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# **Healing After Breast Cancer Treatment**

by Barbara MacDonald, ND, LAc, MSOM

Breast cancer is a "survivable disease" for most women.<sup>1</sup> The relative survival rates are 89% at 5 years, 82% at 10 years, and 77% at 15 years.<sup>2</sup> Most are for postmenopausal women whose tumors are node-negative, estrogen-receptor positive (ER+), and HER2/neu-negative.<sup>3-6</sup> After cancer patients have survived 5 years, they are thought to be cancer free. However, breast cancer is a late-recurring disease. Twenty percent of women who were disease-free 5 years posttreatment are still at risk of a recurrence at 10 years.<sup>7</sup> Most of the late-recurring cases had estrogen-receptor positive tumors and their oral hormone-modifying medication tenure is only 5 years. This leaves a significant gap in the conventional treatment of breast cancer.

After conventional cancer treatment removes the manifestation of the body's underlying state of imbalance, the process of facilitating healing begins, in order to help restore health and hopefully remain cancer free. I propose that naturopathic medicine can play a role in reducing this late recurrence risk by treating patients with basic complementary and individually designed, constitutional methods. I review the roles that naturopathic physicians play in helping breast cancer survivors to heal.

## **Naturopathic Care After Conventional Treatment for Breast Cancer**

To summarize the roles that naturopathic physicians play in support of those healing after breast cancer treatment, I describe three broad categories: complementary care, basic naturopathic care, and individualized constitutional care (<u>Table 1</u>).

## **Complementary Care**

Supporting breast cancer patients recovering from surgery, chemotherapy and/or radiation is the first of role that we play after treatment ends. Next, manage lingering treatment-related side effects and potential toxicities. This is reviewed with Dr. Kelly

Jennings in our textbook, The Breast Cancer Companion: A Complementary Care Manual.8

Next, support patients taking hormone-modifying medications. We have many tools for limiting symptoms related to menopause, arthralgia, myalgia, and so on.<sup>9</sup> Help monitor them for endometrial, osteoporotic, hepatic, clotting, lipid changes, and other possible signs of toxicity.<sup>10</sup> Help patients avoid taking contraindicated supplements and botanicals. In addition, offer agents found to be synergistic with selective estrogen-receptor modulator (SERM) and aromatase inhibitor (AI) medications. See <u>Table 2</u> for a summary of contraindications and synergistic agents.

## **Basic Naturopathic Care**

In addition to complementary care during conventional treatment, naturopathic physicians offer numerous methods for helping patients afterwards. What I am calling basic naturopathic care is a post-treatment naturopathic template.

First, educate patients on the evidence-based lifestyle modifications found to help prevent recurrence by up to 50%. Previously, we relied on primary prevention studies. Now we have a small body of data that can be used to empower patients to optimize their lifestyle in order to reduce risk of recurrence. Conflicting dietary intervention trials prove confusing. Some studies do, however, support recommending a diet that is high in fiber, vegetables, fruit, and soy and calories from fat as low as 15%. See <a href="Table">Table</a>
3, for details and references. There seems to be consensus, however, about the therapeutic value of exercise, achieving optimal body mass index, limiting alcohol intake and drinking green tea. Studies on preventing recurrence with an empowering lifestyle are detailed in <a href="Table 3">Table 3</a>.

Many nutritional supplements and botanicals recommended in breast cancer treatment plans are based on primary prevention studies and warrant consideration such as turmeric, mushroom extracts, melatonin, higher dosages of CoQ10. These agents are more thoroughly reviewed and are referenced in *The Breast Cancer Companion* as well as *The Definitive Guide to Cancer*. 11,12

There are several agents, however, that have prevention of recurrence data in animals and humans. Taking vitamin supplements, vitamin C and E, CoQ10 with antioxidants,

drinking green tea all have inverse associations with breast cancer recurrence. Taking Coriolus versicolor mushroom extracts, melatonin, and black cohosh were also found to increase survivorship among specific subsets of breast cancer survivors. See <u>Table</u> 4 for studies, references, and an associated basic treatment plan.

In review, there are important roles that the naturopathic physicians offer patients after conventional breast cancer treatment. The aim of complementary care is to assist patients in recovery and healing after conventional oncologic therapies and to resolve residual side effects. In addition, basic naturopathic guidelines provide a template for helping patients to reduce recurrence risk with both lifestyle medications and evidence-based natural therapeutics.

# Individualized, Constitutional Treatment of People Who Have Had Breast Cancer Overview

Conventional approaches to treating breast cancer are like the Coast Guard arresting a speedboat. This is especially important in cases of aggressive or late-stage disease. Naturopathic approaches are like a sailboat harnessing the natural power of the wind to guide the boat to safety. Adding these approaches is recommended, especially for the majority of women who may develop late-recurring breast cancer. I propose that together, we may be able to arrest the manifestation of this disease and guide the patient toward healing.

Naturopathic foundational principles include treating the whole person, not treating cancer, treating the underlying cause of an illness, not the symptom, using the healing power of nature, and removing obstacles to a cure. To inspire transformational healing, first identify the patient's constitutional factors.

There are nonmodifiable risk factors that many patients share, such as being female and aging. <sup>13</sup> However, many patients have no other risk factors like obesity, smoking, DES exposure, excessive alcohol consumption, gene mutations, or family history. Other women who do have breast cancer risk factors never get it. <sup>14</sup> The cause in many cases is multifactorial. Consider a combination of factors like genomics, unfortunately timed toxic exposures, individual constitution, and lifestyle factors.

Over the 14 years that I have treated women with breast cancer, I have noted that there are common constitutional factors that need to be treated in order for transformational healing to occur. For simplicity's sake, I have grouped them into three broad categories: detoxification, inflammation, and stress response.

To identify an individual's constitutional imbalance(s), take a thorough medical history, environmental exposure history, psychological/social history, and family history. You may include a Chinese Medical history. Perform a traditional and nutritional physical examination, Chinese Medicine pulse, tongue, and energy evaluation if desired. From the clues presented, run appropriate tests. Then methodically treat each layer of dysfunction using naturopathic foundation principles (Table 1).

## **Detoxification**

Detoxification refers to the risk of malignant transformation from breast tissue toxicity in an individual whose genome inhibits metabolism and elimination of toxins.<sup>16</sup> Exposure is most concerning at times of rapid cell division such as in utero or during puberty.

To evaluate the hypothesis that detoxification issues play at least a partial role in the etiology of a patient's breast cancer, perform single nucleotide polymorphism (SNP) testing.<sup>17,18</sup> Evaluate: (1) hormone metabolism; (2) detoxification of specific environmental toxins; (3) medication metabolism. Consider testing sufficiency of amino acids used in detoxification as well as a urine organic acids test to evaluate hepatic stress.

Subsequent to identifying SNPs related to hormone metabolism, order an estrogen metabolism test of the ratio of 2-hydroxy estrone to 16-alpha hydroxyestrone. Higher ratios are associated with reduced risk of breast cancer, especially in those with ERnegative tumors and if premenopausal. <sup>19-21</sup> If patients are taking hormone-modifying medications, consider treating issues of estrogen metabolism with diet alone. Consider a diet low in animal protein, or vegan plus low-toxin fish, ground flaxseed meal (especially in those with catechol-O-methyltransferase polymorphism, or COMT SNP), organic whole soy foods, cruciferous vegetables, and green and white tea. <sup>22-26</sup> If they are not on hormone-modifying drugs, consider diindolylmethane (DIM) and test

estrogen metabolism quarterly until therapeutic dose is achieved.<sup>27</sup>

If a patient has SNPs that affect detoxification of solvents or polyaromatic hydrocarbons and their history indicates, consider testing specific toxin load.<sup>28</sup> If they are deficient in amino acids of detoxification and/or have hepatic stress, consider replenishing amino acids during a six-week toxin-specific cleanse. Follow with quarterly 10-day cleansing.

If a patient has a null GSTM SNP and history indicates, cautiously consider oral or IV-chelated toxic metal test and treatment. It is theoretically possible that liberating carcinogens may increase vulnerability to mutation.

## **Inflammation**

For some, the constitutional imbalance is related to inflammation. This refers to the risk of malignant cellular transformation of breast tissue resulting from states of systemic, tissue, and/or intracellular inflammation. Research supports the potential role of inflammation as a factor that may contribute to breast cancer occurrence.<sup>29</sup> In 2009, the *Journal of Clinical Oncology* reported "some of the most persuasive evidence yet that chronic inflammation might increase the risk of breast cancer recurrence."<sup>30</sup> Further evidence points to a negative immune shift from TH1 to TH2 dominance that contributes.<sup>31</sup>

When considering treatment for chronic inflammation, look for a thickly coated or scalloped tongue, slippery pulse, edema, overweight. Listen for a history of bloating, diarrhea, constipation, digestive infections, congestion, allergies, discharges, itching, phlegm, rash, pain, and so on. Research studies have identified blood markers of inflammation that have been correlated to breast cancer incidence, recurrence, and prognosis: CRP, circulating acute phase proteins, interleukin 6, VEGF, TH2 immune activation complexes, D-dimer, and so on. 32-38

Evaluate and treat thyroid dysfunction. Autoimmune thyroid disorders account, to a large extent, for the increased prevalence of thyroid disorders among breast cancer patients.<sup>39</sup>

Test for food allergies/intolerances to eliminate food-based inflammation. Consider allergy elimination and an anti-inflammatory diet as a template for food-based treatment of inflammation.<sup>40,41</sup>

I have observed that digestive infections/dysbiosis are common sources of inflammation in breast cancer patients, especially those who have deficiencies in the Earth element from a Chinese Medicine perspective. Test stool and/or urine organic acids to evaluate and guide treatment of dysbiosis.<sup>42</sup> Restore the integrity of the digestive mucosa.

In addition to treating the cause of the inflammation, consider natural antiinflammatory agents that also inhibit breast cancer such as fish oil, curcumin, and so on. 43-45

# **Stress Response**

Cancer is not caused by stress alone.<sup>46</sup> The stress response constitutional factor refers to the theory that while the cause of breast cancer is often multifactorial, it may partially result from or progress due to a patient's neurochemical response to chronic stress. There is value in treatments that limit the impact that chronic negative stress response may have on the immune and endocrine systems.

Certain genotypes of the COMT SNP are correlated with breast cancer risk and prognosis. 47,48 COMT SNPs result in 3- to 4-fold less COMT enzyme activity and therefore inhibition of catecholamine degradation. 49 Prolonged activation of either the sympathetic nervous system or the hypothalamic-pituitary-adrenal axis (stimulator of cortisol production) may promote tumor growth. 50 One researcher of ovarian cancer stated that the evidence may be even stronger for stress's playing a role in cancer progression. 51 Others found elevations of catecholamines in tumor samples of patients under extreme stress compared with those who were less stressed. 52 In addition, cancer patients reporting higher stress levels have elevated levels of tumor angiogenic cytokines. 53

Consider testing stress response as a constitutional factor by testing the COMT SNP, neurotransmitters, DHEA, diurnal cortisol, and amino acids as they relate to

## neurotransmitters (Table 1).

I use a combination of lifestyle, mind-body-spirit treatment, energetic balancing with acupuncture, and qi gong, as well as Western and Chinese botanicals, amino acids, and other nutritional supplements (<u>Table 1</u>). My goal is to support patients in experiencing longer periods of being in the moment. I have a theory: the more time spent being in the moment, the more time spent vibrating at the appropriate frequency for our cellular being. I like to think that this equates with slowing down those rapidly dividing cancer cells.

### **Conclusion**

Individualized, constitutional treatment of people who have had breast cancer requires adherence to the foundational principles of naturopathic medicine. By identifying and treating the cause, treating the whole person, and inspiring the healing power within each patient by removing obstacles to her cure, we facilitate transformational healing. By combining this approach with evidence-based basic naturopathic care and complementary care methods, we are at the very least inspiring health.



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## Table 1: The Role of Naturopathic Care After Conventional Breast Cancer Treatment

#### **Complementary Care**

Help patients recover from side effects and long-term toxicities that may result from surgery, chemotherapy, and/or radiation and accompanying oral medications.

For those taking hormone-modifying medications, offer natural treatments that reduce side effects and potential drug toxicity. Educate patients about and avoid contraindications. Offer agents that act synergistically (see Table 2, p.78).

#### **Basic Naturopathic Care**

Inspire patients with research on lifestyle changes found to dramatically reduce the risk of recurrence and help them implement these lifelong goals (see Table 3, p. 80).

Provide evidence-based supplements and botanicals that have been found to reduce the risk of recurrence of breast cancer (see Table 4, p. 81).

Optimize antioxidant status primarily through diet.

Optimize immune function and reduce inflammation.

exposure to environmental toxins.

Optimize Improve metabolism of detoxification pathways.

Manage response to stress and encourage mindfulness.

#### Individualized, Constitutional Treatment

In addition to the above, use naturopathic foundational principles to evaluate and treat the individual. Consider the following constitutional categories, take a thorough history, do a physical examination, test your clinical hypotheses, and methodically treat each layer until a healthy constitution is restored.

Detoxification	Inflammation	Stress Response	
Take a toxic exposure history and listen for other symptoms that may relate to toxicity of chemicals, metals, hormones, etc. <sup>1</sup>	Question and examine for symptoms and signs of inflammation.	Take a social history, life stressor, and trauma history and observe for signs of tension in face, muscles, posture, and pulse.	
Test:	Test:	Test:	
<ul> <li>single nucleotide polymorphisms<sup>2</sup></li> <li>organic acids for hepatic stress<sup>3</sup></li> <li>amino acids related to detoxification<sup>4</sup></li> <li>specific toxin load<sup>5</sup></li> <li>estrogen metabolism<sup>6</sup></li> </ul>	appropriate conventional markers of inflammation such as CRP7, <sup>8</sup> food allergies     digestive function, digestive infection, flora and dysbiosis <sup>9</sup> thyroid function and autoimmune antibodies <sup>10,11</sup>	methylation SNPs <sup>12,13</sup> Neurotransmitters:     (catecholamines, GABA, etc.) <sup>14</sup> DHEA, diurnal cortisol rhythm <sup>15,16</sup> serum amino acids for precursors to neurotransmitters and GABA <sup>17</sup>	
Educate/coach:	Educate/coach:	Educate/coach:	
tools for avoidance of xenoestrogens and other concerning toxins determined by above testing <sup>18</sup> foods and beverages for detoxification <sup>19</sup>	avoid pro-inflammatory foods <sup>20</sup> avoid personal allergens     increase anti-inflammatory foods <sup>21</sup>	schedule modifications to reduce rushing     cultivate inner peace with mindfulness, qi gong, yoga, tai chi, etc.     optimize fitness <sup>22–25</sup>	
Treatment:	Treatment:	Treatment:	
<ul> <li>replenish deficient amino acids</li> <li>safely timed toxin-specific cleansing until normal on retesting<sup>26</sup></li> <li>optimize 2:16oh-estrone<sup>27</sup></li> </ul>	treat dysbiosis; restore proper balance of bowel flora <sup>28</sup> implement therapeutic anti-inflammatory/anti-allergic diet	botanicals for calming the mind and Shen <sup>35</sup> amino acids based on deficiencies + L-theanine <sup>36</sup>	

naturopathic and Chinese Medicine

inflammation such as curcumin, fish

protocols to reduce chronic

· Optimize thyroid function33,34

 Marchese M. Environmental exposure history questionnaire. Permission granted by author. Available at: www.dmarchese.com/ images/Exposure\_Questionnaire.doc. Accessed December 6, 2011.
 Consider the Genova Diagnostics Laboratory DetoxiGenomic

· quarterly 10-day cleanse

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results

· adrenal tonics based on test

· body-mind-spirit therapies

· energetic/meridian treatments37

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## Table 2: Substances Contraindicated and Synergistic with **Hormone-Modifying Medication**

#### Tamoxifen (TAM) selective estrogen-receptor modulator

#### Avoid

Powerful inhibitors of CYP2D6 pathway such as SSRIs, moderate inhibitors such as OTC antihistamines, berberines, less concern with mild inhibitors like Panax ginseng. 1-5

Agents metabolized by the CYP3A4 pathway such as St. John's wort, especially in the elderly; moderate inhibitors (rhodiola, gaultheria, uva ursi), echinacea, and other mild 3A4 inhibitors appear to

#### Synergistic

Indole-3-carbinole enhances TAM effect; may also increase toxic metabolites (caution: hepatotoxicity).10 DIM has no effect on TAM metabolism.11

Green tea, omega-6 (gamma linolenic acid), and melatonin may enhance effect of TAM in vitro. 12-15

Diet high in vegetables associated with reduced risk of recurrence among TAM users.<sup>16</sup>

Flax seeds enhanced the tumor-inhibiting effect of TAM-resistant breast cancer cells in mice. 17

Quercetin enhances the effect of TAM in vitro and may reduce acquired TAM resistance. 18,19

Black cohosh reduces hot flashes among TAM users, enhances the inhibition of proliferation of TAM in vitro; possible concern for 2D6 and 3A4 inhibition, caution: may increase hepatotoxicity of TAM. NB: Black cohosh may increase the risk of lung metastasis in those with HER2+ breast cancer. <sup>20–23</sup>

Vitamin E enhances the tumor inhibition of TAM in vitro and tocotrienols were found to increase survivorship by as much as 60% among TAM users; the result was not statistically significant.  $^{24,25}$ 

Dietary intake of soy isoflavones combined with TAM (in postmenopausal American women) resulted in 60% reduction in breast cancer recurrence comparing highest with lowest intake; "appears not to interfere with tamoxifen efficacy."26

Silymarin, grapeseed extract, and curcumin reduced hepatotoxicity in TAM-intoxicated rats.<sup>27</sup> Taurine appears to do the same.28

#### Notes

Consider CYP2D6 and CYP 3A4 polymorphism testing to ensure proper drug metabolism. See notes below

#### Aromatase Inhibitors (AI)

#### Avoid

Inducers of the CYP3A4 drug metabolism pathway may lower plasma concentrations of Als (see notes) such as St. John's wort (especially in the elderly) and berberine-rich plants like goldenseal, which may interfere with efficacy of these medications. 29,30

Caution is recommended when taking with other 3A4 substrates and inhibitors (such as SSRIs, antifungals, antibiotics, opiates, ginkgo, milk thistle, grapefruit juice, gaultheria, rhodiola, uva ursi) as plasma concentrations of Als may increase resulting in toxicity. For a list of substrates and inhibitors, consider: http://ctep.cancer.gov/protocolDevelopment/docs/cyp3a4.doc31,32

A study to evaluate the safety of flaxseed consumption by those taking anastrozole is under way.33

#### Syneraistic

Women eating the most soy with anastrozole had 33% lower recurrence vs. those who ate the

Curcumin enhances the effect of letrozole in mice endometrial cancer model.35

Vitamin D: Achieving a 40 ng/mL concentration of 25OHD may prevent Al-induced arthralgia. Routine pre-Al vitamin D testing recommended due to risk of bone loss with Als.36,37

#### Notes

Consider CYP3A4 polymorphism testing to identify errors in drug metabolism and inform selection.

SERM: selective estrogen receptor modulator such as tamoxifen (TAM) commonly used in premenopausal survivors Al: aromatase inhibitor such as anastrozole (Arimidex), exemestane (Aromasin), and letrozole (Femara) used only in postmenopausal survivors to block the conversion of adrenal testosterone to estrogen

SSRI: selective serotonin reuptake inhibitor

Notes: Tamoxifen-treated patients carrying CYP2D6 variants that impaired formation of 4-hydroxytamoxifen, had more than double the risk of recurrence of breast cancer, shorter relapse-free periods, and worse event-free survival rates compared with patients with functional CYP2D6.38 Those with CYP3A41b variants are at higher risk of endometrial cancer.39 Femara only mildly inhibits 3A4; Arimidex moderately inhibits 3A4; Aromasin is metabolized by 3A4 and has the greatest risk of interactions with other 3A4-metabolised drugs.44

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Fitness/Shane

## Table 3: Lifestyle Modifications that Lower the Risk of Recurrence of **Breast Cancer**

Fitness/Shape				
Exercise	There was a 50% greater chance of being a survivor in those who got the equivalent of 30 minutes of exercise 6 days a week or 3 hours weekly.	WHEL trial: 1490 women diagnosed and treated for early-stage breast cancer between 1991 and 2000.	1.	Pierce JP, Stefanick ML, Flatt SW, et al. Greater survival after breast cancer in physically active women with high vegetable-fruit intake regardless of obesity. <i>J Clin Oncol.</i> 2007;25(17):2345–2351.
	Not only does physical activity increase survivorship, but the amount matters. The women who exercised 3–5 hours a week at an average pace (2–2.9 mph) were 50% more likely to be long-term survivors. The women who only exercised 1–3 hours a week were 30% less likely to survive. <sup>2</sup>	Prospective observational study based on responses from 2987 participants in the Nurses' Health Study who were diagnosed with stage I, II, or III breast cancer between 1984 and 1998.	2.	Holmes M, Chen W, Feskanich D, et al. Physical activity and survival after breast cancer diagnosis. JAMA: 2005;293:2479–2486.  Irwin M, Smith A, McTiernan A, et al. Influence of
	Women who increased their activity level after diagnosis and treatment had a 45% higher chance of survival and those who reduced their posttreatment activity had a four-fold lower chance of survival. Modest increase in posttreatment fitness improves prognosis. <sup>3</sup>	Prospective observational study of 933 women; (Health, Eating, Activity, and Lifestyle Study) diagnosed with local or regional breast cancer (1995–1998); observed until death or 2004.	4.	pre-and postdiagnosis physical activity on mortality in breast cancer survivors: The health, eating activity, and lifestyle study. J of Clin Onc. 2008;26(24):3958–3964. Dal Maso L, Zucchetto A, Talamini R, et al. Effect of obesity and other lifestyle factors on mortality in women with breast cancer. Int J Cancer.
Body mass index	Those who had a body mass index of less than 25 or a waist-to-hip ratio (WHR) of less than or equal to 0.85 were 38% more likely to be a survivor than those whose BMI was greater than or equal to 30 or a WHR of <0.80. (Low vegetable and fruit consumption and current or past smoking were also associated with worse breast cancer survival.) <sup>4</sup>	1453 women with invasive breast cancer, diagnosed 1991–1994 were interviewed during follow-up; Italian multicenter case-control study.	5.	2008;123(9):2188–2194.  Patterson RE, Cadmus LA, Emond JA, et al. Physical activity, diet, adiposity and female breast cancer prognosis: a review of the epidemiologic literature.  Maturitas. 2010;66(1):5–15.
Body fat	Women with higher percentage of body fat had a 30% lower risk of surviving breast cancer. The most consistent finding was that adiposity was associated with a 30% increased risk of mortality. <sup>5</sup>	2010 review of epidemiologic studies conducted at Moores UCSD Cancer Center.	6.	Kwan ML, Kushi LH, Weltzien E, et al. Alcohol consumption and breast cancer recurrence and survival among women with early-stage breast cancer: the life after cancer epidemiology study. J Clin Oncol.
Beverages/Diet				2010;28(29):4410–4416.
Alcohol	Drinking 3 to 4+ drinks per week is associated with a 1.3-fold increased risk of breast cancer recurrence. <sup>6</sup>	Kaiser's Life After Cancer Epidemiology (LACE) prospective study of 1897 early stage breast cancer survivors diagnosed between 1997 and 2000.	7.	Ogunleye AA, Xue F, Michels KB. Green tea consumption and breast cancer risk or recurrence: a meta-analysis. <i>Breast Cancer Res Treat</i> . 2010;119(2):477–484.
Green tea	One meta-analysis reported that more than 3 cups of green tea consumed daily reduces the risk of recurrence by 27% while 5+ cups was required in the 2005 analysis. <sup>7,8</sup>	2010 meta-analysis of other studies, 5617 cases and 2005 systematic review and meta-analysis.	8.	Seely D, Mills EJ, Wu P, et al. The effects of green tea consumption on incidence of breast cancer and recurrence of breast cancer: a systematic review and meta-analysis. <i>Integr Cancer Ther.</i> 2005;4(2):144–155
Vegetables/fruits & fitness	There was a 50% greater likelihood of being a survivor among those who consumed five or more servings of vegetables and fruits daily and who accumulated 540+ metabolic equivalent tasks-min/ wk (equivalent to walking 30 minutes 6 d/wk); only the combination was associated with a significant survival advantage. <sup>9</sup>	This prospective study was performed of 1490 women diagnosed and treated for early-stage breast cancer between 1991 and 2000.	9.	Pierce JP, Stefanick ML, Flatt SW, et al. Greater survival after breast cancer in physically active women with high vegetable-fruit intake regardless of obesity. <i>J Clin Oncol.</i> 2007;25(17):2345–2351.
	Note: the Women's Healthy Eating and Living trial did not find high vegetable and fruit consumption to result in more benefit compared with controls in the general first analysis of the study. However, a subgroup of women taking tamoxifen who ate the most servings of cruciferous vegetables daily had a 52% lower recurrence rate than those who ate the fewest servings. <sup>10</sup>			Thomson CA, Rock CL, Thompson PA, et al. Vegetable intake is associated with reduced breast cancer recurrence in tamoxifen users: a secondary analysis from the Women's Healthy Eating and Living Study. Breast Cancer Res Treat. 2011 125(2):519–527.
Soy isoflavones	Asian women who ate the most soy foods had the least recurrence and the greatest survival. 11 Another study found that among postmenopausal American women who take tamoxifen, those who ate the equivalent of isoflayones in an Asian diet had a 60% reduction in breast cancer recurrence. 12 Note: published warnings	5042 Chinese breast cancer survivors ages 20–75 diagnosed between 2002–2006 vs. California cohort of 1954 survivors from 1997– 2000 in a prospective assessment of	11.	Ou Shu X, Zheng Y, Cai H, et al. Soy food intake and breast cancer survival. <i>JAMA</i> . 2009;302(22):2437–2433.
	regarding the differences in the epigenetics of American breast cancer survivors (vs. Asian) caution the consumption of soy foods equaling the equivalent of the Asian diet until more data are available. <sup>13</sup>	isoflavone consumption.	12.	Guha N, Kwan ML, Quesenberry CP Jr, et al. Soy isoflavones and risk of cancer recurrence in a cohort of breast cancer survivors: the Life After Cancer Epidemiology study. <i>Breast Canc Res Treat</i> . 2009;118(2):395–405.
Dietary intervention	trials in review and support of limiting animal fat for breast cancer sur	vivorship	13.	
The Nurses' Health Study reported no evidence suggesting that lower intake of total fat or a specific type of fat was associated with death from breast cancer 14				Hilakivi-Clarke L, Andrade JE, Helferich W. Is soy consumption good or bad for the breast? <i>J Nutr.</i>

Higher levels of dietary intake of butter, margarine, lard, and beef were found to increase the risk of recurrence. There was also an increased risk associated with consumption of red meat, liver, and bacon, corresponding to a doubling of the risk for each time per day that foods in this category were consumed (p = 0.09).15

During the Women's Intervention Nutrition Study (WINS), women counseled to reduce fat intake to 15% of calories had a 24% lower risk of recurrence compared with the control group counseled to eat between 20–35% calories from fat (p < 0.05).16

## Basic recommendations for therapeutic lifestyle modifications to reduce risk of recurrence of breast cancer:

- Exercise 3-5 hours a week, at least more than you did before you were diagnosed. Optimize BMI, waist/hip ratio, and body fat to meet study guidelines listed above.
- Drink fewer than three alcoholic beverages weekly.
- Drink 5-10 cups of green tea a day (or the equivalent in capsules).
- Eat a diet high in fiber with a therapeutic dose (5–10 half-cup portions) of a variety of local, organic vegetables (particularly cruciferous) and fruits (particularly berries) daily, and limit or eliminate animal protein and, if eaten, use free-ranging, hormone-free sources.
- Eat organic, whole soy foods if you are from Asia, were raised on an Asian equivalent of soy, and/or are on tamoxifen.

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### Table 4: Natural Therapeutic Interventions and Prevention of Recurrence of Breast Cancer

Vitamin **supplements** taken the first six months after treatment resulted in lower recurrence and 18% reduced risk of mortality. The authors stated: "Our results do not support the current recommendation that breast cancer patients should avoid use of vitamin supplements."

Breast cancer survivors with serum **vitamin D** concentrations at 55 nmol/L had a 1.55 times longer disease-free survival than those with 35 nm/L concentration.2 However, this was not seen in the WHEL trial where no relation between vitamin D and breast cancer recurrence was found.<sup>3</sup>

There is a (nonsignificant) lower risk of recurrence and disease-related mortality among those who self-reported using **vitamins C** and **E** for three years posttreatment (vitamin E nearly halved the risk )<sup>4</sup>

Increased **green tea** consumption (more than three cups a day) was inversely associated with breast cancer recurrence (pooled RR = 0.73, 95% CI: 0.56–0.96) in a meta-analysis of 5716 cases.<sup>5</sup>

Black cohosh lengthened disease-free survival among 18,861 patients observed for 3.6 years. After 2 years following initial diagnosis, 14% of the control group had developed a recurrence, while the black cohosh extract group didn't reach this proportion until after 6.5 years.6 However, black cohosh was found to increase the risk of lung metastasis in HER2-expressing transgenic mice. Caution in HER2+ patients is advised.<sup>7</sup>

A pilot study evaluated the survival of patients with various types of end-stage cancer including breast. 76% of those who received supplements of **coenzyme Q10** and a **mixture of other antioxidants** (e.g., vitamin C, selenium, folic acid and beta-carotene) survived longer than predicted among the treatment group; on average, surviving 5 more months than the control group.<sup>8</sup>

The disease-free survival was increased from 84% to 100% when **PSK** (extract from Coriolus versicolor) was added to biannual chemotherapy × 5 years. They studied 134 randomly selected breast cancer survivors who were HLAB40+. The benefit was not apparent among those whose tumors were HLAB40-.9

Daily administration of **melatonin** significantly increased the survival time of tumor-bearing animals. This is only recommended for those with ER+ tumor history.<sup>10</sup>

From these studies, I might recommend that a posttreatment patient with ER+ breast cancer consider:

- · whole-foods multivitamin/mineral complex without iron (such as Innate's Iron-free one daily)
- · selenium, 400 mcg from food (100 mg per Brazil nut) and supplementation combined
- vitamin D3 to achieve serum concentration of 50–60 ng/mL
- green tea at 5+ cups a day or the equivalent in capsules (two 300 mg capsules of Vitanica's green tea, which include 50 mg of whole plant (95% polyphenols,80% catechins, 55% EGCg, 10% caffeine)
- Coriolus versicolor mushroom extracts from JHS Natural Products (five 600 mg capsules
  daily in divided doses) × 6 months minimum and either add or put in quarterly rotation with
  therapeutic dosages of curcumin, artemisia, astragalus, AHCC, or arabinogalactan, etc.
- melatonin, 20 mg at bed
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balancing with acupuncture, and qi gong, as well as Western and Chinese botanicals, amino acids, and other nutritional supplements (Table 1). My goal is to support patients in experiencing longer periods of being in the moment. I have a theory: the more time spent being in the moment, the more time spent vibrating at the appropriate frequency for our cellular being. I like to think that this equates with slowing down those rapidly dividing cancer cells.

#### Conclusion

Individualized, constitutional treatment of people who have had breast cancer requires adherence to the foundational principles of naturopathic medicine. By identifying and treating the cause, treating the whole person, and inspiring the healing power within each patient by removing obstacles to her cure, we facilitate transformational healing. By combining this approach with evidence-based basic naturopathic and complementary methods, we are at the very least inspiring health.

#### Notes

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