Patient Optimization: Prehab

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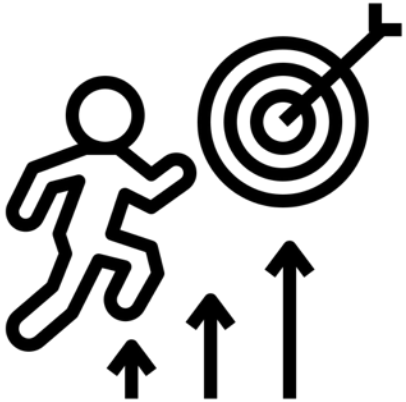
Disclosures:

I have no relevant financial relationships with ineligible companies to disclose.

Patient Optimization

Patient Satisfaction



Outcome Measures

Cost Savings

PREHABILITATION

What is Prehabilitation?

“Prehabilitation is an individualized plan that proactively addresses a patient’s specific physical and psychosocial needs before surgery to enhance post-operative recovery (Punnoose et al., 2023)

Component	Modality/Activity	Suggested Frequency/Duration
Muscular Strengthening	Resistance training/BFR	2-4×/week, at least 4 weeks[3,4]
Aerobic Conditioning	Walking, stationary cycling, aquatic	3×/week[5]
Flexibility/ROM	Joint-specific stretching	Daily[6]
Neuromuscular/Balance	Proprioceptive and gait work	2-3×/week[7]
Nutrition	Assessment, supplementation	At intake, then as indicated[2]
Psychology	Anxiety/depression screening/support	At intake, targeted intervention[2]
Education	Preoperative planning, expectations	Once + reinforcement[8]

Target Demographic

Who benefits most?

- Total Knee Arthroplasty[9]
- Total Hip Arthroplasty[8,10]
- Lumbar spine surgery[11]
- ACL reconstruction[12-14]
- Rotator cuff repair
- Meniscus repair
- MPFL

Additional benefit

High-risk patients: frail, elderly, malnourished, sarcopenic, or with existing functional deficits[1]

Dose

2+ sessions/week for ≥4 weeks[1]

Is Prehab Effective?

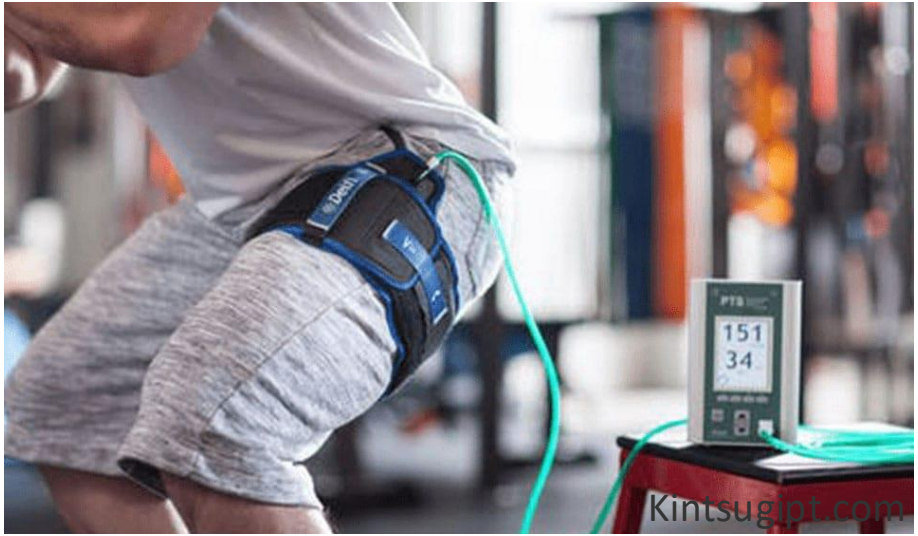
Key Evidence Supporting Prehabilitation

Surgery Type	Statistically Significant Outcomes
Lumbar Surgery	↓ pre-op back pain, ↑ function at 6 mo post-op[11]
Total Knee Replacement (TKR)	↑ pre-op function, ↑ function at 6 mo post-op, ↑ knee flexor strength, ↑ 6-min walk test[9, 18]
Total Hip Replacement (THR)	↑ HRQOL , ↑ hip abductor strength[8, 10]
ACL reconstruction	↑ pre-op quad strength, ↑ extension ROM, ↑ IKDC/KOOS, earlier return-to-run[12-14]

Blood Flow Restriction Therapy (BFRT)

BFRT in Surgical Prehabilitation

Measure	BFRT + Prehab	Traditional Prehab	Key Research Outcomes
Quadriceps muscle strength	↑↑	↑	Improved isometric endurance, hypertrophy[3,4]
Pain during exercise	↓	—	Less pain vs. standard low-load exercises[3]
Muscle mass preservation	↑	—	Reduced post-op atrophy, esp. in TKA, ACL[4]
Functional recovery	↑	—	Early restoration, expedited return[3,4]



Barriers to Prehab Access

Transportation, work, and caregiver burdens

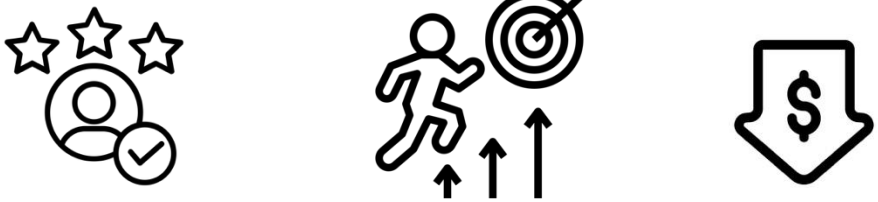
Insurance coverage, limits, cost

Limited geographic access

Fear avoidance/ pre-op anxiety

Telehealth + Remote Therapeutic Monitoring (RTM)

Prehabilitation Checklist



Prehab adds value to the patient experience

- ❑ Elective orthopedic surgery scheduled with ≥ 2 weeks lead time
- ❑ 2+ co-morbidities that ↓ post-op outcomes
- ❑ Seeking accelerated return to sport
- ❑ Fear avoidance behavior

Prehab is appropriate if <u>ANY</u> criterion apply

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