

Table 2: Controlled clinical trials of hypnotherapy for cancer

Source: Lorenc A, CAM-Cancer Collaboration. [Hypnotherapy](#) [online document]. October 2024.

First author year	Study design	Participants (number, diagnosis)	Interventions (experimental, control)	Main outcome measures	Main results	Comments (risk of bias, critical evaluation, etc)
Cancer patients undergoing surgery						
Rosenbloom 2024	RCT	Any cancer undergoing surgery (n=92)	1. Clinical hypnosis (in person; 2 sessions) plus recordings 2. Control	1. Opioid consumption (from clinical notes) 2. Pain (NRS) 3. Pain catastrophising (pain catastrophising scale) 4. Sleep (PROMIS) 5. Depressed mood (CES-D) 6. Anxiety (GAD-7) No safety data.	A significant Group × Time interaction, $F(6, 323.34) = 3.32, p = 0.003$, indicated an opioid sparing effect of clinical hypnosis during the acute postoperative period. Hypnosis also protected against increases in pain catastrophizing at one-week after surgery, $F(1, 75.26) = 4.04, p = 0.048$. No change in other outcomes.	No major risk of bias. Randomisation stratified for antiemetic use. Higher dropout in control group than hypnosis (8 people vs 0). High attrition rate in both groups, mostly loss to follow up (over 35%).
Azam 2024	RCT (secondary analysis of Rosenbloom 2024)			1. Heart rate variability (ECG) 2. Respiration rate (MindWare respiratory belt) 3. Heart rate (ECG) 4. Subjective relaxation (NRS) 5. Pain (BPI-SF) No safety data.	One month after surgery, HRV was significantly higher in hypnosis group ($p < 0.05$). No difference between groups for other outcomes.	
Oddby-Muhrbeck 1995*	RCT	Breast cancer patients undergoing surgery (n=70)	1. Self-hypnosis 2. Blank tape with low background music No safety data.	1. Occurrence of postoperative nausea and vomiting. No safety data.	No significant differences in 24 hour period. Hypnosis group less often recalled nausea and vomiting.	Cannot assess quality as full text of study not available.
Hernandez 2022	RCT	Breast cancer patients who underwent mastectomy (n=40)	1. Clinical hypnosis (recordings before surgery and after at home) 2. Control	1. Pain (BPI-SF Spanish) No safety data.	At follow-up after surgery hypnosis group had a statistically significant reduction in pain intensity ($p=0.07$), interference in daily activities due to pain ($p = .003$), mood ($p = .001$), social relationships ($p = .001$), sleep ($p = .001$), and life enjoyment ($p = .001$). No change in pain interference during walking and usual work activities.	Many limitations: not registered, methods are lacking detail in reporting, sample small and not powered. No dropouts.

Lemoine 2022	RCT	Breast cancer patients scheduled to undergo preoperative wire placement (n=167)	1. Hypnosis (conversational) 2. Control	1. Anxiety (VAS) 2. Pain (patient reported duration) 3. Technician satisfaction with relationship 4. Radiologist perceived ease of insertion of marker No safety data.	At planned interim analysis (half the planned sample size) no change in anxiety (p = 0.615) or any other outcomes.	Trial was interrupted prematurely due to lack of improvement in planned interim analysis. Authors felt that the clinicians may have changed their communication style for control patients (due to taking part in the study) and therefore benefits of hypnosis were felt in the control group. This was confirmed by qualitative data. Multicentre. Registered. Sample size was powered. Well reported.
Hoslin 2019	RCT	Cancer patients scheduled for a subcutaneous central venous access port implantation (n=148)	1. Hypnosis recording 2. Control	1. Perioperative experience in patients undergoing anaesthesia without loss of consciousness (EVAN-LR questionnaire), including comfort, pain, attention, information, waiting 2. Anxiety (VAS) 3. Heart rate 4. Procedure duration 5. VAS for comfort, pain, attention, information, waiting No safety data.	The global index of Evan-LR was significantly higher in the hypnosis session group compared to the control group (P = 0.006). No difference was reported in secondary outcomes.	Not registered. Minimal information on randomisation process. No sample size calculation.

Hypnosedation for cancer surgery						
Berliere 2018	Non-randomised observational study	Breast cancer patients undergoing surgery (lumpectomy, mastectomy, dissection or biopsy) (n=300) (after surgery 32 received chemotherapy, 123 radiotherapy, 115 endocrine therapy)	1. Hypnosedation 2. General anaesthesia (no group allocation, based on patient preference)	1. Duration of hospitalisation 2. Post-surgery lymph punctures and removal 3. Anxiety pre and post surgery (distress thermometer) 4. Asthenia (for those on radiotherapy) 5. Incidence of nausea and vomiting 6. Radiodermatitis (for those on radiotherapy) 7. Incidence of hot flashes (for those on endocrine therapy) 8. Pain (measure not specified)	Duration of hospitalization significantly lower in hypnosedation group ($p < 0.001$). Number of post-mastectomy lymph punctures reduced in hypnosedation ($p = 0.01$), and quantity of lymph removed for mastectomies ($p = 0.0297$). Regarding post-surgery treatments, hypnosedation group had group had less frequent radiodermatitis ($p=0.002$) and asthenia ($p<0.001$) (radiotherapy); lower incidence of hot flashes, pain and asthenia (endocrine therapy; all $p<0.001$) and lower incidence of asthenia ($p=0.01$) but no difference in nausea and vomiting (chemotherapy). No safety data (despite concluding hypnosis is safe).	Nonrandomised due to patient preference for hypnosedation. Observational design means results are inconclusive. No data on dropouts or missing data. Baseline differences in psychological measures may explain group differences in outcomes.
Berliere 2021		Subset of Berliere 2018, patients who had neoadjuvant chemotherapy (n=63)		Long-term (every 3 months for 2 years): 1. Polyneuropathy 2. Musculoskeletal pain (NRS and VAS) 3. Postoperative pain (NRS and VAS) 4. Cancer-related fatigue (NRS)	Duration was significantly lower for polyneuropathy ($p < 0.05$), musculoskeletal pain ($p < 0.05$) postoperative pain and cancer-related fatigue ($p < 0.05$) in the hypnosedation group. No safety data.	
Lacroix 2019	Non-randomised controlled trial	Breast cancer patients who underwent mastectomy (n=42)	1. Hypnosedation (in person; during surgery) 2. General anaesthesia.	1. Postoperative pain (NRS) 2. Distress (thermometer) 3. Shoulder range of motion (goniometer measurements) 4. Lymphoedema (measured by clinicians) No safety data (but they do state hypnosis is safe)	Preliminary results only. Significantly lower incidence of postoperative chronic pain ($P = 0.008$) and shoulder range of motion ($P = 0.04$). No hypnosedation patients requested a conversion to general anaesthesia.	Study was not randomised due to patient preference for hypnosedation. Small sample size.

Bankole 2023	Non-randomised retrospective study.	Cancer patients undergoing awake surgery for glioma (n=61)	1. Hypnosedation 2. Standard sedation (asleep-awake-asleep)	1. Tumour volume (imaging) 2. Overall survival	No significant differences between groups on either outcome, suggesting hypnosedation is an alternative to standard sedation.	Non-randomised. Small sample. No data on dropouts or missing data.
Pesce 2020	Non-randomised controlled trial	Patients with high grade gliomas undergoing awake surgery (n=15)	1. Hypnosedation 2. Spinal anaesthesia	1. Postoperative complications 2. Clinical and neurological status 3. Duration of surgical interventions 4. Extent of Resection (imaging)	Duration of surgery significantly longer in hypnosedation group (p=0.0001). No significant difference for other outcomes.	Very small sample, which authors do not adequately acknowledge. No data on dropouts or missing data.
Chapet 2018*	Non randomised controlled trial	Patients with prostate cancer undergoing brachytherapy (n=79)	1. Hypnosedation 2. General anaesthesia (GA) 3. Spinal anaesthesia (SA)	1. Request for GA 2. Pain (VAS) 3. Comfort (VAS) 4. Anxiety (VAS) 5. Medication 6. Surgery duration	11 patients (13.9%) requested a GA, because they did not reach the hypnotic level. Hypnosedation group received significant less medications than general or spinal anaesthetic (p < 0.0001). Hypnosedation group had longer duration of surgery but shorter recovery room	Full text unavailable so study quality cannot be evaluated.
Cancer survivors						
Barton 2019	RCT	Have/have had breast or gynaecological cancer with a negative change in body image since diagnosis and a desire to improve (n=87)	1. Hypnosis 2. Progressive muscle relaxation (both face to face and home practice)	1. Body image (impact of treatment scale) 2. Perception of sexual self (Sexual Self-Schema Scale for women) 3. Mood (Positive/Negative Affect Scale) 4. Sexual satisfaction (PROMIS sexual health measure) 5. Perceived change (Global Impression of Change Scale) 6. Adverse events	Body image improved in both groups with no difference between groups. No difference in secondary outcomes. Two side effects in hypnosis group. (grade 1 agitation at week 4 ; grade 1 restlessness at week 1). There were no AE's reported in the PMR group	Registered. Small underpowered sample. High dropout rate. No non treatment group. Very narrow/specific sample.
Eaton 2022	RCT	Adult cancer survivors with chronic pain (n = 109)	1. Hypnosis recordings 2. Relaxation recordings	1. Pain (NRS) 2. Pain interference 3. Anxiety 4. Depression 5. Fatigue 6. Sleep disturbance (all using PROMIS)	Both groups reported significant improvements in pain, pain interference and anxiety. No between group differences. No adverse effects in either group.	No non-treatment control. A few dropouts, some due to lack of effect. Assessors were not blinded.

Other cancer treatments (non-surgical)						
Hamdani 2020	Non-randomised controlled trial	Head and neck cancer patients undergoing chemotherapy (n=64)	1. Hypnosis 2. Control	1. Anticipatory nausea (VAS) No safety data	Significantly lower nausea in the hypnosis group (p<0.001)	No dropouts. Unclear how group allocation was performed (not random), creating a major risk of bias.
Elyasi 2021	Non-randomised controlled trial.	Breast cancer undergoing chemotherapy (n=50)	1. Hypnosis (face to face) 2. Cognitive behavioural therapy (CBT) (both 8 sessions). 3. Control	1. Hypnotisability (Speigel test) (not reported in results) 2. Quality of life (QoL) (EORTC) 3. Anxiety (HADS) – reported as ‘stress’ in the results. 4. Depression (HADS) No safety data	Improvements in stress, depression, and QoL in all three groups and higher in CBT group than hypnosis. Physical functioning, body image, sexual functioning, arm symptoms, breast symptoms, future perspective, pain, digestive problems, and functional scale were significantly improved in both hypnosis and CBT groups	Non-randomised (they said patient preference/challenges made randomisation impossible). Report seems to confuse ‘stress’ and ‘anxiety’. No dropouts. Sample size was calculated but small.
Tellez 2017	Non-randomised controlled trial (reports same study as Tellez 2020)	Breast cancer undergoing chemotherapy (n=40)	1. Group hypnosis (24 sessions) 2. Control	1. Anxiety (HADS) 2. Depression (HADS) 3. Functional social support (Duke-UNC-11) 4. Perceived stress (PSS) 5. Self-esteem (Rosenberg scale) 6. Optimism (Life Orientation Test) 7. Hypnotisability (Stanford Hypnotic Susceptibility Scale) No safety data	Hypnotisability was not related to any outcome. Hypnosis group had significant improvement compared to control in self-esteem 1 month p=0.046; 6 months p=0.008), optimism (1 month p=0.05; 6 months p=0.003), anxiety (1 month p=0.002; 6 months NS), total HADS (1 month p=0.001, 6 month NS). No difference in social support or perceived stress.	Not randomised (allocation was sequential) and no explanation why not. Doesn’t appear to be registered. Some dropouts but this doesn’t appear related to the intervention.
Tellez 2020	Non-randomised controlled trial (reports same study as Tellez 2017)			1. Cytokine levels No safety data.	At the end of chemotherapy treatment, the control group had significantly higher levels of tumor necrosis factor alpha (TNF-α) (p=0.002) and granulocyte colony stimulation factor (G-CSF) (p=0.024) compared to the hypnosis group. No other significant differences.	

Hawkins 1998	RCT	Children with leukaemia and non-Hodgkin's lymphoma who were undergoing regular lumbar punctures (n=30)	1. Direct hypnosis 2. Indirect hypnosis	1. Pain during lumbar puncture (smiley face scale and nurse observation) 2. Pain-related anxiety (smiley face scale and nurse observation) 3. Hypnotic ability (Stanford scale) No safety data.	No significant difference between the two groups. Pre post outcomes were significant (p<0.001)	No sample size calculation and seems small. No non-treatment control.
Hockenberry-Eaton, 1989*	RCT	Children with various cancer types undergoing chemotherapy (n=22)	1. Taught self-hypnosis 2. Control	1. Perceived self-competence (Harter score) No safety data*	Increase in perceived self-competence scores in hypnosis group as opposed to a decrease in control.	Cannot assess quality as full text of study not available. P values not provided in abstract. Small sample.
<p>*Only an abstract was available for this study BPI-SF: brief pain inventory short form CBT: cognitive behavioural therapy ECG: echocardiogram GAD: generalised anxiety disorder GA: general anaesthetic HADS: hospital anxiety and depression scale</p>				<p>NRS: numeric rating scale PMR: progressive muscle relaxation PSS: perceived stress scale RCT: randomised control trial VAS: visual analogue scale</p>		