Endeavor Health

Post-PRP Rehabilitation Protocol: Inflammation, Tissue Proliferation, and Loading Guidelines

Purpose:

This handout summarizes evidence-informed guidelines for activity, rest, and loading progression after platelet-rich plasma (PRP) treatment. It is designed to support optimal inflammatory response, tissue proliferation, and functional recovery.

Understanding the Early Inflammatory Phase (0–48 Hours)

PRP initiates an intentional inflammatory cascade that releases growth factors to stimulate healing. Studies show excessive early activity or mechanical loading can blunt platelet-mediated growth factor release and impair downstream fibroblast proliferation.

- REST is essential during the first 24–48 hours.
- Expect warmth, soreness, and mild swelling—these are normal components of the healing response.
- Light activities of daily living (ADLs) are allowed as long as they do not increase pain.

Medication Guidance

Non-steroidal anti-inflammatory drugs (NSAIDs) interfere with prostaglandin activity and may disrupt the PRP-initiated healing cascade. **Our protocol recommends avoiding NSAIDs for 8 weeks after PRP.**

Evidence on Early Overloading

Biomechanical and cellular studies indicate that excessive early loading can reduce platelet-derived growth factor (PDGF) activity and impair tenocyte and chondrocyte proliferation. Experimental tendon-loading models show significant blunting of anabolic signaling when high-torque or high-strain activity occurs too soon.

Clinical observations in orthopedics also demonstrate improved outcomes when early mechanical stress is minimized to allow the biologic cascade to mature.

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Activity Progression Timeline

Days 0–2: Early Inflammatory Phase
- Rest and protection.
- Light ADLs only (walking inside home, self-care, brief errands).
- Avoid high-load, repetitive, or impact activities.
- Do not use NSAIDs.

Days 3–7: Transition Phase
- Gentle mobility and light functional movements.
- No stretching into pain and no strengthening yet.
- Continue to avoid overloading, high-torque movements, and impact.

Week 2–3: Proliferation & Light Strengthening
- Begin light strengthening (submaximal isometrics, controlled low-load isotonic exercises).
- Introduce functional movement patterns that do not provoke symptoms.
- Gradually expand ADLs but avoid early plyometrics or heavy resistance.

Weeks 4–6: Progressive Strengthening & Sport-Specific Loading
- Begin progressive resistance training and increase load tolerance.
- Introduce sport-specific patterns at moderate intensity.
- High-torque or weight-bearing loading should not begin until Week 4 to avoid disruption of the proliferative phase.
- Continue monitoring for swelling or increased soreness lasting more than 24 hours post-activity.

Key Principles for Optimal Outcomes
- Protect the inflammatory cascade during the first 48 hours.
- Avoid NSAIDs for 8 weeks.
- Light function begins after Day 7.
- Progressive strengthening begins at Weeks 2–3.
- Sport-specific and high-load training typically begins Weeks 4–6.
- Optimal outcomes occur when high-torque and weightbearing activity are NOT resumed until Week 4.