

## **Autologous Blood and Platelet Rich Plasma (PRP) Injections**

### **Why are they used?**

In recent years there have been rapid developments in the use of growth factors for accelerated healing of tendon injuries. Blood contains many nutrients and substances which are thought to promote healing. Platelets are tiny cells in blood which stick to each other when we cut ourselves to result in the formation of a clot to stop any further bleeding. Platelets contain many powerful growth factors, in particular PDGF (Platelet Derived Growth Factor) which has been shown to promote healing of many types of tissues, including bone, teeth, skin and the tissue lining our eyes. PDGF also promotes healing of tendons which are damaged due to excessive use and/or the ageing process.

### **What is the difference between Autologous Blood and Platelet Rich Plasma (PRP) injections?**

In both procedures, a small amount of blood is withdrawn from one of the veins in the arm.

**Autologous Blood Injections** involve injecting the blood that has been withdrawn into the site of the injury.

**PRP injections** involve a slightly larger amount of blood being taken from the arm using the Arthrex ACP double barrelled syringe. This is then placed into the Arthrex centrifuge which spins at many thousands of times a minute and causes the blood to separate to produce a quantity of platelet rich plasma. It is this platelet rich plasma which is then injected into the site of injury.

### **Which is better? Autologous Blood or PRP?**

Theoretically, whilst PRP injections provide more growth factors than autologous blood injections, there is currently little research comparing the effects of PRP and autologous blood. This means that the theoretical advantage of using PRP instead of autologous blood has not (at the time of writing) been proven to lead to enhanced clinical benefit for the patient.

### **How is the procedure performed?**

First the skin on the arm over a vein is cleansed and prepared and a small amount of blood is withdrawn from it. In the case of a PRP injection, the special double-barrelled syringe containing the blood will be placed into the centrifuge to extract the platelet rich plasma component. In the case of an autologous blood injection, the blood will not be centrifuged and will be used whole.

For both procedures: Local anaesthetic is then injected into the skin overlying the tendon. The Autologous blood or the PRP is then directed into the tendon under ultrasound guidance. The amount of blood injected depends on the size of the tendon but is usually somewhere in the region of 2-3ml.

***Please ensure that you report any known allergies (drugs, elastoplast etc) to the doctor prior to the procedure.***

### **How well does the procedure work?**

As with all medical and surgical treatments, the treatment will not work for everyone. NICE (The National Institute of Clinical Excellence) cite two studies, involving 250 patients with tennis elbow, which looked at how well the autologous blood injection procedure worked. In one of the studies, 150 patients had either the whole-blood injection or the platelet rich plasma injection. When asked 6 months after the procedure, these injections had worked well for 89 out of 130 patients followed up. In the other study, 100 patients had either the platelet-rich plasma injection or corticosteroid injection. After 2 years, the procedure had worked well in 39 of the 51 patients who had the platelet-rich plasma injection and 21 of the 49 patients who had the corticosteroid injection. However, 6 patients who had the procedure and 14 patients who had the corticosteroid injection needed more treatment within 2–14 months.

In summary, the National Institute for Clinical Excellence (NICE) have said that whilst treatment is safe, there is some uncertainty as to how well it works.

### **How long does it usually take to start to obtain benefit from the injection?**

Because the procedure aims to encourage healing within the tendon (involving the growth and organisation of new tendon tissue cells), it can take four to six weeks before benefits start to become apparent.

### **What are the Possible Side Effects and Risks?**

The risk of a complication arising from this procedure is low and serious complications are extremely rare. However occasionally the following may occur and may require medical attention;

- Some individuals are susceptible to fainting during medical procedures. Faints result from a sudden short term fall in blood pressure. Please inform the doctor or podiatrist in advance if you feel this may be likely so that precautions can be taken.
- It is not uncommon for patients to experience a flare in their symptoms following the injection. This can involve increased pain and stiffness. A flare up of symptoms typically starts to build up a few hours following injection and can last for 48 hours. Rest and simple pain killers usually help. In rare cases, this reaction can be more prolonged and you are advised to contact your doctor if you have suffered a flare up which is not resolving after 48 hours.
- Any injection procedure which involves puncture of the skin carries a small risk of infection although this is extremely rare. However, it can have very serious consequences if not identified and treated promptly. Signs of infection are can involve progressive redness, warmth, swelling and/or worsening pain at the injection site particularly in association with fever. If an infection occurs, the usual treatment is a course of antibiotics.

### ***How do I distinguish between a flare of symptoms and an infection?***

*Symptom flare and infection can both involve increased pain and reduced function. Symptom flare tends to begin within a few hours and in most cases starts to improve after 48 hours. However, the symptoms of infection tend to be more delayed – usually beginning 48 hours following injection with symptoms becoming progressively worse with time. If in doubt, please contact your doctor)*

- Rarely, patients can be allergic to local anaesthetic. Any medication has the potential to precipitate an allergic reaction even in someone who has previously encountered the same medication without problem. This is most likely to occur within 20 minutes of the injection. You should therefore remain in the clinic for 20 minutes following your procedure.
- Bleeding or bruising. This is more likely if you are taking certain medications for example aspirin, warfarin or other antiplatelet drugs and usually settles with simple pressure. If you experience severe swelling or bruising after the injection seek urgent medical attention.
- Theoretically, tendon rupture is possible with any procedure which involves injecting a diseased tendon although this is extremely rare. Seek prompt medical attention if you experience new weakness in the affected body part.

#### **Before and After your injection:**

- You should **avoid taking anti-inflammatory medication such as ibuprofen for at least 24 hours prior to your injection and at least 72 hours following injection.**
- Driving after an injection: The **site of injection, type of local anaesthetic used, the dose administered and the patient's individual response** are all factors which must be considered. We tend to use very low doses of local anaesthetic and for most injection sites in most people, this would not be expected to impair your ability to drive. However it is best to check with your practitioner and to also remember that patients are all individual in their response. On very rare occasions, a patient may experience more widespread temporary numbness or weakness as a result of the local anaesthetic than expected. Should this be the case, if your practitioner feels that this will impair your driving abilities, you will need to wait for the anaesthetic effects to wear off before you can drive. In an extreme case, this may take up to four hours.
- Advice on activity modification and rehabilitation following injection will depend upon what activities you normally do, although all patients will be advised to take it easy for at least a few days.