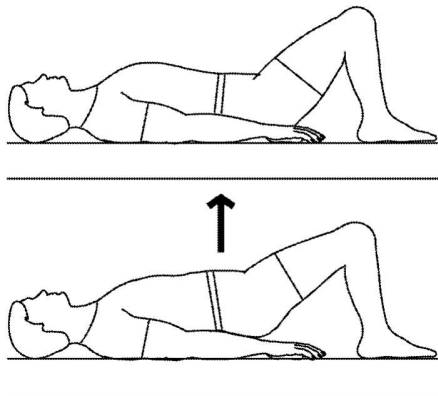
Rest for 30 seconds between sets.



Side Lying Hip External Rotation

- Lie on your side with knees bent, feet together.
- Lift your top knee upward.
- Lower and repeat.
- Repeat exercise lying on your other side.

Rest for 30 seconds between sets.

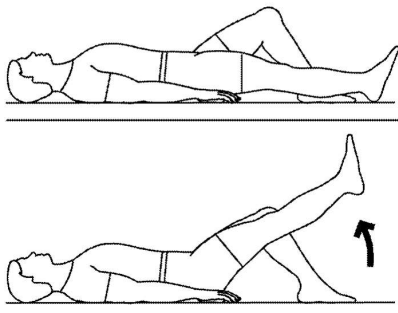


Bridging

- Lie on your back with your knees bent.
- Lift your buttocks off the bed and hold for 5 seconds.
- It does not matter how high you go, it is still exercising your muscles.
- Return to start position.

Do not hold your breath or use your arms.

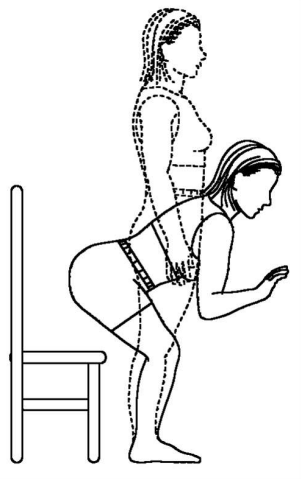
Rest for 30 seconds between sets.



Straight Leg Raise

- Lie on your back with one leg bent.
- With your other knee straight, lift your leg up and hold. Align it with the other knee.
- Slowly lower your leg.
- Repeat on other side.

Rest for 30 seconds between sets.



Sit to Stand

- Begin standing with the bed or chair behind you.
- Slowly sit and then stand back up again. Try to perform without using your arms if you are strong enough.
- Repeat.

Rest for 30 seconds between sets

- 3. Stationary Biking Program:** Once your platelet counts are consistently greater than 20,000, you can start riding a stationary bike. Gradually increase your time up to 30 minutes, starting with 10 minutes with a warm up and cool down. When you can bike for 30 minutes easily, gradually increase the resistance or amount of time on the bike. If adding resistance, you may need to decrease the total time you can tolerate on the bike initially until your endurance improves.

Note: DO NOT ride a bike outdoors until you have spoken with your care team and have been advised that it is safe to do so.

- 4. Weights:** Using weights greater than 5 pounds is discouraged until cleared by your care team or until your *platelets* have completely recovered. If you are using light weights (less than 5 pounds) and you experience joint and/or muscle pain while exercising, decrease the number of repetitions and/or the amount of weight. Once the pain resolves, gradually return to your prior number of repetitions or weight. Different muscle groups may require different weights. Start with 3 sets of 8 to 10 repetitions. When you can perform 12 to 15 repetitions easily, you can increase the weight. Start by increasing the weights 1 pound at a time, until you can complete the exercises with 2 to 5 pounds.

If you have any questions about your physical therapy or exercise routine, call the BWH Department of Rehabilitation Services at 617-732-5301.