

# New Study Confirms Benefits of Exercise for Breast Cancer Patients

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## STORY AT-A-GLANCE

- › Exercise benefits breast cancer patients by boosting immune function and lowering recurrence risk. A 30-minute moderate-intensity cycling session increased tumor-killing white blood cells, particularly natural killer cells, by 202%
- › For breast cancer patients undergoing chemotherapy, a home-based exercise and nutrition intervention led to better outcomes. 53% of participants showed no signs of cancer after treatment, compared to 28% in the usual care group
- › Exercise improves cognitive function in breast cancer survivors, with aerobic training being the most commonly studied. Muscle-brain communication likely plays a role in these cognitive benefits
- › A combination of exercise types and dietary changes is most effective for breast cancer patients. Multimodal programs combining different exercises with diet modifications best reduce fat and preserve lean muscle mass
- › Walking is an accessible, low-impact exercise that can reduce cancer risk and improve survival rates. Breast cancer survivors who walked daily for over 15 minutes showed a 60% lower risk of death

Exercise plays a significant role in improving outcomes for breast cancer patients. While the benefits of physical activity for overall health have long been established, a growing body of evidence highlights its specific advantages for those battling breast cancer.

From boosting immune system function to improving cognitive health, exercise is a powerful tool in the cancer care toolkit.

A study published in *Frontiers in Immunology* focused on newly diagnosed patients and revealed that even a single exercise session is beneficial, triggering positive changes in circulating immune cells.<sup>1</sup> The findings offer fresh insights into the mechanisms by which physical activity can support recovery and empower patients in their fight against breast cancer.

## **A 30-Minute Exercise Session Increases Tumor-Killing White Blood Cells**

Researchers from University of Turku in Finland examined how a 30-minute moderate-intensity cycling session influenced various immune cell subsets in the blood of 19 breast cancer patients between the ages of 36 and 68.<sup>2</sup> The participants had not yet started cancer treatments, and participated in the cycling session at a resistance of their choice.<sup>3</sup>

Significant changes in immune cell composition occurred following exercise, including increases in several key immune cell types, such as total leukocytes, neutrophils, lymphocytes and various T-cell subsets. Of particular interest was the substantial increase in natural killer (NK) cells, which showed a remarkable 202% increase at the end of the exercise period compared to resting levels.

The researchers also noted changes in the proportions of different immune cells. The percentage of NK cells and CD8+ T-cells increased, while the proportion of myeloid-derived suppressor cells (MDSCs) decreased. These shifts suggest a potential move toward a more anti-tumorigenic immune profile following exercise.

"The balance of different types of white blood cells determines whether the immune system works to destroy cancer or to support it. If there are more cancer-destroying cells than cancer-promoting cells in the tumor area, the body is more capable of fighting cancer," study author Tiia Koivula said in a news release.<sup>4</sup>

Interestingly, the study also found correlations between certain immune cell mobilizations and aspects of the patients' disease state, such as tumor size and hormone receptor status. Koivula continued:<sup>5</sup>

*"We found that during the exercise, the number and proportion of cancer-destroying cells increases in the bloodstream, while the proportion of cancer-promoting cells either stays the same or decreases. However, it is still unclear whether these changes seen in the bloodstream also lead to changes in the white blood cell counts in tumor area.*

*In this study, it was seen that the number of almost all white blood cell types decreased back to resting values one hour after the exercise. With the current knowledge, we cannot say where the white blood cells go after the exercise, but in preclinical studies, cancer-destroying cells have been seen to migrate into the tumor area."*

## **Exercise Leads to Better Outcomes During Treatment**

Often, people with cancer capitulate to taking **chemotherapy**, either because of fear, their own choice or direction from loved ones or their oncologist. However, many alternative practitioners treating cancer patients say their biggest challenge is the fact that virtually no one comes to see them before they take chemotherapy, which often destroys their body's healing abilities.

For those undergoing chemotherapy, exercise is a useful intervention, according to a randomized trial published in the Journal of Clinical Oncology.<sup>6</sup> Researchers gathered a group of 173 women with different stages of breast cancer and split them into two groups: one that received home-based exercise and nutrition intervention and another that continued with their usual care.

Among the women who were receiving chemotherapy before surgery, known as neoadjuvant chemotherapy, the group that exercised more and ate healthier had much better results. More than half of them (53%) had what's called a pathologic complete

response (pCR), meaning there were no signs of cancer left after treatment, compared to 28% in the usual care group.

The study also noted that despite the high prevalence of chemotherapy-induced side effects, participants in the intervention group were able to improve their diet quality during treatment. "Given that pCR is an accepted predictor of recurrence and mortality, our findings could provide oncologists with a supportive care intervention that affects the ability to potentially improve survival outcomes," the researchers concluded.<sup>7</sup>

## **Exercise Improves Cognitive Function in Breast Cancer Survivors**

Many women who've beaten breast cancer report concerns about their cognitive abilities afterward. It's a phenomenon known as cancer-related cognitive impairment (CRCI), and it's become a major focus for researchers. This is another area where exercise shines.

A scoping review published in the journal *Breast Cancer*<sup>8</sup> set out to explore how physical activity and exercise programs affect CRCI in breast cancer survivors, analyzing studies published over a 21-year period from 2000 to 2021.

Out of 1,129 articles, only 20 met the criteria for inclusion in this review. Most of the observational studies were cross-sectional, meaning they looked at data from a specific point in time. On the experimental side, the majority were randomized controlled trials or randomized crossover trials — these are considered the gold standard in research.

The studies used a variety of tools to measure cognitive function, including neuropsychological tests and self-reported questionnaires.

When it came to physical activity, most studies focused on moderate to vigorous physical activity (MVPA), which is defined as activities that require more than 3 METs — or metabolic equivalent of task — of energy expenditure. For comparison, 1 MET describes the energy cost of a person sitting quietly, while walking at a moderate pace of 3 miles per hour requires about 3.5 METs.<sup>9</sup>

While the evidence is still emerging, there's promise in using exercise to improve brain health among breast cancer survivors. Aerobic training, in particular, was the most commonly studied type of exercise.

"The exploratory approach of this review demonstrates modest but increasingly promising evidence regarding exercise's potential to improve brain health among breast cancer survivors," the researchers concluded.<sup>10</sup> Interestingly, they added that muscle-brain crosstalk, or the communication between your muscles and brain, is likely involved in exercise's benefits on cognitive function in breast cancer survivors.<sup>11</sup>

## **What Types of Exercise Are Best for Breast Cancer Patients and Survivors?**

In breast cancer survivors, exercise isn't just about getting fit; it's about recovering both physically and mentally, and finding a way back to "normal" life after cancer treatment. A systematic review and meta-synthesis looked into how breast cancer survivors feel about exercise after they've finished their treatment.

The researchers combed through nine different databases and included 24 studies, looking at what helps survivors stick with their exercise programs, and what gets in their way. One of the key takeaways is that breast cancer survivors need ongoing support to keep exercising. In addition to having a good workout plan, this involves getting emotional support and encouragement from health care providers, family members and others.

Ultimately, the study revealed that a team effort, with different types of experts working together to create exercise programs that really work, is ideal for breast cancer survivors.<sup>12</sup> As for which types of exercise are best, a systematic review and meta-analysis involving 84 studies looked into which combination of exercise, physical activity and dietary interventions works best for reducing fat and potentially increasing lean muscle mass.<sup>13</sup>

Obesity is a risk factor for developing breast cancer and for its recurrence. Plus, it can lead to poorer outcomes for those battling the disease. So, finding effective ways to manage weight in women diagnosed with breast cancer or at high risk of the disease is important.

The study revealed that it's not just one approach that works best — it's a combination. The most effective interventions were those that combined different strategies. For instance, calorie restriction combined with exercise was a powerhouse for reducing fat mass and body weight. But when it came to building lean muscle mass, resistance exercise came out on top.

Overall, multimodal programs — those that combine different types of exercise with dietary changes — were the superstars. These programs were the most effective at reducing fat, lowering body fat percentage, decreasing overall body weight and either increasing or preserving lean muscle mass.

## **Walking Is an Ideal Form of Exercise for Many**

Whether you're looking to lower your risk of chronic diseases like cancer or recover from disease, **embracing walking** can improve both your physical and mental health. Plus, it's a free, accessible activity that you can do virtually anywhere, and since it's low-impact and moderate-intensity, it's appropriate for people of all ages and fitness levels.

A review published in *GeroScience*<sup>14</sup> found that walking is a powerful antiaging intervention that can reduce the risk of chronic age-related diseases like cancer. "A recent analysis of the UK Biobank cohort, which measured accelerometer-based daily step count in 78,500 individuals, showed that accruing more daily steps, including intentional walking steps, was associated with a lower risk of incident cancer and mortality due to cancer," the researchers explained.<sup>15</sup>

In another example, a cohort study involving breast cancer survivors found that even moderate physical activity, such as walking, was linked to a 60% lower risk of death.<sup>16</sup>

Study author Reina Haque, senior cancer epidemiologist in the Kaiser Permanente Southern California Department of Research & Evaluation, said in a news release:<sup>17</sup>

*"Our study shows that breast cancer survivors who exercise at moderate levels, such as walking every day for more than 15 minutes, may experience the same survival benefits as those who do more strenuous exercise."*

Unlike **high-intensity workouts**, which can backfire if you overdo it, moderate-intensity activity like walking offers the health benefits of physical activity without the risks of overexercising.

## Important Tips for Breast Cancer Prevention

**Mitochondrial dysfunction** is at the heart of most chronic diseases, including cancer. In addition to excess **linoleic acid** intake, gut dysbiosis that leads to the production of endotoxin and exposure to electromagnetic fields (EMFs), **estrogen dominance** is a primary contributor to mitochondrial dysfunction.

**Estrogens** are a leading factor contributing to increasing your cancer risk – along with the plastic burden contributing their xenoestrogens – as both decrease mitochondrial function. **Progesterone** is the antidote because it is not only anti-estrogen but also inhibits cortisol and will improve mitochondria production of cellular energy by blocking estrogen and cortisol.

Hormonal birth control may also increase breast cancer risk. A case-control study and meta-analysis, published in PLOS Medicine, assessed breast cancer risk associated with different types of hormonal contraceptives.<sup>18</sup> The study found that current or recent use of hormonal contraceptives was associated with an increased risk of breast cancer, with researchers stating:<sup>19</sup>

*"Our findings suggest that there is a relative increase of around 20% to 30% in breast cancer risk associated with current or recent use of either combined oral or progestogen-only contraceptives ..."*

*When our findings for oral contraceptives are combined with results from previous studies (which included women in a wider age range), they suggest that the 15-year absolute excess risk of breast cancer associated with use of oral contraceptives ranges from 8 per 100,000 users (an increase in incidence from 0.084% to 0.093%) for use from age 16 to 20 to about 265 per 100,000 users (from 2.0% to 2.2%) for use from age 35 to 39."*

## **How to Use Progesterone**

Before you consider using progesterone it is important to understand that it is not a magic bullet, and that you get the most benefit by implementing a Bioenergetic diet approach that allows you to effectively burn glucose as your primary fuel without backing up electrons in your mitochondria that reduces your energy production. My new book, "Your Guide to Cellular Health: Unlocking the Science of Longevity and Joy," covers this process in great detail.

Once you have dialed in your diet, an effective strategy that can help counteract estrogen excess is to take transmucosal progesterone (i.e., applied to your gums, not oral or transdermal), which is a natural estrogen antagonist. Progesterone is one of only three hormones I believe many adults can benefit from. (The other two are DHEA and pregnenolone.)

I do not recommend transdermal progesterone, as your skin expresses high levels of 5-alpha reductase enzyme, which causes a significant portion of the progesterone you're taking to be irreversibly converted primarily into allopregnanolone and cannot be converted back into progesterone.

## **Ideal Way to Administer Progesterone**

Please note that when progesterone is used transmucosally on your gums as I advise, the FDA believes that somehow converts it into a drug and prohibits any company from



advising that on its label. This is why companies promote their progesterone products as "topical."

However, please understand that it is perfectly legal for any physician to recommend an off-label indication for a drug to their patient. In this case progesterone is a natural hormone and not a drug and is very safe even in high doses. This is unlike synthetic progesterone called progestins that are used by drug companies, but frequently, and incorrectly, referred.

Dr. Ray Peat has done the seminal work in progesterone and probably was the world's greatest expert on progesterone. He wrote his Ph.D. on estrogen in 1982 and spent most of his professional career documenting the need to counteract the dangers of excess estrogen with low LA diets and transmucosal progesterone supplementation.

He determined that most solvents do not dissolve progesterone well and discovered that vitamin E is the best solvent to optimally provide progesterone in your tissue. Vitamin E also protects you against damage from LA. You just need to be very careful about which vitamin E you use as most supplemental vitamin E on the market is worse than worthless and will cause you harm not benefit.

It is imperative to avoid using any synthetic vitamin E (alpha tocopherol acetate – the acetate indicates that it's synthetic). Natural vitamin E will be labeled "d alpha tocopherol." This is the pure D isomer, which is what your body can use. There are also other vitamin E isomers, and you want the complete spectrum of tocopherols and tocotrienols, specifically the beta, gamma, and delta types, in the effective D isomer.

There are also other vitamin E isomers, and you want the complete spectrum of tocopherols and tocotrienols, specifically the beta, gamma, and delta types, in the effective D isomer. As an example of an ideal vitamin E you can look at the label on our vitamin E in our store. You can use any brand that has a similar label.

You can purchase pharmaceutical grade bioidentical progesterone as Progesterone Powder, Bioidentical Micronized Powder, 10 Grams for about \$40 on many online stores like Amazon. That is nearly a year's supply, depending on the dose you choose.

However, you will need to purchase some small stainless steel measuring spoons as you will need a 1/64 tsp which is 25 mg and a 1/32 tsp which is 50 mg. A normal dose is typically 25 to 50 mg and is taken 30 minutes before bed, as it has an anti-cortisol function and will increase GABA levels for a good night's sleep.

If you are a menstruating woman, you should take the progesterone during the luteal phase or the last half of your cycle, which can be determined by starting 10 days after the first day of your period and stopping the progesterone when your period starts.

If you are a male or non-menstruating woman you can take the progesterone every day for four to six months and then cycle off for one week. The best time of day to take progesterone is 30 minutes before bed as it has an anti-cortisol function and will increase GABA levels for a good night's sleep.

This is what I have personally doing for over a year with very good results. I am a physician so do not have any problems doing this. If you aren't a physician you should consult one before using this therapy, as transmucosal progesterone therapy requires a doctor's prescription.

## **Additional Prevention Strategies**

Additional strategies to protect against excessive estrogen load include:

**Choose natural products** — Opt for natural and organic personal care products, including makeup, skincare and hair care items, to reduce exposure to synthetic chemicals like parabens and phthalates, which have estrogenic properties.

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**Limit pesticide exposure** — Choose organic produce whenever possible to reduce exposure to pesticides, many of which have estrogenic effects. Washing fruits and vegetables thoroughly can also help remove pesticide residues.

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**Rethink your household products** — Many household cleaning products, laundry detergents and air fresheners contain chemicals with estrogenic properties. Swap

them out for natural, nontoxic alternatives or make your own cleaning solutions using vinegar, baking soda and essential oils instead.

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**Avoid plastic containers** – Minimize the use of plastic containers and food packaging, which can leach estrogenic compounds into food and beverages. Instead, opt for glass or stainless steel containers for food storage and water bottles.

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**Maintain a healthy weight** – Adopt a balanced diet and regularly exercise. This reduces your risk for overweight or obesity. Excess body fat, particularly around the thighs, hips and buttocks, can also contribute to higher estrogen levels.

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**Support liver health** – Support liver function, as your liver plays a crucial role in metabolizing and eliminating excess estrogen from your body. Eat a nutrient-rich diet, limit alcohol consumption and consider incorporating liver-supporting herbs and supplements, such as milk thistle or dandelion root.

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**Promote hormonal balance naturally** – Explore natural approaches to promote hormonal balance, such as consuming well-cooked cruciferous vegetables like broccoli, cauliflower and kale, which contain compounds that help support estrogen metabolism and detoxification.

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**Reduce stress** – Manage stress through relaxation techniques like meditation, deep breathing exercises, yoga or spending time in nature. Chronic stress can disrupt your hormone balance, including estrogen levels, so prioritizing stress reduction is essential.

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## Sources and References

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