



PATHWAYS

A Study of Breast Cancer Survivorship

A NEWSLETTER FOR STUDY PARTICIPANTS

WINTER 2026

Physical Activity and Breast Cancer: Pathways Study Results and Clinical Recommendations

On October 30, 2025, the 6th Pathways Forum, “Physical Activity and Breast Cancer: Pathways Study Results and Clinical Recommendations,” was hosted by Zero Breast Cancer at the Collaborative for Health & Environment (CHE), and Kaiser Permanente Northern California Division of Research. You can view the Forum online at <https://zbcLink.org/PathwaysWebinars>. In this newsletter, we provide highlights from the webinar from the speakers, Pathways researcher Rikki Cannioto, PhD, EdD (Roswell Park Comprehensive Cancer Center), physical therapist Holly Rodriguez, PT, MPT, CLT-LANA (Kaiser Permanente Vacaville Medical Center), and health coach Lianna Hartmour, MA, NBC-HWC (Zero Breast Cancer at CHE), as well as tips from sports psychologist Cory Nyamora, PsyD (Endurance: A Sports and Psychology Center).



Physical Activity and Breast Cancer Outcomes in the Pathways Study by Dr. Rikki Cannioto

The United States Department of Health and Human Services advises that all adults, including those with chronic illness and disability, aim to

achieve The Physical Activity Guidelines for Americans. The Physical Activity Guidelines for Americans recommend that all adults should: 1) move more and sit less throughout the day; 2) aim to accumulate 150-300 minutes of moderate-intensity aerobic physical activity each week, or 75-150 minutes of vigorous-intensity aerobic physical activity each week; and 3) perform muscle strengthening activities that target all major muscle groups on 2 or more days per week. For adults 65 and above, there is an additional recommendation to engage in balance training 2-3 days per week.

In the Pathways Study, we explored the relationship between self-reported physical activity and breast cancer survival. We classified participants into three groups according to their self-reported activity across three time points as inactive, low active, and moderate/high active – the equivalent to meeting or exceeding the current Physical Activity Guidelines. Participants reporting no leisure time aerobic physical activity



Dr. Rikki Cannioto

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were classified as inactive, participants performing some regular aerobic physical activity but not enough to meet the Guidelines were classified as “low activity,” and participants meeting or exceeding the Guidelines were classified as moderate/high activity.

We found that, in comparison to inactivity, consistently meeting or exceeding the minimum Physical Activity Guidelines (moderate/high activity levels) was associated with a 54% decrease in mortality (death) from any cause, a 46% reduction in breast cancer mortality, and a 41% reduction in breast cancer progression, which includes recurrence or death. Importantly, lower levels of activity were also associated with a 37% decreased risk of mortality from any cause and a 28% decreased risk of progression. These data are consistent with other studies showing that regular moderate-to-vigorous physical activity around the time of diagnosis and after diagnosis is associated with improved breast cancer outcomes. Keep in mind that meeting the minimum Physical Activity Guidelines can be accomplished by as little as 22 minutes of brisk walking for exercise per day. If this amount of activity is not feasible, any amount of regular activity is better than inactivity for improving health and breast cancer outcomes.

Lastly, there are currently no public health guidelines regarding the minimum number of steps per day needed for meeting the

Physical Activity Guidelines, decreasing all-cause mortality, or decreasing cancer-related mortality. However, current research suggests that accumulating 8,000 total steps per day is a good target for women and older adults, while 10,000 to 12,000 steps may be optimal for younger adults. Keep in mind that total steps include those that are “purposeful” (performed during exercise) and those that are “incidental” (performed during daily living activities). The general Physical Activity Guideline recommending “moving more and sitting less” throughout the day can result in an increase in incidental steps.



Holly Rodriguez

Physical Therapy Tips for Exercising after Breast Cancer Treatment by Holly Rodriguez

Exercise can help reduce cancer risk and recurrence and improve aerobic capacity, improve muscle strength, balance, and

quality of life, and enhance survival. Make sure you are cleared by your doctor to start exercising after your surgery and/or treatment. If you exercised before your surgery and/or treatment, do not resume where you left off prior as you are likely not at the same level of fitness. Start slow and progress gradually. You should stop if you have any pain and consult a physical therapist.

Here are some tips for how to address some common side effects from breast cancer treatment:



Lymphedema or the Risk of Lymphedema

- Watch Heaviness, Aching, Fatigue, Numbness, Tingling, and Swelling (HAFNTS)
- Take breaks if symptoms arise
- Avoid extreme temperatures
- Be cautious with high altitude
- Wear compression garments if you have lymphedema

Neuropathy

- Take precautions with balance
- Wear supportive shoes
- Watch tripping hazards

Osteoporosis

- Weight-bearing activities, strengthening, and balance activities can be helpful in reducing risk of falls and improving bone health
- Avoid twisting and bending of the spine, especially with lifting

Cardiotoxicity

- Start low and go slow. When beginning, make sure you can talk while exercising (talk test).
- Follow phases of treatment with Rate of Perceived Exertion (RPE) scale
- Use a targeted Heart Rate (HR) formula to exercise in safe zones

Radiation

- Radiation fibrosis is common
- Gentle stretching is helpful and recommended for 2+ years after radiation

Adjuvant Hormone Treatment

- Work on pacing
- Watch overheating
- Protect joints

Walking, stationary bike, exercising in the pool, gentle stretching yoga, Qigong, and tai chi are all good places to start and have been found beneficial. It can be helpful to begin by exercising several times a week for at least 10 minutes at a time, working up to this as needed. Only add an increase in time or an increase in resistance/tension/incline, never at the same time.

“Exercise snacks” are small bouts of exercise integrated throughout your day as you build up to longer periods of time. It might be dancing to the length of a song or pedaling your leg exerciser for the length of a commercial. It is all helpful.

It may take longer than you expect to get back to where you were with your exercise routine prior to breast cancer treatment. If you are not sure where to start, ask your doctor for a referral to an oncology rehabilitation specialist. A little activity can go a long way.

The Role of Health and Wellness Coaching in Fostering Physical Activity by Lianna Hartmour



Lianna Hartmour

Transitioning from knowing the benefits of physical activity to consistently applying that knowledge can be a significant challenge. Individuals often face internal and external barriers, such as a lack of sustained motivation, difficulty forming consistent habits, or navigating life's inevitable disruptions. These challenges highlight a gap between intention and action,

which traditional models of care may not fully address.

This is where the framework of health and wellness coaching provides a unique and valuable intervention. A health coach does not direct exercises like a trainer or prescribe exercises like a doctor or physical therapist, though these recommendations are crucial guidance for what to focus on. Instead, health and wellness coaches establish a collaborative partnership with clients. This approach is fundamentally client-centered, meaning the client is the expert in their own life. Through thought-provoking questions and a guided discussion, the coach's role is to facilitate self-discovery and internal motivation, drawing on an individual's strengths and values to align their actions with their goals. The National Board for Health & Wellness Coaching certification signifies a rigorous standard of training, ensuring coaches are equipped with a high level of competency and ethical practice.

In the context of physical activity, a health coach helps in several ways. First, they assist in goal clarification, moving beyond generic objectives like “be more active” to help clients define what a meaningful and achievable goal looks like for them personally. Second, they work with clients on barrier identification by proactively exploring

potential obstacles (such as time constraints or competing priorities) and develop realistic, flexible strategies to navigate them. Third, coaches facilitate strategy development by helping the client generate and select evidence-based strategies that are most likely to lead to long-term success. And fourth, they provide sustained accountability through regular check-ins and non-judgmental support, which helps clients maintain momentum and reinforce new behaviors, transforming short-term efforts into lasting habits.

Ultimately, the value of a health and wellness coach lies in their ability to foster self-efficacy—the belief in one's capacity to execute the behaviors necessary to achieve a desired outcome. This empowerment is the critical ingredient for transforming intentions into a lifestyle of sustained physical activity.

Zero Breast Cancer at CHE offers free health and wellness coaching to breast cancer survivors after active treatment in Northern California. For more information, visit

zerobreastcancer.org/resilientme.

Overcoming Psychological Barriers to Exercise by Dr. Cory Nyamora

If you have undergone cancer treatment, you may be facing challenges when it comes to exercise. Some common struggles may be depression, pain, and neuropathy. Here are tips that may help you incorporate physical activity into your routine:



Dr. Cory Nyamora



1. Mental health support can help with depression, anxiety or other reactions to your diagnosis and treatment. Your therapist can be a wonderful source of support and guidance. Some people also benefit from medication.
2. Work out with a friend, family or join a group doing physical activity you enjoy. It can give motivation and purpose. Joining an athletic group that fundraises for a cause or meeting a friend can give you that extra boost since you'll know you are helping others. It can be a wonderful way to deepen connections.
3. When choosing activities, go by your interests – is there something you loved before or something you've never done that sounds good? This will engage your mind and body, decreasing stress. Once you choose an activity, focus on the benefits of mental health – how did you feel afterwards? Was your mood better? Were you in less pain? Did you have more energy?
4. Consult with your physician if you have pain or neuropathy and find out what they recommend for exercise. Many times, lower impact exercises, such as swimming, walking, biking, weight training or yoga are helpful.
5. If you are a visual person, put up photos, words or other reminders on your wall or phone of why you love these activities.
6. Link up your physical activity with music or a favorite podcast. Only listen to them when exercising so that it's something you look forward to doing while you exercise. Basically, find a way to make movement fun and special.
7. Use a wellness coach, personal trainer or sports coach to tailor ideas and provide extra support.
8. Find resources in your area and if what you want doesn't exist and you have any energy start something in your area. It may help others and give you more purpose.
9. Set small goals – start with a few minutes a day or a few days a week.
10. Set steady goals so you don't second guess yourself – your goal could be to go out once a day no matter what.
11. Don't leave movement up to your mood. Setting up a pattern will allow the habit to develop and you won't have to spend as much energy trying to plan.
12. Moving in nature or anywhere beautiful can boost your mood.

For more tips or to request a therapy appointment, visit

<https://www.endurancecenter.org>.

Our next Webinar will be this spring and will focus on Pathways findings over the years. ☒

We are grateful for your role in Pathways. All of you add meaning and diversity to our team and contribute your unique perspective. Thank you for participating! Please do let us know if your phone number or home address has changed. You can email us at dor-pathways@kp.org ☒

For the most up to date information on the Pathways study, please visit our updated website: <https://thepathwaysstudy.org> ☒



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