

# Recover<sup>®</sup> Platelet Separation Kit

A natural treatment of **tennis elbow**

Patient information





# Tennis Elbow

Tennis elbow is a painful condition that often occurs as a result of overuse of the muscles and tendons of the forearm and around the elbow joint. As its name suggests, tennis elbow can sometimes be caused by playing tennis, but it can also occur as a result of a number of other physical activities. Many people with tennis elbow participate in work or recreational activities that require repetitive and vigorous use of the forearm muscle. Painters, plumbers, and carpenters are particularly prone to developing tennis elbow.<sup>1</sup>

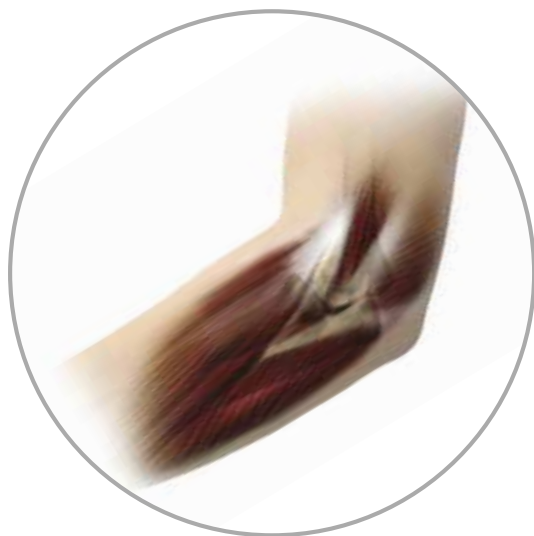
When you suffer from a tennis elbow the major symptom is pain on the outside of the elbow. The pain that is caused by a tennis elbow can be persistent and may lead to weakness of the fore arm, a painful grip, and not being able to hold relatively heavy items in your hand.

Tendons and ligaments are known to have a poor blood supply. Combined with the stress of day-to-day activities, they do not easily heal from damage. As a result of the slow healing of tendons, the symptoms occurring at a tennis elbow injury can last for a number of weeks, months, or sometimes, they can persist for years.



## Available treatments for a tennis elbow

- Activity restriction
- Rest
- Physiotherapy
- Compressive forearm band
- **Recover** L-PRP treatment
- Shockwave therapy
- Acupuncture
- Steroid injections
- Surgery



## Recover technique; Leukocyte-, and Platelet-Rich Plasma (L-PRP) injections

Blood consists of red blood cells, white blood cells, plasma and blood platelets. Platelets are known to be responsible for blood clotting and releasing growth factors. Growth factors, released from platelets upon activation, can influence the biological processes necessary for the repair of soft tissues, such as tendon or ligaments, following acute traumatic or overuse injuries.<sup>2</sup>

**Recover** Leukocyte-, and Platelet-Rich Plasma (L-PRP) offers a technique that may help tendon injuries. L-PRP prepared with the **Recover** technique, result in concentrated platelets and white blood cells containing reservoirs of bioactive proteins, like growth factors. L-PRP injection therapy offers a technique that may help to decrease pain and improve function.<sup>3-6</sup>



## Recover: A natural treatment of your tennis elbow

### Recover treatment

A 26 ml sample of blood is withdrawn from your arm. The blood is then transferred in a cell separator tube that is placed in a centrifuge that spins the blood for 15 minutes. The centrifuge step separates the L-PRP from the rest of the blood components. After centrifugation the L-PRP is collected. The PRP (containing platelets, growth factors and white blood cells) is ready to be injected back into the tendon at the site of the chronic injury.

Before injecting the L-PRP a local anaesthetic can be used. After just one single skin poke, the L-PRP will be injected into the tendon with multiple penetrations.

### After treatment

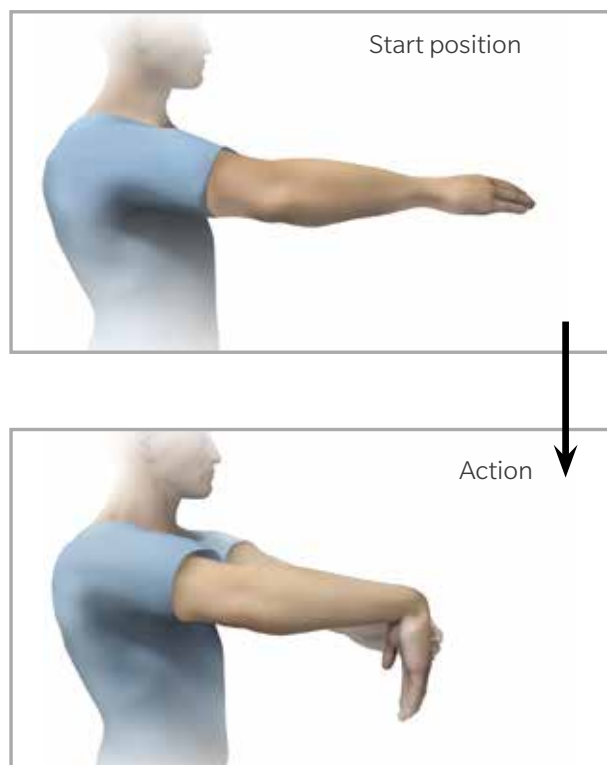
After the L-PRP injection you should not move your arm for 15 minutes. Afterwards you can go home and you may get a prescription for a narcotic pain medication for pain control overnight. Anti-inflammatory drugs are not allowed. Icing may be a good solution. Increased pain at the site of injury may result for 48–72 hours post L-PRP injection.

Twenty-four hours post treatment you should start a standardized stretching protocol (level 1) to follow for two weeks. After the two weeks stretching a formal strengthening programme (level 2) will be added. Over time, you are allowed to take up sporting or recreational activities, as tolerated.<sup>3-5</sup>



## Tennis elbow stretching exercise (level 1)

### Wrist extensor stretch



You should perform the stretches in this section daily for two weeks. When the elbow pain is becoming less, proceed to level 2.

**Purpose:** To stretch the forearm muscles and wrist.

**Start position:** Hold your arm straight out in front of you with your palm facing down. Keep your elbow perfectly straight.

**Action:** Grasp the hand to be stretched with the other hand and slowly bend it toward the floor until the stretch is felt along the top of the forearm and elbow.

**Parameters:** Hold the stretch for 20 seconds. Repeat 10 times.

**Tips:** Keep your shoulder relaxed and do the stretch slowly as tolerated

## Tennis elbow stretching exercise (level 1)

### Wrist flexor stretch



**Purpose:** To stretch the forearm muscles and wrist.

**Start position:** Hold your arm straight out in front of you with your palm facing down. Keep your elbow perfectly straight.

**Action:** Grasp the fingers with the other hand and slowly bend them toward the ceiling until the stretch is felt along the underside of the forearm and elbow.

**Parameters:** Hold the stretch for 20 seconds. Repeat 10 times.

**Tip:** Keep your shoulder relaxed and do the stretch slowly as tolerated.

## Tennis elbow strengthening exercise (level 2)

### Wrist extensor strengthening exercise



The exercises in this section should be done every other day for 2–4 weeks after completion of 'level 1 stretching'. The band (shown in the pictures) can be obtained from your doctor.

**Purpose:** To strengthen the forearm muscles and wrist.

**Start position:** In a seated position, rest your forearm on your thigh and let your wrist fall palm downward toward the floor. Hook the band around your foot.

**Action:** Grasp the band and then slowly move your wrist and hand toward the ceiling while keeping your forearm on your thigh. Hold for one second then slowly move wrist and hand toward the floor again.

**Parameters:** Perform 3 sets of 20 repetitions, every other day.

**Tips:** Squeeze your shoulder blades together as you do this exercise. Also, keep the movements slow and controlled.



## Tennis elbow strengthening exercise (level 2)

### Wrist flexor strengthening exercise

Start position



**Purpose:** To strengthen the forearm muscles and wrist.

**Start position:** In a seated position, rest your forearm on your thigh and let your wrist fall palm upward toward the floor. Hook the band around your foot.

**Action:** Grasp the band and then slowly move your wrist and hand toward the ceiling while keeping your forearm on your thigh. Hold for one second then slowly move wrist and hand toward the floor again.

**Parameters:** Perform 3 sets of 20 repetitions, every other day.

**Tips:** Squeeze your shoulder blades together as you do this exercise. Also, keep the movements slow and controlled.

Action







## References

1. <https://orthoinfo.aaos.org/en/diseases--conditions/tennis-elbow-lateral-epicondylitis/>
2. Gobbi, Alberto *et al.* "Platelet-Rich Plasma Treatment in Symptomatic Patients With Knee Osteoarthritis: Preliminary Results in a Group of Active Patients." *Sports Health* 4.2 (2012): 162–172. PMC. Web. 24 May 2018.
3. Mishra, A. *et al.* Efficacy of Platelet-Rich Plasma for Chronic Tennis Elbow. *AJSM PreView*, December 12, 2013.
4. Rodik, T., McDermott, B. Platelet-Rich Plasma Compared With Other Common Injection Therapies in the Treatment of Chronic Lateral Epicondylitis. *Journal of Sport Rehabilitation*, 2016, 25, 77–82.
5. Gosens, T. *et al.* Ongoing Positive Effect of Platelet-Rich Plasma Versus Corticosteroid Injection in Lateral Epicondylitis A Double-Blind Randomized Controlled Trial With 2-Year Follow-Up. *American Journal Sports Medicine*. 2011 Jun;39(6):1200–8.
6. Fitzpatrick *et al.*, The effectiveness of PLatelet-Rich-Plasma in the Treatment of Tendinopathy, *AJSM*, vol. 44, 10: pp. NP53 2016

This brochure describes the surgical techniques, stretching/strengthening programs and postoperative protocol used by Allan Mishra, M.D.

Results will vary due to health, weight, activity and other variables. Not all patients are candidates for this product and/or procedure. Only a medical professional can determine the treatment appropriate for your specific condition. Appropriate post-operative activities will differ from patient to patient. Talk to your surgeon about whether joint replacement is right for you and the risks of the procedure, including the risk of implant wear, loosening, or failure. For product information, including indications, contraindications, warnings, precautions, potential adverse effects and patient counselling information of Zimmer Biomet products, visit [www.zimmerbiomet.com](http://www.zimmerbiomet.com).

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Biomet UK, Ltd.  
Waterton Industrial Estate  
Bridgend, South Wales  
CF31 3XA  
United Kingdom



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Biomet Biologics, LLC  
A Subsidiary of Biomet, Inc. P.O. Box 587  
56 E. Bell Drive  
Warsaw, Indiana 46581-0587 USA

[www.zimmerbiomet.com](http://www.zimmerbiomet.com)