Improving Long Term Health with Exercise

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Objectives

- Effects of Cancer Treatment on the Body
- Components of Physical Fitness
- Developing Exercise Goals
- Implementing Exercise Goals
- Benefits of Exercise
- Modifications to Exercise
Cancer Survivorship

EXERCISE
Effects of Cancer Treatment

Acute Responses during Treatment

Cancer treatment

- ↑ Percent of body fat
- ↑ Intake of high-calorie foods
- Cardiomyopathy
- ↓ Muscle strength
  Mobility limitation
- Change in parenting

Sarcopenic Obesity

Adipokines, Inflammation, and Adiposity in Hematopoietic Cell Transplantation Survivors

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The higher percent fat mass observed supports previous studies that HCT survivors have a lean mass deficit and increased fat mass (sarcopenic obesity) associated with abnormalities in adipokine levels.

Ketterl et al. (2018) Biology of Blood and Marrow Transplantation
Metabolic Syndrome

- Increased rates of obesity in childhood cancer survivors.
- Increased risk of Metabolic Syndrome in childhood transplant survivors.
- Early complications from cardiovascular disease.
Body Composition

WATER  MUSCLE  BONE  FAT

Cancer Therapy
Sickness/Wellness/Fitness

“Wellness”
- Blood Pressure
- Body Fat
- Bone Density
- Triglycerides
- Cholesterol
- Flexibility
- Muscle Mass
- Etc

“Sickness”

“Fitness”
Impact of Childhood Cancer on Nutrition & Physical Activity

- Physical activity is an important factor in maintaining a **healthy body weight**.

- There are many factors that can influence a pediatric cancer survivor’s ability to be physically active; however, childhood cancer and its treatment **should not** be used as an **excuse** for not eating a **healthy diet** or staying **physically active**.

- Many survivors, just like many people who have never experienced cancer, have poor health habits.

- Now is a good time to begin **making healthy choices** about diet and exercise.

- These choices can have a **positive effect** on your health for many **years to come**.
5 Components of Physical Fitness

- Flexibility
- Body Composition
- Cardiorespiratory Endurance
- Muscular Strength
- Muscular Endurance
Developing a Healthy Exercise Plan

When choosing an exercise plan, ask yourself these questions:

• Do you have **reasonable goals** based on your present strength and endurance?
• Is the activity **safe** for you to perform?
• Does the plan fit into your **lifestyle** and **schedule**?
• Does the activity require **special equipment** or protective gear and will your budget **cover the expense**?
• Do you need to make changes in the sport or activity based on a **special need**?
• Do you enjoy doing the **sport** or **activity**?
How to Pick an Exercise Goal

• What can my body do?
• What is an activity or goal I want to achieve?
• I want to be able to do…

• Avoid appearance goals
• Avoid weight goals
Goal Setting

Make your SMART goals:

- Specific
- Measurable
- Achievable
- Realistic
- Time-bound
Write Down Goals

- 83% People with No Goals
- 14% People with Goals in their Heads
- 3% People with Written Goals

30 Times Successful
10 Times Successful
EXERCISE
Some motivation required.
Implementing An Exercise Plan

- Start out slow. Don’t try activities that are too strenuous or put you at risk for muscle strain.
- Begin your exercise plan with a warm-up program and end with a cool-down activity, such as stretching and slow easy movements.
- Use correct posture when exercising.
- Exercise until you are tired, but not in pain.
- Identify the muscles you want to strengthen and choose exercises that work on those muscles.
- Alternate exercises to work different muscles and different parts of your body.
- To avoid injury, use the right equipment and shoes.
- Increase your workout by no more than 10 percent per week.
Target Heart Rate

Maximum Heart Rate (MHR)
220 – AGE = MHR

Target Heart Rate
MHR X .60 = Minimum Heart Rate
MHR X .80 = Maximum Heart Rate

Example 16 Year Old
220 - 16 = 204 (MHR)
204 x .60 = 122 (low)
204 x .80 = 163 (high)

Goal range is 122 – 163 (60-80%)

Training Zones:
- Warm-up Zone: 50-60%
- Fat Burning Zone: 60-70%
- Aerobic Zone: 70-80%
- Anaerobic Zone: 80-90%
- Red Line Zone: 90-100%
Progression of Exercise

- Mechanics
  - How to do a movement or exercise
- Consistency
  - Do it correctly every time
- Intensity
  - Increase speed, weight and effort
Exercise Tips

- Park at the back of the parking lot to get a brisk walk in throughout the day.
- Set aside 30 minutes a day to take a brisk walk.
- Take the stairs instead of the elevator.
- Stretch your muscles every hour and take a walk during your lunch or break.
- Ride a bike to work or for running errands.
- If you have a dog, take him/her on a brisk walk every day.
- Watch TV or read a book while on a stationary bike or treadmill.
- Plan active family outings, instead of attending a movie.
- Exercise with a friend/family member you enjoy spending time with.
- Join a sports team.
- Set limits on screen time.
Benefits of Exercise

- **Raised heart rate** to 170 bpm (40-60 mins, 3-4x per week = 5-10% improvement in **aerobic fitness** in 8-12 weeks).
- **Resistance training** 2 or 3x per week improves **muscle strength** and endurance.
- Every 15 mins of exercise improves **academic performance** by an average of about a quarter of a grade.

- 30 minutes of **cardio** exercise per day boosts **confidence**, reduces **stress** and **anxiety**.
- Exercise between the ages of **11-18** increases **bone density**, particularly in the spine and hip.
- 30 minutes on the treadmill boosts **problem solving** by up to 10%.
Benefits of Regular Exercise

- Helps build and maintain healthy bones, muscles and joints
- Helps reduce the risk of developing obesity and chronic diseases
- Helps to achieve and maintain a healthy body weight
- Improves the quantity and quality of sleep
- Greater self-esteem and better self image
- Improves coordination and motor skills
“If exercise could be packed in a pill, it would be the single most widely prescribed and beneficial medicine in the nation.”

-Robert N. Butler, MD, Former Director, National Institute on Aging
Questions?

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