

# PREHAB AND REHAB – PREPARING FOR PRP & PROLOTHERAPY



**Prehab** – how to prepare for your regenerative injections

**Physiotherapy** – book a physio appointment in the second week after PRP if you wish, so that you can learn good exercise techniques

How to get the most out of your PRP/prolo treatment

1. Address your lifestyle – these contribute up to 70% of success:

- consider an anti-inflammatory diet (such as avoiding gluten, grains and dairy, avoid processed foods, while eating lots of deeply colourful vegetables and small portions of fruit, especially berries; choose small portions of lean meat or SMASH fish i.e. salmon, mackerel, anchovies, sardines, or herring; choose olive oil, avocado oil, or coconut oil and avoid polyunsaturated oils; nuts and avocados are a good source of healthy fat) and control your glucose metabolism by avoiding simple sugars or too much fruit and juices
- consider taking a few key supplements (such as vitamin D, magnesium glycinate, long-acting vitamin C, fish oil, multivitamins)
- exercise as much as you are able
- stop or reduce smoking
- stop or reduce alcohol
- get enough good quality sleep – usually 8 hours
- consider hormone status – are your hormones optimal, including estrogen, progesterone, testosterone, thyroid and adrenal hormones; consider bioidentical hormone replacement after menopause
- make time for relaxation, meditation, prayer, and address stress, anxiety and depression; aim for psychosocial wellness and leave time for play or sport

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## 2. Other treatments:

There are a variety of treatments that help your body get in shape as best as possible before your procedure. These use **mechanotherapy**, helping body movements to provide mechanical stimuli to remodel body tissue.

- Manual therapies – there are many!
- Electrotreatments such as TENS, acupuncture
- Therapeutic ultrasound
- Dry needling/IMS, taping and bracing
- **EXERCISE** – to the best of your ability, making adjustments for your injury. Be aware of your posture and body kinetics/tensegrity as you exercise. **Staying in good aerobic shape** is key to a good recovery. A 2020 study showed a 4-minute bout of **high intensity exercise shortly before drawing blood** for platelet-rich plasma **increased platelet yields** in the blood. This should be done ideally within 1/2 hour or less of the blood draw. This means aerobic exercise like a bike or jogging/sprinting, even for a very short time
- Please note: only do this if you do not have a heart condition

## 3. Medications:

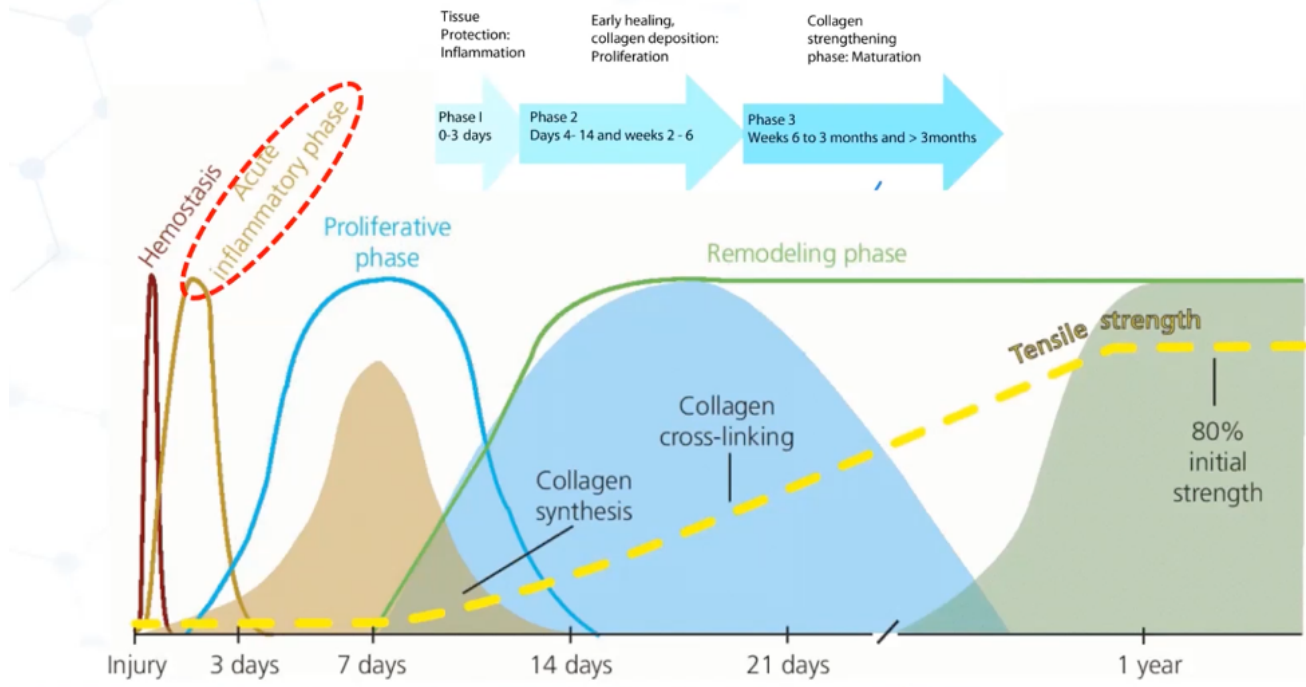
- **STOP NSAIDS** ideally a week before and after your procedure – we are trying to stimulate a controlled inflammation, and taking these medications can prevent this from happening. Stop advil/ibuprofen, aleve, celebrex, diclofenac/voltaren, etc. and turmeric capsules and full dose aspirin/ASA. You can take any other pain medication if needed, as long as it is not an NSAID.
- **STOP STEROIDS** at least 2 weeks before and after PRP
- **DO NOT STOP baby aspirin** for your heart.
- **ASK ABOUT ALL OTHER MEDICATION** before stopping anything else. **Proton pump inhibitors** like pantoloc, and some **anti-depressants** can lower magnesium needed for repair. Make sure you are supplementing with magnesium if you are on these medications. **Anti-cholesterol medications** inhibit the effect of PRP. **Do not stop these meds** without first discussing with your doctor. **Anticoagulants** do not usually need to be stopped – never stop these without first discussing with your doctor.

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## Connective Tissue Healing



PRP recovery time of injections into the joint occur fairly quickly: only 3-5 days of soreness and possible swelling. However, tendon and ligament injections can be painful for 7-10 days. After this, the improvement is gradual and can take up to 3-4 months.

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Post-procedure rehabilitation: acute phase (0-7 days) – acute inflammation

Goal:

- protect the treatment site and control pain

Precautions:

- avoid heavy lifting, forceful movements and NSAIDs
- limit immobilization (such as slings, crutches, taping, etc.)

Pain control and decrease swelling:

- various treatments like TENS/electrical simulation, acupuncture, ultrasound, manual therapy
- use heat to increase blood flow to the area (only use ice if severe pain)
- stop the activity if the pain is more than a 3 out of 10 (3/10)
- use medications as needed: acetaminophen, tramadol, T3, topical medication like menthol (no NSAIDs though)
- Epsom salts in the bath are a good source of magnesium
- Avoid hot tubs and swimming pools for 48 hours (to allow injection sites to heal)

EXERCISE:

- Immobilization: limit to the least restrictive and taper over 3 – 4 days
- Start with PROM, gradually moving to AAROM then AROM for 3 – 5 mins, 3 – 5 times per day
- Start with gentle isometric exercises above and below the treated area
- Cardio – but choose with no impact on the treated area
- Goal is minimal to no pain with active ROM and decreased swelling

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## Proliferation phase early (4 – 14 days)

### Goal:

- increase tissue tolerance to load
- stop immobilization
- increase strength and endurance to get to full ROM
- avoid de-conditioning

### Precautions:

- avoid overstraining the joint or tendon
- avoid shear force in bone remodelling

### Pain control and decrease swelling:

- see “0 – 7 days” section

### EXERCISE:

- AROM (PROM) for 3 – 5 minutes, 3 – 5 times per day
- Submaximal isometrics for 5 – 10 seconds, 3 – 5 times per day. Discontinue if your pain is more than a 3/10.
- Consider blood flow restriction (BFR) exercises and whole-body vibration (WBV)
- Progressive loading of other regions of the body (not the injured region)
- Cardio: low impact, avoid the injured region, 150 min per week

### Progression:

- Aim for less than 3/10 level pain with exercise and activities of daily living, and minimal post-exercise pain
- Decrease swelling (increase blood flow, elevate as needed, etc.)
- Aim for full range of movement

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## Proliferation phase late (2 – 6 weeks)

### Goal:

- FROM
- Increase your tolerance to load
- Increase strength and endurance
- Increase proprioception/balance/control

### Precautions:

- Avoid high velocity or intense exercise like throwing
- Avoid post-activity pain

### Pain control:

- Keep your pain 3/10 or less
- Use treatment choices to help do this (already mentioned above)

### EXERCISE:

- Progressive loading
- Isometrics (keeping the injured region from moving – such as planks, squats, etc.), then concentrics (exercises that shorten muscles), then eccentrics (exercises that lengthen muscles – only start these last ones from 6 weeks onwards)
- Weights, Theraband
- Consider BFR and WBV
- Stretching 4 times a day, joint mobilization as needed
- Cardio: no impact to injured region, 150 min per week

### Progression:

- Full range of movement aiming for full strength without pain
- Minimal to no pain with exercise or activities of daily living, and no post-exercise pain

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## Remodelling/Maturation (6 – 8+ weeks)

### Goal:

- Gradual return to full activities
- Increase tolerance to load, increase strength, increase balance/proprioception
- Increase sport-specific and functional training
- Return to full activities by 12 weeks

### Precautions:

- Minimal post activity pain which resolves in 1 – 2 days

### Pain control:

- Pain no more than 3/10, or no more than 5/10 with eccentric exercises

### EXERCISE:

- Increase strength of treated region with concentrics (+BFR), eccentrics (based on symptoms) 3 times per week
- Heavy slow resistive training (HSR) and plyometrics (8+ weeks)
- Sport specific and functional loads (intensity, velocity, positions that are used in the sport)
- Cardio: increase intensity and duration for sport and activities

### Progression:

- Standard rehab guidelines for return to activities
- Full range of movement, up to 85% strength compared to the unaffected side, work on neuromuscular control, no pain with activities
- Re-evaluate progress
- Transition to home exercise or independent training program

There will be ups and downs – adjustments will need to be made.

Remember, it takes time for tissue to remodel and repair: up to 2 years.

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## Abbreviations

- NSAIDS – non-steroidal anti-inflammatory drugs such as advil/ibuprofen, aleve, celebrex, diclofenac, ketoprofen, etc. and also aspirin full dose (do not stop baby aspirin for your heart)
- ROM – range of movement
- PROM – passive ROM
- AROM – active ROM
- AAROM – assisted active ROM
- FROM – full ROM

