

# Effect of Exercise Interventions on Quality of Life in Patients With Lung Cancer: A Systematic Review of Randomized Controlled Trials

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**PROBLEM IDENTIFICATION:** Improving quality of life (QOL) is a key issue for patients with lung cancer. Exercise interventions could positively affect patients' QOL; however, there is no clear-cut understanding of the role of exercise in improving QOL in patients with lung cancer.

**LITERATURE SEARCH:** The PubMed®, Embase®, Cochrane Library, and Web of Science electronic databases were searched from inception to September 6, 2019.

**DATA EVALUATION:** 16 randomized controlled trials met the inclusion criteria. A qualitative synthesis method was used to identify the effect of exercise interventions on QOL in patients with lung cancer.

**SYNTHESIS:** This review indicates that exercise interventions may have beneficial effects on the QOL of patients with lung cancer. The effectiveness seems to be affected by the duration of the intervention, as well as exercise frequency, intensity, and adherence.

**IMPLICATIONS FOR PRACTICE:** Exercise interventions can be integrated into management plans for patients with lung cancer to improve their QOL. Healthcare providers should consider developing optimal exercise prescriptions to maximize the results for this population.

**KEYWORDS** lung cancer; exercise; quality of life; systematic review

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Lung cancer remains the leading cause of cancer morbidity and mortality worldwide and represents close to one in five cancer deaths (Bray et al., 2018; Siegel et al., 2020). Compared with patients with other types of cancer, patients with lung cancer have been reported to experience more disease burden and symptom distress, as well as have poorer physical functioning and health-related quality of life (QOL) (Henshall et al., 2019; Hung et al., 2011; Ostroff et al., 2011; Paramanandam & Dunn, 2015). With the improvement of various treatment methods, the survival rate of individuals with lung cancer has steadily improved. QOL is increasingly recognized as an important topic for such populations, and QOL has gradually become an integral end point in clinical trials.

QOL is a multidimensional concept that reflects the patient-perceived evaluation of one's health, including the physical, emotional, and social dimensions, and symptoms related to disease or treatment (Fiteni et al., 2016). Patients with lung cancer experience numerous adverse outcomes related to disease or treatment, including dyspnea, cough, pain, and fatigue, all of which are a major detriment to their QOL. Following a diagnosis of lung cancer, which is a traumatic stressor, patients often show negative emotions, such as anxiety and depression, because of the anticipation of negative outcomes and the fear of death, which have a significant impact on patients' QOL and even disease progression (Pompili et al., 2013). Studies have also revealed that, following lung resection surgery, QOL can further decline significantly because of postoperative complications and functional disability (Balduyck et al., 2007; Handy et al., 2002; Pompili, 2015; Yip et al., 2018). In addition, the QOL of patients with advanced lung cancer is significantly reduced because of high