

# EXEMPLAR OF EVIDENCE-BASED CARE IN PRACTICE

## A four-pillar multimodal prehabilitation program in colorectal cancer

**WHAT** did the initiative involve?

This prospective observational cohort study aimed to test the feasibility, safety, and effectiveness of a multimodal prehabilitation program.

Patients were assigned to either the prehabilitation program or to a control group. The 4-week multimodal prehabilitation program consisted of:

Exercise intervention:

- High-intensity endurance (interval) training, complemented with upper and lower body resistance training 3 times per week.
- Participants were encouraged to walk or cycle for 60 minutes on the days between the supervised training sessions.

Nutrition intervention:

- Tailored dietary advice aiming at a total protein intake of 1.5–1.8 g/kg per day, including twice daily protein supplements.
- Daily Vitamin D and multivitamins (50% of recommended dietary allowance).

Psychological support:

- Assessment by a trained psychologist to address anxiety, provide coping strategies, teach relaxation techniques, and discuss postoperative expectations.
- Weekly phone call from specialist nurse to reinforce coping mechanisms and address psychological complaints.

Smoking cessation:

- Intensive counselling in combination with nicotine replacement therapy was offered to all smokers.

Clinical assessment measures were completed by physiotherapist (6M walk test, stair climb test, sit-to-stand test), dietitian (patient-generated subjective global assessment, handgrip strength) and psychologist (health-related quality of life, generalised anxiety disorder assessment, patient health questionnaire).

**WHO** was involved in the initiative?

Surgeons, nurse specialists, dietitians, physiotherapists and psychologists.

**WHERE** did the initiative occur?

Outpatient setting  
Máxima Medical Centre, Veldhoven, the Netherlands.

**WHO** was the target of the initiative?

Adult patients (≥18 years) scheduled for elective resection for colorectal cancer without neoadjuvant treatment.

|  |  |
|--|--|
| <b>WHEN</b> was the initiative undertaken? | Patients were approached to participate when diagnosis was final and surgery was scheduled. The prehabilitation program ran for 4 weeks prior to surgery.  |
| <b>HOW</b> was the initiative undertaken?  | This pilot RCT was conducted over 1 year.  |
| <b>OUTCOMES</b>                            | <ul style="list-style-type: none"> <li>• n=50 (prehabilitation 20, control 30).</li> <li>• The program had a high (90%) attendance rate and high level of patient satisfaction.</li> <li>• No adverse events occurred.</li> <li>• Endurance and/or strength were improved.</li> <li>• Eighty-six percent of patients with prehabilitation recovered to their baseline functional capacity 4 weeks postoperatively, compared to 40% in the control group (P &lt; 0.01).</li> </ul> <p>Multimodal prehabilitation including high-intensity training for colorectal cancer patients was deemed feasible, safe, and effective.</p> |
| <b>REFERENCE</b>                           | van Rooijen SJ, Molenaar CJL, Schep G, et al. Making Patients Fit for Surgery: Introducing a Four Pillar Multimodal Prehabilitation Program in Colorectal Cancer. Am J Phys Med Rehabil. 2019;98(10):888-896.  |