Table 2: Randomised controlled trials* of yoga for cancer supportive care
Source: Karen Pilkington, CAM-Cancer Consortium. Yoga [online document]. https://cam-cancer.org/en/yoga. March 2022.

First author, year	Study design	Participants (number, diagnosis)	Interventions (experimental treatments, control)	Main outcome measures	Main results	Comments
Adair 2018	RCT	40 yoga-naive head and neck cancer survivors >3 months post-cancer treatment	8-week hatha yoga intervention group or a wait-list group	Shoulder range of motion; pain; anxiety; adverse events	Efficacy measures indicated potential benefit for shoulder range of motion ($P < .05$), pain ($P \leq .005$), and anxiety ($P = .015$).	Randomisation appropriate; allocation concealment unclear. Blinding not possible and outcomes subjective and self-assessed. Pilot study so not powered for efficacy and intention-to-treat analysis not carried out
Barassi 2018	RCT	32 smokers with lung cancer	Yoga breathing or standard breathing	Pulmonary and cardiocirculatory functions (computerized spirometer and a portable pulse oximetry device).	Short-term improvement in lung function due to yoga breathing but differences NS except for heart rate and oxygen saturation	Randomisation and allocation concealment processes unclear Blinding unclear but outcomes objective Power and intention-to-treat analysis not reported (although appears to be no attrition).

Ben-Josef 2017	RCT	68 prostate cancer patients undergoing external beam radiation therapy (RT)	Eischens Yoga or no yoga	Fatigue, erectile dysfunction, urinary incontinence, and overall quality of life (QOL)	Less fatigue in yoga arm (P<.0001). Improvement in erectile function (P=.0333). NS: International Prostate Symptom Score (P=.1022). Mixed results for QOL measures	Randomisation appropriate but allocation concealment unclear. Blinding not possible and outcomes subjective and self-assessed. Power calculated but unclear what sample size was required. Intention-to-treat analysis is not reported and attrition 13 in yoga group vs 5 in control group. Attrition in yoga group due to time constraints for 9 participants.
Cohen 2004 #	RCT	39 patients with lymphoma who were undergoing treatment or who had concluded treatment within the past 12 months	Tibetan yoga group or wait-list control group	Psychological adjustment and sleep quality	Significantly lower sleep disturbance scores with yoga (5.8 vs. 8.1; P < 0.004). better subjective sleep quality, faster sleep latency, longer sleep duration, and less use of sleep medications NS for intrusion or avoidance, state anxiety, depression, or fatigue.	Randomisation and allocation concealment appropriate. No blinding possible and outcomes subjective and self-assessed. Power calculated but attrition 16% in yoga and 25% in control group. Intention-to-treat analysis not carried out. #N.B. only trial included in Cochrane review of yoga in haematological malignancies
Cramer 2016	RCT	54 patients with non-metastatic colorectal cancer	10-week yoga intervention (90 min once weekly) or a waitlist control	Disease-specific quality of life (Functional Assessment of Cancer Therapy - Colorectal [FACT-C]). Also: spiritual well-being, fatigue, sleep disturbances, depression and anxiety, body awareness and body-efficacy expectations	No significant differences in FACT-C total score Significant differences in emotional well-being and sleep disturbances at week 22; anxiety and depression at week 10 No serious adverse events occurred in the yoga group	Randomisation and allocation concealment appropriate. Blinding not possible and outcomes subjective and self-assessed. Adequately powered and intention-to-treat analysis carried out.

D'Cuhna 2021	RCT	48 cervical cancer patients undergoing chemo-radiotherapy	Yoga nidra daily for 45 minutes for 4 weeks or usual care only	Stress (three domains: psychological, physical, and social and financial problems)	Stress was significantly less in the groups that practiced yoga nidra (79.46 vs. 64.42) (P<0.0001).	Randomisation and allocation concealment unclear. Blinding not possible and outcome subjective and self-assessed. Adequately powered and no attrition. Outcome measure was developed for the study
Hardoerfer 2018	RCT	70 cancer patients with mixed diagnoses	Yoga therapy compared with waiting list control group.	Anxiety (General Anxiety Disorder (GAD-7) scale) Depressive symptoms (Patient Health Questionnaire-2 (PHQ-2)) Fatigue (European Organisation for Research and Treatment of Cancer Fatigue scale (EORTC QLQ-FA13)).	Anxiety was significantly reduced yoga therapy compared to the control group (p = 0.005). NS for depression (p = 0.21) and fatigue (p = 0.11)	Randomisation and allocation external but no details of process Blinding not possible and outcomes subjective and self-assessed Power adequate. Intention-to-treat analysis not carried out and difference in attrition between yoga (5) and control (1) groups
Huberty 2019	RCT	62 myeloproliferative neoplasm patients	Online yoga (60 min/week of yoga) or wait-list control	Depression, anxiety, fatigue, pain, sleep disturbance, sexual function, total symptom burden, global health, and quality of life	Small/moderate effect sizes for yoga intervention for sleep disturbance (d = -0.26 to -0.61), pain intensity (d = -0.34 to -0.51), anxiety (d = -0.27 to -0.37), and depression (d = -0.53 to -0.78).	Randomisation and allocation concealment appropriate. Blinding not possible and some outcomes subjective and self-assessed. Power and intention-to-treat analysis not reported but attrition similar in both groups.
Janelsins 2015	RCT (secondary analysis)	328 participants who provided data on the memory difficulty item of the MD Anderson Symptom Inventory	YOCAS©® yoga-a program or standard care (SC)	Memory difficulty item of the MD Anderson Symptom Inventory	YOCAS©® significantly reduced memory difficulty at post intervention compared with SC (P<.05).	Secondary analysis of data from above RCT (Mustian 2013)

Kothari 2019	RCT	100 patients with various cancers receiving highly emetogenic chemotherapy	Yoga including breathing techniques, asanas and meditation daily for 2 rounds of chemotherapy or standard care only	Nausea and vomiting	Non-significant reduction in incidence of chemotherapy-induced nausea (90% vs. 78%, P = 0.35) Significant reduction in incidence of vomiting with yoga (42% vs. 22%, P = 0.01)	Randomisation and allocation concealment unclear. Blinding not possible and nausea subjective but vomiting objective. Power and attrition not reported.
Lin 2019	Multicentre RCT	358 patients with various cancers (77% breast cancer)	Standardized, 4-week, yoga therapy program (Yoga for Cancer Survivors [YOCAS]) or standard care	Cancer-related fatigue, sleep	Significantly greater improvements in CRF compared with standard survivorship care post-intervention (P < .01). (effects mediated by improved sleep quality and reduced daytime dysfunction)	Randomisation and allocation concealment adequate. Blinding not possible and outcomes subjective and self-assessed. Power calculated but not achieved with higher attrition in control group.
Milbury 2019a	RCT	26 dyads (lung or oesophageal cancer patients undergoing thoracic radiotherapy and caregivers)	Dyadic Yoga (DY – asanas, breathing techniques, guided imagery/meditation) 15 sessions or waitlist control (WLC)	Quality of life, depression, physical function	Significant improvements in 6 minute walk test (means: DY=473m vs. WLC=397m, d=1.19) and SF-36 physical function (means: DY=38.77 vs. WLC=30.88; d=.66) and social function (means: DY=45.24 vs. WLC=39.09; d=.44). QoL better	Randomisation appropriate (minimisation used) Blinding not possible and outcomes subjective Pilot study so not adequately powered. Similar attrition in both groups.
Milbury 2019b	Pilot RCT	20 dyads (glioma patients undergoing radiotherapy and caregivers)	Dyadic Yoga (DY – asanas, breathing techniques, guided imagery/meditation) 12 sessions or waitlist control (WLC)	Cancer-related symptoms, fatigue, depression, quality of life	Clinically significant improvements for patients in the DY compared with the WLC group for overall cancer symptom severity (d = 0.96); symptom interference (d = 0.74); depressive symptoms (d = 0.71);mental QOL (d = 0.69)	Randomisation appropriate (minimisation used) Blinding not possible and outcomes subjective Pilot study so not adequately powered. Only one withdrawal from yoga group.

Mustian 2013	RCT	410 cancer survivors (mainly breast cancer, also gastrointestinal, gynaecological, haematological and other cancers) suffering from moderate or greater sleep disruption	Yoga for Cancer Survivors (YOCAS) program consisting of pranayama (breathing exercises), 16 yoga asanas (postures), and meditation. Two 75-minute sessions per week for 4 weeks plus standard care versus standard care alone.	Sleep quality, sleep quality characteristics, adverse effects	Yoga participants had greater improvements in global sleep quality, subjective sleep quality, daytime dysfunction, wake after sleep onset, sleep efficiency, and medication use (all P < .05)	Randomisation and allocation concealment were appropriate. Blinding of patients was not possible but subjective outcomes measures were supplemented by sleep actigraphy. Study was adequately powered and intention-to-treat analysis was used.
Namazi Nia 2019	RCT	69 patients with various cancers undergoing chemotherapy	Four 20-30 min sessions of laughter yoga prior to chemotherapy versus routine self-care training	Warwick-Edinburgh Mental Well-being Scale (WEMWBS)	Mean post-test WEMWBS score in the intervention group (50.0±8.9) was significantly higher than that in the control group (47.9±10.4, P=0.004).	Randomisation and allocation concealment were appropriate. Blinding not possible and outcome subjective. Power and intention-to-treat analysis not reported but attrition similar in both groups.
Sprod 2015	RCT (secondary analysis)	97 older cancer survivors (≥60years of age), between 2months and 2years post-treatment, who participated in the original trial	YOCAS©® yoga-a program or standard care (SC)	Cancer-related fatigue and global side-effect burden	Yoga group had lower cancer-related fatigue, physical fatigue, mental fatigue, and global side-effect burden than SC group (p<0.05).	Secondary analysis of data from the above RCT (Mustian 2013)
Zetzl 2021	RCT	173 cancer patients suffering from mild to severe fatigue (approx. 50% with breast cancer)	Yoga therapy (8 weekly sessions of 60 min each) or waitlist control	Self-reported fatigue, depression and quality of life	Greater reduction in general fatigue (P = .033), physical fatigue (P = .048), and depression (P < .001) and increase in QoL (P = .002)	Randomisation adequate; allocation concealment unclear. Blinding not possible and outcomes subjective and self-assessed. Power adequate and attrition similar in both groups.

*Trials involving at least 20 patients with cancers other than breast cancer.
RCT = randomised controlled trial
QOL= quality of life