



Thriving, Not Just Surviving, after Transplant through Exercise and Fatigue Management



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Celebrating a Second Chance at Life
Survivorship Symposium

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Thriving, Not Just Surviving, After Stem Cell Transplant Through Exercise and Fatigue Management

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Learning Objectives

At the conclusion of the workshop, attendees should have a clear understanding of the following:

1. How an exercise program can increase stamina and strength
2. How a physical therapist can tailor an exercise program to address an individual's needs
3. Specific exercises recovering patients can perform at home to increase stamina and strength
4. The role of other factors, such as nutrition and energy conservation, in managing fatigue

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Cancer Related Fatigue (CRF)

“a distressing, persistent, subjective sense of tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning.”

“Fatigue is by far the most common – and for many the most distressing symptom...”

National Comprehensive Cancer Network (NCCN)

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How Do People Describe Fatigue?

- Weakness
- Exhaustion
- Lack of energy
- Drained
- Difficult to concentrate



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Rate Your Fatigue

- Fatigue can be rated on a 0-10 scale
 - 1-3 – mild fatigue
 - 4-6 – moderate fatigue
 - 7-9 – extreme fatigue
 - 10 – worst fatigue
- **Suggestion:**
 - *Keep a diary to track fatigue and report to your health care team to help manage your symptoms*

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What Causes Fatigue after Transplant?

- Treatment and medication side-effects
- Nutrition problems and dehydration
- Stress
- Pain
- Anemia
- Sleep changes
- Underlying medical comorbidities

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Common Cause: Treatment and Medication Side Effects

- CRF is experienced by 70-100 % of cancer patients while receiving chemotherapy
- May continue to be disruptive in healing for months, and even years, after treatment ends
- Fatigue may also cause a patient not to continue with treatment

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Common Cause: Nutrition

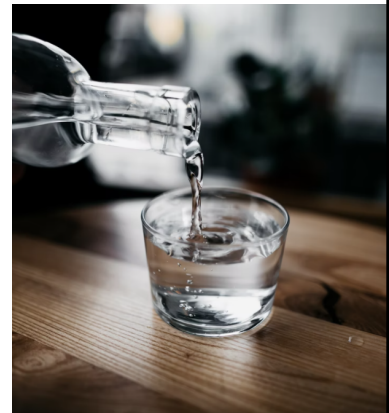
- Adequate nutrition plays an essential role in fighting cancer and its recovery.
- Patients who stay adequately nourished generally tolerate treatment better and recover faster.
- **Suggestion:**
 - *Ask your healthcare team for a consult with a registered dietitian to develop an individualized plan that meets your needs*



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Common Cause: Dehydration

- The average adult needs 10 oz. of liquid for every 50 # of body weight.
- Most of us should drink between two and three quarts of water per day to stay healthy.
- **Suggestion:**
 - *It is especially important to increase your water intake during active treatment to avoid fatigue*
 - *Drink! Drink! Drink!*



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Common Cause: Mental and Emotional Stress

- Treatment for cancer can be an emotional roller coaster.
- Hormonal changes, mood swings, and disruption of sleep all can contribute to fatigue.
- Relaxation techniques and physical activity may help to balance out these hormonal changes and reduce stress levels
- **Suggestions**
 - *Supportive Expressive Therapies*
 - *Support groups, Counseling, Journaling/Diaries*
 - *Complementary Therapies*
 - *Breath control, Progressive muscle relaxation, Guided imagery, Massage, Yoga, Tai chi*

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Common Cause: Pain

- Increased fatigue levels can lower the pain threshold and negatively affect how your body perceives pain
- **Suggestions**
 - *Discuss with your MD and your care team*
 - *Pain diary*
 - *Exercise*
 - *Complementary therapies*
 - *Modalities- heat, cold, electrical stimulation, kinesiotaping*
 - *Orthotics*
 - *Positioning*

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Common Cause: Medication

- Some medications contribute to feelings of fatigue.
 - Many drugs that combat nausea also cause sleepiness.
- **Suggestions**
 - *Make sure you check with your doctor before making any drug changes*
 - *Adjusting timing of dose may help*
 - *If medication makes you groggy, take it at bedtime if possible*
 - *If medications keeps you awake at night, consider an AM dosage instead*



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Common Cause: Anemia

- When your body has too few red blood cells it has to work harder to supply oxygen to your muscles.
 - A simple activity like climbing the stairs can feel like climbing a mountain.
- Don't forget the importance of muscular conditioning!
 - A fit muscle uses less energy and oxygen to get the job done.
- After a transplant blood counts can take weeks or months to return to normal.
 - We must consider patient's lab values when developing an individual exercise program

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Common Cause: Poor Sleep

- Four out of five patients have trouble sleeping.
- **Suggestions**
 - *Always balance activity and rest for optimal energy*
 - *Before bedtime, try herbal tea or natural sleep aids*
 - *Reduce screen time an hour before you go to bed*
 - *Turn down the lights*
 - *Reduce external stimulation*
 - *Try earplugs*



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How to Combat Fatigue: Energy Conservation

- It is important to consider ways to maximize your energy throughout the day, especially during active treatment
- **Suggestions**
 - Break tasks into parts
 - Pace yourself and take rest breaks
 - Participate in meaningful activities when you have energy
 - Allow others to support and help with daily tasks
 - Set realistic goals for yourself



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How to Combat Fatigue: Work with Physical and/or Occupational Therapist

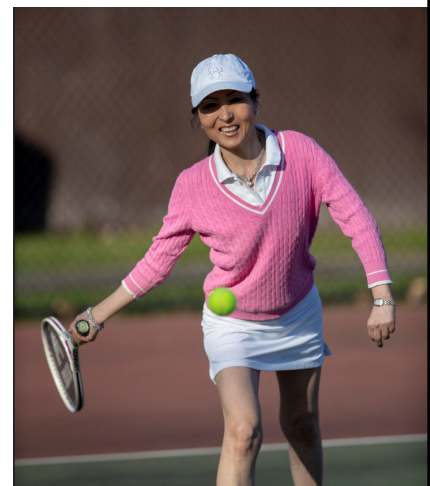
- A formal skilled therapy (PT/OT) evaluation is important to determine individualized goals for fatigue management and appropriate exercise prescription
- Areas to consider
 - Exercise/activity that fits into ongoing treatment regimens
 - Ongoing medical issues as part of treatment regimen
 - Current pain levels and activity tolerance
 - Functional testing to determine exercise prescription and/or modifications
 - Exercise goals and support



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How to Combat Fatigue: Exercise

- Although it may be counter-intuitive, exercise helps to fight fatigue especially during active treatment
 - Decreases anxiety and depression
 - Improves quality of life
 - Improves body image and helps promote optimal health
 - It is recommended that people exercise during and after cancer treatment



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Exercise: How Much, How Often?

- Recommended activity for cancer survivors
 - 150 minutes of moderate intensity aerobic activity OR 75 minutes of vigorous-intensity aerobic activity weekly¹
 - 2-3 non-consecutive days/week of resistance training and flexibility training¹
- **Suggestions**
 - *Don't rush into an exercise routine- start slowly and build yourself up*
 - *Activity IS exercise! Do what you can each day to stay active. People have good days and bad days*
 - *Include a warm-up or cool-down*
 - *Avoid exhaustion*

¹Campbell et al 2019

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Overall

- Learn the facts –
 - Communicate with your healthcare team and meet with a skilled physical therapist/occupational therapist!
- Pace yourself
- Set priorities and limits
- Exercise
- Know your body



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Specific Exercise Program

- Flexibility/Stretching
- Upper body
- Lower body/balance
- Core
- Aerobic conditioning



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Appendix

Exercises to Build Stamina and Strength and Reduce Fatigue

****These exercises are for demonstration ONLY. Please consult with your healthcare team prior to starting an exercise program.**

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Seated Hamstring Stretch on Physio Ball



Sit on a physio ball. Place one leg out straight next to the physio ball with your heel on the ground and toes pulled toward your nose.

Gently reach your arms forward but be careful to not allow the physio ball to roll out from under you.

Standing Quad Stretch with Chair



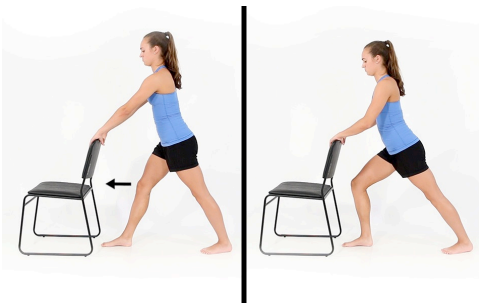
Begin standing facing away from a chair and have a second chair/counter in front of you for support.

Bend the knee of the leg to be stretched so the top of your foot is resting on the chair behind you.

Slowly bend your opposite knee and lean backwards until you feel a moderate stretch in your thigh. Hold as directed. Repeat as directed.

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Runners Stretch, Gastroc



Place your hands on a wall or chair out in front of you. Place the foot back you wish to stretch with your knee straight. Place your front foot far enough in front of you so that you can lunge forward with balance.

Slowly shift your body forward effectively bending flexing your back ankle. Keep your foot flat on the floor. You should feel a stretch in the back of your lower leg.

Hook Lying Lower Trunk



Lie on back with knees bent and feet flat on floor. Keeping your back flat on the ground, bring your knees downward toward one side until you feel a light stretch in your lower back.

Return to the starting position and then repeat toward the opposite side. Continue alternating as directed.

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Butterfly Stretch



Begin seated on a mat with both legs straight. Bend both legs up and bring the knees outward, placing the bottom of both of your feet together.

Place your hands on your feet and bend forward until you feel a stretch in your groin, making sure to keep your back straight. Hold as directed.

Repeat as directed.

Unilateral Pec Stretch In



Begin standing with a doorway about 1-2 feet in front of you. Bend the elbow of the arm to be stretched to 90 degrees, raise the arm so the upper arm is parallel to the floor, and place your forearm on the side of the doorway.

Step forward with one foot so that it is on the other side of the doorway. Slowly shift weight onto front foot until you feel a stretch in your chest. Hold as indicated.

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Triceps Stretch



Begin either sitting or standing and bring the arm to be stretch up over your head, as if you were going to rest your hand on your opposite shoulder.

With your opposite arm, grasp your upper arm just above the elbow, and gently pull toward your opposite shoulder until you feel a moderate stretch in the back of your arm. Hold as directed.

Hook Lying Transverse Abdominis Bracing with Pelvic Floor



Begin by lying on your back with feet flat on floor/bed. Keep a neutral spine (small space between low back and the floor). Place your hands on your stomach so that your fingertips are palpating are just inside your hip bone.

Inhale, exhale and contract your pelvic floor muscles (Kegel). Then, activate your transverse abdominus by drawing in your abdomen without moving your spine upon exhale. Brace your stomach as if your about to be punched in the stomach. Hold each contraction as specified.

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Abdominal Bracing with Marches



Begin by lying on your back with your knees bent and feet flat on the floor. Tighten your abdominals and roll your hips backwards, feeling your low back press downwards towards the floor.

Keeping your abdominals tight, alternate lifting your feet off the floor, keeping your knees bent as if you are marching in place. Repeat as directed.

Bridge

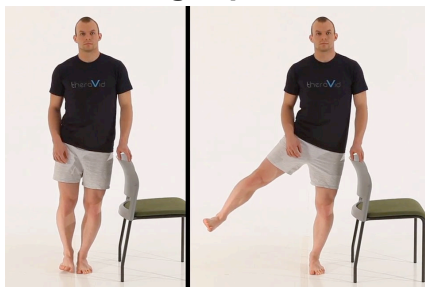


Begin by lying with knees bent and both feet placed on the floor with arms at your sides. Raise your hips off the surface by squeezing your buttock muscles.

Attempt to bring the hips up to where they are in line between the knees and shoulders. Slowly lower back to starting position. Repeat as directed.

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Standing Hip Abduction



Begin standing on flat ground. Place one hand on a railing or piece of stable furniture for stabilization.

Lift the leg to be exercised out to the side while keeping the knee straight and toes pointed forward. Be sure keep the trunk and pelvis pointed forward.

Slowly lower back to starting position. Repeat as directed.

Standing Hamstring Curl



Begin by standing with a stabilizing surface in front of you. Place both of your hands on or just above the stabilizing surface.

Slowly lift the lower portion of the leg to be exercised up and back toward the buttocks by bending at the knee.

Slowly lower back down to starting position. Repeat as directed.

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Standing March with Support



Begin by standing with a chair at your side, feet shoulder width apart, toes pointing forward.

While holding onto chair with single hand alternate raising your knees upward to waist level till hip and knee is at 90 degrees. Keep your abdominals tight and stand upright while looking forward.

Repeat as directed.

Sit to Stand



Begin sitting at the edge of a stable chair. With your legs shoulder-width apart and both arms extended out in front of you, slowly come into standing.

Follow this by slowly lowering yourself back to a seated position by bending your hip and knees and keeping your arms extended in front of you and your back straight. Repeat as directed.

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Step Up

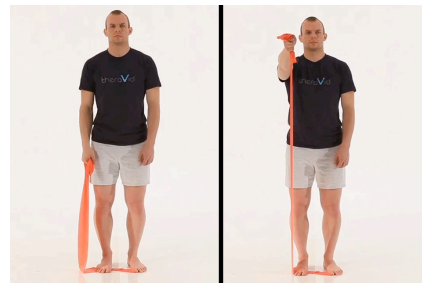


Stand in front of step.

Step up onto step with right leg and bring left leg up to meet it. Return to floor with both feet.

Repeat with left side.

Shoulder Flexion with Resistance Band to 90



Begin by standing on one end of an exercise band. Grasp the other end of the exercise band with the hand of the arm to be exercised and place the arm at your side.

Keeping the elbow straight, slowly lift the arm in front of you until it is parallel to the floor. Slowly lower back to starting position.

Repeat as directed.

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Standing Bilateral Bent-Over Row with Dumbbell



Stand with your hips slightly bent at 45 degrees and hold weights in your hands.

Bring your hands upward, bending your elbows and squeezing your shoulder blades.

Slowly return to the start position.

Perform specified number of repetitions.

Bilateral Scaption to 90 with Dumbbell

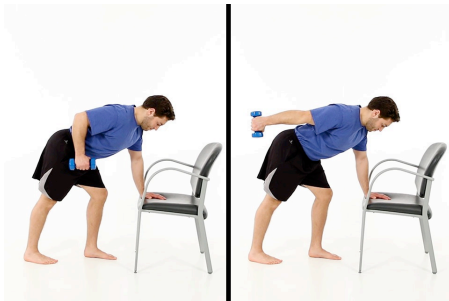


Begin by standing with your back straight, arms at your sides, and a weight in both hands. Keeping your elbows straight, slowly lift your arms in a "V" shape. Only raise up to 90 degrees, so that your arms are at shoulder height.

Slowly lower to starting position. Repeat as directed.

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Triceps Kickbacks



While standing, lean over a table or chair with your other arm as a support. Hold a weight in the other hand with your upper arm parallel to your trunk, elbow bent.

Straighten your elbow to raise your hand backward without moving the upper arm.

Return to the starting position and repeat.

Bicep Curl with Dumbbells



Stand. Hold dumbbell in hands and bend your elbows to perform bicep curl.

Return to starting position.

Repeat as specified.

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References

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Questions?



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