Benefits of Yoga for Women with Metastatic Disease

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Yoga was developed over 5,000 years ago in India

The practice is a ‘mind-body’ experience comprised of a combination of physical poses (asanas), breathing exercises (pranayama) and meditation which results in numerous physiological effects.

Yoga is a form of CAM therapy believed to have beneficial effects on physical and emotional health.¹

Benefits of Yoga
Breathing Techniques: Pranayama

- 100 different combinations of breathing patterns
- Used as energy management tools to affect the high energy response to stress or the opposite, low-energy, withdrawn, depressed person
- Includes techniques such as Nadi Shodhana (alternate nostril breathing) and Ujjayi Breath
Benefits of Yoga

The effects of yoga have been explored in a number of patient populations, including individuals with:

- asthma
- cardiac conditions
- arthritis
- kyphosis
- multiple sclerosis
- epilepsy
- headache
- depression
- diabetes
- pain disorders
- gastrointestinal disorders
- addictions
- healthy individuals

In recent years, investigators have begun to examine the effects of yoga among cancer patients and survivors. ²
According to the World Health Organization, breast cancer is the most common cancer in women worldwide. 

New Cases of Cancer in Women in the US in 2014 (per the American Cancer Society) 

- Breast 29%
- Colon & rectum 8%
- Thyroid 6%
- Melanoma of skin 4%
- Pancreas 3%
- All other sites 21%
- Lung & bronchus 13%
- Uterine corpus 6%
- Non-Hodgkin lymphoma 4%
- Kidney & renal pelvis 3%
- Leukemia 3%

- Breast 29%
- Colon & rectum 8%
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- Pancreas 3%
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- Uterine corpus 6%
- Non-Hodgkin lymphoma 4%
- Kidney & renal pelvis 3%
- Leukemia 3%

According to the World Health Organization, breast cancer is the most common cancer in women worldwide.
Metastatic disease

- “Estimated to be around 5% in Europe and less than that in US for metastatic research for ALL cancers.”

- The National Cancer Institute defines metastatic cancer as “cancer that has spread from the place where it first started in the body.”

- All cancers can form metastatic tumors.

- The most common metastasis are bone, liver, and lung.

According to the National Cancer Institute:

<table>
<thead>
<tr>
<th>Cancer type</th>
<th>Main sites of metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder</td>
<td>Bone, liver, lung</td>
</tr>
<tr>
<td>Breast</td>
<td>Bone, brain, liver, lung</td>
</tr>
<tr>
<td>Colorectal</td>
<td>Liver, lung, peritoneum</td>
</tr>
<tr>
<td>Kidney</td>
<td>Adrenal gland, bone, brain, liver, lung</td>
</tr>
<tr>
<td>Lung</td>
<td>Adrenal gland, bone, brain, liver, other lung</td>
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<tr>
<td>Melanoma</td>
<td>Bone, brain, liver, lung, skin/muscle</td>
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<tr>
<td>Ovary</td>
<td>Liver, lung, peritoneum</td>
</tr>
<tr>
<td>Pancreas</td>
<td>Liver, lung, peritoneum</td>
</tr>
<tr>
<td>Prostate</td>
<td>Adrenal gland, bone, liver, lung</td>
</tr>
<tr>
<td>Stomach</td>
<td>Liver, lung, peritoneum</td>
</tr>
<tr>
<td>Thyroid</td>
<td>Bone, liver, lung</td>
</tr>
<tr>
<td>Uterus</td>
<td>Bone, liver, lung peritoneum, vagina</td>
</tr>
</tbody>
</table>
Metastatic Breast Cancer (MBC) Symptoms

- The fact that MBC can involve any organ and the many treatment options available can make management an added challenge.
- One third of patients with MBC present with local recurrence involving lymph nodes. Over time 75% of these patients develop metastases to other organs.  

MBC symptoms include:
- Pain
- Fatigue
- Depression
- Anxiety
- Difficulty Sleeping
- Lymphedema
- Dyspnea
- Bone metastasis
- GI symptoms
Cancer Patients’ Experiences with and Perceived Outcomes of Yoga: Results from a Focus Group.


- Varied types of cancers were studied in a group of women participating in a yoga program. ³

- Out of the 29 participants in the focus group, diagnoses ranged from the following cancers: breast, colorectal, lung, kidney, brain, endometrial + non-Hodgkin lymphoma, or Hodgkin lymphoma.

- Treatments ranged from surgery, chemotherapy, radiotherapy, hormone therapy, immunotherapy, autologous stem cell transplantation, or none.

- All participants perceived benefits in physical and psychosocial outcomes.
Cancer Patients’ Experiences with and Perceived Outcomes of Yoga (continued)

Some of the reported qualitative benefits included:

- Increased muscle strength, body flexibility, balance
- Increased energy level
- Better coping with pain
- Higher sleep quality
- Improved empowerment, self-esteem, stability
- Better coping with disease, treatment, anxiety
- Improved stress-management
- Increased focus and concentration
Predictors of Yoga Use Among Patients with Breast Cancer


- Cross sectional survey study conducted at the Rowan Breast Cancer Center of the Abramson Cancer Center of the University of Pennsylvania.
- Potential participants included all postmenopausal women with a history of histologically confirmed stage I to II, hormone receptor-positive breast cancer who were currently taking a third-generation aromatase inhibitor.
- Primary outcome: yoga use.
- Of 484 patients screened, 45 (9%) had metastatic disease.
- Out of 300 participants, 59 (17.7%) reported having used yoga following their cancer diagnosis.
The study showed evidence of significant differences between sociodemographic and clinical characteristics between yoga and non-yoga users.

Patients more likely to use yoga based on the findings:
- White patients*
- Higher level of education
- Normal weight women (BMI)

Patients with greater yoga use was also associated with:
- Part time employment status*
- Stage II cancer
- Previous chemotherapy*
- Previous Radiation therapy*

*Note: When multivariable regression analysis was utilized, yoga use was independently associated with education level and BMI. However, race/ethnicity, employment status, and previous use of chemotherapy or radiation therapy were not statistically significant.
### Table 1. Characteristics of Study Participants (N = 300)\(^a\)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No.</th>
<th>Percentage</th>
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<td>Age, y</td>
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<tr>
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<td>56-65</td>
<td>131</td>
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<tr>
<td>&gt;65</td>
<td>96</td>
<td>32.0</td>
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<tr>
<td>Race</td>
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<td></td>
</tr>
<tr>
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<tr>
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<td>Education</td>
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<td>50.0</td>
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<tr>
<td>Yes</td>
<td>194</td>
<td>64.7</td>
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</table>

BMI, body mass index.

*Some of the cells do not add up to 300 due to the missing data.

<sup>b</sup>Nonwhites: mostly black.

### Table 2. Characteristics of Study Population by Yoga Use (N = 300)<sup>a</sup>

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Yoga Users No. (%)</th>
<th>Non-Yoga Users No. (%)</th>
<th>(P) Value</th>
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<td>56-65</td>
<td>24 (18.5)</td>
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<tr>
<td>&gt;65</td>
<td>11 (11.5)</td>
<td>85 (88.5)</td>
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<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>White</td>
<td>51 (20.2)</td>
<td>202 (79.8)</td>
<td>.02</td>
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<tr>
<td>Nonwhite&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2 (4.4)</td>
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<td>10 (8.2)</td>
<td>112 (91.8)</td>
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<td>College graduate</td>
<td>16 (10.9)</td>
<td>136 (89.1)</td>
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<td>Employment status</td>
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<td>91 (80.4)</td>
<td>.005</td>
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<td>26 (65)</td>
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<td>32 (28.5)</td>
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<td>&gt;30</td>
<td>6 (6.3)</td>
<td>94 (93.7)</td>
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<td>Stage of cancer</td>
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<td></td>
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<tr>
<td>I</td>
<td>10 (10)</td>
<td>90 (90.0)</td>
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<tr>
<td>II</td>
<td>34 (24.1)</td>
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<tr>
<td>III</td>
<td>6 (6.5)</td>
<td>94 (93.5)</td>
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<tr>
<td>Surgery</td>
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<td></td>
<td>.30</td>
</tr>
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<td>No</td>
<td>30 (20)</td>
<td>120 (80.0)</td>
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<tr>
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<td>23 (15.4)</td>
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<td>42 (23.2)</td>
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<td>Yes</td>
<td>42 (21.7)</td>
<td>152 (78.4)</td>
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</tbody>
</table>

BMI, body mass index.

*Some of the cells do not add up to 300 due to the missing data.

<sup>b</sup>Nonwhites: mostly black.

### Table 3. Factors Associated With the Use of Yoga

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Univariate Analysis</th>
<th>Multivariate Analysis</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Age, y</td>
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<td></td>
</tr>
<tr>
<td>&lt;55</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>56-65</td>
<td>0.69</td>
<td>0.35-1.38</td>
</tr>
<tr>
<td>&gt;65</td>
<td>0.39</td>
<td>0.17-0.90</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Nonwhite&lt;sup&gt;b&lt;/sup&gt;</td>
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<td>0.04-0.77</td>
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<td>1.17-6.50</td>
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<td>1</td>
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<td>Part-time</td>
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<td>1.00-4.95</td>
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<td>Not currently employed</td>
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<td>BMI</td>
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<tr>
<td>&lt;25</td>
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<tr>
<td>Yes</td>
<td>2.36</td>
<td>1.16-4.81</td>
</tr>
</tbody>
</table>

OR, odds ratio; CI, confidence interval; AOR, adjusted odds ratio; BMI, body mass index.

<sup>*</sup>P < .05.
Benefits of Yoga on Immunity

- For cancer patients, in general, yoga therapy has shown the potential to:
  - reduce HIF-1 activity by enhanced oxygenation
  - promoting NK cell activity
  - minimizing the expressions of various tumor signaling pathways.
  - It may help prevent progression and recurrence of cancer when used with conventional treatment, but more studies are needed regarding metastatic cancer.  

- A recent study reviewed the benefits of implementing an integrated yoga program vs. supportive counseling for advanced MBC survivors. The results showed:
  - Decrease in cortisol (stress hormone) within the yoga group in 0600 hours
  - Significant increase in natural killer (NK) cell percentage in the yoga group compared to controls after intervention.
Benefits of Yoga on Affect & QOL

- Women diagnosed with MBC that participated in a yoga intervention program\textsuperscript{10} showed:
  - Decrease in anxiety, depression, perceived stress, and fatigue severity
  - Improvement in emotion function, role function, cognitive function, and global QOL.

- Evidence has shown a physical exercise program can improve emotional functioning, physical fatigue, and QOL in populations with incurable cancer and short life expectancy .\textsuperscript{11}
Benefits of Yoga on QOL (continued)

- A randomized controlled longitudinal trial explored the effects of a seated exercise program on fatigue and QOL in patients with MBC. The intervention group had a slower decline in total and physical well-being and QOL and less increase in fatigue scores starting with the third cycle of chemotherapy.  

- “Physical activity as supportive care in patients with advanced-stage cancer is feasible treatment approach and has the potential to decrease symptoms and improve health-related quality of life.”

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13
Benefits of Yoga on Fatigue


- A recent pilot study involved 120 minute sessions of gentle yoga comprised of physical stretching postures complemented by breathing exercises, meditation techniques, and study of awareness. 14

- The participants were women with metastatic breast cancer.

- Results showed that patients who practiced yoga longer on a given day were much more likely to experience:
  - significantly lower levels of pain and fatigue.
  - higher levels of invigoration, acceptance, and relaxation the next day.
Potential Benefits of Walking and Yoga on Perceived Levels of Cognitive Decline and Persistent Fatigue in Women with Breast Cancer


- Fatigue shows a 91% prevalence in women with breast cancer after chemotherapy.
- Purpose: This study investigated evidence for the effect of walking and yoga on BCSs post-chemotherapy.
- Method: search engines included Cochrane Database of Systematic Reviews, CINAHL, Nursing & Allied Health Collection: Comprehensive, MEDLINE, and PubMed. RCT, systematic reviews, cohort, and case series were searched for the effect of yoga on QOL, persistent fatigue, and perceived levels of cognitive decline in breast cancer populations.
Potential Benefits of Walking and Yoga on Perceived Levels of Cognitive Decline and Persistent Fatigue in Women with Breast Cancer


- Results:
  - Benefits of exercise included improvements in: physical function, QOL, body weight, fatigue levels, and psychological issues.
  - Benefits of walking included improvements in: QOL, decreased levels of anxiety, fatigue, and depression, increased levels of functional capacity.
  - Benefits of yoga included improvements in: sleep quality, strength, flexibility, and QOL.

- More research is needed to explore the impact of perceived levels of cognitive decline in breast cancer survivorship and how that can be impacted by exercise.
Physiological Benefits of Select Yoga Poses

- Child
- Half Moon
- Standing Angle
- Head to Knee
- Warrior 1
- Locust
Child - Garbhasana

Physiological Benefits

- Deeply tranquilizes the whole system, calming mind and emotions
- Provides counter-stretch for backward bending postures
- Increases flexibility in the hips and legs
- Massages, oxygenates and decongests abdominal organs
- Tones and stimulates pancreas, liver gall-bladder, kidneys, spleen, intestines, gonads and bladder
- Improves peristaltic action in the intestines
- Stimulates digestion and elimination
- Relieves intestinal gas
- Helps relieve constipation
- Helps relieve hemorrhoids
Half Moon – Ardha Chandrasasana

Physiological Benefits

▪ Provides alternate stretching & contraction of the sides of the body, toning & strengthening the intercostal, lateral & dorsal muscles
▪ Increases flexibility of the spine
▪ Strengthens ankles, knees, hips, back, shoulders, & neck
▪ Regulates kidney functioning
▪ Stimulates digestion & helps relieve constipation
▪ Firms & trims waistline, hips, abdomen, buttocks, & thighs
▪ Improves circulation & respiration
▪ Increases body heat & energizes the entire body
▪ Develops concentration, coordination, balance & poise, strength & groundedness
▪ Builds confidence
Standing Angle – Dandayamana Konasana

Physiological Benefits

- Strengthens and tones the feet, ankles, calves, knees, hips, back, arms, shoulders, and neck
- Stretches muscles, ligaments and nerves in inner thighs and back of legs (can help alleviate some cases of sciatica)
- Increases flexibility in the spine and hips
- Provides a powerful stretch to entire back side of the body
- Stretches, tones, and lengthens the spinal column
- Invigorates and decongests the nervous system
- Tones and irrigates the kidneys
- Massages, oxygenates, and decongests the abdominal organs
- Tones and stimulates the pancreas, liver, gall-bladder, kidneys, spleen, intestines, gonads and bladder
- Improves peristalsis and helps relieve constipation
- Increases sexual vitality and control
- Increases circulation of body fluids from legs to trunk
- Helps relieve hemorrhoids
- Trims and strengthens hips, thighs and abdominal muscles
- Deeply relaxing; calms mind and emotions
Head to Knee – Janu Shirshasana

Physiological Benefits:

- Provides a powerful stretch to the entire back of the body
- Invigorates & decongests the nervous system
- Irrigates & decongests the kidneys
- Increases flexibility in the spine & hips
- Stretches muscles, ligaments, & nerves in the back of the legs & can help alleviate certain cases of sciatica
- Massages, oxygenates, & decongests abdominal organs
- Tones & stimulates pancreas, liver, gall-bladder, kidneys, spleen, intestines, gonads & bladder
- Improves peristalsis & helps relieve constipation
- Increases sexual vitality and control
- Improves circulation of body fluids between legs & torso
- Helps relieve hemorrhoids
- Trims & strengthens hips, thighs & abdominal muscles
- Deeply relaxing, calms mind & emotions
Warrior I - Virabhadrasana

Physiological Benefits:

- Develops concentration, coordination, balance, poise, strength and groundedness
- Strengthens the feet, ankles, knees, thighs, hips joints, back, arms, shoulders and neck
- Brings resilience to the spine and proper placement to the bones and muscles of the hips
- Stretches, strengthens, and tones the inner thigh muscles
- Strengthens and tones every muscle in the central part of the body, especially in the abdomen
- Helps prevent and reverse lumbago, rheumatism and scoliosis
- Invigorates and decongests the nervous system
- Firms and trims hips, abdomen, buttocks, thighs and arms
- Tones and irrigates kidneys
- Stimulates digestion and helps relieve constipation
- Improves circulation and respiration
- Increases body heat and energizes the entire body
- Builds confidence and fortitude
Locust - Shalabhasana

Physiological Benefits

▪ Strengthens the lumbar back muscles
▪ Draws blood to the sacral region of the spine through powerful contraction of the lumbar muscles
▪ Irrigates kidneys, helping the elimination of toxins
▪ Revitalizes the endocrine system, especially adrenals, pancreas, thyroid and gonads
▪ Recharges the nervous system
▪ Aligns the spinal column
▪ Stimulates vagus nerve in the neck through contraction
▪ Stretches and strengthens the abdominal muscles
▪ Stimulates digestion and peristalsis
▪ Especially beneficial for toning for toning ovaries and uterus
▪ Tones and strengthens the buttocks, thighs, legs, arms and shoulders
▪ Releases venous blood from the legs, helping prevent varicose veins
▪ Improves blood circulation and increases lymphatic circulation, strengthening the immune system
▪ Increases body heat and energizes the entire body
▪ Builds self-confidence
Yoga Benefits on Sleep

- May help improve difficulty falling asleep or maintaining sleep.
- While cognitive behavioral therapy interventions are likely to be effective, these need to be studied further in their role of improving sleep.  

- Changing the environmental factors such as the temperature, noise, and surrounding light that incorporates sleep hygiene may decrease interruptions during sleep.

- Yoga breathing using Pranayama technique may improve sleep disturbance, anxiety, and mental QOL for cancer chemotherapy-associated symptoms.

- Tibetan Yoga was found recently to help patients with lymphoma. The participants showed improved sleep quality, faster sleep latency, longer sleep duration and less use of sleep medications.
Impact of Yoga on Functional Outcomes in Breast Cancer Survivors With Aromatase Inhibitor-Associated Arthralgias


- Joint pain is a major side effect of BCSs receiving aromatase inhibitors with almost 50% of users reporting Al-associated arthralgia.
- This yoga protocol was inspired by Iyengar yoga with stationary alignment principles, but utilized breath work during the practice. Body parts were also broken out into areas for focusing.
- Participants included post menopausal women with stage I to III breast cancer who reported AIAA were enrolled in a single-arm pilot trial.
- Yoga was provided 2x a week for 8 weeks. Classes were 90 minutes long.
- During week 2 an abbreviated home program was introduced. Participants performed the home program 3 X a week for 15 minutes on days when yoga sessions did not take place.
Impact of Yoga on Functional Outcomes in Breast Cancer Survivors With Aromatase Inhibitor-Associated Arthralgias (continued)

- Evaluation tools: Functional reach and Sit and Reach test. Pain measured by Brief Pain Inventory (BPI), Self-reported Patient Specific Functional Scale (PSFS) and Functional Assessment of Cancer Therapy-Breast.

- Results: 80% of participants adhered to the home program. Participants had significant improvement in balance (measured by the Functional Reach) and flexibility (measured by the sit and reach test).

- PSFS improved from 4.55 to 7.21 and QOL improved. The Pain Severity subscale of the BPI reduced.

- There was no adverse events nor development or worsening of lymphedema.

- Preliminary data suggests that yoga may reduce pain and improve balance and flexibility in BCSs with AIAA. A RCT is needed to establish the efficacy of yoga for objective functional improvement in this population.
A Qualitative Exploration of the Impact of Yoga on Breast Cancer Survivors with Aromatase Inhibitor-Associated Arthralgias


- 47% of Aromatase Inhibitor users reported AI-related arthralgia and reduced QOL. This study is an exploratory, qualitative investigation.

- The study used the Social cognitive theory to gather information on performance accomplishment, structured experience, verbal support, and physical feedback.

- 10 postmenopausal women with stage I-III breast cancer and AIAA received yoga twice a week for 8 weeks for 90 minutes and were instructed to continue in a home-based yoga program.

- Participants completed journal reflections on their experience and received weekly phone calls.
A Qualitative Exploration of the Impact of Yoga on Breast Cancer Survivors with Aromatase Inhibitor-Associated Arthralgias (continued)


Themes discovered by observation and weekly phone call documentation:

- **Empowerment: Importance of Camaraderie, Community & Sharing**
- **Pain Relief**
- **Increased Physical Fitness (Energy, Flexibility, & Function)**
- **Relieved Stress/Anxiety**
- **Transferability of Yoga Through Breathing**

- **This study showed that Yoga may offer a way to help manage AIAA-related pain independent from the pharmacological option.**

- **More research is needed to better understand sustainability of a yoga-based intervention for long term pain management.**
Tai Chi for Well-being of Breast Cancer Survivors With Aromatase Inhibitor-Associated Arthralgias: A Feasibility Study


- 12 participants met twice a week for 8 weeks for 1 hour of Tai Chi instruction.
- Program included a gentle form of tai chi focused on body awareness, deep breathing, and WB to address the symptoms of BCSs.
- Quantitative findings:
  - Anxiety & depression reduced
  - Emotional well-being increased
  - Fatigue decreased slightly
- Qualitative findings:
  - Improved relaxation & stress reduction
  - Increased, Undisturbed Sleep
  - Value in Group and Instructor Support
  - Overall improvement of QOL.
- There was no adverse effects of intervention.
- Future RCT are needed to establish comparative efficacy to improve outcomes of AIAA.
Yoga of Awareness Program for Menopausal Symptoms in Breast Cancer Survivors: Results from a Randomized Trail.


- Therapies that prevent recurrence such as tamoxifen, tend to exacerbate menopausal symptoms.
- RCT evaluated the effects of yoga intervention on menopausal symptoms in a sample of survivors of early-stage breast cancer (stages IA – II B)
- 37 disease-free women experiencing hot flashes were randomized to the 8 week Yoga of Awareness program or to wait-list control. The primary outcome was daily reports of hot flashes collected at baseline, posttreatment, and 3 months after treatment.
- At 3 months posttreatment, women who received the yoga program showed significantly greater improvements relative to the control conditions for:
  - hot-flash frequency and severity
  - Levels of joint pain
  - fatigue
  - Symptom-related bother
  - vigor
Important Aspects of Wellness Coaching

- Wellness coaches are credentialed health, fitness, and mental health professionals trained to coach individuals on evidence-based areas of wellness—physical activity, nutrition, weight, stress, and life satisfaction. They work within their scope of practice and only give advice in their area of expertise, on an as-needed basis.
  - This allows individuals to discuss issues that impact their health and well-being regardless of the discipline. In this way it may lead to necessary referrals that could otherwise be easily missed.
- The American College of Sports Medicine (ACSM) endorses the Wellness Coaches certification.
- The practice is based around the science of coaching psychology which draws from 15 theories including:
  - Transtheoretical model
  - Motivational interviewing
  - Appreciative inquiry
  - Hope theory
  - Positive psychology

Longitudinal Benefits of Wellness Coaching Interventions for Cancer Survivors


- **Purpose:** To determine the feasibility and benefits of wellness coaching in improving health, fitness, well-being, and overall QOL; both the immediate, 3 month changes, and one year sustainability for cancer survivors.

- Survivors throughout the state of DE were invited to participate while cohorts in VT and IL were attained through cancer clinics. These three cohorts represented urban and rural settings.

- Thirty participants received 6 wellness coaching interventions through the telephone. Participants included 20 breast, 7 prostate, and 3 colorectal cancer survivors who ranged between 0.5 – 9 years since primary treatment ended.
Initial session:
- 90 minutes
- A wellness vision
- Three month behavioral plan with first week’s SMART goals

Five follow up sessions:
- 30-40 minutes
- Completed over three months
- Review of goals, what went well, challenges, strategies, refocus to vision/3 month goals, coaching tools as needed.

Significant Results:
- Hospital Anxiety and Depression Scale – change in depression subscale (p=.039)
- Exercise Stage Assessment (p = .005)
- Total QOL – Cancer survivor (p=.009)
Open Ended Results

- The following frequency of responses were identified:
  - **Primary benefits of coaching to live a healthier lifestyle**: Goal setting, awareness of food choices, & exercise
  - **Health, fitness, and well-being improvements in last 3 months**: Exercise and increasing healthy food choices
  - **Small changes made and confident in maintaining**: Exercise & eating healthier
  - **Most helpful in working with coach**: Motivation & feedback
  - **All participants recommend program to other survivors**
Personal Responses

- “Moving, getting up and being active. I have moved away from a sedentary lifestyle that I was feeling trapped in after my cancer. I make healthier choices in my eating. I quit smoking. I feel like I established a new pattern of health behavior.”

- “Just having someone to talk to that understands what I’m going through. Having someone to lean on and give me advice on what to do if I’m in trouble.”
Longitudinal Benefits of Wellness Coaching Interventions for Cancer Survivors


- During the intervention period, significant improvements were found in:
  - Depression
  - Anxiety
  - QOL

- Positive trends continued from cessation of coaching to 6 months later. Note: A slight decline in these improvements was observed from 6 to 12 months, but it did not return to baseline.

- Further research utilizing a RCT is needed in the future to determine dose-response relationship during various stages of survivorship and/or stages of readiness where coaching would have optimum outcome for clinical practice.
General Considerations

- Physical activity such as yoga can present unique risk in patients with metastatic disease. More research is needed to provide evidence regarding which positions are the most beneficial.

- Discuss your plans for a yoga routine with a medical professional before implementing a program. They can help you adjust your routine to prevent injury.

- Stretch gently and listen to your body.

- Do not rush into a position. Move carefully while remaining mindful of your body movement in space.

- Enjoy your ‘YOU’ time.
References


Images included in this presentation were retrieved from google images.
APPENDIX: RESOURCES

- List of yoga poses used in various studies described

- Embedded Youtube video for Alternate Nostril Breathing

- Video resources from Youtube providing instruction to beginners on the proper form for various yoga poses
## Yoga Class Components

### Table 1: Yoga Class Structure and Components

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Exercises</th>
</tr>
</thead>
</table>
| **Upper extremity focus** | 1. 10 minutes Organizational issues/introduction  
2. 10 minutes Seated nadi shodana and focusing  
3. 10 minutes Upper-back movements—setu bhadasana  
4. Child's pose extended, breath into upper back  
5. Gentle twists/arm binds  
6. Standing (focusing on opening upper back, chest, and arms)  
   (i) Tadasana  
   (ii) Virabhadrasana I (arms up variation)  
   (iii) Trikonasana (arms wide variation)  
   (iv) Adhomuka savasana (knees bent)  
   (v) Padottanasana (arms behind back)  
   (vi) Ardha uttanasana (half-way up)  
7. Seated (focus on upper back, chest, and extremities)  
   (i) Navasana (supported)  
   (ii) Dandasana  
   (iii) Janu sirsvasana/parivrttasanasana  
   (iv) Wrist work  
8. Supine twist (thoracic focus)  
9. Savasana |
| **Lower extremity focus** | 10 minutes Organizational issues/introduction  
2. 10 minutes Seated nadi shodana and focusing  
3. 10 minutes Lower-back movements—setu bhadasana  
4. Child's pose extended, breath into lower back  
5. Standing (focusing on opening lower back and hips)  
   (i) Tadasana to ardha Chandrasana (supported)  
   (ii) Virabhadrasana I (arms up variation)  
   (iii) Ajanasana (knee down lunge)  
   (iv) Lunges with knee at wall on blocks  
   (v) Adhomuka savasana (against wall or straightening legs)  
   (vi) Padottanasana (arms under shoulders/twists)  
   (vii) Genudasa (chair balance variations—no arms)  
   (viii) Bhikasana  
6. Seated (focus on lower back and hips)  
   (i) Bhujangasana (supported variations)  
   (ii) Bhadha kanasana/janu sirsvasana (forward extension)  
   (iii) Ankle and foot rolls  
7. Supported backbends with blocks  
8. Supine twist (lumbar focus)  
9. Savasana |

Yoga Class Components

- Spine focus
  1. 10 minutes Organizational issues/introduction
  2. 10 minutes Seated nadi shodana and focusing
  3. 10 minutes hip and back movements—setu bhadasana
  4. Sukasana with twists and side extensions
  5. Child’s pose side to side
  6. Cat/Cow
  7. Adhomuka sanasana—bent knees
  8. Standing
     (i). Tadasana to ardha chandrasana (supported)
     (ii). Trikonasana I
     (iii). Parsvakonasana
     (iv). Padottanasana (with extended twists)
  9. Seated
     (i). Dandasana
     (ii). Paschimottanasana
     (iii). Prasarita Padottanasana (with side extensions)
  10. Supported backbend series on block
  11. Supta pada gostasana with wall
  12. Viparita korani (elevated)
  13. Savasana

- Home practice options (15-30 minutes)
  1. Pranayama/Meditation
  2. Lower-back movements
     (i). Ankle rolls
     (ii). Lunges with knees at wall
     (iii). Lower back twists
     (iv). Savasana
  3. Upper-back movements
     (i). Wrist work sequence
     (ii). Arm and shoulder work with blocks
     (iii). Upper-back twists
     (iv). Savasana

Yoga Of Awareness Poses

**Mat-Based Sequence:**
- Child’s Pose
- Table
- Downward Facing Dog Flow
- Half Moon
- Warrior 1 Flow
- Extended Side Angle
- Modified Locust
- Supine Squats
- Supine Big-Toe
- Supine Sage Twist with Bolster
- Corpse

**Chair-Based Sequence:**
- Warmups
- Cat/Cow
- Thoracic spine twist flow
- Sun salutation
- Standing wide angle fold
- Standing wide angle fold with thoracic twist
- Prayer flow
- Seated wide angle fold
- Head to knee
- Pigeon
- Forward fold
- Modified sage twist
- Seal of yoga
- Corpse

Alternate Nostril Breathing
(Nadi Shodhan pranayama)
## VIDEO RESOURCES

<table>
<thead>
<tr>
<th>Yoga Pose (Mat-Based)</th>
<th>Resource</th>
<th>URL Link</th>
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<tbody>
<tr>
<td>Child’s Pose (Balasana)</td>
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