Table 2: Systematic reviews of massage therapy for cancer pain

Source: Karen Pilkington, CAM-Cancer Consortium. Massage [online document]. https://cam-cancer.org/en/massage-classicalswedish, February 15th, 2021.

First author (year)	Main outcomes	Number of studies Type of studies Number of patients included	Methods/quality assessment	Main results/Conclusion
Behzadmehr (2020)	Pain in breast cancer patients	5 studies (n= 298); 4 RCTs and 1 quasi-experimental study	4 databases were searched to April 2019 restricted to English The type of pain was postoperative in 4 of the 5 studies JADAD Scale and JBI tool used for assessing the quality of RCT and quasi-experimental studies. 3 RCTs and the non-RCT were judged to be moderate quality and 1 RCT as low quality.	Massage vs. no intervention **Pain** All the included studies reported that massage therapy reduces cancer-related pain (no meta-analysis)
Boyd (2016)	Pain, function-related and health-related QOL, all cancer patients.	16 CTs (n=2034) Meta-analysis conducted on 15 studies.	At least 4 (not specified in text) electronic databases were searched through February 2014 in English. Samueli Institute's systematic Rapid Evidence Assessment of Literature review process was utilised. Eligible RCTs assessed using the SIGN 50 Checklist. Methodological limitations: Only trials reported in English were included which may introduce bias.	**Pain** Intensity/Severity Massage vs. No Treatment 3 studies (n=167). All 3 included in Meta-analysis. (SMD, −0.20: 95% CI, −0.99 to 0.59; I2 = 82.60%) at post-treatment. **Pain**: Massage vs active comparator. 10 studies (n=708). 6 studies (n=370) included in Meta-analysis. (SMD, −0.55 (95% CI, −1.23 to 0.14; I2 = 89.26%) for a reduction of pain intensity/severity
Chen (2016)	Pain in cancer patients	3 RCTs (n= 278)	2 databases were searched to July 2015 with no language restrictions Risk of bias assessment using Cochrane criteria. Overall, risk of bias not reported but appears to be unclear or high for each of the 3 included studies. Search was only for massage using essential oils.	Massage with essential oil vs. usual care **Pain** Nonsignificant effect (SMD = 0.01; 95% CI [-0.23,0.24]).

Greenlee (2017)	Wide range of outcomes	8 RCTs (n not reported)	4 databases were searched to December 2015 restricted to English Each article was scored according to the quality of design and reporting based on the Jadad scoring scale and a modified scale adapted from the Delphi scoring system. Grades of evidence for a specific outcome using a modified version of the US Preventive Services Task Force grading system.	Massage vs control (not specified) **pain** Insufficient evidence
Jong (2020)	Pain in children with cancer (decision aid for parents)	3 studies (n=98); 2 pilot studies and a quasi-experimental study	4 databases were searched to March 2016 restricted to English or Dutch Risk of bias assessment using Grading of Recommendations Assessment, Development and Evaluation (GRADE) handbook Quality of studies was judged low to moderate	Massage vs. standard care **Pain** No effect (MD, − 0.77; 95% CI, − 1.82, 0.28; P = 0.15)
Lee (2015)	Pain, all cancer patients	12 RCTs (n=559)	9 electronic databases searched for studies published through August 2013 in English, Chinese, and Korean. Wide range of databases without language restrictions. Methodological quality was assessed using the Physiotherapy Evidence Database (PEDro) and Cochrane risk-of-bias scales. No details of type of conventional care. Limitations: possible selection bias, small number of long-term studies. Several different types of massage used including reflexology and shiatsu.	Significantly reduced cancer **pain**, especially surgery-related pain compared with no massage treatment or conventional care SMD, −1.25; 95% CI −1.63 to −0.87)
Lee (2016)	Quality of life, negative emotions and disease-related symptoms in women with breast cancer	7 RCTs (n= 704)	5 databases were searched to January 2015 with no language restrictions Two of the 7 trials compared reflexology, and either scalp massage or foot manipulation against control. Cochrane risk of bias (ROB) and Jadad score used for assessment. Four studies were at high risk of bias according to ROB and 2 were unclear. The remaining study was assessed as low risk.	Pain Massage therapy vs standard care 2 studies - significant change after massage($p < 0.001$ and $p = 0.001$, respectively).The third study assessed reflexology

Pan (2014)	Breast cancer-related symptoms	18 RCTs (n=950)	3 electronic databases searched for studies published through June 2013 in English. Risk of bias evaluated using the Cochrane Handbook 5.2 standards. Anxiety, depression and pain states were inadequately controlled for non-specific effects (analgesics and anti-emetics were used by some of the participants). Small number of databases searched Methodological limitations of some of the included trials: lack of control of non-specific effects and inadequate control groups). Control groups varied from self-initiated support (n=4), standard healthcare (n=7), health educations classes (n=2), visit (n=1), modified massage treatment (n=1), bandaging (n=1) and self-administered support (n=1).	Significantly greater reductions in: pain (n=4) SMD, -0.33; 95% CI, −0.69, -0.03; p=0.07)
Radossi (2016)	Range of outcomes including anxiety, nausea and vomiting and pain	9 RCTs (n= 645)	5 databases were searched to September 2016 with no language restrictions Quality scores were calculated for eligible studies using the National Institute of Health's Quality Assessment Tool for Controlled Intervention Studies, a 14-point scale. Six studies were of poor quality and three were of fair quality	Massage vs control (not specified) Pain One trial (poor quality) found that massage therapy reduced pain
Rodríguez-Mansilla (2017)	Symptoms in children with cancer) (pain, nausea, stress, anxiety, white blood cells and neutrophils)	7 RCTs (n=383)	6 databases searched to November 2014 restricted to English or Spanish Methodological quality was analysed using the Physiotherapy Evidence Database scale 4 trials were assessed as good and 3 as fair quality	Massage vs. control (not specified) **Pain** 3 of 5 RCTs on pain found that massage produced changes (1 good and 2 fair quality)
Shin (2016)	Pain, psychological symptoms, all cancer patients.	19 studies (n=1274) Meta-analysis conducted on 5 studies.	8 electronic databases searched for studies published through August 2015 with no language restriction. Methodological components of the trials assessed and classified	**Massage compared with no-massage** Short-term **pain** (PPI-VS) relief was greater for intervention group (1 RCT, n = 72, mean difference (MD) -1.60, 95% confidence interval (CI) -2.67 to -0.53).

			according to the Cochrane Handbook for Systematic Reviews of Interventions Evidence assessed using GRADE (Grading of Recommendations Assessment, Development and Evaluation). The GRADE quality of evidence was downgraded for all outcomes to very low because of observed imprecision, indirectness, imbalance between groups in many studies, and limitations of study design. Fourteen studies had a high risk of bias related to sample size and 15 studies had a low risk of bias for blinding the outcome assessment. The studies were judged to be at unclear risk of bias overall. Most studies were too small to be reliable and key outcomes were not reported.	**Massage with aromatherapy vs no-massage** Relief of medium- and long-term **pain** (medium-term: 1 RCT, n = 86, MD 5.30, 95% CI 1.52 to 9.08; long-term: 1 RCT, n = 86, MD 3.80, 95% CI 0.19 to 7.41) but not clinically significant, **Massage with aromatherapy vs massage without aromatherapy** Unable to be assessed - limited available evidence.