

Alleviating Treatment Side effects

Surgery

Supplements to DC prior to surgery

- **Garlic**- 7 days due to possible Platelet inhibition
- **Ginkgo**- DC 36 hours pre op due to risk bleeding
- **St Johns Wort** – DC 5 days pre op (MAO inhibitor)
- **Kava Kava** – DC 24 hours pre op (additional sedative effect)
- **Ginseng**- DC 7 days due to Platelet inhibition
- **Aspirin and prescription blood thinners** - DC per your surgeon

Ang-Lee MK, Moss J, Yuan CS. [Herbal medicines and perioperative care](#). JAMA 286(2):208-16 11 Jul, 2001

Wang CZ, Moss J, Yuan CS. [Commonly Used Dietary Supplements on Coagulation Function during Surgery](#).

Medicines (Basel) 2(3):157-185 Sep, 2015

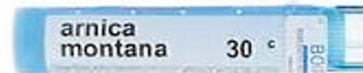
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Peri-operative / Preoperative

Arnica Montana 30 C (oral) 5 pellets under the tongue TID
beginning the day prior to surgery continue until JP out

Pre-surgery day 5 Phosphorus 30C 10 pellets

Pre-surgery day 3 Gelsemium Sempevirens 30C 10 pellets



Arch Facial Plast Surg. 2006 Jan-Feb;8(1):54-9.

**Effect of homeopathic Arnica Montana on bruising
in face-lifts: results of a randomized,
double-blind, placebo-controlled clinical trial.**

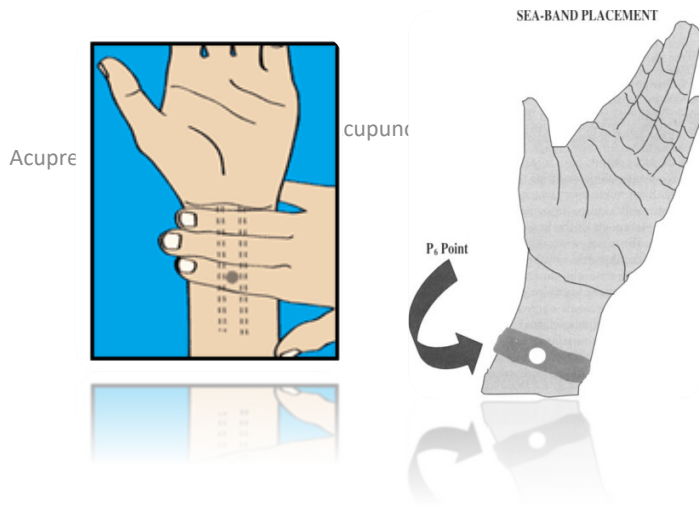
Seeley BM¹, Denton AB, Ahn MS, Maas CS.

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Chemotherapy

Nausea

Acupressure (Bands)




Sci Nutr. 2018 Nov 5;7(1):96-108
Sci Rep. 2015 Nov 26;5:16776

Acupuncture



Ginseng

Peripheral Neuropathy 29-68% patients

- Regional cooling applied to distal extremities on the severity of CIPN
- \$50 for a set
- 6/42 publications reviewed
- 4/6 revealed benefit preventing CIPN
- Applying $> (-20^{\circ}\text{C}$ and $-30^{\circ}\text{C})$ cooling compared $<$ degree  benefit
- Both direct application & compression on fingertip cooling showed potential benefit



The Impact of Peripheral Cooling on Chemotherapy-Induced Peripheral Neuropathy: An Integrative Review

BETHANY G. SPHAR, MSN, APRN, FNP-C, AOCNP®, CHRISTI BOWE, DNP, APRN, ANP-C, NPD-BC, CPHQ, and JOYCE E. DAINS, DrPH, JD, APRN, FNP-BC, FNAP, FAANP

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CIPN Glutamine Vit E and Omega-3 FA

- **Glutamine** supplementation can help prevent the peripheral neuropathy caused by Taxanes and other chemotherapy drugs (15g BID or Glutamate 500mg TID)
- **Vitamin E** reduces oxidative nerve injury. (300 mg BID)
- **Omega-3 fatty acids** are present in the phospholipid membranes of nerve cells and play a key role in signal transduction. (640mg TID)

Supplement Acetyl-L-Carnitine

- **Acetyl-L-carnitine** is an amino acid with potential benefit for cardio-protection and for fatigue reduction during some various cancer treatments. However, its use during Taxane chemotherapy is contraindicated due to a **worsening of chemotherapy-induced peripheral neuropathy**

Hershman DL, Unger JM, Crew KD, Minasian LM, Awad D, Moinpour CM, Hansen L, Lew DL, Greenlee H, Fehrenbacher L, Wade JL, Wong SF, Hortobagyi GN, Meyskens FL, Albain KS.

[Randomized double-blind placebo-controlled trial of acetyl-L-carnitine for the prevention of taxane-induced neuropathy in women undergoing adjuvant breast cancer therapy. J Clin Oncol 31\(20\):2627-33 10 Jul, 2013](#)



Cold Caps Scalp Cooling Systems for preventing Chemotherapy Alopecia

- FDA initially cleared the device, the DigniCap® Scalp Cooling System, for patients with breast cancer in 2015
- 755 articles were screened and data from 27 studies involving 2202 participants were used in the meta-analysis.
- This review shows that scalp cooling devices can significantly improve the patients with breast cancer chemotherapy-induced alopecia
- FSA and HAS eligible (some insurers covering)
- HA, nausea, scalp pain, chilliness



Radiation Therapy

Radiation Skin Protection

- Calendula



Marigold extract

Pommier, P, et al., Phase II Randomized Trial of Calendula officinalis Compared with Trolamine for the Prevention of Acute Dermatitis During Irradiation for Breast Cancer, Journal of Clinical Oncology, 2004, 22:1147-1453.



Memorial Sloan Kettering Cancer Center

Integrative Medicine / About Herbs, Botanicals & Other Products / Search About Herbs

Calendula

Common Names

- Gold-bloom
- Marigold
- Marybud
- Pot Marigold



Our Approach

Therapies, Classes & Workshops +

About Herbs, Botanicals & Other Products —

Overview

Search About Herbs

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Wisconsin Ginseng and Radiation Fatigue

- 340 participants 40 institutions
- Double blind placebo vs **2000 mg** American Ginseng
- Multidimensional Fatigue Symptom Inventory
- NO discernable side effects from Ginseng
- Ginseng derived from Ethanol extraction can exhibit estrogenic properties and stimulate breast cancer cell growth theoretically
- **Ginseng** derived from **Water extraction** or pure root ***preclinical data demonstrates breast cancer cell inhibition**

Wisconsin Ginseng (*Panax quinquefolius*) to Improve Cancer-Related Fatigue: A Randomized, Double-Blind Trial, N07C2

Debra L. Barton, Heshan Liu, Shaker R. Dakhil, Breanna Linquist, Jeff A. Sloan, Craig R. Nichols, Travis W. McGinn, Philip J. Stella, Grant R. Seeger, Amit Sood, Charles L. Loprinzi

Manuscript received December 21, 2012; revised March 18, 2013; accepted June 13, 2013.

(≥30% improvement)

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Wisconsin Ginseng : Cancer Related Fatigue

- Results: **115** search results were reduced to a final sample of **5** articles after applying inclusion and exclusion criteria.
- Published results suggest that 2,000 mg of American ginseng once daily improves symptoms of CRF.
- Minimal side effects or drug interactions are observed.
- Conclusion: **There are data to support the use of American ginseng to treat Cancer Related Fatigue**

REVIEW

Ginseng for the Management of Cancer-Related Fatigue: An Integrative Review

EMILY A. LEMKE, DNP, AGPCNP-BC, AOCNP®

J Adv Pract Oncol

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Exercise and Radiation Fatigue

- Women 47-53
- 30 control 28 Equivalent baseline fatigue /Hgb
- Study group mild- to moderate-intensity aerobic exercise
- Weekly after starting radiotherapy
- Multivariate analyses- “” fatigue severity and interference decreased significantly over time for women in the intervention group but increased over time for women in the control group”

Radiation Therapy Fatigue

- Exercise - meta-analysis of 9 studies including 802 participants concluded that exercise is effective at reducing radiation-caused fatigue in women with breast cancer
- **American Ginseng** - 2X 2,000 mg capsules of ground American ginseng root before noon each day
- 364 participants
- Statistically significant improvement
- Aerobic exercise and Yoga proven effective

Lipsett A, Barrett S, Haruna F, Mustian K, O'Donovan A. [The impact of exercise during adjuvant radiotherapy for breast cancer on fatigue and quality of life: A systematic review and meta-analysis.](#) *Breast* 32:144-155 Apr, 2017

[“Phase III evaluation of American ginseng \(panax quinquefolius\) to improve cancer-related fatigue: NCCTG trial N07C2.”](#)

DOI:10.1038/nct0181
Advance Access publication July 13, 2013

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ARTICLE

Wisconsin Ginseng (*Panax quinquefolius*) to Improve Cancer-Related Fatigue: A Randomized, Double-Blind Trial, N07C2

Debra L. Barton, Heshan Liu, Shaker R. Dabhi, Breanna Linquist, Jeff A. Sloan, Craig R. Nichols, Travis W. McGinn, Philip J. Stella, Grant R. Saenger, Anne Sood, Charles L. Loprinzi

Manuscript received December 21, 2012; revised March 18, 2013; accepted June 13, 2013.

Correspondence to: Debra L. Barton RN, PhD, AOCN, FAAN, Mayo Clinic, 200 First St SW, Rochester, MN 55905 (e-mail: barton.debra@mayo.edu).

Background Safe, effective interventions to improve cancer-related fatigue (CRF) are needed because it remains a prevalent, distressing, and activity-limiting symptom. Based on pilot data, a phase II trial was developed to evaluate the efficacy of American ginseng on CRF.

Methods A multisite, double-blind trial randomized fatigued cancer survivors to 2000 mg of American ginseng vs a placebo for 8 weeks. The primary endpoint was the general subscale of the Multidimensional Fatigue Symptom Inventory-Short Form (MFSI-SF) at 4 weeks. Changes from baseline at 4 and 8 weeks were evaluated between arms by a two-sided, two-sample *t* test. Toxicities were evaluated by self-report and the National Cancer Institute's Common Terminology Criteria for Adverse Events (CTCAE) provider grading.

Results Three hundred sixty-four participants were enrolled from 40 institutions. Changes from baseline in the general subscale of the MFSI-SF were 14.4 (standard deviation [SD] = 21.1) in the ginseng arm vs 8.2 (SD = 24.8) in the placebo arm at 4 weeks ($P = .07$). A statistically significant difference was seen at 8 weeks with a change score of 20 (SD = 27) for the ginseng group and 10.3 (SD = 26.1) for the placebo group ($P = .003$). Greater benefit was reported in patients receiving active cancer treatment vs those who had completed treatment. Toxicities per self-report and CTCAE grading did not differ statistically significantly between arms.

Conclusions Data support the benefit of American ginseng, 2000 mg daily, on CRF over an 8-week period. There were no discernible toxicities associated with the treatment. Studies to increase knowledge to guide the role of ginseng to improve CRF are needed.

J Natl Cancer Inst 2013;105:1230-1238

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Resistance Training and Radiation Fatigue

- 160 pts. Stage 0-III
- 12 week
- Progressive resistance vs relaxation (group based)
- Function ($P = 0.035$)
- Pain ($P = 0.040$) resistance training effects on fatigue and
- “QOL goes beyond psychosocial benefits, and that the clinically relevant overall benefit of resistance exercise compared with usual care can be assumed to be higher”

Annals Clinical Oncology 2014 Nov;25(11):2237-43. doi: 10.1093/annonc/mdu374. Epub 2014 Aug 5.
Randomized, controlled trial of resistance training in breast cancer patients receiving adjuvant radiotherapy:
results on cancer-related fatigue and quality of life.
Steindorf K¹, et al



Yoga and Radiation Fatigue

- Stage 0-III breast cancer
- Yoga vs Gentle stretching vs Waitlist 3X/week during TX
- “YG 3 X per week improved QOL and physiological changes associated with XRT beyond the benefits of simple ST exercises, and these benefits appear to have long-term durability”

JOURNAL OF CLINICAL ONCOLOGY 2014



Tai Chi

- Among breast cancer survivors with insomnia, 3 months of TCC reduced cellular inflammatory responses, and reduced expression of genes encoding proinflammatory mediators. Given the link between inflammation and cancer, these findings provide an evidence-based molecular framework to understand the potential salutary effects of TCC on cancer survivorship.

Irwin MR, Olmstead R, Breen EC, Witarama T, Carrillo C, Sadeghi N, Arevalo JM, Ma J, Nicassio P, Ganz PA, Bower JE, Cole S. Tai chi, cellular inflammation, and transcriptome dynamics in breast cancer survivors with insomnia: a randomized controlled trial. J Natl Cancer Inst Monogr. 2014 Nov;2014(50):295-301. doi: 10.1093/jncimonographs/lgu028. PMID: 25749595; PMCID: PMC4411534.

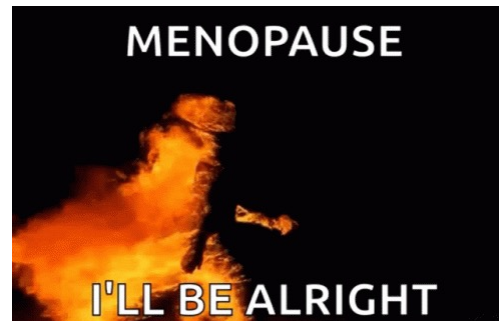
Anti- Estrogen Therapy

Hot Flash Treatment Options

- Acupuncture
- Acteane
- Relizen
- Exercise
- Black Co-hash

Acupuncture

Statistically significant lower hot flash
Score than enhanced self care alone
Increased QOL



J Clin Oncol. 2016 May 20;34(15):1795-802. doi: 10.1200/JCO.2015.63.2893. Epub 2016 Mar 28.

Acupuncture As an Integrative Approach for the Treatment of Hot Flashes in Women With Breast Cancer: A Prospective Multicenter Randomized Controlled Trial (AcCliMaT).

Lesi G¹, Razzini G², Musti MA¹, Stivanello E¹, Petrucci C¹, Benedetti B¹, Rondini E¹, Ligabue MB¹, Scaltriti L¹, Botti A¹, Artioli F¹, Mancuso P¹, Cardini F¹, Pandolfi P¹.

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Acupuncture

- Hot flashes
- Chemotherapy induced nausea and Vomiting
- Arthralgias associated with Aromatase inhibitors

O'Regan D, Filshie J. [Acupuncture and cancer](#). *Autonomic neuroscience : basic & clinical* 157(1-2):96-100 Oct, 2010

Crew KD, Capodice JL, Greenlee H, Brafman L, Fuentes D, Awad D, Yann Tsai W, Hershman DL.
[Randomized, blinded, sham-controlled trial of acupuncture for the management of aromatase inhibitor-associated joint symptoms in women with early-stage breast cancer.](#)

Journal of clinical oncology : official journal of the American Society of Clinical Oncology 28(7):1154-60 Mar, 2010



Arthralgias form AI's



- Vit D level check and make certain therapeutic (25Hydroxy Vit D > 45 ng)
- Ruta graveolens 6 C 5 pellets upon waking
- Rhus toxicodendron 6 C 5 pellets upon waking
- Acupuncture
- Curcumin

Eur Rev Med Pharmacol Sci. 2014;18(24):3959-63 & Haroyan A, 2018. & BMC Complement Altern Med. 2018 Jan 9;18(1):7.)

Black Cohash

(*Actea racemosa/Cimicifuga racemosa*)

- There is a common misconception that black cohosh is Phyto estrogenic. Black cohosh is not Phyto estrogenic, i.e., it has no interactions with the estrogen receptor.
- Two-thirds of the women were given 20 mg of Kimadynon in addition to the tamoxifen for 12 months.
- 50% of the intervention group were free of hot flashes, with only 24% reporting severe hot flashes.
- 74% of the control group continued to report severe hot flashes

Park J, Shim M, Rhyu MR, Lee Y. [Estrogen receptor mediated effects of Cimicifuga extracts on human breast cancer cells.](#)

Pharmazie 67(11):947-50 Nov, 2012

Hernández Muñoz G, Pluchino S. [Cimicifuga racemosa for the treatment of hot flashes in women surviving breast cancer.](#)

Maturitas 44 Suppl 1:S59-65 14 Mar, 2003



AVOID Red Clover and Don Quai IN ER+

- Two herbs with estrogenic properties are red clover and dong quai
- Until studies clarify the safety of these botanicals, in a woman with a history of breast cancer, especially hormone receptor positive breast cancer, they should be used with caution

Hüser S, Guth S, Joost HG, Soukup ST, Köhrle J, Kreienbrock L, Diel P, Lachenmeier DW, Eisenbrand G, Vollmer G, Nöthlings U, Marko D, Mally A, Grune T, Lehmann L, Steinberg P, Kulling SE. [Effects of isoflavones on breast tissue and the thyroid hormone system in humans: a comprehensive safety evaluation.](#) *Arch. Toxicol.* 92(9):2703-2748 Sep, 2018

Lau CB, Ho TC, Chan TW, Kim SC. [Use of dong quai \(*Angelica sinensis*\) to treat peri- or postmenopausal symptoms in women with breast cancer: is it appropriate?](#) *Menopause* 12(6):734-40



Lubricants Moisturizers & Soothing Creams



The
"Sahara
Desert"
Vagina

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Lifestyle Modification

Fasting 14 hours

- A 2016 observational study
- Prolonged overnight fasting > 13 hours between completion of the evening meal and first calories the next morning
- **Reduction in breast cancer recurrence**, compared to an overnight fast of 12 hours or less **36% higher hazard for breast cancer recurrence**
- Each two-hour increase in the overnight fasting interval was associated with a **4% decrease in hemoglobin a1c**.
- The underlying mechanisms may involve beneficial changes in glucose regulation, decrease obesity and increased sleep duration.

Marinac CR, Nelson SH, Breen CI, Hartman SJ, Natarajan L, Pierce JP, Flatt SW, Sears DD, Patterson RE.
[Prolonged Nightly Fasting and Breast Cancer Prognosis](#). *JAMA Oncol* 2(8):1049-55 01 Aug, 2016



Intermittent Fasting >14 hours – Physician Supervised

GETTING STARTED

- Define your reason why
- Start slowly, try 12 hour fast then extend to 14 hours
- *HINT*: Gradually push back breakfast
- Drink only clear fluids before breaking fast (e.g., black coffee, tea)
- Drink plenty of water
- Choose healthy foods



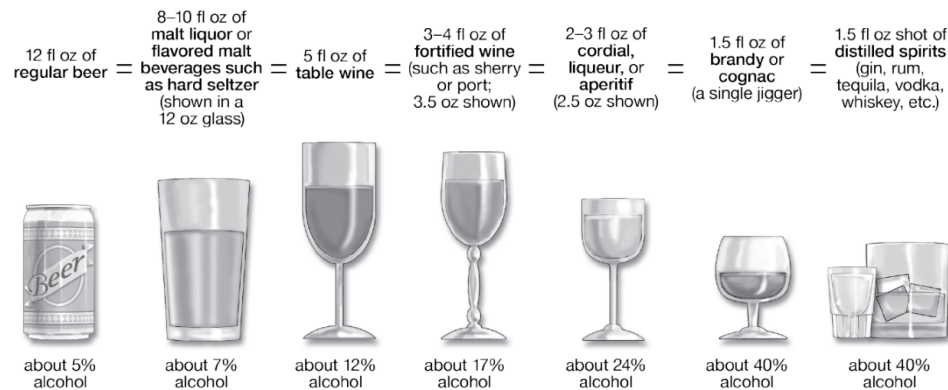
Not recommended for people: under weight, history diabetes or eating disorders, during pregnancy, under the age of 18 years

Complements Jodi Hutchinson

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What constitutes “A” Drink

In the United States, a “standard” drink is any drink that contains about 0.6 fluid ounces or 14 grams of “pure” alcohol. Although the drinks pictured here are different sizes, they all contain about the same amount of alcohol. They can be called “drink equivalents.”



Each drink shown above represents one U.S. standard drink and has an equivalent amount (0.6 fluid ounces) of “pure” ethanol.



NATIONAL INSTITUTE of HEALTH GUIDELINES:

♀ 1 drink or less/day ♂ 2 drinks or less/day

U.S. Department of Agriculture and U.S. Department of Health and Human Services.
Dietary Guidelines for Americans, 2020-2025

Complements Jodi Hutchinson

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Exercise Systematic Review Conclusions

"Physical activity is highly beneficial for improving symptoms of depression, anxiety and distress across a wide range of adult populations, including the general population, people with diagnosed mental health disorders and people with chronic disease.

Physical activity should be a mainstay approach in the management of depression, anxiety and psychological distress."



Cancer is a "*chronic disease*" that benefits from Exercise Oncology Programs!

Systematic review



OPEN ACCESS

Effectiveness of physical activity interventions for improving depression, anxiety and distress: an overview of systematic reviews

Ben Singh ,¹ Timothy Olds,¹ Rachel Curtis,¹ Dorothea Dumuid ,¹ Rosa Virgara,¹ Amanda Watson,¹ Kimberley Szeto,¹ Edward O'Connor,¹ Ty Ferguson,¹ Emily Eglitis,¹ Aaron Miatke,¹ Catherine EM Simpson,¹ Carol Maher²

Singh B, et al. *Br J Sports Med* 2023;**0**:1–10.
doi:10.1136/bjsports-2022-106195

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Impact of the Exercise Oncology Program N = 11,248

Physical & Psychological Impact

- Increase in Quality of Life: **58.7%**
- Increase in Cardiovascular Endurance: **15.2%**
- Increase in Muscular Endurance: **18.2%**
- Increase in Flexibility: **31.9%**
- Increase in Feeling More Positive: **75.9%**
- Increase in Feelings of Support: **58.7%**

Cancer Prevention Lifestyle (1/1/05-12/31/10)

- Prospective, observational cohort study designed to assess lifestyles

- before diagnosis /during treatment/ 1 year / 2 years after treatment completion

- **Higher scores indicated healthier lifestyle** - 7 lifestyle assessments at 4 points in life

(1) Physical activity

(2) Body mass index

(3) Fruit and vegetable consumption

(4) Red and processed meat intake

(5) Sugar-sweetened beverage consumption

(6) Alcohol consumption

(7) Smoking.

JAMA Network Open. 2023;6(5):e2311673. doi:10.1001/jamanetworkopen.2023.11673



Original Investigation | Nutrition, Obesity, and Exercise

Adherence to Cancer Prevention Lifestyle Recommendations Before, During, and 2 Years After Treatment for High-risk Breast Cancer

Rikki A. Cannioto, PhD, EdD; Kristopher M. Attwood, PhD; Evan W. Davis, MPH; Lucas A. Mendicino, BS; Alan Hutson, PhD; Gary R. Zirpoli, PhD; Li Tang, PhD; Nisha M. Nair, MPH; William Barlow, PhD; Dawn L. Hershman, MD; Joseph M. Unger, PhD; Halle C. F. Moore, MD; Claudine Isaacs, MD; Timothy J. Hobday, MD; Gabriel N. Hortobagyi, MD; Julie R. Gralow, MD; Kathy S. Albain, MD; G. Thomas Budd, MD; Christine B. Ambrosone, PhD



Cancer Prevention Lifestyle- Results

- 1340 women
- Average age 51
- 65% ER+
- Highest vs lowest lifestyle index score
- 37% reduction in recurrence
- 58% reduction in mortality

lifestyle behaviors co-occur, investigations of independent behaviors ignore cumulative effects that could impact recurrence or mortality

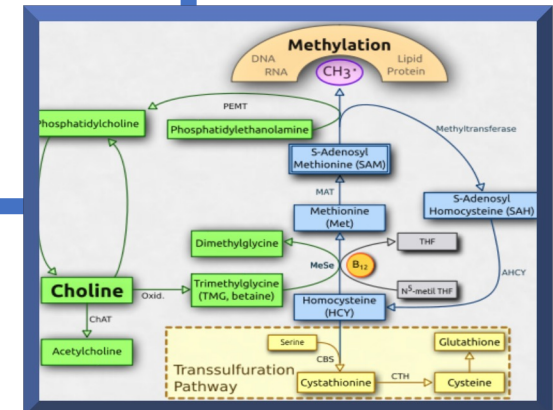
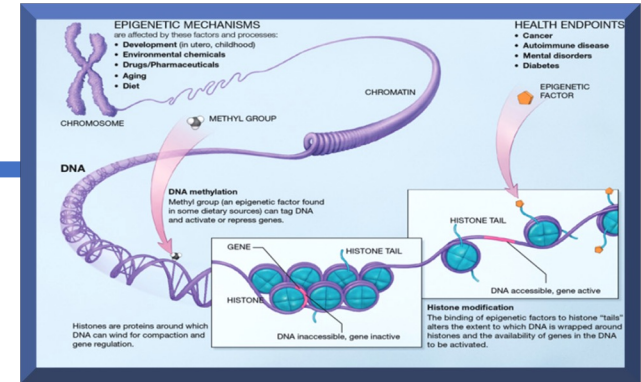
CONCLUSIONS AND RELEVANCE In this observational study of patients with high-risk breast cancer, strongest collective adherence to cancer prevention lifestyle recommendations was associated with significant reductions in disease recurrence and mortality.

Education and implementation strategies to help patients adhere to cancer prevention recommendations throughout the cancer care continuum may be warranted in breast cancer.



Epigenetics

- Study of lifestyles and environmental factors on gene expression
- Inherit molecular tags/mark at least 4 generations
- Somatic inheritance or acquired affect expression of human genome
- Turn genes on/off, activate or silencing.
- Test for epigenetic markers and develop strategies for modulating them.
- Ex: Methylation depends on vit B12 and folate.
- Hypomethylation promotes expression of oncogene and hypermethylation silences tumor suppressor genes.
- SNPs are common and reduce methylation
- Supplementation to support this impairment
- Cytotoxicity of chemo → epigenetic changes that can → drug resistance



Breathwork

- Life force
- Key element of health

- Slow, deep purposeful
- Massages internal organs
- Improves lymphatic drainage



- Strengthens and tones muscles
- Improves digestion, absorption and metabolize nutrients

Complements Dr Cynthia Aks

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Parallel and serial mediation analysis between pain, anxiety, depression, fatigue and nausea, vomiting and retching within a randomised controlled trial in patients with breast and prostate cancer

Andreas Charalambous ^{1 2 3}, Margarita Giannakopoulou ³, Evaggelos Bozas ³, Lefkios Paikousis ⁴

Affiliations + expand

PMID: 30679301 PMCID: [PMC6347855](#) DOI: [10.1136/bmjopen-2018-026809](#)

[Free PMC article](#)

Abstract

Objective: Cancer treatment is a particularly stressful period for the patient. The reasons vary and include fear of treatment outcome as well as treatment induced side effects. The patient frequently experiences simultaneously various side effects resulting in a diminishing of the patient's health-related quality of life (HRQoL). The study provides evidence on the co-occurrence and inter-relations between pain, anxiety, depression and fatigue in patients with breast and prostate cancer.

- Demonstrated the benefits of meditation for cancer patients.
- Improved anxiety, depression, fatigue, pain and QOL
- Meditation reduces stress, memory loss, helps fight addictions, can generate kindness, enhances self-awareness, attention span, improved sleep,

Meditation



Meditation and Mental Health

Review of 47 trials found meditation improves:

- Anxiety
- Depression
- Pain



Healthy Sleep



- Sleep is an essential function that allows the mind and body to recharge. It is a time for rest and restoration.
- “Healthy” sleep helps the body remain healthy and stave off disease.
- Good quality sleep promotes refreshed and energized well-being.
- Good sleep allows the body to conserve energy for maximized performance.
- Linked to weight management, concentration, creativity, productivity and memory storage.
- Improves mood.
- Lower stress and inflammation.

Sleep disruption in breast cancer patients and survivors. Oxana Palesh, Arianna, Aldridge-Gerry, Ayhan Ulusakaraya, Elisabet Ortiz-Tudela, Lucile Capuron, Pasquale Inominato, J Natl Compr Canc Netw. 2013 Dec 1;11(12)1523-30

Complements Dr Cynthia Aks

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Sleep Disturbance



- Sleep Hygiene
- Magnesium 350 mg ~ Almonds nuts grains & green vegetables) NIH 310-360 mg for adult women
- Melatonin 20 mg qhs * / Cancer suppression / TNBC

Davoodvandi et al. *Cellular & Molecular Biology Letters* (2022) 27:73
<https://doi.org/10.1186/s11658-022-00375-z>

Cellular & Molecular Biology
Letters

REVIEW LETTER

Open Access

Melatonin and cancer suppression: insights into its effects on DNA methylation

Amirhossein Davoodvandi^{1,2}, Banafsheh Nikfar³, Russel J. Reiter⁴ and Zatollah Asemi^{5*}



CDDpress

www.nature.com/cddis

ARTICLE OPEN



Melatonin inhibits triple-negative breast cancer progression through the Lnc049808-FUNDC1 pathway

Anli Yang^{1,5}, Fu Peng^{2,3,5}, Lewei Zhu^{4,5}, Xing Li¹, Shunling Ou¹, Zhongying Huang¹, Song Wu¹, Cheng Peng^{2,5*}, Peng Liu^{1,5*} and Yanan Kong^{1,5*}

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The Wandering Vagus Nerve

Review > Immunol Lett. 2018 Oct;202:38-43. doi: 10.1016/j.imlet.2018.07.006.

Epub 2018 Aug 2.

Therapeutic potential of the vagus nerve in cancer

Eva Reijmen ¹, Luca Vannucci ², Marijke De Couck ³, Jacques De Grève ⁴, Yori Gidron ⁵

Affiliations + expand

PMID: 30077536 DOI: 10.1016/j.imlet.2018.07.006

Abstract

Accumulating evidence points to a beneficial effect of vagus nerve activity in tumor development. The vagus nerve is proposed to slow tumorigenesis because of its anti-inflammatory properties mediated through ACh and the $\alpha 7$ nAChR. Since $\alpha 7$ nAChRs are widely expressed by many types of immune cells we hypothesized that the vagus nerve affects the tumor microenvironment and anticancer immunity. Studies using animal cancer models that vagus nerve activity is relevant to the tumor microenvironment. Also, a role for the vagus nerve in altering immunity. These results provide a rationale to combine vagus nerve stimulation with conventional cancer treatments, may improve cancer patients by promoting anticancer immunity.

Doi:10.1196/annual.1366.01

4

Doi: 10.1111/joim/.12046

Doi:10.1177/15347354221075576

Doi:10.1111/j.1365-2796.2004.01442

- Action potentials from the Vagus control lymphocytic secretion of acetylcholine that inhibit the production of pro-inflammatory cytokines.
- Turns down $TNF\alpha$.
- HRV can be used as a measure of anti-inflammatory reflex.
- Cancer patients report anxiety, stress, depression, cognitive complaints, fatigue and disrupted ANS functioning.
- Therapies that tone the Vagus can improve QoL



Depression / Anxiety

- Regular exercise
- Meditation mindfulness practice Yoga / Tai Chi
- Melatonin
- Magnesium
- Lavendar Aromathérapie
- Gelsemium
- Vagus Nerve Stimulation

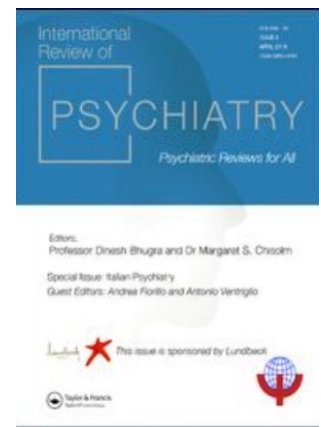


Breast Cancer Res Treat. 2014 Jun;145(3):683-95

Nutrients. 2017 Apr 26;9(5). pii:

E429 2012 Jun 15;19(8-9):825-35. & Phytomedicine. 2010 Feb;17(2):94-9.

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INTERNATIONAL REVIEW OF PSYCHIATRY
<https://doi.org/10.1080/09540261.2018.1482261>



Taylor & Francis
Taylor & Francis Group

REVIEW ARTICLE

Check for updates

Therapeutic use of classic psychedelics to treat cancer-related psychiatric distress

Stephen Ross

Department of Psychiatry, New York University Langone Medical Center, Bellevue Hospital Center, New York, NY, USA

- Clinical research (1960s to early 1970s) suggested a therapeutic signal for serotonergic psychedelics (psilocybin, LSD) in treating cancer-related psychiatric distress.
- Decades of quiescence (WAR ON DRUGS)
- Systematic search of clinical trials from 1960–2018
- 10 trials / 445 patients advanced or terminal cancer

Stephen Ross (2018): Therapeutic use of classic psychedelics to treat cancer-related Psychiatric distress, International Review of Psychiatry, DOI: 10.1080/09540261.2018.1482261

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Psilocybin Johns Hopkins Trials

- When administered under psychologically supportive, double-blind conditions, a single dose of psilocybin produced substantial and enduring decreases in depressed mood and anxiety along with **increases in quality of life and decreases in death anxiety** in patients with a life-threatening cancer diagnosis. Ratings by patients themselves, clinicians, and community observers suggested these effects endured at least 6 months. The overall rate of clinical response at **6 months on clinician-rated depression and anxiety was 78% and 83%, respectively**

Original Paper

Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: A randomized double-blind trial

Roland R Griffiths^{1,2}, Matthew W Johnson¹, Michael A Carducci³, Annie Umbricht¹, William A Richards¹, Brian D Richards¹,



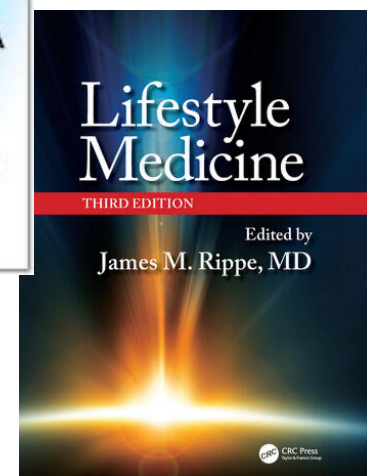
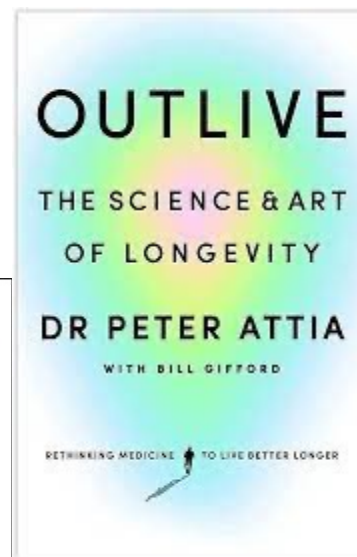
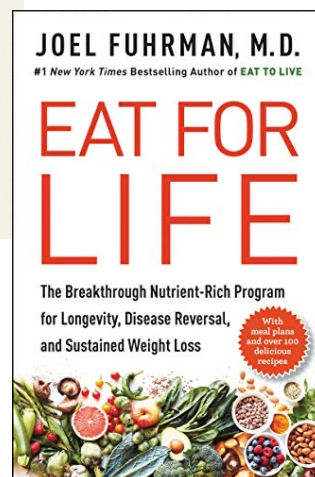
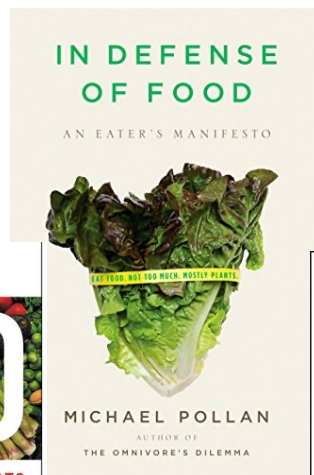
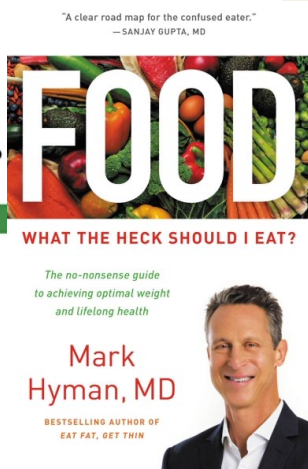
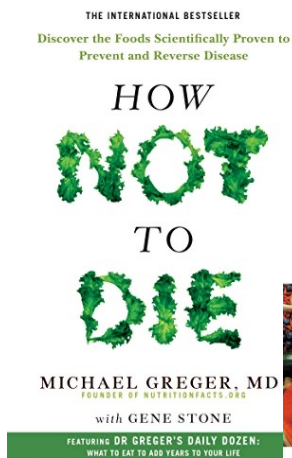
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- www.forksoverknives.com/wellness/judy-brangman-plant-based-physician/

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Integrative Medicine Resources

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- <https://dsid.nlm.nih.gov/dsid>
- <https://nutritionfacts.org>
- <https://www.mdanderson.org/education-and-research/departments-programs-and-labs/programs-centers-institutes/integrative-medicine-program/>
- <http://beta.global.columbia.edu/institutes-programs-initiatives/richard-and-hinda-rosenthal-center-complementary-alternative>
- http://govinfo.library.unt.edu/whccamp/pdfs/fr2002_document.pdf
- https://ods.od.nih.gov/Research/PubMed_Dietary_Supplement_Subset.aspx
- <https://nccih.nih.gov/research/camonpubmed/>
- <https://www.mskcc.org/cancer-care/treatments/symptom-management/integrative-medicine/herbs/>

**With ANY Integrative or
Complementary Modality
YOU must discuss with
YOUR CARE TEAM**

