Complementary Therapy
Survivorship

Screened Data Sources:
Pubmed 2012 - 01/2020
ASCO 2015 – 2019
SABCS 2015 – 2019
EBCC 2015 – 2019
Cochrane library: summary Jan. 2020:
Complementary Therapy – Hormonal Treatment and Alternatives in Breast Cancer Survivors – Survivorship

- **Versions 2002–2019:**
  Albert / Bauerfeind / Blohmer / Fersis / Friedrich / Gerber / Göhring / Hanf / Janni / Kümmel / Lück / von Minckwitz / Nitz / Oberhoff / Rhiem / Scharl / Schmidt / Schütz / Thomssen

- **Version 2020:**
  Kümmel / Schütz

**Screened Data Sources:**

- Pubmed: 2012 - 01/2020
- ASCO: 2015 – 2019
- SABCS: 2015 – 2019
- EBCC: 2015 – 2019
- Cochrane library: summary Jan. 2020:
Komplementäre Verfahren werden parallel zur konventionellen Therapie angewendet und unterscheiden sich von alternativen Verfahren dadurch, dass sie den Wert der konventionellen Verfahren nicht in Frage stellen, sondern sich als Ergänzung verstehen.

_onkolleitlinienprogramm_

1. Witt CM et al.. A Comprehensive Definition for Integrative Oncology. J Natl Cancer Inst Monogr (2017) 2017(52): lgx012

“Integrative oncology is a patient-centered, evidence-informed field of cancer care that utilizes mind and body practices, natural products, and/or lifestyle modifications from different traditions alongside conventional cancer treatments. Integrative oncology aims to optimize health, quality of life, and clinical outcomes across the cancer care continuum and to empower people to prevent cancer and become active participants before, during, and beyond cancer treatment.”
1. Saquib J, Parker BA, Natarajan L, et al. Prognosis following the use of complementary and alternative medicine in women diagnosed with breast cancer. Complement Ther Med. 2012 Oct;20(5):283-90. doi: 10.1016/j.ctim.2012.04.002. Epub 2012 Apr 27.
2. Guha N, Kwan ML, Quesenberry CP, et al: Soy isoflavones and risk of cancer recurrence in a cohort of breast cancer survivors: the Life After Cancer Epidemiology study. Breast Cancer Res Treat. 2009;118(2):395–405, pmid:19221874.
3. Johnson SB et al.. Use of Alternative Medicine for Cancer and Its Impact on Survival. JNCI J Natl Cancer Inst (2018) 110(1): djx145.
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8. Johnson SB et al. Complementary Medicine, Refusal of Conventional Cancer Therapy, and Survival Among Patients With Curable Cancers. JAMA Oncol. doi:10.1001/jamaoncol.2018.2487 published online July 19, 2018.
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Statement zu diagnostischen Verfahren: analog S3-Leitlinie, Konsensbasierte Empfehlung 6.53, S. 302
Hypnosis

1. Amraoui J, Poulguen C, Fraisse J et al. (2018) Effects of a Hypnosis Session Before General Anesthesia on Postoperative Outcomes in Patients Who Underwent Minor Breast Cancer Surgery: The HYPNOSEIN Randomized Clinical Trial. JAMA Netw Open.;1(4):e181164. doi: 10.1001/jamanetworkopen.2018.1164.
2. Cramer H, Lauche R, Paul A, et al: Hypnosis in Breast Cancer Care: A Systematic Review of Randomized Controlled Trials. Integr Cancer Ther. 2015 Jan;14(1):5-15. Epub 2014 Sep 18.
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Complementary Therapy
Pre- and Postoperative

| Therapy | LoE | GR | AGO |
|---------|-----|----|-----|
| Hypnosis (reduces anxiety, pain, nausea) | 1b | B | + |
| Acupuncture (pain relief, anxiety) | 1b | B | +/- |
| Acupuncture (nausea, vomiting) | 2b | B | + |
| Massage therapy (pain relief) | 2b | C | +/- |
| Early postoperative exercise reduces upper-limb dysfunction (beware: increased wound drainage) | 1a | A | + |
| Physical exercise to reduce breast cancer related secondary lymphedema as a prophylaxis of lymph edema | 1a | A | + |
| Prophylactic lymphatic drainage | 1b | B | - |
| Yoga (arm and shoulder pain) | 2b | C | + |
| Music therapy (reduces pain after mastectomy) | 2b | C | +/- |
Acupuncture and Postoperative Nausea and Vomiting / Pain
1. Mallory MJ et al.: Acupuncture in the postoperative setting for breast cancer patients: a feasibility study. Am J Chin Med. 2015;43(1):45-56.
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3. Quinlan-Woodward J, Gode A, Dusek JA: Assessing the Impact of Acupuncture on Pain, Nausea, Anxiety, and Coping in Women Undergoing a Mastectomy. Oncol Nurs Forum. 2016 Nov 1;43(6):725-732.
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Massage Therapy
1. Lee SH, Kim JY, Yeo S et al: Meta-Analysis of Massage Therapy on Cancer Pain. Integr Cancer Ther. 2015 Jul;14(4):297-304.
2. Pan YQ, Yang KH, Wang YL, et al: Massage interventions and treatment-related side effects of breast cancer: a systematic review and meta-analysis. Int J Clin Oncol. 2014 Oct;19(5):829-41.

Postoperative exercise
1. De Groef A, Van Kampen M, Dieltjens E, et al.Effectiveness of postoperative physical therapy for upper-limb impairments after breast cancer treatment: a systematic review. Arch Phys Med Rehabil. 2015 Jun;96(6):1140-53. doi: 10.1016/j.apmr.2015.01.006. Epub 2015 Jan 13. Review.
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4. Anderson RT, Kimmick GG, McCoy TP, et al. A randomized trial of exercise on well-being and function following breast cancer surgery: the RESTORE trial. J Cancer Surv 2012;6(2):172-81
5. Eyigor S, Uslu R, Apaydin S, et al. Can Yoga have any effect on shoulder and arm pain an quality of life in patients with breast cancer? A randomized, controlled, single-blind trial. Complementary Therapies in Clinical Practice 2018;32:40-45.
**Reduction secondary lymphedema**

1. Baumann FT, Reike A, Reimer V et al: Effects of physical exercise on breast cancer–related secondary lymphedema: a systematic review. Br J Cancer 2018; 170: 1-13

**Prevention lymphedema**

1. Ammitzbøll G, Johansen C, Lanng C, Andersen EW et al.. Progressive resistance training to prevent arm lymphedema in the first year after breast cancer surgery: Results of a randomized controlled trial. Cancer. 2019 May 15;125(10):1683-1692. doi: 10.1002/cncr.31962. Epub 2019 Jan 11.
2. Baumann FT, Reike A, Hallek M, et al. (2018) Does Exercise have a preventive effect on secondary lymphedema in breast cancer patients following local treatment – a systemic review. Breast Care 13(5): 380–385. DOI. 10.1159/000487428

**Prophylactic lymph drainage**

1. Devoogdt N, Geraerts I, Van Kampen M, et al. Manual lymph drainage may not have a preventive effect on the development of breast cancer-related lymphoedema in the long term: a randomised trial. J Physiother. 2018 Oct;64(4):245-254. doi: 10.1016/j.jphys.2018.08.007. Epub 2018 Sep 18.
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3. Li L, Yuan L, Chen X: Current Treatments for Breast Cancer-Related Lymphoedema: A Systematic Review. Asian Pac J Cancer Prev. 2016 Nov 1;17(11):4875-4883.

**Music therapy**

1. Li, X.M., Yan H, Zhou KN, et al. Effects of music therapy on pain among female breast cancer patients after radical mastectomy: results from a randomized controlled trial. Breast Cancer Res Treat, 2011. 128(2): p. 411-9.
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3. Bradt, J., et al., Music interventions for improving psychological and physical outcomes in cancer patients. Cochrane Database Syst Rev, 2016(8): p. Cd006911.
Complementary Treatment While on Cancer Treatment – Impact on Toxicity

### During anti-cancer treatment: Beware of drug interactions

| Drug                        | Oxford LoE | Grade | AGO      |
|-----------------------------|------------|-------|----------|
| Mistletoe (Viscum album)    | 1a         | B     | +/-      |
| in order to reduce side effects |           |       |          |
| Thymic peptides             | 2a         | B     | +/-      |
| lower risk of severe infections |         |       |          |
| Ginseng                     | 2b         | C     | -        |
| in order to reduce cancer related fatigue; note: interacts with cytochrome P enzymes e.g. CYP 3A4 | | | |
| Ganoderma lucidum           | 2b         | C     | -        |
| may improve fatigue, note: inhibits cytochrome P enzymes (e.g. CYP 3A4) | | | |
| L-Carnitine                 | 1b         | B     | --       |
| given for prevention of toxicity; however, increased chemotherapy-induced peripheral neuropathy | | | |
| Improvement of cancer related fatigue | | | |
| Curcumin                    | 1b         | B     | +/-      |
| adjunct to reduce radiation-induced dermatitis | | | |
| Ginger                      | 1b         | C     | +/-      |
| adjunct to guideline-oriented medication to treat chemotherapy induced nausea & vomiting – beware of drug interactions | | | |

### General

1. Li Y, Wang J, Lin F: A Methodology for Cancer Therapeutics by Systems Pharmacology-Based Analysis: A Case Study on Breast Cancer-Related Traditional Chinese Medicines. PLoS One. 2017 Jan 9;12(1):e0169363.

2. Farahmand L, Darvishi B, Majidzadeh-A K: Naturally occurring compounds acting as potent anti-metastatic agents and their suppressing effects on Hedgehog and WNT/β-catenin signalling pathways. Cell Prolif. 2017 Feb;50(1). doi: 10.1111/cpr.12299.

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4. Neuhouser ML, Smith AW, George SM: Use of complementary and alternative medicine and breast cancer survival in the Health, Eating, Activity, and Lifestyle Study. Breast Cancer Res Treat. 2016 Dec;160(3):539-546.

### Mistletoe

1. Ostermann T, Appelbaum S, Poier D, et al.: A Systematic Review and Meta-Analysis on the Survival of Cancer Patients Treated with a Fermented Viscum album L. Extract (Iscador) – an Update of Findings. Compl Med Res. 2019. In press.

2. Freuding M, Keinki C, Micke O, et al.: Mistletoe in oncological treatment: a systematic review: Part 1: survival and safety. J Cancer Res Clin Oncol. 2019 Mar;145(3):695-707.
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10. Troger W, Zdrale Z, Tisma N, et al: Additional therapy with a mistletoe product during adjuvant chemotherapy of breast cancer patients improves quality of life: An open randomized clinical pilot trial. Evidence-based complementary and alternative medicine : eCAM 2014;2014:430518.

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**Thymus**

1. Wolf E, Milazzo S, Boehm K, et al. Thymic peptides for treatment of cancer patients. Cochrane Database of Systematic Reviews 2012, Issue 2. Art. No.: CD003993. DOI: 10.1002/14651858.CD003993.pub3.
Ginseng, Ganoderma lucidum
1. Leggett S1, Koczwar B, Miller M. The impact of complementary and alternative medicines on cancer symptoms, treatment side effects, quality of life, and survival in women with breast cancer--a systematic review. Nutr Cancer. 2015;67(3):373-91.
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L-Carnitine
1. Hershman DL, Unger JM, Crew K et al.: 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. 2013 Jul 10;31(20):2627-33
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Curcumin
1. Ryan, J. L., C. E. Heckler, M. Ling, et al (2013). "Curcumin for radiation dermatitis: a randomized, double-blind, placebo-controlled clinical trial of thirty breast cancer patients." Radiat Res 180(1): 34-43.
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Ingwer
1. Thamlikitkul L, Srimuninnimit V, Akewanlop C, et al. Efficacy of ginger for prophylaxis of chemotherapy-induced nausea and vomiting in breast cancer patients receiving adriamycin-cyclophosphamide regimen: a randomized, double-blind, placebo-controlled,
crossover study. Support Care Cancer. 2017 Feb;25(2):459-464. doi: 10.1007/s00520-016-3423-8. Epub 2016 Oct 6.
2. Sanaati F, Najafi S, Kashaninia Z, et al. Effect of Ginger and Chamomile on Nausea and Vomiting Caused by Chemotherapy in Iranian Women with Breast Cancer. Asian Pac J Cancer Prev. 2016;17(8):4125-9.
**General**

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**Antioxidant supplements**

1. Jung AY, Cai X, Thoene K, Obi N et al. Antioxidant supplementation and breast cancer prognosis in postmenopausal women undergoing chemotherapy and radiation therapy. Am J Clin Nutr. 2019 Jan 1;109(1):69-78. doi: 10.1093/ajcn/nqy223.

2. Greenlee H, Hershman DL, Jacobson JS: Use of antioxidant supplements during breast cancer treatment: a comprehensive review. Breast Cancer Res Treat. 2009 Jun;115(3):437-52.

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The Protective Role of Phenolic Compounds Against Doxorubicin-induced Cardiotoxicity: A Comprehensive Review. Razavi-Azarkhiavi K, Iranshahy M, Sahebkar A, et al. Nutr Cancer. 2016 Aug-Sep;68(6):892-917. doi: 10.1080/01635581.2016.1187280. Epub 2016 Jun 24. Review.

Protective effects of salidroside on epirubicin-induced early left ventricular regional systolic dysfunction in patients with breast cancer. Zhang H1, Shen WS, Gao CH, et al.

Vitamin C
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Selen
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Coenzym Q10
1. Lesser GJ, Case D, Stark N, et al. A randomized, double-blind, placebo-controlled study of oral coenzyme Q10 to relieve self-reported treatment-related fatigue in newly diagnosed patients with breast cancer. J Support Oncol 2013;11(1):31-42.
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**Proteolytic enzymes and toxicity of chemotherapy**

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**Bromelain**

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**Chinese herbal medicine and wound healing**

1. Chen J, Lv Q, Yu M et al.: Randomized clinical trial of Chinese herbal medications to reduce wound complications after mastectomy for breast carcinoma. Br J Surg. 2010 Dec;97(12):1798-804

**Kurzzeit-Fasten**

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### Additional Complementary Therapy of Side Effects Related to Cancer Treatments

| Oxford LoE | GR | AGO |
|------------|----|-----|
| Chinese medicinal herbs to treat the side effects of chemotherapy in breast cancer patients | 1b | B | - |
| Homoeopathic medicine against therapy side effects | 1b | B | +/- |
| - Topical calendula (>= 20% Calendula amount) for prophylaxis of acute dermatitis during radiotherapy | | | |
| - Traumeel® mouthwash to treat chemotherapy-induced stomatitis | | | |
| - Topical Silymarin for prophylaxis of acute dermatitis during radiotherapy | 3a | B | +/- |
| - Massage to improve on fatigue, pain, anxiety, nausea | 1b | C | +/- |
| - Transcutaneous Electrical Nerve stimulation (TENS) against cancer pain | 2b | D | +/- |
| - Hydrotherapy | 3b | C | +/- |

### Chinese medicinal herbs
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### Homeopathic medicines for adverse effects of cancer treatments
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### Topical use of Silymarin
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**Massage**

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2. Shin ES, Seo KH, Lee SH, et al. Massage with or without aromatherapy for symptom relief in people with cancer. Cochrane Database of Systematic Reviews 2016, Issue 6. Art. No.: CD009873. DOI: 10.1002/14651858.CD009873.pub3.

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**Transcutaneous electric nerve stimulation (TENS) for cancer pain in adults: (von Slide 16 übertragen)**

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**Hydrotherapie**

1. Dalenc F, Ribet V, Rossi AB, et al. Efficacy of a global supportive skin care programme with hydrotherapy after non-metastastic breast cancer treatment: a randomized, controlled study. Eur J Cancer Care 2018;27:doi:10.1111/eec
### Additional Complementary Therapy of Side Effects Related to Cancer Treatments

| Acupuncture in order to improve on | LoE | GR | AGO |
|-----------------------------------|-----|----|-----|
| • Chemotherapy-induced nausea and vomiting | 1b  | B  | +  |
| • (Electro-)Acupuncture as adjunct to entiemic treatment | 1b  | B  | +  |
| • Acupuncture as adjunct to entiemic treatment | 1b  | B  | +  |
| • Pain | 1b  | B  | +  |
| • Cancer pain | 1b  | B  | +  |
| • Aromatase-inhibitor – induced athraiga | 1a  | B  | +  |
| • TENS – Transcutaneous Electrical Nerve Stimulations to relieve cancer pain | 2b  | D  | +/-|
| • Fatigue | 1a  | B  | +  |
| • Acupuncture | 1b  | B  | +  |
| • Anxiety and depression | 2b  | B  | +  |
| • Cognitive dysfunction | 5   | D  | +/-|
| • Menopause syndrome in Breast Cancer Patients | 1b  | B  | +  |
| • to improve on frequency and severity of hot flashes | 1b  | B  | +/-|
| • Electro-Acupuncture to improve on sleep and hot flashes | 2a  | B  | +  |
| • Leucopenia (Moxibustion) | 2b  | B  | +/-|
| • Treatment of chemotherapy induced polyneuropathy | 1b  | B  | -  |
| • prophylactically | 1b  | B  | -  |
| • therapeutically | 2b  | B  | +/-|
| • Chronic lymph edema after Breast Cancer Treatment | 2b  | B  | +/-|

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### Modifiable Lifestyle Factors

**Nutrition after Breast Cancer Diagnosis**  
Prevention of Recurrence / Improvement of Overall Survival II

| Criterion | LoE | GR | AGO |
|-----------|-----|----|-----|
| Adherence to normal BMI / weight loss if overweight, irrespective of HR-status | 1a | A | ++ |
| Low fat diet dietary counseling recommended | 1a | B | + |
| Increased fiber intake (e.g. Flaxseed) | 2a | B | + |
| Adherence to general nutrition guidelines (e.g. DGE, WCRF) similar to a Mediterranean Diet | 2a | B | ++ |
| Dietary extremes | 2a | B | -- |

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### Complementary Treatment

**Prevention of Recurrence / Improvement of Overall Survival III**

**Dietary Supplements – Herbal Therapies**

| Supplement | Loe | Gr | AGO |
|------------|-----|----|-----|
| Post treatment vitamin/antioxidant supplements does not appear to be associated with increased risk of recurrence (be aware of drug/treatment interactions) | 2b | B | |
| Smokers on antioxidant supplements are at higher risk for lung cancer | 1b | A | |

#### For Prevention of BC Recurrence:

- **Antioxidants**
- **Orthomolecular substances** (Selenium, Zinc...)
- **Vitamine supplementation in patients on a balanced diet** (esp. Vit C, E, D)
- **Artifical carotenoids appear to be associated with worse outcome**
- **Proteolytic enzymes** (Papain, Trypsin, Chymotrypsin)
- **Soy-food (natural source of phytoestrogens)** - food or concentrates containing ≥100 mg isoflavones per day
- **Black Cohosh** *(Cimicifuga racemosa)*
- **Mistletoe** *(Viscum album)*
- **Thymic peptides** (impact on OS)
- **Oxygen- and ozone therapy**
- **Antioxidant supplements (after completion of radiotherapy)**
- **Lactire**
- **Green tea**
- **Methadone**
- **Cancer bush** *(Sutherlandia frutescens)*, *Devil’s claw* *(Harpagophytum procumbens)*, *Roobios tea* *(Aspalathus linearis)*, *Bambara groundnut* *(Vigna subterranea)*

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