Breast Cancer Rehab: Where we are today

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Defining Therapy for Breast Cancer

Good breast cancer rehab strives to mitigate the side effects caused by cancer and cancer treatments such as…

- Lymphedema
- Cancer-related fatigue
- Neuropathy: increased falls risk
- Chemobrain i.e. Chemo Induced Cognitive Impairment (CICI) and Cancer Fatigue Syndrome-Related Cognitive Impairment
- Chronic pain/functional loss

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Defining Therapy for Breast Cancer

- Referral from MD/DO/NP/PA
  - Most states have direct access to care, but referral is helpful for guarantee of insurance reimbursement
- Interdisciplinary Team
  - Physical Therapy
  - Occupational Therapy
  - Speech Therapy

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From Prehab to Chronic

- **Ideally therapy is a part of the breast cancer "story" and referral to rehab is considered upon diagnosis with breast cancer**
  - Prehab: can be used to prepare patient for cancer treatments
  - Treatment during Neo-Adjuvant Chemotherapy (before surgery) and Adjuvant Chemotherapy (after surgery) as well as long-term chemo
  - Pre-op visit and post-op treatments
    - Lumpectomy
    - Mastectomy without reconstruction
    - Reconstruction patients
      - From expanders through final stages of reconstruction
  - During and after radiation
  - For Chronic needs
    - Lymphedema
    - Mastectomy Pain Syndrome
    - Radiation Fibrosis
    - Implant Encapsulation
    - Metastatic Disease

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Breast Surgery Pre-Op Appointment

- Pre-op Tests and Measures
  - Lymphedema risk screening
    - L-Dex to measure Bioimpedance
    - Circumferential measurements
  - AROM/PROM
  - Strength Testing
    - Grip strength
- Review post-op protocol in detail
  - ROM restrictions
  - Seroma/Lymphedema prevention
  - ADLs/Self-Care
- Schedule appropriate timing for post-op visit and follow-ups

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Manual Therapy for Lymphatic Drainage

Certified Lymphedema Therapist: PT, OT, Massage Therapist, Nurse, MD/DO

- Klose
  - https://klosetraining.com/therapist-directory/
- Norton
  - http://www.nortonschool.com/therapistreferrals_form.html
- The Academy of Lymphatic Studies
  - https://www.acols.com/find-therapist/
- Vodder
  - https://www.vodderschool.com/contacts/therapist
- LANA: Lymphatic Academy of North America
  - https://www.clt-lana.org/search/therapists/.html

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PORi Techniques for Breast Patients

- PORi: Physiological Oncology Rehabilitation Institute
  - Julia Osborne, founder of Oncology Rehab has taught manual therapy rehab techniques for 15 years, and in 2016 opened PORi based in Denver
- Manual Techniques to Promote Healing of Lymphatics
  - Theory based on early treatment of lymphatic system with manual techniques to both superficial and deep lymphatics, as early as 2-3 weeks post-op
  - Combination of Trigger Point Release (TPR), Joint Mobilization, and Manual Lymphatic Drainage (MLD)
  - Encourage the system to recover without the use of compression if able
  - Complete Decongestive Therapy (CDT: an intensive course of 24/7 bandaging for 3-6 weeks followed by fitting with 24/7 compression garments) is a last resort
- Find a PORi therapist https://www.oncologyrehab.info/breast-cancer.html

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PORi
PHYSIOLOGICAL ONCOLOGY REHABILITATION INSTITUTE

Chemo Toxicity Program

- Prehab Tests and Measures
  - **Cardiovascular testing** for Phase 1 chemo rehab
  - **Cognitive screening**
  - **Sensory testing** with biothesiometer or tuning fork for threshold vibration measurement
    - Especially helpful for patients with pre-existing neuropathy, diabetic or otherwise
- Education
  - Patient will be educated at start of chemo about side effects and when to return to therapy
- Skilled Therapy
  - Patients who already show a need for services can be picked up early and have one-on-one sessions throughout chemotherapy
    - Fall risk
    - Prehab to qualify for surgery

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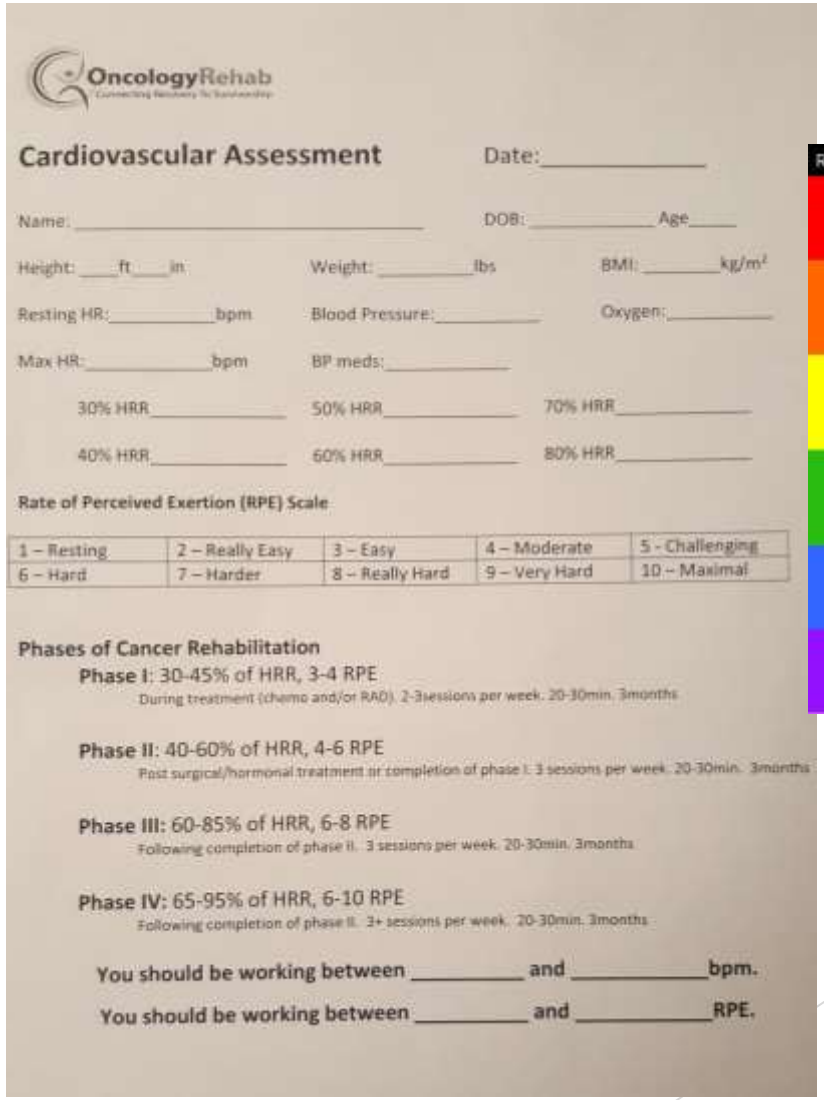
Cardiovascular Assessment

- Phases of Cancer Rehab
  - Phase 1: during active treatment, chemo and radiation
  - Phase 2: after working in Phase 1 for 12 weeks + chemo/radiation are complete
  - Phase 3: after working in Phase 2 for 12 weeks
  - Phase 4: after working in Phase 3 for 12 weeks

If patient does not have chemo/radiation, they may enter at Phase 2



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Cardiovascular Assessment Date:_____

Name:_____ DOB:_____ Age____

Height:____ft____in Weight:_____lbs BMI:_____kg/m²

Resting HR:_____bpm Blood Pressure:_____ Oxygen:_____

Max HR:_____bpm BP meds:_____

30% HRR_____ 50% HRR_____ 70% HRR_____

40% HRR_____ 60% HRR_____ 80% HRR_____

Rate of Perceived Exertion (RPE) Scale

1 – Resting	2 – Really Easy	3 – Easy	4 – Moderate	5 - Challenging
6 – Hard	7 – Harder	8 – Really Hard	9 – Very Hard	10 – Maximal

Phases of Cancer Rehabilitation

Phase I: 30-45% of HRR, 3-4 RPE
During treatment (chemo and/or RAD). 2-3sessions per week. 20-30min. 3months

Phase II: 40-60% of HRR, 4-6 RPE
Post surgical/hormonal treatment or completion of phase I. 3 sessions per week. 20-30min. 3months

Phase III: 60-85% of HRR, 6-8 RPE
Following completion of phase II. 3 sessions per week. 20-30min. 3months

Phase IV: 65-95% of HRR, 6-10 RPE
Following completion of phase III. 3+ sessions per week. 20-30min. 3months

You should be working between _____ and _____bpm.

You should be working between _____ and _____RPE.

RPE Scale	Rate of Perceived Exertion
10	**Max Effort Activity** Feels almost impossible to keep going. Completely out of breath, unable to talk. Cannot maintain for more than a very short time.
9	**Very Hard Activity** Very difficult to maintain exercise intensity. Can barely breath and speak only a few words
7-8	**Vigorous Activity** Borderline uncomfortable. Short of breath, can speak a sentence.
4-6	**Moderate Activity** Breathing heavily, can hold short conversation. Still somewhat comfortable, but becoming noticeably more challenging.
2-3	**Light Activity** Feels like you can maintain for hours. Easy to breathe and carry a conversation
1	**Very Light Activity** Hardly any exertion, but more than sleeping, watching TV, etc

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Cancer Treadmill Protocol

Stage	Speed (mph)	Grade (%)	Treadmill Time	Estimated VO2 peak (mL/kg/min)		METS	Estimated VO2 peak (Handrails)	
0	1.0	0	1:00-1:59	6.2 (walk)		1.8	6.2 (walk)	
1	1.5	0	2:00-2:59	7.5 (walk)		2.2	7.5 (walk)	
2	2.0	0	3:00-3:59	8.9 (walk)		2.5	8.9 (walk)	
3	2.5	0	4:00-4:59	10.2 (walk)		2.9	10.2 (walk)	
4	2.5	2	5:00-5:59	12.6 (walk)		3.6	12.1 (walk)	
5	3.0	2	6:00-6:59	14.4 (walk)		4.1	13.4 (walk)	
6	3.3	3	7:00-7:59	17.1 (walk)		4.9	15.2 (walk)	
7	3.4	4	8:00-8:59	19.2 (walk)		5.5	16.6 (walk)	
8	3.5	5	9:00-9:59	21.3 (walk)		6.1	18.1 (walk)	
9	3.6	6	10:00-10:59	28.0 (run)	23.6 (walk)	8.0/6.7	22.8 (run)	19.7 (walk)
10	3.7	7	11:00-11:59	29.6 (run)	25.9 (walk)	8.5/7.4	23.9 (run)	21.3 (walk)
11	3.8	8	12:00-12:59	31.2 (run)	28.3 (walk)	8.9/8.1	25.0 (run)	23.0 (walk)
12	3.9	9	13:00-13:59	32.9 (run)	30.9 (walk)	9.4/8.8	26.1 (run)	24.8 (walk)
13	4.0	10	14:00-14:59	34.6 (run)	33.5 (walk)	9.9/9.6	27.3 (run)	26.6 (walk)
14	4.1	11	15:00-15:59	36.4 (run)	36.2 (walk)	10.4	28.6 (run)	28.5 (walk)
15	4.2	12	16:00-16:59	38.2 (run)	39.1 (walk)	10.9/11.2	29.8 (run)	30.4 (walk)
16	4.3	13	17:00-17:59	40.0 (run)	42.0 (walk)	11.4/12.0	31.1 (run)	32.5 (walk)
17	4.4	14	18:00-18:59	41.9 (run)	45.0 (walk)	12.0/12.9	32.4 (run)	34.6 (walk)
18	4.5	15	19:00-19:59	43.9 (run)	48.1 (walk)	12.5/13.7	33.8 (run)	36.7 (walk)
19	4.6	16	20:00-20:59	45.9 (run)	51.3 (walk)	13.1/14.7	35.2 (run)	39.0 (walk)
20	4.7	17	21:00	48.0 (run)	54.6 (walk)	13.7/15.6	36.6 (run)	41.2 (walk)

Speed_____ Incline_____ HR_____ TO Speed_____ Incline_____ HR_____

HR at completion of test:_____

Predicted Aerobic Capacity: _____

Classification: _____

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Cardiorespiratory Endurance

Cancer Population-Specific VO2peak Norms (mL-kg-min)

Age	Low	Below Average	Average	Above Average	Excellent
Females					
19-39	≤20.7	20.8-23.7	23.8-26.7	26.8-31.5	≥31.6
40-49	≤18.0	18.1-21.7	21.8-24.5	24.6-29.1	≥29.2
50-59	≤17.6	17.7-21.3	21.4-23.4	23.5-26.8	≥26.9
60-69	≤15.2	15.3-17.5	17.6-20.9	21.0-25.3	≥25.4
≥70	≤12.1	12.2-15.9	16.0-18.0	18.1-22.8	≥22.9
Males					
19-39	≤24.5	24.6-24.9	25.0-27.6	27.7-34.9	≥35.0
40-49	≤22.1	22.2-24.5	24.6-30.3	30.4-34.3	≥34.4
50-59	≤16.6	16.7-19.5	19.6-22.6	22.7-29.1	≥29.2
60-69	≤14.2	14.3-17.3	17.4-22.9	23.0-28.4	≥28.5
≥70	≤13.0	13.1-15.8	15.9-21.2	21.3-24.8	≥24.9

General US Population VO2max Norms (mL-kg-min)
Cardiorespiratory Fitness Classification

Age	Poor	Fair	Good	Excellent	Superior
Females					
20-29	≤35	36-39	40-43	44-49	≥50
30-39	≤33	34-36	37-40	41-45	≥46
40-49	≤31	32-34	35-38	39-44	≥45
50-59	≤25	25-28	29-30	31-34	≥35
60-69	≤24	26-28	29-31	32-35	≥36
70-79	≤23	24-26	27-29	30-35	≥36
Males					
20-29	≤41	42-45	46-50	51-55	≥56
30-39	≤40	41-43	44-47	48-53	≥54
40-49	≤37	38-41	42-45	46-52	≥53
50-59	≤34	35-37	38-42	43-49	≥50
60-69	≤30	31-34	35-38	39-45	≥46
70-79	≤27	28-30	31-35	36-41	≥42

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Physical Therapy for Neuropathy

- Chemo-Induced Peripheral Neuropathy (CIPN)
- Vestibular Nerve Damage
- Other Neuropathy or Balance Impairment
  - Balance/Proprioception
  - Vestibular Retraining
  - Sensory Integration
  - Strengthening
  - Manual therapy with mobilization of feet and hands
  - Regular monitoring with Falls Risk Assessment

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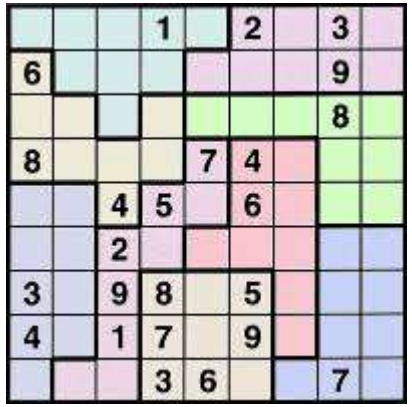
Speech Therapy for Cognitive Impairment

- Chemo-brain aka Chemo-Induced Cognitive Impairment (CICI)
- Cancer Fatigue Syndrome-Related Cognitive Impairment
- Other Cognitive Impairment
  - Memory
  - Attention and processing of information
  - Attention and concentration
  - Speed of information processing
  - Abstract reasoning, problem-solving, and executive functions
  - Verbal fluency



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In Summary…

Good breast cancer rehab strives to mitigate the side effects caused by cancer and cancer treatments!

We hope with early treatment and prevention we can reduce the incidence of:

- Lymphedema
- Cancer-related fatigue
- Falls
- Chronic pain/functional loss

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Reference:

Kee Shackelford DY, Brown JM, Peterson BM, Schaffer J, Hayward R (2017) The University of Northern Colorado Cancer Rehabilitation Institute Treadmill Protocol Accurately Measures VO2peak in Cancer Survivors. Int J Phys Med Rehabil 5:437. doi:10.4172/2329-9096.1000437

Questions?

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