

BEST PRACTICE FOR EXERCISE REHABILITATION FOR ONCOLOGY CLIENTS

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Please find following a summary of a literature search and relevant results. All articles can be provided in full - email library@monashhealth.org for a list of the articles you require.

QUESTION

This literature report was requested to support decision making around best practice for exercise rehabilitation for oncology clients. The focus is on broad high-quality studies in oncology. Literature for individual patient groups has not been included.

RESULTS

CLINICAL GUIDELINES

Tsuji, et al. (2025). **Japan's cancer survivorship guidelines for exercise and physical activity.** *Japanese journal of clinical oncology*, 55(1), 12–20. [Click for full-text.](#)

- A panel of experts, including oncologists, physicians, exercise scientists, epidemiologists and patient advocates, utilized a modified Delphi process and systematic reviews to establish consensus on exercise recommendations for cancer survivors. The panel focused on setting the objectives of the Clinical Practice Guidelines and addressing crucial clinical issues in Japan. Recommendations were formulated based on the strength and certainty of evidence, the benefit–harm balance and patient values and preferences.

American Society of Clinical Oncology Journal (2022). **Exercise, Diet, and Weight Management During Cancer Treatment: ASCO Guideline.** [Web link](#)

- A systematic review of the literature identified the impact of aerobic and resistance exercise, specific diets and foods, and intentional weight loss and avoidance of weight gain in adults during cancer treatment, on quality of life, treatment toxicity, and cancer control.
- Oncology providers should recommend regular aerobic and resistance exercise during active treatment with curative intent and may recommend preoperative exercise for patients undergoing surgery for lung cancer

Stout, et al. (2021). **A systematic review of rehabilitation and exercise recommendations in oncology guidelines.** *CA: a cancer journal for clinicians*, 71(2), 149–175. [Click for full-text.](#)

- This report was developed as a part of the World Health Organization (WHO) Rehabilitation 2030 initiative to identify rehabilitation-specific recommendations in guidelines for oncology care.
- Clinical reports of low rehabilitation utilization rates suggesting that guideline recommendations may be overlooked.

Jeevanantham, et al. (2021). **Mobilization and Exercise Intervention for Patients with Multiple Myeloma: Clinical Practice Guidelines Endorsed by the Canadian Physiotherapy Association.** *Physical therapy, 101(1)*. [Click for full-text.](#)

- These clinical practice guidelines were developed to aid physical therapists in implementing evidence-based and best-practice care for patients with Multiple Myeloma (MM) to optimize rehabilitation outcomes.

Clinical Oncology Society of Australia. (2020). **COSA Position Statement on Exercise in Cancer Care.** [Web link](#)

- The position statement of the Clinical Oncology Society of Australia (COSA) on the role of exercise in cancer care, considering the strengths and limitations of the evidence base.

PEER-REVIEWED JOURNAL ARTICLES

Articles are grouped by theme:

- Exercise programs
- Telerehabilitation/Telemedicine
- Effectiveness Studies
- Guidelines

Each article summary contains excerpts from the abstract and an online link.

EXERCISE PROGRAMS

Fairman, et al. (2024). **Planning and evaluating an integrated clinical exercise oncology service: an exploratory mixed-methods study.** *BMC health services research, 24(1)*, 1318. [Click for full-text.](#)

This project aimed to design and evaluate the potential to integrate an exercise oncology service into clinical care in a local healthcare system. The goal was to inform the design of an implementation strategy to promote its sustainable use in standard care. This two-phase, exploratory study used a mixed-methods approach. First, qualitative measures were used to understand the context for exercise integration into oncology care by clinicians and administrators in the healthcare system. Next, the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework guided a comprehensive evaluation of the exercise service. Designing an exercise program for meaningful integration and sustainment requires understanding the context where the program will be delivered, followed by intentional and continuous engagement with key stakeholders to ensure the program continues to meet the needs of the system.

Weemaes, et al. (2024). **Effects of remote coaching following supervised exercise oncology rehabilitation on physical activity levels, physical fitness, and patient-reported outcomes: a randomised controlled trial.** *The international journal of behavioral nutrition and physical activity, 21(1)*, 8. [Click for full-text.](#)

This randomised controlled trial aimed to assess the effectiveness of a six-month remote coaching intervention, following a supervised exercise oncology rehabilitation program on maintenance of PA levels; and improvement of aerobic capacity, muscle strength and patient-reported outcomes in cancer survivors. Ninety-seven participants from a Dutch University Hospital's exercise rehabilitation program were randomised to the COACH group (n = 46), receiving 6 months of remote coaching after completing the exercise program, or the CONTROL group (n = 50), receiving no additional intervention. The six-month remote coaching intervention did not notably improve PA levels;

sedentary time; aerobic capacity; muscle strength; HRQoL; fatigue; anxiety and depression symptoms and RTW rates after participation in a supervised exercise oncology program. Although the participants who received coaching showed slightly higher levels of PA, these differences were not significant.

Fernandez-Rodriguez, et al. (2023). **Multimodal Physical Exercise and Functional Rehabilitation Program in Oncological Patients with Cancer-Related Fatigue-A Randomized Clinical Trial.** *Int J Environ Res Public Health*. 2023, 20(6):4938. [Click for full-text.](#)

The main objective of this study was to evaluate the effects of a multimodal program of physical exercise and functional rehabilitation on asthenia, pain, functional capacity, and quality of life in cancer patients with cancer-related fatigue. This was a randomized, parallel-controlled clinical trial, with two arms (experimental and control group), and it was conducted over the course of a year. Participants (n = 48) were assessed at three points during the study. The first assessment was prior to hospital discharge, the second assessment was after 15 days, and the final assessment was at one month post-hospital follow-up. The intervention lasted one month. The main variables studied were the dependency levels (Barthel), cancer-related fatigue (FACT-An), health-related quality of life (EuroQoL-5D), functional capacity (SPPB), and kinesiophobia (TSK-F). The results demonstrated that there are beneficial effects of a multimodal physical exercise and functional rehabilitation program in improving the autonomy of cancer-related fatigue patients.

Viamonte, et al. (2023). **Adherence, safety, and satisfaction of a cardio-oncology rehabilitation program framework versus community exercise training for cancer survivors: findings from the CORE trial.** *Supportive care in cancer*, 31(3), 173. [Click for full-text.](#)

To assess safety, satisfaction, and overall adherence of a center-based cardiac rehabilitation (CBCR) program for cancer survivors at increased cardiovascular (CV) risk, compared to community-based exercise training (CBET). The CORE study was a single-center, prospective, randomized controlled trial enrolling cancer survivors exposed to cardiotoxic cancer treatment and/or with previous CV disease. Participants were randomized to an 8-week CBCR program or CBET, twice a week

Dennett, A. M. (2021). **Multidisciplinary, exercise-based oncology rehabilitation programs improve patient outcomes but their effects on healthcare service-level outcomes remain uncertain: a systematic review.** *Journal of physiotherapy*, 67(1), 12–26. [Click for full-text.](#)

A systematic review investigating the effect of multidisciplinary, exercise-based, group oncology rehabilitation programs on healthcare service outcomes and patient-level outcomes, including quality of life and physical and psychosocial function. Multidisciplinary, exercise-based oncology rehabilitation programs improve some patient-level outcomes compared with usual care. Further evidence from randomised trials to determine their effect at a healthcare service level are required if these programs are to become part of standard care.

TELEREHABILITATION/TELEMEDICINE

Batalik, et al. (2024). **Effect of exercise-based cancer rehabilitation via telehealth: a systematic review and meta-analysis.** *BMC Cancer*. 24:600. [Click for full-text.](#)

Exercise-based cancer rehabilitation via digital technologies can provide a promising alternative to centre-based exercise training. This study conducted a meta-analysis examining the effect of telehealth exercise-based cancer rehabilitation in cancer survivors on cardiorespiratory fitness,

physical activity, muscle strength, health-related quality of life, and self-reported symptoms. This meta-analysis showed that telehealth exercise cancer rehabilitation could significantly increase cardiorespiratory fitness and physical activity levels and decrease fatigue.

Burton, et al. (2024). **Telerehabilitation physical exercise for patients with lung cancer through the course of their disease: A systematic review.** *Journal of telemedicine and telecare*, 30(5), 756–780.

[Click for full-text.](#)

Telerehabilitation can overcome some of barriers often met by patients to practice physical activity. The objective of this systematic review is to assess feasibility and safety of telerehabilitation for patients with lung cancer, its effects on physical capacity, quality of life, symptoms severity, depression and anxiety, survival, lung function, post-operative outcomes, dyspnoea and body composition. Eight studies were included. Telerehabilitation is safe but was characterized by a low recruitment and attendance rate (<70%). It enhances quality of life, muscle mass, depression and anxiety but it does not improve physical capacity (except in preoperative period), symptoms severity, survival, lung function or dyspnoea

Smith-Turchyn, et al. (2024). **A pilot randomized controlled trial of a virtual peer-support exercise intervention for female older adults with cancer.** *BMC geriatrics*, 24(1), 887. [Click for full-text.](#)

Regular exercise can mitigate side effects of cancer treatment. However, only a small proportion of adults with cancer meet exercise guidelines, and older adults (> 65 years) are underrepresented in cancer rehabilitation research. The purpose of this study was to determine the feasibility and preliminary effectiveness of a virtual partner-based peer support exercise intervention for older adult female cancer survivors. Findings showed that a virtual partner-based exercise intervention for older adults with cancer is feasible and shows preliminary effect benefits. Findings inform future trials aimed at increasing exercise in older adults with cancer.

Batalik, et al. (2021). **Home-Based Aerobic and Resistance Exercise Interventions in Cancer Patients and Survivors: A Systematic Review.** *Cancers*, 13(8), 1915. [Click for full-text.](#)

Exercise interventions are increasingly being recognized as an important part of treatment and supportive cancer care for patients and survivors. The aim of this descriptive systematic review was to identify the literature focusing on the health effects of HB exercise interventions in cancer survivors and to evaluate the methodological quality of the examined studies. Most studies were on aerobic and resistance exercises, and the frequency, duration, intensity, and modality varied across the different interventions. Improvements in cardiorespiratory fitness (CRF), physical activity (PA) levels, fatigue, health-related quality of life (HRQOL), and body composition have been reported. However, all the studies were limited in methodology and the reporting of results.

EFFECTIVENESS STUDIES

Tan, et al. (2024). **Cancer survivors maintain health benefits 6 to 12 months after exercise-based rehabilitation: a systematic review and meta-analysis.** *Journal of cancer survivorship: research and practice*, 18(3), 651–672. [Click for full text.](#)

This systematic review and meta-analysis aimed to determine the effects of exercise-based cancer rehabilitation on physical functioning, activity (including physical activity) and participation (including quality of life) are maintained at 6 to 12 months. Outcome data (e.g. fitness, physical activity, walking capacity, fatigue, depression, quality of life) were extracted and Nineteen

randomised controlled trials including 2974 participants were included. Participants who underwent exercise-based rehabilitation had improved physical activity. Health outcomes of cancer survivors after exercise-based rehabilitation can be maintained after rehabilitation completion.

Beyer, et al. (2024). **Effects of postoperative physical exercise rehabilitation on cardiorespiratory fitness, functional capacity and quality of life in patients with colorectal, breast, and prostate cancer - a systematic review and meta-analysis.** *Journal of cancer research and clinical oncology*, 151(1), 13. [Click for full-text.](#)

This study is a systematic review of 12 studies including 1298 patients and ten studies were included in the meta-analysis. Reduced cardiorespiratory fitness (CRF) and functional capacity following surgical procedures and during cancer treatments is a major risk factor for morbidity and mortality among patients with cancer. This study aimed to assess the impact of endurance and combined resistance exercise interventions during the postoperative rehabilitation period for patients with colorectal, breast, and prostate cancer. Postoperative exercise interventions could effectively improve CRF, functional capacity and QoL as shown in this meta-analysis. However, there is a lack of high-quality trials with a higher number of participants examining the effects of postoperative exercise in patients with colorectal, breast, and prostate cancer.

Linero-Bocanegra, et al. (2024). **Effectiveness of Therapeutic Exercise for Children Undergoing Treatment for Cancer: A Systematic Review.** *Pediatr Phys Ther*, 1;36(4):422-438. [Click for full-text.](#)

This systematic review aimed to evaluate the effectiveness of therapeutic physical exercise (TPE) interventions on the physical functioning, psychosocial well-being, and quality of life (QoL) of children undergoing treatment for cancer. Seven randomized controlled trials were included. Most studies showed that strength, fatigue, and QoL improved after the intervention. Cardiorespiratory capacity through 6-minute walk test and physical activity levels were better in the experimental groups. No changes were noted in other variables.

Malik, et al. (2023). **Effects of physical exercise on rehabilitation of cancer patients undergoing radiotherapy.** *J Cancer Res Ther*, 19(3):585-589. [Click for full-text.](#)

The purpose of this study was to study the effect of physical activity on health/behavioural changes among adult cancer survivors. The study is randomized controlled trial which included 100 patients (Group A - Exercise group - 50 patients and Group B - Control group - 50 patients). Assessment of cardiopulmonary fitness, endurance, and QOL was done. Significant improvement in pulse rate, SpO2 and endurance, mental health, and social dimension was found in exercising group with no significant improvement in spiritual dimension.

Fukushima, et al. (2021). **Effects of aerobic, resistance, and mixed exercises on quality of life in patients with cancer: A systematic review and meta-analysis.** *Complementary therapies in clinical practice*, 42. [Click for full-text.](#)

This systematic review aimed to determine the effects of aerobic, resistance, and mixed exercise on multiple aspects of quality of life in patients with cancer through a meta-analysis. Randomized controlled trials with quality of life were collected, and 20 studies were analyzed. Subgroup analyses were performed according to exercise types. Exercise improved global, physical, role, and emotional quality of life, but not cognitive and social quality of life. Aerobic, resistance, and mixed exercises improved global, physical, role, emotional, and social quality of life; global, physical and role quality of life; and only physical quality of life, respectively.

Morishita, et al. (2020). **Effect of Exercise on Mortality and Recurrence in Patients With Cancer: A Systematic Review and Meta-Analysis.** *Integrative Cancer Therapies*, 19. [Click for full-text.](#)

This systematic review and meta-analysis of randomized controlled trials (RCTs) aimed to determine the effects of exercise on mortality and recurrence in patients with cancer. The systematic review included RCTs of exercise interventions, such as resistance exercise and aerobic exercise, in patients with cancer that evaluated the risk of mortality and recurrence. This study found that exercise has a favorable effect on mortality and recurrence in patients with cancer. However, the effect could not be fully determined due to data insufficiency.

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APPENDIX

SEARCH METHODOLOGY

A systematic search was conducted for literature. The results were screened by librarians using [Covidence](#).

SEARCH LIMITS

- English-language
- Published within the last 5 years
- RCTs and Systematic reviews only

DATABASES SEARCHED

- Medline – index of peer reviewed articles across health sciences and medicine.
- Embase – index of biomed and pharmacological peer reviewed journal articles.
- Emcare – index of nursing, allied health, critical-care medicine and more.
- Grey literature – Google, Google Scholar, Trip database, Biomed Central Proceedings.

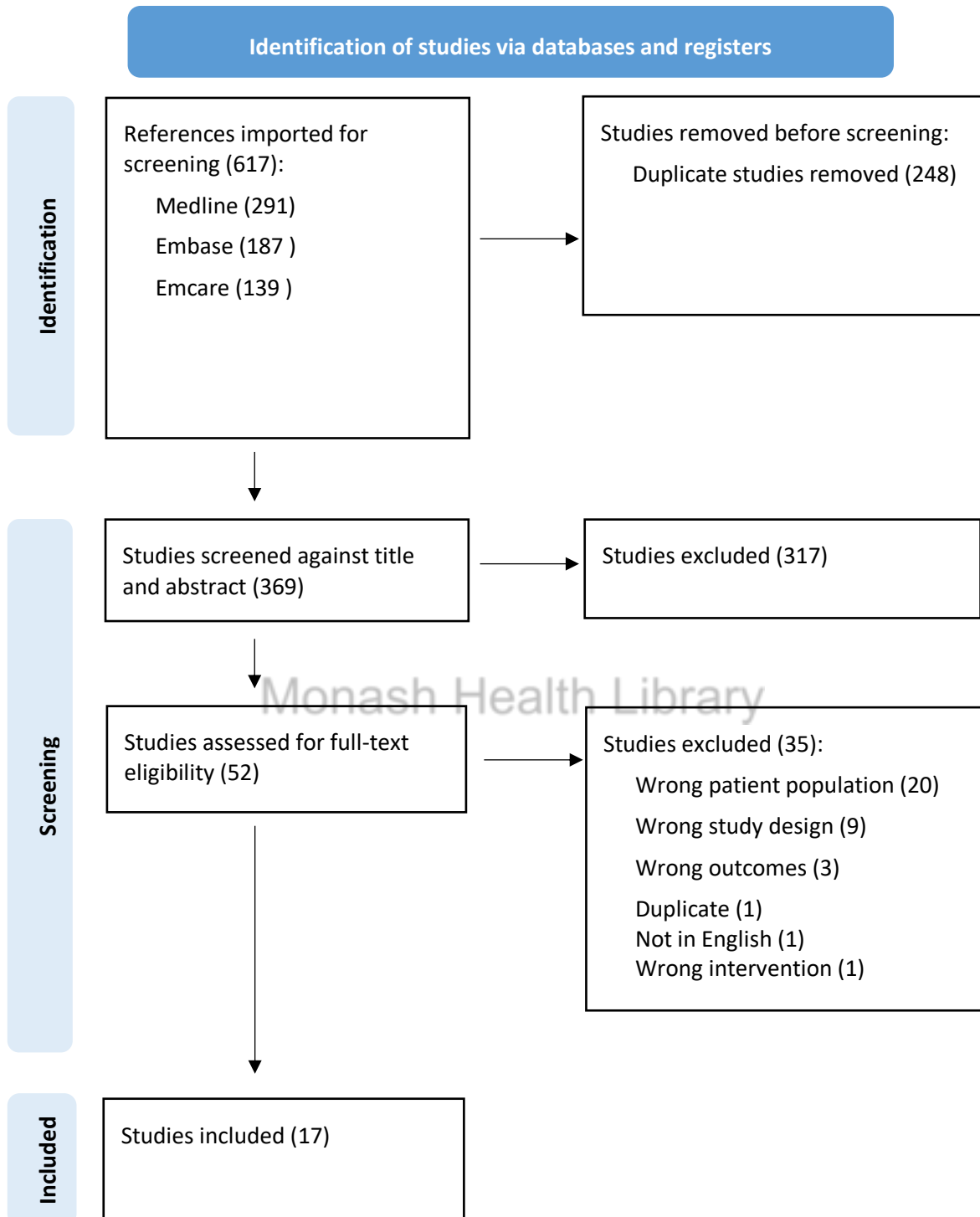
MEDLINE SEARCH STRATEGY

This search strategy was conducted on 28/02/2025 and translated to other databases, as relevant. Searches in each database were conducted on the same day.

Ovid MEDLINE(R) ALL <1946 to February 28, 2025>

1	exp Neoplasms/	4079189
2	Neoplasm*.ti,ab,kf.	332427
3	Cancer*.ti,ab,kf.	2517189
4	Oncology.ti,ab,kf.	163907
5	1 or 2 or 3 or 4	4895509
6	*Exercise Therapy/ or physical therapy modalities/	74231
7	(Exercise adj3 (therap* or intervention* or program* or group or class)).ti,ab,kf.	56876
8	6 or 7	116603
9	Rehabilitation/	18842
10	((Rehab* or telerehab*) adj5 (exercise or physical or physiotherapy or intervention or cancer)).ti,ab,kf.	28251
11	9 or 10	45701
12	randomized controlled trial/	632703
13	(randomi?ed or randomly or trial).mp.	2107425
14	meta-analysis/ or "systematic review"/	372700
15	(systematic adj2 (review or literature or scoping or narrative or qualitative or evidence or quantitative or meta or critical or mixed or mapping or cochrane or integrative)).mp.	403657
16	(metaanaly* or meta analy* or meta-analy*).mp.	368979
17	12 or 13 or 14 or 15 or 16	2499213
18	5 and 8 and 11 and 17	387
19	limit 18 to (english language and last 5 years)	173

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