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Physical Activity Intervention in Cancer Survivors: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Background

The aim was to systematically review all published randomized controlled trials (RCTs) which tested the effect of a physical activity intervention in adult cancer survivors after the main cancer treatment.

Method

Relevant RCTs were located by: (1) systematic searching of electronic databases (PUBMED and Google Scholar) using cancer-related and exercise-related search terms; and (2) scanning the references of retrieved RCTs and relevant reviews. All relevant RCTs were retrieved and assessed to determine if they met the selection criteria. Data extraction was independently performed by two investigators and followed by a discussion to reach consensus. The main outcome measures were cancer outcome (survival and recurrence), quality of life (QoL), body composition and functional capacity.

Results

A total of 2,447 citations were identified of which 170 potentially relevant ones were examined in detail. Forty-five papers met the selection criteria of which 41 reported data on at least one relevant outcome. These encompassed 18 papers not included in previously published reviews. Twenty-six papers (63.4%) were on breast cancers and the remaining papers were on other cancers.

There was a paucity of published data on the effects of physical activity interventions on cancer outcome. Various instruments were used to assess the other outcomes (QoL and functional capacity) limiting the pooling of data for meta-analysis. Estimates of the effects of physical activity interventions on QoL, body composition and functional capacity were determined. Potential determinants of the effect heterogeneity across studies were evaluated.

Conclusion

Moderately-strong-to-strong evidence was found for a positive effect of physical activity interventions on QoL of adult cancer survivors following main cancer treatment. Clinically meaningful associations were identified between such interventions and...
improved functional capacity. The observed heterogeneity in study design and outcome parameters highlighted the need for the development of a standardized protocol to facilitate meta-analysis on the effects of physical activity in cancer survivors.

**Acknowledgements**

This study has been supported by WCRF UK, WCRF International and WCRF Hong Kong.