

# PRINCIPLES AND PRACTICE OF PRESURGICAL REHABILITATION IN THE COMMUNITY.

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**Introduction:** Preoperative rehabilitation is an essential component of joint replacement surgery preparation, aiming to improve patient outcomes and reduce postoperative complications. A study conducted in Boston demonstrated that patients undergoing a six-week prehabilitation program—including aquatic and land-based strength training, aerobic, and flexibility exercises—reduced their need for inpatient rehabilitation by 73%. Patients awaiting surgery often experience pain, joint stiffness, muscle weakness, balance problems, and psychological concerns. Prehabilitation addresses these issues by focusing on six key areas: strength, range of motion, joint stability, flexibility, balance, and cardiovascular fitness. Additionally, patients are trained to use assistive devices and adapt to postoperative mobility restrictions.

A structured prehabilitation program typically includes a multidisciplinary approach involving physiotherapists, occupational therapists, and social workers. Patients undergo motor and functional assessments, receive personalized treatment plans, and participate in a two-week group training program, supplemented with individual sessions as needed. This preparation enhances physical and functional readiness while also providing psychological support.

**Results** Postoperative rehabilitation begins immediately after surgery and aims to facilitate pain management, wound care, functional independence, and mobility restoration. A study of 29 patients (mean age  $72 \pm 10$  years) undergoing total knee or hip replacement showed that after an average hospital stay of  $5.7 \pm 2.0$  days, home-based rehabilitation commenced within  $2.0 \pm 1.5$  days and lasted  $32.7 \pm 8.2$  days. Patients received physiotherapy ( $11.4 \pm 3.8$  sessions), nursing care (1-2 visits), and occasional occupational therapy and social work support. Functional assessments demonstrated significant improvements, with Functional Independence Measure (FIM) scores increasing from  $103.0 \pm 5.3$  to  $117.7 \pm 5.5$  and Timed Up and Go (TUAG) test times reducing from  $54.4 \pm 19.1$  seconds to  $28.7 \pm 14.0$  seconds, indicating enhanced mobility and independence. A follow-up study of 38 patients (mean age  $73 \pm 12$  years) undergoing total knee replacement, total hip replacement, or hip fracture surgery confirmed the prolonged benefits of home-based rehabilitation. Patients participated in a  $34.0 \pm 9.4$ -day program, receiving physiotherapy ( $12.4 \pm 5.2$  sessions), nursing care ( $1.9 \pm 0.7$  visits), and occupational therapy as needed. A post-discharge telephone survey conducted approximately  $114.5 \pm 51.4$  days later revealed high patient satisfaction ( $8.8 \pm 2.0$  on a 10-point scale), well-preserved walking ability ( $4.7 \pm 1.2$  on a 6-point scale), and moderate success in stair climbing ( $3.0 \pm 0.9$  on a 4-point scale). Most patients reported partial preservation of their preoperative motor abilities ( $1.9 \pm 0.8$  on a 3-point scale). **Conclusions** These findings highlight the effectiveness of structured

pre- and postoperative rehabilitation in improving functional outcomes, promoting independence, and reducing the need for prolonged inpatient care. Home-based rehabilitation programs, in particular, demonstrate prolonged benefits, reinforcing the importance of integrating prehabilitation into the standard care pathway for joint replacement patients.