

How Do I Find Out More?

Schedule an appointment with **Dr. Kevin Elder** at BayCare Medical Group Hyde Park Adult and Pediatric Sports Medicine by calling (813) 254-8055. Dr. Elder has been performing these procedures since 2012, having performed more than 1,000 of these injections on patients for a variety of conditions with outstanding success. He has extensive experience in treating professional and Olympic-level athletes, collegiate athletes, and normal patients who are trying to achieve a better quality of life or relief of their pain, or aren't yet ready for joint replacement surgery. An appointment will allow an individual evaluation to be done in the office including diagnostic testing as needed, such as X-ray or MSK-diagnostic ultrasound, as well as review any prior workups to determine if the patient is a candidate.



Bone Marrow Aspirate Concentrate (BMAC)



What Is Bone Marrow Aspirate Concentrate (BMAC)?

Bone marrow aspirate concentrate (BMAC) or bone marrow aspirate (BMA) injections are derived from harvesting blood and tissue from the bone marrow of a patient's own hip/posterior iliac crest. This is a true stem cell injection, where mesenchymal stem cells are derived from this procedure, along with additional concentrated platelets and cells. This procedure is done with local anesthetic. The BMAC/BMA injections contain all of the growth and healing factors in PRP, along with true stem cells which further contribute to the healing and regenerative process. Some early studies show promise in possibly allowing true regeneration of cartilage and ligament (such as meniscus) injuries in animal/human models, although this is still an evolving science and no conclusive proof can be stated yet. BMAC/BMA or PRP injections can't be expected to heal injuries such as complete anterior cruciate ligament tears or complete rotator cuff tears, or injuries where there's a mechanical prevention of motion/locking, which may be more appropriately managed with surgery.



What Is Platelet-Rich Plasma (PRP)?

Platelet rich plasma (PRP) is a treatment that uses a patient's own blood components in order to stimulate a healing response in injured muscles/tendons or joints. Platelets store growth factors which are released and respond to injuries. PRP concentrates platelets from your own blood in order to achieve a greater growth factor release and stimulate healing in a more powerful form. This treatment may lead to an accelerated recovery and restoration of tissue to a healthy state with less resultant scar tissue and improved functional return to activity. Currently, there's a level I evidence for treatment of several tendon injuries/tendinopathies, as well as knee arthritis. The level of evidence continues to grow for PRP, and comparative data with hyaluronic acid injections, steroid injections and saline/placebo injections is very favorable for PRP. Furthermore, recent studies show accelerated joint damage with repetitive steroid injections into the knee joint.



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What Conditions Are Treated with PRP or BMAC/BMA Injections?

Knee

- Tendon injuries including patellar tendon, quadriceps tendon
- Muscle injuries
- Ligament sprains or tears including MCL/LCL
- Bursitis including pes anserine bursitis
- Chronic IT band inflammation/degeneration
- Painful degenerative meniscus tear
- Cartilage injuries

Hip Pain

- Muscle pain or injury including gluteus medius tendinopathy/tears
- Piriformis syndrome
- Greater trochanteric bursitis
- Tendon injuries including proximal hamstring and other
- Sacroiliac joint pain
- Hamstring tendinopathy
- Hip arthritis

Shoulder and Arm Pain

- Shoulder/glenohumeral arthritis
- Rotator cuff tendinitis, tendinopathy or partial tears
- Biceps tendinitis/partial tear of biceps
- Medial and lateral epicondylitis (golfer’s or tennis elbow)
- Ulnar collateral ligament sprain or tear
- De Quervain’s Tenosynovitis
- Wrist pain/TFCC injury
- Some early evidence of help with peripheral nerve injuries such as carpal tunnel syndrome

Leg and Foot Pain

- Plantar fasciitis
- Peroneal tendonitis/partial tears
- Ankle sprain/ligament injury
- Shin splints
- Achilles tendinitis or partial tears
- Persistent retrocalcaneal bursitis/degeneration
- Ankle arthritis
- May help with various toe arthritis/hallux rigidus for alternate to steroid injection

Treatment Process and Evaluation

Each patient receives a formal individual evaluation and diagnostic workup. This workup may include X-ray or diagnostic ultrasound which are done in the office. Previous X-ray films, MRI films and other treatment plans will be reviewed and an individualized treatment plan will be discussed. A full explanation of the procedure including risks and benefits will be reviewed. Once written consent is obtained, blood is drawn from a patient’s arm, or a bone marrow aspiration is done from the posterior hip region, and placed into a special processing unit/centrifuge to separate platelets, white blood cells and serum from red blood cells. The platelets and white blood cells (including stem cells) are then collected in a sterile syringe. The skin and tissue is numbed with a local anesthetic, and the procedure is performed using MSK-ultrasound guidance to provide optimal precision and accuracy for this treatment.

Treatment Plan

Each patient receives individual attention and an individual treatment plan. One to three injections are typically required. Following the initial treatment with PRP or BMAC/BMA, a follow-up visit occurs between two to four weeks later, during which time an evaluation of response is made and a further treatment plan is coordinated including the possibility of referral for skilled physical therapy or for additional injections. Many chronic injuries will require more than one injection. Many studies demonstrate the potential advantage of a series of two or three injections for knee arthritis. Developing protocols that continue to be studied may indicate that BMAC/BMA injection, followed by PRP four to eight weeks later, may provide additional benefit. The amount of physical therapy and the degree of return to physical activity are individual decisions based on the patient’s response to treatment, but generally physical therapy seems to be helpful in our experience in correcting any kinetic chain issues that may have led to the injury in the first place.

Safety of PRP and BMAC/BMA Injections

Clinical data has shown that PRP and BMAC/BMA injections are extremely safe with minimal risk for any adverse reaction or complication. This is an autologous product, or derived from the patient’s own blood, so there isn’t any concern for rejection or disease transmission. There’s a small risk of infection from injection into the body, but this is extremely rare. Research suggests that PRP may actually have an antibacterial property which protects against possible infection. In addition, MSK-ultrasound visualization is used to provide tactical accuracy and safety.



What to Expect After Treatment

It’s not uncommon to have an achiness or soreness after the injection at the site of injury. This soreness can be a sign of the healing response that has been set in motion. Pain is sometimes increased in treatment of certain injured tendons where PRP or BMAC/BMA injection are done in conjunction with tendon needling (tenotomy) to try and achieve the best outcome. Not all patients will have the same degree of soreness, and it may last for several days before gradually decreasing as healing and tissue repair begins to occur. As per the post-procedure instructions that are given to patients, all anti-inflammatory medications including ibuprofen, naproxen and other prescription versions, are to be held following PRP treatments. There’s a concern that this may block the intended healing effects of the injections. Post-procedure pain is managed with Tylenol or with a prescription for a mild pain medication. This will all be discussed at the time of the injection. Activity is typically restricted for 24-48 hours after the injection, followed by a gradual return to normal activities. The specifics of the post-injection plan will be discussed at the time of the injection.