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# Randomized controlled trial of the Effects of combined resistance and AerobiC exercise on Health-related quality of life in patients undergoing first-line chemotherapy for metastatic colorectal cancer (REACH): A Trial Protocol

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**Background:** Metastatic colorectal cancer is largely incurable. The primary goal of first-line treatment is to prolong survival while maintaining acceptable levels of health-related quality of life. However, chemotherapy is associated with substantial treatment-related toxicity, and 30–50% of patients with mCRC experience clinically relevant reductions in health-related quality of life during systemic treatment. Exercise training has been shown to improve HRQoL in patients with early-stage cancers; however, the effects of exercise training on health-related quality of life in patients with metastatic colorectal cancer receiving first-line chemotherapy remain insufficiently investigated.

**Objectives:** The primary objective of this trial is to evaluate the effects of an 18-week combined home-based resistance and aerobic exercise program on health-related quality of life in patients undergoing first-line chemotherapy for metastatic colorectal cancer. The secondary objectives are to evaluate the effects of exercise training on cancer-related fatigue, tolerability of first-line treatment, physical performance, maximal oxygen consumption, and body composition.

**Methods:** This trial is a national, multicenter, parallel-group, randomized controlled trial. Adult ( $\geq 18$  years of age) patients with metastatic colorectal cancer scheduled for first-line systemic chemotherapy are eligible. Exclusion criteria include pregnancy, life expectancy  $<6$  months, absolute contraindications to maximal exercise, ECOG performance status  $>2$ , inability to understand Danish or English, and engagement in structured moderate-to-high intensity aerobic exercise for  $>30$  minutes more than once per week during the past 3 months. The patients are recruited from five oncological departments in Denmark. A total of  $n = 150$  participants will be randomized 1:1 to standard care or standard care plus 18 weeks of supervised and unsupervised home-based combined moderate-to-high intensity aerobic and resistance training (three 35-minute sessions per week). The trial adopts a decentralized design, including in-home outcome assessment and intervention delivery. The primary outcome is health-related quality of life.

## Keywords

Cancer, exercise

## Conflict of Interest & Ethical Approval

yes

## Abstract submitters declaration

yes

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