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Guidelines Breast
Version 2021.1D

FORSCHEN
LEHREN
HEILEN

Diagnostik und Therapie früher und fortgeschrittener Mammakarzinome

Komplementäre Therapie „Survivorship“

Screened Data Sources:

Pubmed	2012 - 01/2020
ASCO	2015 – 2019
SABCS	2015 – 2019
EBCC	2015 – 2019
Cochrane library:	summary Jan. 2020:



Komplementäre Therapien

Hormontherapie „Survivorship“ (Rezidiv-Prävention)

■ Versionen 2002–2020:

Albert / Bauerfeind / Blohmer / Fersis / Friedrich / Gerber / Göhring
/ Hanf / Janni / Kümmel / Lück / von Minckwitz / Nitz / Oberhoff /
Rhiem / Scharl / Schmidt / Schütz / Thomssen / Kümmel / Schütz

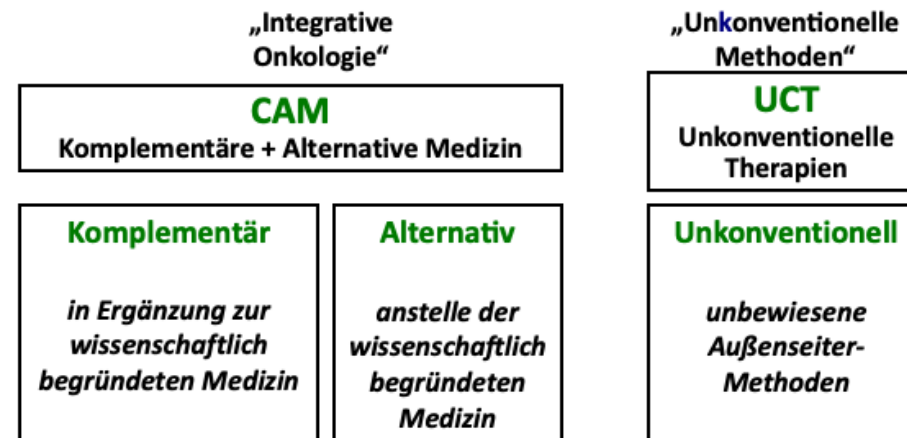
■ Version 2021:

Dall / Solomayer

Screened Data Sources:

Pubmed	2012 - 01/202
ASCO	2015 – 2020
SABCS	2015 – 2020
EBCC	2015 – 2020
Cochrane library:	summary Jan. 2021:

CAM



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.”

Gute klinische Praxis

- **Alle Patienten sollen frühestmöglich und im Verlauf wiederholt zum Interesse an Informationen komplementärmedizinischer Maßnahmen befragt werden und bei Interesse soll auf verlässliche Informationsquellen verwiesen werden.**

S3 LL "Komplementärmedizin in der Behandlung von onkologischen PatientInnen"

Literatur S3 LL "Komplementärmedizin in der Behandlung von onkologischen PatientInnen"

Allgemein

	Oxford		
	LoE	GR	AGO
▪ CAM anstelle lokoregionärer Interventionen	2b	B	--
▪ CAM anstelle systemischer Therapie	2b	B	--
▪ Patienten sollten nach ihrer Nutzung von komplementären und alternativen Therapien befragt werden.			
▪ Diagnostische Verfahren im Zusammenhang mit komplementären und alternativen Therapiekonzepten ohne Evidenz (z.B. Irisdiagnostik, Bioresonanz) sollen nicht empfohlen werden.			
▪ Unter Systemtherapie: Besondere Beachtung gilt möglichen Medikamenteninteraktionen			

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.
4. Fremd C et al.. Use of complementary and integrative medicine among German breast cancer patients: predictors and implications for patient care within the PRAEGNANT study network. Arch Gynecol Obstet. 2017 May;295(5):1239-1245. doi: 10.1007/s00404-017-4348-2. Epub 2017 Mar 22.
5. Samuels N et al.. Unmonitored use of herbal medicine by patients with breast cancer: reframing expectations. J Cancer Res Clin Oncol (2017) 143:2267–2273
6. Smith PJ et al.. Complementary and alternative medicine use by patients receiving curative-intent chemotherapy. Asia-Pacific Journal of Clinical Oncology 2016; 12: 265–274
7. Greenlee H et al.. Association Between Complementary and Alternative Medicine Use and Breast Cancer Chemotherapy Initiation: The Breast Cancer Quality of Care (BQUAL) Study. JAMA Oncol. 2016 Sep 1;2(9):1170-6. doi: 10.1001/jamaoncol.2016.0685
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.

9. Johnson SB, Park HS, Gross CP et al. Use of Alternative Medicine for Cancer and Its Impact on Survival. J Natl Cancer Inst. 2018 Jan 1;110(1). doi: 10.1093/jnci/djx145.
10. Hack, et al. Analysis of Oncological second opinions in a certified university breast and gynecological cancer center in relation to complementary and alternative medicine . Medicine Research, 2020

Komplementäre Therapien prä- und postoperativ

	Oxford		
	LoE	GR	AGO
Präoperativ			
▪ Hypnose (reduziert Ängste, Schmerz, Übelkeit)	1b	B	+
Postoperativ			
▪ Akupunktur			
▪ bei Schmerzen, Ängstlichkeit	1b	B	+/-
▪ bei Übelkeit, Erbrechen	2b	B	+
▪ Massage Therapie (bei Schmerzen)	2b	C	+/-
▪ Frühzeitige postoperative Bewegungstherapie beugt Dysfunktion der oberen Extremität vor CAVE: vermehrt Wundsekret	1a	A	+
▪ Körperliche Aktivität			
▪ zur Reduktion des sek. Lymphödems	1a	A	+
▪ zur Prophylaxe eines Lymphödems	1b	B	+/-
▪ Prophylaktische Lymphdrainage	1b	B	-
▪ Yoga (bei Arm- und Schulterschmerzen)	2b	C	+
▪ Musiktherapie (Schmerzreduktion nach Mastektomie)	2b	C	+/-

Hypnosis

1. Amraoui J, Pouliquen 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.
3. Montgomery GH, David D, Kangas M, et al. (2014) Randomized Controlled Trial of a Cognitive-Behavioral Therapy Plus Hypnosis Intervention to Control Fatigue in Patients Undergoing Radiotherapy for Breast Cancer. JCO DOI 10.12007JCO.2013.49.3437
4. Montgomery GH, Bovbjerg DH, Schnur JB et al. (2007): A randomized clinical trial of a brief hypnosis intervention to control side effects in breast surgery patients. J Nat Cancer Inst; 99:1304–1312.
5. Schnur JB, Bovbjerg DH, David D et al. (2008): Hypnosis decreases presurgical distress in excisional breast biopsy patients. Anesth Analg , 106(2):440-4
6. Montgomery GH, Schnur JB, Kravits K. Hypnosis for cancer care: Over 200 years young. CA Cancer J Clin. 2012 Nov 20. doi: 10.3322/caac.21165.

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.
2. Chao LF et al.: The efficacy of acupoint stimulation for the management of therapy-related adverse events in patients with breast cancer: a systematic review. *Breast Cancer Res Treat* (2009) 118:255–267.
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.
4. Giron PS, Haddad CA, Lopes de Almeida: Effectiveness of acupuncture in rehabilitation of physical and functional disorders of women undergoing breast cancer surgery. *Support Care Cancer*. 2016 Jun;24(6):2491-6.
5. Chiu HY, Hsieh YJ, Tsai PS. Systematic review and meta-analysis of acupuncture to reduce cancer-related pain. *Eur J Cancer Care (Engl)*. 2017 Mar;26(2). doi: 10.1111/ecc.12457. Epub 2016 Feb 7

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.
3. Dilaveri CA, Croghan I, Mallory MJ, et al, Massage compared with massage plus acupuncture for breast cancer patients undergoing reconstructive surgery. *J Altern Complement Med* 2020 26(7):602-609

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.
2. McNeely ML, Campbell K, Ospina M et al.: Exercise interventions for upper-limb dysfunction due to breast cancer treatment. *Cochrane Database of Systematic Reviews* 2010, Issue 6. Art. No.: CD005211. DOI: 10.1002/14651858.CD005211.pub2.
3. Cavanaugh KM.: Effects of Early Exercise on the Development of Lymphedema in Patients With Breast Cancer Treated With Axillary Lymph Node Dissection. *J Oncol Pract*. 2011 March; 7(2): 89–93.
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 and 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 Ca res Treatment 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.
2. Devoogdt N, Christiaens MR, Geraerts I, et al: Effect of manual lymph drainage in addition to guidelines and exercise therapy on arm lymphoedema related to breast cancer: randomised controlled trial. BMJ 2011;343:d5326 doi: 10.1136/bmj.d5326
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.
2. Binns-Turner, P.G., Wilson LL, et al. Perioperative music and its effects on anxiety, hemodynamics, and pain in women undergoing mastectomy. Aana j, 2011. 79(4 Suppl): p. S21-7.
3. Bradt, J., et al., Music interventions for improving psychological and physical outcomes in cancer patients. Cochrane Database Syst Rev, 2016(8): p. Cd006911.

Komplementäre Therapien

Behandlungsphase – Einfluss auf Toxizität I

Bei laufender onkologischer Standardtherapie:

 CAVE: Interaktionen beachten!

- **Mistlektine (Viscum album)**
zur Reduktion therapieassoziierter Nebenwirkungen
- **Thymuspeptide**
verringern Risiko schwerer Infektionen
- **Ginseng**
verringert Fatigue; (Cave: interagiert mit P Enzyme, z.B. CYP3A4)
- **Ganoderma Lucidum**
verringert Fatigue; (Cave: inhibiert P Enzyme, z.B. CYP3A4)
- **L-Carnitin**
Prävention der Toxizität, verbessert periphere Neuropathie
verringert Fatigue
- **Curcumin**
vermindert Radiodermatitis
- **Ingwer**
komplementär zu Leitlinien-gerechter Medikation gegen Chemotherapie induzierte
Übelkeit/Erbrechen; (Cave: Wechselwirkungen)

Oxford		
LoE	GR	AGO
1a	B	+/-
2a	B	+/-
2b	C	-
2b	C	-
1b	B	--
1b	B	-
1b	B	+/-
1b	C	+/-

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.
3. Cramer H, Lauche R, Klose P: Yoga for improving health-related quality of life, mental health and cancer-related symptoms in women diagnosed with breast cancer. Cochrane Database Syst Rev. 2017 Jan 3;1:CD010802.
4. Neuhouwer 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
3. Freuding M, Keinki C, Kutschan S, et al.: Mistletoe in oncological treatment: a systematic review : Part 2: quality of life and toxicity

of cancer treatment. J Cancer Res Clin Oncol. 2019;145(4):927-939.

4. Loef M, Walach H. Quality of life in cancer patients treated with mistletoe: a systematic review and meta-analysis. Compl Med Res. 2019. In press.
5. Weissenstein U, Kunz M, Oufir M, et al.: Absence of herb-drug interactions of mistletoe with the tamoxifen metabolite (E/Z)-endoxifen and cytochrome P450 3A4/5 and 2D6 in vitro. BMC Complement Altern Med. 2019;19:23.
6. Thronicke A, Steele ML, Grah C, et al.: Clinical safety of combined therapy of immune checkpoint inhibitors and Viscum album L. therapy in patients with advanced or metastatic cancer. BMC CAM. 2017;17:534.
7. Shneerson C, Taskila T, Gale N, et al: The effect of complementary and alternative medicine on the quality of life of cancer survivors: A systematic review and meta-analyses. Complementary therapies in medicine 2013;21:417-429.
8. Pelzer F, Tröger W. Complementary Treatment with Mistletoe Extracts During Chemotherapy: Safety, Neutropenia, Fever, and Quality of Life assessed in a randomized study. JAC 2018;24:954-961.

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, Koczwara 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.
2. Jin X, Ruiz Beguerie J, Sze Daniel M-y et al: Ganoderma lucidum (reishi mushroom) for cancer treatment. Cochrane Database of Systematic Reviews 2012
3. Karimi N, Roshan VD: Change in adiponectin and oxidative stress after modifiable lifestyle interventions in breast cancer cases. Asian Pacific journal of cancer prevention : APJCP 2013;14:2845-2850.

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
2. Cruciani RA, Zhang JJ, Manola J et al. L-carnitine supplementation for the management of fatigue in patients with cancer: an eastern

cooperative oncology group phase III, randomized, double-blind, placebo-controlled trial. J Clin Oncol. 2012 Nov 1;30(31):3864-9

Curcumin

1. Kumar P, Kadakol A, Shasthrula P, et al: Curcumin as an adjuvant to breast cancer treatment. Anti-cancer agents in medicinal chemistry 2015
2. Bandyopadhyay D: Farmer to pharmacist: Curcumin as an anti-invasive and antimetastatic agent for the treatment of cancer. Frontiers in chemistry 2014;2:113.

Ingwer

1. Thamlikitkul L, Srimuninnim. 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 it V, Akewanlop C, et alCancer. 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.

Komplementäre Therapien

Behandlungsphase – Einfluss auf Toxizität II

	Oxford		
	LoE	GR	AGO
▪ Antioxidanzien (Suppl.)	1b	B	-
▪ verschied. antioxidative Extrakte zur Minderung anthra-zyklinbedingter Cardiotoxizität	2b	B	+/-
▪ Hochdosiert Vitamin C	1b	C	-
▪ Vitamin E	2b	D	-
▪ Selen (zur Linderung von Nebenwirkungen)	1b	B	-
▪ Co-Enzym Q 10 (Fatigue, Lebensqualität)	1b	B	-
▪ Proteolytische Enzyme (gegen Chemotherapie-induzierte Toxizität)	3b	B	-
▪ Chinesische Medizin (Besserung der Wundheilung)	1b	B	-*inf
▪ Sauerstoff- und Ozon-Therapie	5	D	--
▪ Kurzzeitfasten (QoL, Fatigue)	3b	C	+/-*

* inf: Infusion in Deutschland nicht geprüfter Substanzen
 * Studienteilnahme empfohlen

General

1. Zhu L, Li L, Li Y: Chinese Herbal Medicine as an Adjunctive Therapy for Breast Cancer: A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2016;2016:9469276. doi: 10.1155/2016/9469276.
2. McPherson L, Cochrane S, Zhu X: Current Usage of Traditional Chinese Medicine in the Management of Breast Cancer: A Practitioner's Perspective. Integr Cancer Ther. 2016 Sep;15(3):335-42. doi: 10.1177/1534735415607656.

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. Harvie M: Nutritional supplements and cancer: Potential benefits and proven harms. American Society of Clinical Oncology educational book / ASCO American Society of Clinical Oncology Meeting 2014:e478-486.
3. van Dalen EC, Caron HN, Dickinson HO, et al: Cardioprotective interventions for cancer patients receiving anthracyclines. Cochrane Database Syst Rev 2011:Cd003917.
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Vitamin C

1. Heaney M, Gardner J, Karasavvas N et al.: Vitamin C antagonizes the cytotoxic effects of antineoplastic drugs. Cancer Res. 2008 Oct 1;68(19):8031-8.
2. PLoS One. 2015 Apr 7;10(4):e0120228. doi: 10.1371/journal.pone.0120228. eCollection 2015. High-dose intravenous vitamin C combined with cytotoxic chemotherapy in patients with advanced cancer: a phase I-II clinical trial. Hoffer LJ1, Robitaille L2, Zakarian R3, et al..
3. Sci Transl Med. 2014 Feb 5;6(222):222ra18. doi: 10.1126/scitranslmed.3007154. High-dose parenteral ascorbate enhanced chemosensitivity of ovarian cancer and reduced toxicity of chemotherapy. Ma Y1, Chapman J, Levine M, et al.

Selen

1. Dennert G, Horneber M. Selenium for alleviating the side effects of chemotherapy, radiotherapy and surgery in cancer patients. Cochrane Database of Systematic Reviews 2010, Issue 11. Art. No.: CD005037. DOI: 10.1002/14651858.CD005037.pub2.

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
2. Ann Oncol. 2017 Mar 1;28(3):628-633. doi: 10.1093/annonc/mdw671. Interventions for preventing cardiomyopathy due to anthracyclines: a Bayesian network meta-analysis. Abdel-Qadir H1,2,3,4, Ong G4, Fazlzad R5, Amir E1,5,6, Lee DS1,2,6,7, Thavendiranathan P6,7, Tomlinson G1,6.

Proteolytic enzymes and toxicity of chemotherapy

1. Petru U, Stranz B, Petru C: Effects of proteolytic enzyme therapy with Wobe Mugos against chemotherapy-induced toxicity in breast cancer patients - results of a pilot study Wien Med Wochenschr. 2010 Nov;160(19-20):513-6.

Bromelain

1. Hidaka M, Nagata M, Kawano Y, et al.: Inhibitory effects of fruit juices on cytochrome P450 2C9 activity in vitro. Biosci Biotechnol Biochem. Feb 2008;72(2):406-411.

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

1. Bauersfeld SP, Kessler CS, Wischnewsky M et al. The effects of short-term fasting on quality of life and tolerance to chemotherapy in patients with breast and ovarian cancer: a randomized cross-over pilot study. B MC Cancer (2018) 18:476
2. Groot de S, Vreeswijk MPG, et al. the effects of short-term fasting on tolerance to (neo) adjuvant chemotherapy in Her2-negative breast cancer patients: a randomized pilot study. BMC Cancer 2015;15:652

Komplementäre Therapien unter onkologischer Therapie Behandlung von Nebenwirkungen

	Oxford		
	LoE	GR	AGO
▪ Chinesische Kräutermedizin (zur Behandlung chemo-therapiebedingter Nebenwirkungen)	1b	B	-
▪ Homöopathische Medizin (gegen therapiebedingte Nebenwirkungen) (Placeboeffekt)	1b	B	+/-
▪ Topische Anwendung Silymarin (Silybin, Mariendisteleextrakt) (akute Hautreaktion unter Strahlentherapie)	3a	B	+/-
▪ Massage (zur Verbesserung von Fatigue, Schmerzen, Angst, Übelkeit)	1b	C	+/-
▪ Transkutane elektrische Nervenstimulation (TENS) (bei Karzinomschmerzen)	2b	D	+/-
▪ Hydrotherapie (bei therapie-assoziiierter Hauttrockenheit, Hautverhärtung, Nagelveränderung)	3b	C	+/-

Chinese medicinal herbs

1. Zhu L, Li L, Li Y: Chinese Herbal Medicine as an Adjunctive Therapy for Breast Cancer: A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2016;2016:9469276. doi: 10.1155/2016/9469276.

Homeopathic medicines for adverse effects of cancer treatments

1. Kassab S, Cummings M, Berkovitz S, et al. Homeopathic medicines for adverse effects of cancer treatments. Cochrane Database of Systematic Reviews 2012, Issue 8. Art. No.: CD004845. DOI: 10.1002/14651858.CD004845.pub2.

Topical use of Silymarin

1. Lazzeroni M, Guerrieri-Gonzaga A, Gandini S: A Presurgical Study of Oral Silybin-Phosphatidylcholine in Patients with Early Breast Cancer. Cancer Prev Res (Phila). 2016 Jan;9(1):89-95. doi: 10.1158/1940-6207.

Massage

1. Izgu N, Metin ZG, Karadas C et al.. Prevention of chemotherapy-induced peripheral neuropathy with classical massage in breast cancer patients receiving paclitaxel: An assessor-blinded randomized controlled trial. Eur J Oncol Nurs. 2019 Jun;40:36-43. doi: 10.1016/j.ejon.2019.03.002. Epub 2019 Mar 22.

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.
3. Robison JG, Smith CL. Therapeutic Massage During Chemotherapy and/or Biotherapy Infusions: Patient Perceptions of Pain, Fatigue, Nausea, Anxiety, and Satisfaction. Clin J Oncol Nurs. 2016 Apr;20(2):E34-40. doi: 10.1188/16.CJON.E34-E40.
4. Donoyama N, Satoh T, Hamano T et al., Effects of Anma therapy (Japanese massage) on health-related quality of life in gynecologic cancer survivors: a randomized controlled trial. PLoS one 2018;13:e0196638.

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

1. Hurlow A, Bennett MI, Robb KA, et al. Transcutaneous electric nerve stimulation (TENS) for cancer pain in adults. Cochrane Database of Systematic Reviews 2012, Issue 3. Art. No.: CD006276. DOI: 10.1002/14651858.CD006276.pub3.
2. Paley CA, Johnson MI, Tashani O et al. Acupuncture for cancer pain in adults. Cochrane Database of Systematic Reviews 2011, Issue 1. Art. No.: CD007753. DOI: 10.1002/14651858.CD007753.pub2.

Hydrotherapie

1. Dalenc F, Ribet V, Rossi AB, et al. Efficacy of a global supportive skin care programme with hydrotherapy after non-metastatic breast cancer treatment: a randomized, controlled study. Eur J Cancer Care 2018;27:doi:10.1111/eec

Komplementäre Therapien unter onkologischer Therapie Behandlung von Nebenwirkungen

Akupunktur zur Verbesserung von:

- **Chemotherapie-induzierter Übelkeit und Erbrechen**
 - Elektro-Akupunktur als Ergänzung zu antiemetischer Therapie
 - Akupressur als Ergänzung zu Antiemetika
- **Schmerzen**
 - Krebs Schmerzen
 - AI-induzierter Arthralgie
 - TENS - transkutane elektrische Nervenstimulation bei Krebs Schmerzen
- **Fatigue**
 - Akupressur
- **Angst und Depression**
- **Kognitiver Dysfunktion**
- **Menopausensyndrom bei Patientinnen mit Mammakarzinom**
 - zur Verbesserung v. Häufigkeit und Schwere d. Hitzewallungen
 - Elektroakupunktur zur Verbesserung des Schlafs bei Hitzewallungen
- **Leukopenie (Moxibustion)**
- **Chemotherapie-induzierter Polyneuropathie**
 - als Prophylaxe
 - als Therapie
- **Chronischem Lymphödem nach MaCa Therapie**

Oxford		
LoE	GR	AGO
1b	B	+
1b	B	+
1b	B	+
1a	B	+
2b	D	+/-
1a	B	+
1b	B	+
2b	B	+
5	D	+/-
1b	B	+
1b	B	+/-
2a	B	+
2b	B	+/-
1b	B	-
2b	B	+/-
2b	B	+/-

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Angst und Depression

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Komplementäre Therapien

Behandlungsphase – Mind-Body Medizin I

	Oxford		
	LoE	GR	AGO
MBSR (Mindfulness-Based Stress Reduction – dt. Achtsamkeitsbasierte Stressbewältigung) Programm verbessert Lebensqualität, Bewältigungsstrategien, Achtsamkeit, vermindert Stress, Angst, Depression, Fatigue und Schlafstörung	1a	A	+
Körperliches Training/Sport (mind. 3x/Woche moderates Ausdauertraining in Kombination mit kräftigendem Gerätetraining 2 x /Wo.) verbessert Lebensqualität, kardiorespiratorische Fitness, körperliche Leistungsfähigkeit, Schlaf, Schmerz, Depression, Lymphödem und Fatigue	1a	A	++

Mind-Body Medicine (MBM)

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Fatigue

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Lymphödem

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Körpergewicht

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Komplementäre Therapien

Behandlungsphase – Mind-Body Medizin II

	Oxford		
	LoE	GR	AGO
Entspannungsverfahren Reduktion von Angst und Übelkeit, Verbesserung der Lebensqualität, Verminderung psychischer Belastung	2b	C	+/-
Yoga Verbesserung von Lebensqualität, Stress, Fatigue, Schlaf, Angst und Depression	1b	A	+
Qigong Verbesserung von Lebensqualität, Fatigue, Stimmung	2a	B	+/-
Tai-Chi Verbesserung von Lebensqualität, Muskelkraft, Schlaf	2a	B	+/-
Hypnose (in Kombination mit kognitiver Therapie) Verbesserung von Fatigue unter Radiotherapie, Reduktion von Distress	1b	A	+

General

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Yoga

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Qigong

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Hypnosis

1. 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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Komplementäre Therapien

Rezidivprävention / Verbesserung Gesamtüberleben I

Beeinflussbare Lebensstilfaktoren – Sport – Genussmittel

- **Körperliches Training/Sport**
(das Äquivalent zu 3–5 Std. mäßiggradigem „Walking“ verbessert DFS und OS und kardiopulmonale Funktion)
- **Nikotinreduktion**
- **Alkoholkonsum reduzieren (< 6g/die)**

Oxford		
LoE	GR	AGO
2a	A	++
2b	A	+
2b	A	+

Physical exercise

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Improvements in DFS and OS, prevention of recurrence

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Smoking

1. Pierce JP, Patterson RE, Senger C et al: Lifetime cigarette smoking and breast cancer prognosis in the after breast cancer pooling project. *J Natl Cancer Inst* 2014;106:djt359.
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Alcohol

1. Larsen SB, Kroman N, Ibfelt EH: Influence of metabolic indicators, smoking, alcohol and socioeconomic position on mortality after breast cancer. *Acta Oncol*. 2015 May;54(5):780-8. doi: 10.3109/0284186X.2014.998774.
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Komplementäre Therapien

Rezidivprävention / Verbesserung Gesamtüberleben II

Beeinflussbare Lebensstilfaktoren – Ernährung

	Oxford		
	LoE	GR	AGO
▪ Anstreben eines normalen BMI	1a	A	++
▪ Ernährung mit geringem Fettanteil (Ernährungsberatung empfohlen)	1a	B	+
▪ Ballaststoffhaltige Lebensmittel (u.a. Saaten, z.B. Leinsamen)	2a	B	+
▪ Beachten genereller Ernährungsempfehlungen (z.B. von DGE, WCRF) im Sinne einer mediterranen (Vollwert-)Ernährung	2a	B	++
▪ Diät-Extreme	2a	B	--

Adherence to normal body weight/BMI

1. Mei L, He L, Song Y et al. Association between obesity with disease-free survival and overall survival in triple-negative breast cancer. A meta-analysis. *Medicine* 2018;97:19
2. (Brenner DR, Brockton NT, Kotsopoulos J: Breast cancer survival among young women: a review of the role of modifiable lifestyle factors. *Cancer Causes Control*. 2016 Apr;27(4):459-72. doi: 10.1007/s10552-016-0726-5.)
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Übergewicht

1. Mei L, He L, Song Y et al. Association between obesity with disease-free survival and overall survival in triple-negative breast cancer. A meta-analysis. Medicine 2018;97:19

Low-Fat Diet

1. De Cicco P, Catani MV et al. Nutrition and Breast Cancer: A Literature Review on Prevention, Treatment and Recurrence. Nutrients 2019 Jul 3;11(7).
2. Chlebowski R, Anderson G et al. Low-Fat Dietary Pattern and Cancer Mortality in the Women's Health Initiative (WHI) Randomized Controlled Trial, JNCI Cancer Spectrum, Volume 2, Issue 4, October 2018
3. Dieli-Conwright CM, Lee K, Kiwata JL: Reducing the Risk of Breast Cancer Recurrence: an Evaluation of the Effects and Mechanisms of Diet and Exercise. Curr Breast Cancer Rep. 2016;8(3):139-150.
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Fiber

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2. De Cicco P, Catani MV et al. Nutrition and Breast Cancer: A Literature Review on Prevention, Treatment and Recurrence. Nutrients 2019 Jul 3;11(7).
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Nutrition, Physical Activity, and Breast Cancer Survivors. 2014. Available at: www.wcrf.org/sites/default/files/Breast-Cancer-Survivors-2014-Report.pdf

Adherence to general nutrition – guidelines:

1. De Cicco P, Catani MV et al. Nutrition and Breast Cancer: A Literature Review on Prevention, Treatment and Recurrence. *Nutrients* 2019 Jul 3;11(7).
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9. Amireault, S, Fon AJ, Sabiston CM. Promoting Healthy Eating and Physical Activity Behaviors: a systematic review of multiple health behavior change interventions among cancer survivors. *American Journal of lifestyle Medicine* 2016;12:184-199.
10. Rhee J, Mattei J, Huges M et al. Diabetes risk reduction diet score. *SABSC 2020*

Diät Extreme:

1. Mohsen M, Katsiki N et al. Lower carbohydrate diets and all-cause and cause-specific mortality: a population-based cohort study and pooling of prospective studies. *European Heart Journal* 2019, 40, 2870-2879

2. Huebner J., Marienfeld S. et al.: Counseling Patients on Cancer Diets: A Review of the Literature and Recommendations for Clinical Practice. *Anticancer Res.* 2014 Jan; 34(1):39-48.
3. Erickson, N., Boscheri, A., Linke, B. et al.: Systematic review: isocaloric ketogenic dietary regimes for cancer patients. *Med Oncol* (2017) 34: 72. <https://doi.org/10.1007/s12032-017-0930-5>
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Komplementäre Therapien

Rezidivprävention / Verbesserung Gesamtüberleben III

Pflanzliche Therapieansätze – Nahrungsergänzung

	Oxford		
	LoE	GR	AGO
▪ Nach Systemtherapie – Vitamine/Antioxidanzien scheinen nicht mit einem erhöhtem Rezidivrisiko assoziiert	2b	B	
▪ Raucher haben ein höheres Bronchial-Ca-Risiko unter Antioxidanzien	1b	A	
Prävention eines brustkrebsassoz. Rezidivs			
▪ Antioxidanzien	2a	B	+/-
▪ Vitamine (zusätzlich zu ausgewogener Ernährung; Vit. C, E, D)	2a	B	+/-
▪ Sojaprodukte (Phytoöstrogene)	2a	B	+/-
▪ Phytoöstrogene Konzentration ≥ 100 mg Isoflavone pro Tag	2a	B	-
▪ Traubensilberkerze (<i>Cimicifuga racemosa</i>)	3b	C	+/-
▪ Antioxidative Supplemente nach Beendigung der Radiotherapie	2b	B	+/-
▪ Grüner Tee	3a	C	+/-
▪ Orthomolekulare Substanzen (Selen, Zink ...)	5	D	-
▪ Karotenoide erscheinen mit schlechterem Ergebnis assoziiert	2b	B	-
▪ Proteolytische Enzyme (Papain, Trypsin, Chymotrypsin)	3b	B	-
▪ Mistellektine (<i>Viscum album</i>)	1b	C	-
▪ Thymuspeptide (Einfluss auf Überleben)	2a	B	-
▪ Sauerstoff- und Ozon-Therapie	5	D	--
▪ Laetrile (Aprikosenkernextrakt)	1c	D	--
▪ Methadon	5	D	--
▪ Cancer bush (<i>Sutherlandia frutescens</i>), Devil's claw (<i>Harpagophytum procumbens</i>), Rooibos Tee (<i>Aspalathus linearis</i>), Bambara-Erdnuss (<i>Vigna subterranean</i>)	5	D	-
▪ Weihrauch	5	D	-

General

1. Hervik JB, Stub T: Adverse effects of non-hormonal pharmacological interventions in breast cancer survivors, suffering from hot flashes: A systematic review and meta-analysis. Breast Cancer Res Treat. 2016 Nov;160(2):223-236.

Post treatment vitamin and/or antioxidant supplements

1. Drewe J, Bucher KA, Zahner C. A systematic review of non-hormonal treatments of vasomotor symptoms in climacteric and cancer patients. Springerplus. 2015 Feb 10;4:65. doi: 10.1186/s40064-015-0808-y. eCollection 2015.
2. Sodde VK, Lobo R, Kumar N, et al. Cytotoxic activity of *Macrosolen parasiticus* (L.) Danser on the growth of breast cancer cell line (MCF-7). Pharmacogn Mag. 2015 May;11(Suppl 1):S156-60. doi: 10.4103/0973-1296.157719.
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6. Martin-Herranz A, Salinas-Hernández P. Vitamin D supplementation review and recommendations for women diagnosed with breast or ovary cancer in the context of bone health and cancer prognosis/risk. Crit Rev Oncol Hematol. 2015 Oct;96(1):91-9. doi: 10.1016/j.critrevonc.2015.05.006. Epub 2015 May 19.

Soy as normal part of the diet/soy concentrates

1. Wu AH, Spicer D, Garcia A, et al. Double-Blind Randomized 12-Month Soy Intervention Had No Effects on Breast MRI Fibroglandular Tissue Density or Mammographic Density. Cancer Prev Res (Phila). 2015 Oct;8(10):942-51. doi: 10.1158/1940-6207.CAPR-15-0125. Epub 2015 Aug 14.
2. Fritz H, Seely D, Flower G, et al.: Soy, red clover, and isoflavones and breast cancer: A systematic review. PLoS one 2013;8:e81968.

Black cohosh

1. Fritz H, Seely D, McGowan J, et al: Black cohosh and breast cancer: A systematic review. Integrative cancer therapies 2014;13:12-29.

Laetrile treatment for cancer

1. Milazzo S, Ernst E, Lejeune S, et al.: Laetrile treatment for cancer. Cochrane Database of Systematic Reviews 2011, Issue 11. Art. No.: CD005476. DOI: 10.1002/14651858.CD005476.pub3.

St John's Wort

1. Caraci F, Crupi R, Drago F, et al. Metabolic drug interactions between antidepressants and anticancer drugs: focus on selective serotonin reuptake inhibitors and hypericum extract. Curr Drug Metab. 2011 Jul 1;12(6):570-7.
2. Schellander R, Donnerer J: Antidepressants: clinically relevant drug interactions to be considered. Pharmacology. 2010;86(4):203-15. Epub 2010 Sep 8.
3. Nahrstedt A, Butterweck V: Lessons learned from herbal medicinal products: the example of St. John's Wort (perpendicular). J Nat Prod. 2010 May 28;73(5):1015-21.

Red clover

1. Fritz H, Seely D, Flower G et al. Soy, red clover, and isoflavones and breast cancer: A systematic review. PLoS One. 2013 Nov 28;8(11):e81968.

2. Geller SE, Shulman LP, van Breemen RB et al.: Safety and efficacy of black cohosh and red clover for the management of vasomotor symptoms: a randomized controlled trial. *Menopause*. 2009;16(6):1156–1166.

Dong Quai

1. Zhuang SR, Chiu HF, Chen SL, Effects of a Chinese medical herbs complex on cellular immunity and toxicity-related conditions of breast cancer patients. *Br J Nutr*. 2011 Aug 25:1-7.
2. Rotem C, Kaplan B: Phyto-Female Complex for the relief of hot flushes, night sweats and quality of sleep: randomized, controlled, double-blind pilot study. *Gynecol Endocrinol*. 2007;23(2):117-122.

Mistletoe

1. Freuding M., Keinki C., Micke O., Mistletoe in oncological treatment: a systematic review. *Journal of Cancer Research and Clinical Oncology* (2019) 145:695–707

Ginseng root

1. Yamada N, Araki H, Yoshimura H: Identification of antidepressant-like ingredients in ginseng root (*Panax ginseng* C.A. Meyer) using a menopausal depressive-like state in female mice: participation of 5-HT_{2A} receptors. *Psychopharmacology (Berl)*. 2011 Aug;216(4):589-99.
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Bromelain+Papain+Selen+Lektin bei AI-induced athralgia

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Green Tea

1. Gianfredi V, Nucci D, Abalsamo A, et al. Green Tea consumption and risk of breast cancer and recurrence – a systematic review and meta-analysis of observational studies. *Nutrients* 2018;10;pii:E1886.
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