EXERCISING SAFELY THROUGH CANCER

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WHAT IS REHABILITATION?

- Rehabilitation deals with prevention, diagnosis, treatment and maximizing recovery from a serious illness or injury.

(definition from LIVESTRONG)
INTEGRATED TEAM

- Oncologist
- Physical Therapist
- Occupational Therapist
- Speech and Language Pathologist
- Rehabilitation Nurse
- Registered Dietician
- Psychological Counselor
- Vocational Rehabilitation Specialist
- Exercise Physiologist
American College of Sports Medicine

**ACSM is the largest sports medicine and exercise science organization in the world.**

**Exercise is Medicine is a global health initiative that is focused on encouraging primary care physicians and other health care providers to include physical activity when designing treatment plans for patients and referring their patients to Health Fitness Professionals.**
ACSM’s leadership panel convenes expert panel to review the scientific evidence on cancer survivorship and exercise

- Prior exercise guidelines were non-specific
- Scientific evidence base has grown exponentially over the past few decades (during and post Tx)
- Exercise programs for cancer survivors are beginning to proliferate
<table>
<thead>
<tr>
<th>Condition</th>
<th>Chemo</th>
<th>Radiation</th>
<th>Hormone therapy</th>
<th>Surgery</th>
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</thead>
<tbody>
<tr>
<td>Second Cancers</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Fatigue</td>
<td>X</td>
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<tr>
<td>Pain</td>
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<tr>
<td>Cardiovascular Damage</td>
<td>X</td>
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<tr>
<td>Pulmonary changes</td>
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<tr>
<td>Peripheral Neuropathy</td>
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<tr>
<td>Cognitive changes</td>
<td>X</td>
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<tr>
<td>Endocrine changes</td>
<td>X</td>
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<tr>
<td>Body weight changes</td>
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<td>X</td>
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<tr>
<td>Musculoskeletal changes</td>
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<td>X</td>
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<tr>
<td>Impaired immune function</td>
<td>X</td>
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<tr>
<td>Lymphedema</td>
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<tr>
<td>Gastrointestinal damage</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Organ function changes</td>
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<td>X</td>
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<tr>
<td>Side Effects</td>
<td>Exercise Benefits</td>
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<td>--------------------------------------------------</td>
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<tr>
<td>Low blood cell count</td>
<td>Stimulation of hematopoietic</td>
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<tr>
<td>Cachexia, Increased adiposity</td>
<td>Increase in protein synthesis, muscle regeneration, fat metabolism</td>
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<tr>
<td>Decreased flexibility/ROM</td>
<td>Improvements in connective tissue integrity, decreases in pain</td>
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<tr>
<td>Increased necrosis and cellular debris</td>
<td>Improved removal of cellular metabolites and toxins</td>
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<tr>
<td>Decreased energy production, delivery and utilization</td>
<td>Improved carbohydrate, fat and protein metabolism. Improved energy production and utilization</td>
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<tr>
<td>Cardiotoxicity</td>
<td>Improved cardiovascular efficiency</td>
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<tr>
<td>Depression, anxiety</td>
<td>Improve confidence, body image, decreases stress, improves sleep</td>
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<tr>
<td>Decreased immune function</td>
<td>Up-regulation of immune function</td>
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<tr>
<td>Fatigue</td>
<td>Improves fatigue, improves physical and psychological functioning</td>
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</table>
THE RESEARCH

- **Cardio-Respiratory**
  - (Milne et al., 2008); (Courneya et. al., 2009); (Segal et. al., 2009)

- **Strength**
  - (Milne et. al., 2008); (Adamsen et al., 2009); (Segal et al., 2009)

- **Physical Function**
  - (Galvao et. al., 2010); (Campbell et. al., 2005); (Shelton et. al., 2009)

- **QoL**
  - (Mustian et. al., 2009)
ARE WE EXERCISING?
Results are positive!
- Physical Function.
- Reduction in risk of cancer recurrence and increase survival rates in breast and colorectal cancer populations

Cancer survivors' physical activity levels are thought to decline by at least one third following diagnosis and are often not recovered several years post treatment (Blanchard, Denniston, Baker, et al., 2003).

Only 29.6% of cancer survivors are meeting the American Cancer Society's/Public Health's/ACSM guidelines of 150 min of moderate intensity exercise per week (Blanchard, Courneya, Steink, 2008).
WHY AREN’T WE EXERCISING?

- Knowledge of exercise and its benefits
  - Discussion from the health care provider/Exercise professional
- Disease and treatment side effects
  - **Segal et al (2003) – (Fatigue)**
    - 3x/week for 12 weeks; 155 M prostate cancer; RT: 2 sets, 12 reps at 60-70%
    - **Results:** +42% UBS; +36% LBS; +QoL; - Fatigue
  - **Fong et al (2013) – (Shoulder)**
    - Compared survivors, sedentary survivors, and w/out
    - **Results:** Qigong increased shoulder/rotator muscular strength
    - 142 lung cancer; 71 PRP and 71 non PRP
    - **Results:** Pre-operative pulmonary rehabilitation is helpful to reduce postoperative complications and improve fast-track recovery.
GENERAL MEDICAL ASSESSMENTS
RECOMMENDED PRIOR TO EXERCISE

- Meet with your Physician
  - Evaluation for peripheral neuropathies and musculoskeletal morbidities secondary to treatment regardless of time since treatment
  - Hormonal therapy
  - Evaluation of fracture risk
  - Metastatic disease to the bone
  - Known cardiac conditions
  - As per ACSM guidelines
CANCER SITE SPECIFIC PRE-EXERCISE MEDICAL ASSESSMENTS

- Breast
  - Evaluate arm/shoulder morbidity prior to upper body exercise
  - Including lymphedema: Must be stable
- Prostate
  - Evaluate muscle strength and wasting
- Lung
  - Evaluate SOB symptoms
- Colon
  - Infection prevention with patients with an ostomy
- Gynecologic
  - Evaluate for LE lymphedema prior to exercise
BREAST
PROSTATE
LUNG

Inhale

Exhale
RECOMMENDATIONS FOR EXERCISING

Goal is to regain and improve:
- Physical function
- Aerobic capacity
- Strength
- Flexibility
- Improve body image and Quality of Life
- Improve body composition
## CONTRAINDICATIONS TO STARTING AN EXERCISE PROGRAM

<table>
<thead>
<tr>
<th>Considerations <code>\</code></th>
<th>Recommendations</th>
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<tbody>
<tr>
<td>Fatigue</td>
<td>Try to do 10 minutes of stretching a day</td>
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<tr>
<td>Neuropathy/Gait concerns</td>
<td>Avoid uneven surfaces or any weight bearing exercises that could cause a fall and injury</td>
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<tr>
<td>Bone Health</td>
<td>Do not use heavy weights/perform exercises that places too much stress bones</td>
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<tr>
<td>Edema/SOB</td>
<td>Let your physician of concerns</td>
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<tr>
<td>Medications</td>
<td>Watch for bleeding if taking blood thinners</td>
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<tr>
<td>Radiation</td>
<td>Don’t expose skin to chlorine in pools</td>
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<tr>
<td>Cather/Hickman lines</td>
<td>Avoid water that may cause infections</td>
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<tr>
<td>Blood Counts</td>
<td>Do not exercise if you have anemia. ADL’s can be performed.</td>
</tr>
<tr>
<td>Shoulder Health</td>
<td>Give appropriate time for healing after surgery – follow Doctor/Therapist’s recommendations</td>
</tr>
</tbody>
</table>
WHAT NOW?

RESTORE
Fitness Cancer Program

 ✓ Meet with your Physician
   • Medical form

 ✓ Meet with your Exercise Professional
   • Cancer History Form

 ✓ Perform your Fitness Assessment
   ▪ Class / Personal Training
   ▪ Home Based Program
P.E.A.!!!
OTHER RECOMMENDATIONS

welcome to Gilda’s Club

Cancer support for the whole family, the whole time™

Cancer Wellness House

Cancer Support Community

A Global Network of Education and Hope
Thank you!