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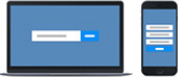
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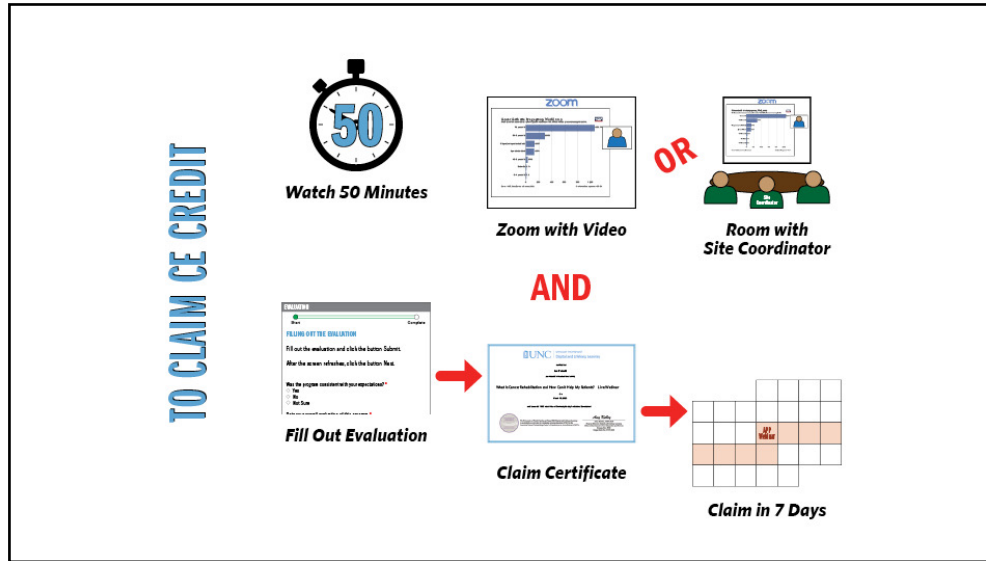
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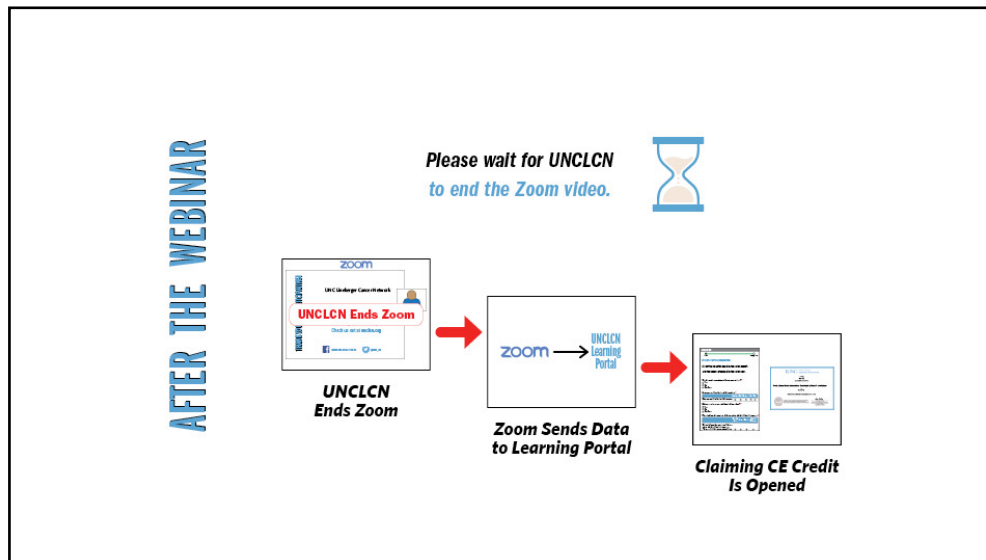


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3



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<b>RESEARCH TO PRACTICE</b> 4th Wednesday Jan-Oct 3rd Wednesday Nov-Dec 12 pm - 1 pm	CME NCPD/CNE ACPE ASRT CTR	<b>SOUTHEASTERN AMERICAN INDIAN CANCER HEALTH EQUITY PARTNERSHIP</b> 1st Wednesday Feb, May, Nov 12 pm - 1 pm	CME NCPD/CNE

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UNC Lineberger Cancer Network

**ADVANCED PRACTICE PROVIDER**

Live Webinar



Carly Bailey, MA




**Exercise and Wellness as Part of the Cancer Experience**

**August 16**

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**OUR PRESENTER**



**Carly Bailey, MA**

Carly Bailey, MA, is the Director of Physical Activity and Integrative Oncology for the UNC Lineberger Comprehensive Cancer Center. She is a graduate of UNC Chapel Hill's curriculum in Exercise Physiology where she received an MA.

After graduation, Carly gained experience as a research coordinator for exercise oncology studies at UNC and then as the research and program coordinator at Cedars-Sinai with the Cancer Survivorship program.

In her current position at UNC, Carly manages exercise and wellness programs, like Get Real and Heel. Her goal is to ensure program access, growth, and positive outcomes related to the exercise and integrative oncology programs at the cancer center.

Carly is an ACSM certified exercise physiologist and board-certified health coach.

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**OUR PRESENTER**

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**OUR PRESENTER**

5. Carly Bailey, MA, is an ACSM-certified exercise physiologist and board-certified health coach.

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**OUR PRESENTER**

5. Carly Bailey, MA, is an ACSM-certified exercise physiologist and board-certified health coach.
4. She is a graduate of UNC Chapel Hill's curriculum in Exercise Physiology where she received an MA.

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4. She is a graduate of UNC Chapel Hill's curriculum in Exercise Physiology where she received an MA.
3. At UNC Carly was a research coordinator for the exercise oncology studies, and at Cedars-Sinai she was a research and program coordinator for the Cancer Survivorship program.

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**OUR PRESENTER**

5. Carly Bailey, MA, is an ACSM-certified exercise physiologist and board-certified health coach.
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3. At UNC Carly was a research coordinator for the exercise oncology studies, and at Cedars-Sinai she was a research and program coordinator for the Cancer Survivorship program.
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When poll is active respond at: [PollTV.com/uncden](https://polltv.com/uncden) Send uncdcn to 22333

Patients undergoing chemo and or radiation therapy do not receive any benefits from exercise.

True	0%
False	0%

Unanswered | Answers | Clear responses

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**ACCME DISCLOSURE**

This activity has been planned and implemented under the sole supervision of the Course Director, William A. Wood, MD, MPH, in association with the UNC Office of Continuing Professional Development (CPD). The course director and CPD staff have no relevant financial relationships with ineligible companies as defined by the ACCME.

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UNC Lineberger Cancer Network

**Patients undergoing chemo and or radiation therapy do not receive any benefits from exercise.**



True 0%

False 0%

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Developing Comprehensive Exercise Programming  
for People Affected By Cancer

August 16, 2023



**Carly Bailey, MA**  
Director Physical Activity and Integrative Oncology  
National Board-Certified Health and Wellness Coach  
ASCM Clinical Exercise Physiologist  
Comprehensive Cancer Support Program  
UNC-Lineberger Comprehensive Cancer Center



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**Presentation Outline**

- **Why Exercise**
  - Benefits
  - Program Components
- **Engaging Patients**
  - Patient Led Conversations
  - Barriers and facilitators access
  - Capitalizing on principles of behavior change
- **What Already Exists at UNC**
  - and how to get your patients involved



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## Objectives

1. Define the role of a variety of modalities of exercise for the benefit of cancer survivors
2. Describe the parameters for safety of exercise during and after cancer treatment
3. Identify 2 ways to help patients engage in exercise during and after cancer treatment



## Physical Activity Rates Among Cancer Survivors

Cancer Survivors	Americans
30-47% of cancer patients are adequately active (Blanchard 2008, Webb 2016)	In 2020, 24.2% adults met 2018 PA guidelines
34% cancer survivors reported no leisure time PA	Most popular leisure activity is watching TV(2-3hrs) followed by gaming



- 15% of patients report being referred to an exercise program by their oncologist (Ligbel 2022)



## Recommendations for Exercise

### American College of Sports Medicine (ACSM)

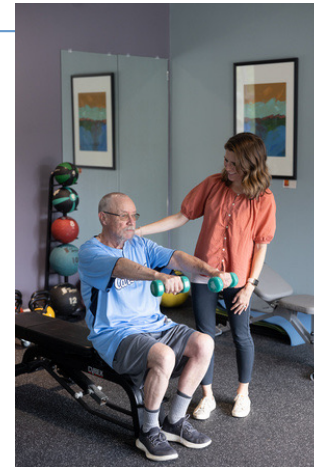
- AVOID INACTIVITY
- Cardio
  - 150 Min moderate intensity PA
  - 75 min high intensity PA
- Strength
  - Perform strength training with all major muscle groups 2x/week
- Flexibility
  - Stretch after each workout session



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## And a little more...

- General movement counts towards the 150 min
- Exercise is safe for patients with lymphedema
- Exercise is safe for patients with metastatic or advanced disease
- No medical clearance required for patients with no comorbidities





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### Is it safe for my patient to exercise?

Description of Patients	Evaluation, Prescription and Programming Recommendations
No comorbidities	No further pre-exercise medical evaluation* Follow general exercise recommendations
Peripheral neuropathy, arthritis/musculoskeletal issues, poor bone health (e.g., osteopenia or osteoporosis), lymphedema	Recommend pre-exercise medical evaluation* Modify general exercise recommendations based on assessments Consider referral to trained personnel!
Lung or abdominal surgery, ostomy, cardiopulmonary disease, ataxia, extreme fatigue, severe nutritional deficiencies, worsening/changing physical condition (i.e., lymphedema exacerbation), bone metastases	Pre-exercise medical evaluation* and clearance by physician prior to exercise Referral to trained personnel!

Most patients

 Campbell 2019 

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### PAR-Q+

- The PAR-Q+ is a 7-step questionnaire for use with persons of all ages. It screens for evidence of risk factors during moderate physical activity and reviews family history and disease severity

GENERAL HEALTH QUESTIONS		
Please read the 7 questions below carefully and answer each one honestly; check YES or NO.	YES	NO
1) Has your doctor ever said that you have a heart condition <input type="checkbox"/> OR high blood pressure <input type="checkbox"/> ?	<input type="checkbox"/>	<input type="checkbox"/>
2) Do you feel pain in your chest at rest, during your daily activities of living, OR when you do physical activity?	<input type="checkbox"/>	<input type="checkbox"/>
3) Do you lose balance because of dizziness OR have you lost consciousness in the last 12 months? <small>Please answer NO if your dizziness was associated with over-breathing (including during vigorous exercise).</small>	<input type="checkbox"/>	<input type="checkbox"/>
4) Have you ever been diagnosed with another chronic medical condition (other than heart disease or high blood pressure)? PLEASE LIST CONDITIONS HERE: _____	<input type="checkbox"/>	<input type="checkbox"/>
5) Are you currently taking prescribed medications for a chronic medical condition? PLEASE LIST CONDITIONS AND MEDICATIONS HERE: _____	<input type="checkbox"/>	<input type="checkbox"/>
6) Do you currently have (or have had within the past 12 months) a bone, joint, or soft tissue (muscle, ligament, or tendon) problem that could be made worse by becoming more physically active? Please answer NO if you had a problem in the past, but it does not limit your current ability to be physically active. PLEASE LIST CONDITIONS HERE: _____	<input type="checkbox"/>	<input type="checkbox"/>
7) Has your doctor ever said that you should only do medically supervised physical activity?	<input type="checkbox"/>	<input type="checkbox"/>

**Severity, Impairment and Control**



- Arthritis, Osteoporosis, Back Problems
- Cancer
- CAD, Heart failure, Arrhythmia
- Hypertension
- Diabetes
- Mental health
- Respiratory Disease
- Spinal Cord Injury
- Stroke

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**Safety Considerations**


Bone Mets/bone loss	Avoid high-impact movements, hyperextension or flexion of the spine and dynamic twisting movements
Lymphedema	Insufficient evidence to support or refute the clinical advice of a compression sleeve- refer to patient's provider for guidance
Older adults	Cancer can accelerate co-morbidities such as: sarcopenia, osteoporosis, cognitive decline, fatigue, neuropathy
Ostomy	Empty before exercise Avoid contact sports Supervision from exercise professional (avoiding Valsalva, modifying core, ensuring proper hydration for ileostomy)
Peripheral neuropathy	Balance, stability and gait should be assessed before starting exercise Consider non-weight bearing exercise Resistance training considerations (gloves, machines vs free weights)
Stem Cell Transplant	Home-based programs encouraged Light intensity, high frequency Progress slowly and on day-to-day basis
Neutropenia	Fevers Platelets <10-15K



 

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**Poll Everywhere**

**Scenario:** Amy is a 57-year-old breast cancer survivor. She was treated with a double mastectomy, chemotherapy, and radiation. She finished treatment 3 months ago and remains on Arimidex. She is concerned about her recent weight gain. She has right arm lymphedema and fatigue related to her treatment, and reports diabetes on her PAR-Q.



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## Why Exercise?

### Effects of Exercise on Health-Related Outcomes in Those with Cancer

**What can exercise do?**

- **Prevention of 7 common cancers\***  
Dose: 2018 Physical Activity Guidelines for Americans: 150-300 min/week moderate or 75-150 min/week vigorous aerobic exercise.
- **Survival of 3 common cancers\*\***  
Dose: Exact dose of physical activity needed to reduce cancer-specific or all-cause mortality is not yet known; Overall more activity appears to lead to better risk reduction.  
\*Breast, colon, endometrial, esophageal, kidney and stomach cancers  
\*\*Breast, colon and prostate cancers

**Overall, avoid inactivity, and to improve general health, aim to achieve the current physical activity guidelines for health: 150 min/week aerobic exercise and 2x/week strength training.**

Outcome	Aerobic Only	Resistance Only	Combination (Aerobic + Resistance)
<b>Strong Evidence</b>	Dose	Dose	Dose
<b>Cancer-related fatigue</b>	2x/week for 30 min per session of moderate intensity	2x/week of 2 sets of 12-15 reps for major muscle groups at moderate intensity	2x/week for 30 min per session of moderate aerobic exercise, plus 2x/week of resistance training 2 sets of 12-15 reps for major muscle groups at moderate intensity
<b>Health-related quality of life</b>	2-3x/week for 30-60 min per session of moderate to vigorous	2x/week of 2 sets of 8-15 reps for major muscle groups at a moderate to vigorous intensity	2-3x/week for 30-60 min per session of moderate aerobic exercise plus 2x/week of resistance training 2 sets of 8-15 reps for major muscle groups at moderate to vigorous intensity
<b>Physical Function</b>	2x/week for 30-60 min per session of moderate to vigorous	2-3x/week of 2 sets of 8-12 reps for major muscle groups of moderate to vigorous intensity	2x/week for 30-60 min per session of moderate to vigorous aerobic exercise, plus 2-3x/week of resistance training 2 sets of 8-12 reps for major muscle group at moderate to vigorous intensity
<b>Anxiety</b>	2x/week for 30-60 min per session of moderate to vigorous	Insufficient evidence	2-3x/week for 30-60 min of moderate to vigorous aerobic exercise plus 2x/week of resistance training of 2 sets, 8-12 reps for major muscle groups at moderate to vigorous intensity
<b>Depression</b>	2x/week for 30-60 min per session of moderate to vigorous	Insufficient evidence	2-3x/week for 30-60 min of moderate to vigorous aerobic exercise plus 2x/week of resistance training of 2 sets, 8-12 reps for major muscle groups at moderate to vigorous intensity
<b>Lymphedema</b>	Insufficient evidence	2-3x/week of progressive, supervised program for major muscle groups does not exacerbate lymphedema	Insufficient evidence
<b>Moderate Evidence</b>			
<b>Bone health</b>	Insufficient evidence	2-3x/week of moderate to vigorous resistance training plus high impact training (sufficient to generate ground reaction force of 2.4 times body weight) for at least 12 months	Insufficient evidence
<b>Sleep</b>	2-4x/week for 30-60 min per session of moderate intensity	Insufficient evidence	Insufficient evidence

Citation: [bit.ly/cancer\\_exercise\\_guidelines](http://bit.ly/cancer_exercise_guidelines)

Moderate intensity (40%-59% heart rate reserve or V<sub>O</sub>2) to vigorous intensity (60%-89% heart rate reserve or V<sub>O</sub>2) is recommended.

Exercise is Medicine | AMERICAN COLLEGE OF SPORTS MEDICINE

UNC LINEBERGER COMPREHENSIVE CANCER CENTER


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**Fatigue**

Fatigue can persist in 25% of cancer survivors many years after their treatment has ended and contributes to difficulty returning to work, independent living and poor quality of life (Bower, JE 2006)

Differential Effects of Exercise on Cancer-Related Fatigue During and Following Treatment: A Meta-Analysis

- Exercise significantly reduced cancer-related fatigue by a mean effect  $\Delta$  (95% CI) of 0.32 (0.21, 0.43) and 0.38 (0.21, 0.54) during and following cancer treatment, respectively.
- Exercise has a palliative effect in patients during treatment and a recuperative effect post-treatment.

 Puetz and Herring 2012

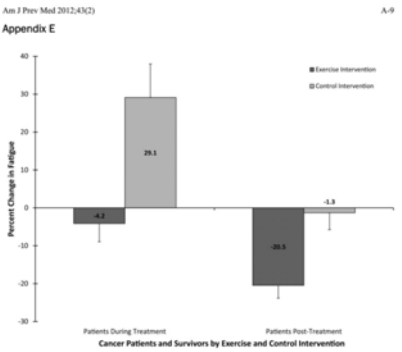


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**Fatigue**


- 70 studies
- 23 during treatment
- 27 post-treatment
- During treatment, the primary moderator was adherence
- Post treatment, the primary moderator was exercise program length, comparison type (waitlist controls)

Appendix E  
Am J Prev Med 2012;43(2) A-9



Intervention	Patients During Treatment	Patients Post-Treatment
Exercise Intervention	-4.2	-20.5
Control Intervention	25.1	-1.8

 Puetz and Herring (2012)



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### Quality Of Life

- **Meta-Analysis of 34 RCTs (Buffart et al 2016)**

- Exercise, and particularly supervised exercise, effectively improves QoL and PF in patients with cancer with different demographic and clinical characteristics during and following treatment
- No effects of intervention timing or FITT factors

- **Meta- Analysis of 74 RCTs (Sweegers et al 2018)**

- Exercise improved QOL and PF compared to control
- Supervised exercise resulted in significant beneficial effects
- Unsupervised exercise with higher energy expenditure was more effected than unsupervised exercise with low energy expenditure
- No differences in exercise intervention effects (timing, duration, or FITT factors)



### Anxiety and Depression

- **Systematic Review and Meta-Analysis of 15 RCTs(Craft et al 2013)**

- Exercise has positive effects on depressive symptoms
- Supervised or partially supervised
- Not home-based
- At least 30 minutes in duration

- **Meta- Analysis of 40 Trials (2 CCTs) (Mishra et al 2012)**


- Significant reduction in anxiety in the group exposed to exercise at 12 weeks follow up







**What makes a "good" exercise program?**

- **Variety**
  - Cardio (target 30 min)
  - Strength
    - Whole body
- **Supervised**
  - Personal touch
- **Uses FITT Principle**
  - Individualized



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 **What is the best mode of exercise to improve fatigue in patients with cancer?**

Cardio Only	0%
Strength Only	0%
Combo of Strength and Cardio	0%

Start the presentation to see live content. For screen share software, share the entire screen. Get help at [pollev.com/app](https://pollev.com/app)

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How to activate patients?



Scenario- Poll Everywhere

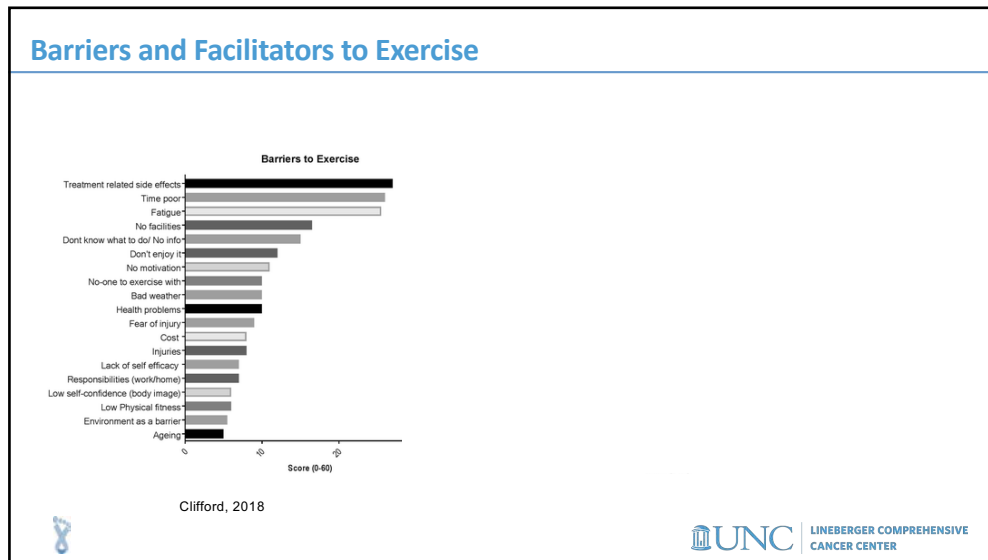
**Mark comes to clinic struggling with fatigue, anxiety, and pain.**

**You decide to mention exercise to him as an alternative way to manage these symptoms.**





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## Patient Led Engagement is Key

- Freedom to do what feels right for them
- Increased autonomy
- Less "micromanaging"



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## Provide Education and Resources

- **Simple ideas about what constitutes physical activity**
- **Community Resources**
  - LiveStrong
  - Cancer support programs
- **Caregivers**
  - Accountability!
- **Tracking resources**
  - Apple Watch, FitBit, etc
  - Journal



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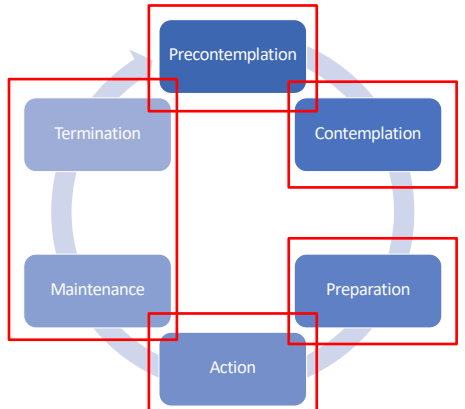
A combination approach to behavior change is critical



UNC LINEBERGER COMPREHENSIVE  
CANCER CENTER

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Reminders about Behavior Change



UNC LINEBERGER COMPREHENSIVE  
CANCER CENTER

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### Patient- Led Conversations

- What kind of exercise does your patient do?
- How important is physical activity/ wellness to them?
- What could they do if they were fitter, stronger, had better ROM... etc
- What does your patient need to be successful?
- Inspire hope and motivation

Contemplation

Preparation


Action




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### Set SMART Goals

- **Specific**
  - What will they do, how will they do it, what do they need
- **Measurable**
  - Frequency, duration
- **Attainable**
  - Can they actually do it?
- **Relevant**
  - Does it matter to them?
- **Timely**
  - When will they do the activity



*"Until my next appointment, I am going to walk 3 days a week for 20 minutes."*



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### Useful Techniques for Patient Led Conversation

- Open ended questions
  - How
  - What
  - Avoid Why
- Active listening
  - Limit distractions
- Reflection
  - Words
  - Emotions

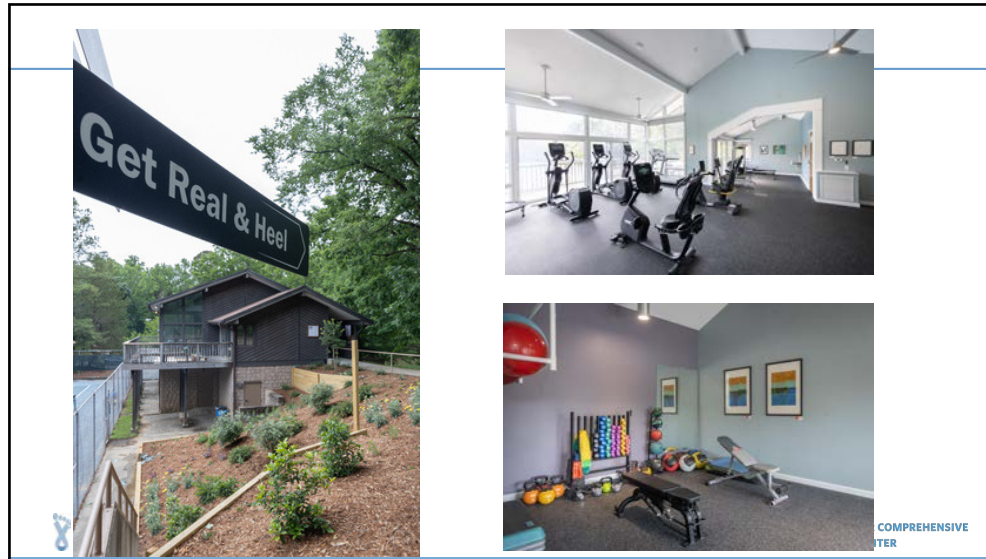


### Existing Exercise Resources at UNC Chapel Hill

Our mission is to offer a scalable, comprehensive, individualized, exercise program to meet the physical wellness needs of cancer survivors of all types. We aim to educate cancer survivors about safe, progressive exercise and provide a platform for students to learn how to deliver oncology-specific exercise programs.

Our purpose is to provide compassionate and effective exercise programming for all North Carolina cancer survivors.





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## Get Real and Heel

### Community Program

- 12-week moderate intensity, individualized, comprehensive exercise program
- Small groups, three times per week
- Includes: aerobic, strength, flexibility, and balance training
- Open to all cancer patients and survivors regardless of cancer diagnosis, stage, or treatment type
- Free
- Program requirements:
  - Completion of a baseline physical assessment (provided by the GR&H team)
  - Medical clearance may be required

### Remote Programming

- All remote programming
- Classes are offered live via zoom 5 days a week
- Recorded: posted to closed Facebook group and off-Facebook
- Still accepting new participants
- Free



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Other Exercise Offerings

	Yoga	Zumba	Walk to Wellness
Days per week	5	1	2
Time of Day	10 am	12 pm	6:30pm; 9 am
Class Duration	1 hour	1 hour	1 hour
Cost	Free	Free	Free
Location	Online 4 days/ week, in person 1 day/week	Online and in-person	Chapel Hill Parks and Recreation- Bolin Creek Trail



UNC- HealthScore Health Coaching Program

- 6-month research study (Bill Wood, PI) aimed to improve or maintain quality of life during or after cancer treatment
- Inclusion:
  - English or Spanish Speaking
  - 6 Month Life expectancy
  - Has metastatic or advanced cancer
- Participants are:
  - Given a FitBit
  - Randomized
    - Intervention Group: physical and PRO milestone assessments, weekly health coaching, symptom monitoring, and resource navigation
    - Control group: standard of care and milestone assessments



## Getting Patients Involved in UNC Exercise Programs

- Email
  - Carly\_Bailey@med.unc.edu
- Phone
  - Get Real and Heel: 919-962-1222
  - Carly: 919-445-4255
- Epic in-basket message (Charlotte Bailey)
- Dot phrase for AVS
  - .GETREALAVS



## At UNC- Oncology Exercise Program Order

Search "Onc Ex"



Oncology Exercise Program

Class: Clinic Perfo

Priority: Routine

select exercise program  Get Real and Heel (GNCH)  Healthscore

Do you have any clinical concerns that would limit the patient's ability to participate?

Yes No

in my professional medical opinion, it is safe for the patient to participate in this moderate intensity aerobic/strength program. The patient is/was under my care for the treatment of cancer and is medically stable to begin participating immediately.

Yes No

Comments:

✔ Accept ✕ Cancel

✔ Accept ✕ Cancel



At UNC- Oncology Exercise Program Order

The screenshot shows a web-based form titled "Oncology Exercise Program". The form includes the following fields and options:

- Class:** Clinic Perfo
- Priority:** Routine (with a dropdown arrow) and STAT
- Select exercise program:** Get final and send to NCHS (checked), Healthcare (checked), and a text input field.
- Do you have any clinical concerns that would limit the patient's ability to participate?:** Yes (checked), No (with a dropdown arrow), and Comments.
- Enter clinical concerns:** A text input field containing "DM".
- Professional opinion:** A text area containing the text: "In my professional medical opinion, it is safe for the patient to participate in this moderate intensity aerobic/strength program. The patient is/has under my care for the treatment of cancer and is medically stable to begin participating immediately."
- Comments:** A text area with a rich text editor toolbar.

Buttons for "Accept" and "Cancel" are visible at the top right and bottom right of the form.



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GRH's Future

- Partnership for research studies at UNC and beyond
  - Research capabilities
- Partnership for launch of GRH program at other sites
  - Program growth
- Community partnerships
  - Expansion into the larger community



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### Questions / Comments?


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**UPCOMING LIVE WEBINARS**

	<p><b>RESEARCH TO PRACTICE</b> No CME credit available for August 23 webinar</p>	<p><b>August 23 12:00 PM</b></p> <p><b>Head &amp; Neck Cancer Management in NC: Updates 2023</b></p> <p><b>Wendell Yarbrough, MD, MMHC, FACS</b> <b>Jared Weiss, MD</b> <b>Siddharth Sheth, DO, MPH</b> <b>Colette J. Shen, MD, PhD</b></p>
	<p><b>PATIENT CENTERED CARE</b></p>	<p><b>September 13 12:00 PM</b></p> <p><b>Improving the Lives of AYA with Cancer</b></p> <p><b>Lauren Lux, MSW</b> <b>Catharine Swift, MSW, LCSW</b> <b>Melissa Matson, MSN, RN, AGPCNP-BC</b></p>
	<p><b>ADVANCED PRACTICE PROVIDER</b></p>	<p><b>September 20 4:00 PM</b></p> <p><b>Oncologic Emergencies: Superior Vena Cava Syndrome, Hypercalcemia, and SIADH</b></p> <p><b>Allison Phillips, MPAP, MHPE, PA-C</b></p>

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**SELF-PACED, ONLINE COURSES**

**ADVANCED PRACTICE PROVIDER**  
Parenting with Cancer  
Justin Michael Yopp, PhD

**RESEARCH TO PRACTICE**  
The Ketogenic Diet for Brain Tumor Patients:  
A Phase 1 Trial and Beyond...  
Jethro L. Hu, MD

**PATIENT CENTERED CARE**  
Cancer Pathology: How Pathology Drives Treatment  
Yuri Fedoriw, MD

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**UNC Lineberger Cancer Network**

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