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## Resistance Training in Incurable Cancer: A Systematic Review of Exercise Prescription, Principles, and Programming

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**Background:** Exercise is an established supportive therapy in oncology, with growing interest in its role for individuals with incurable disease who commonly experience progressive functional decline. Resistance training is recommended in current guidelines, but its effectiveness and clinical translation depend on appropriate application and transparent reporting of key exercise principles and training variables. Prior reviews have shown suboptimal implementation and reporting in exercise oncology trials, and advanced programming strategies remain underused. However, resistance training interventions in incurable cancer have not been comprehensively evaluated across cancer types with respect to exercise principles, prescription, and programming characteristics.

**Aim:** To examine resistance training interventions for individuals with incurable cancer with respect to (1) completeness of training variable reporting, (2) adherence to established exercise principles, and (3) use of programming strategies such as autoregulation, flexible programming, and periodization.

**Methods and Review Status:** This systematic review includes intervention trials involving resistance training for adults with incurable cancer. Six databases (MEDLINE, Embase, PsycINFO, CINAHL, Web of Science, PEDro) were searched without date restrictions, resulting in 725 records, of which 116 potentially relevant studies were identified through title and abstract screening. Full-text screening is currently in process. For each intervention, key training variables (e.g., frequency, intensity, volume) will be recorded, along with adherence to exercise principles (e.g., specificity, individualisation, progression) and use of autoregulation, flexible programming, time-efficient methods, and periodization.

**Expected Significance:** This review will clarify current resistance training prescription and reporting practices in incurable cancer and identify opportunities for improving methodological quality and clinical implementation. The findings will support the development of safe, feasible, and effective resistance training interventions within palliative rehabilitation.

**Conflict of Interest and Ethical Approval:** The authors declare no conflicts of interest. Ethical approval was not required for this study.

### Keywords

incurable cancer, resistance training, exercise principles, exercise prescription

### Conflict of Interest & Ethical Approval

yes

### Abstract submitters declaration

yes

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