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Biologic Treatments at Orthopedic Specialists of Seattle

Biologics are cells, blood components and other natural substances that amplify the body's power to promote healing and decrease inflammation. Orthopedic Specialists of Seattle physicians are committed to providing patients access to the most advanced and proven biological therapies. Treatment is customized for a patient as pain and loss of function are very individual. To provide the best possible treatment outcome your therapeutic regimen may include biologics used either as a non-surgical treatment or as part of surgery.

Platelet-Rich Plasma

Platelet-rich plasma (PRP) contains a high concentration of platelets and a variable amount of white blood cells. This can enhance the body's natural ability to heal, reduce inflammation in tendons and arthritic joints, and accelerate the repair of damaged tendons and ligaments.

After a simple blood draw and isolation of the active biologic cells, an injection is made directly into the treatment area. At Orthopedic Specialists of Seattle this can be done separately in an outpatient setting or in conjunction with a surgical procedure to help reinforce a repair, speed healing and shorten recovery time.

Stem Cells

Stem cells have been shown to reduce inflammation and promote healing, particularly at the site where they are injected. They may be used to reinforce a surgical repair in a joint or tendon. In particular, patients with osteoarthritis, chronic tendon or ligament injuries or cartilage defects may benefit from stem cell injections.

Bone Marrow Aspiration

Stem cells can be harvested from their origin in the bone marrow. They can be collected from the pelvis, humerus or tibia. Once extracted and processed, the stem cells are injected into the area to be treated, often in conjunction with a surgical procedure. Active research is underway for using bone marrow derived stem cells for cartilage injury and transplantation, rotator cuff injury, ligament reconstruction and osteoarthritis.

Surgery and Cartilage Transplantation

Cartilage allows a joint to glide smoothly and acts as a cushion between bony structures. As we age, it's susceptible to wear and tear, or it can be damaged from injury. Cartilage transplants can help reduce pain and increase function by restoring the joint's healthy cartilage. The procedure may slow the progression of osteoarthritis

and delay the need for more invasive procedures. This is particularly applicable in patients considered too young to undergo total joint replacement.

Advances in preserving donor tissue and improved implantation techniques have vastly improved the predictability and success of cartilage transplantation.

Although most frequently used in the knee, cartilage transplantation may also benefit patients with early joint damage in the shoulder, elbow and ankle. These procedures are not applicable for patients for whom total joint replacement is indicated.

Cartilage transplantation is more successful in patients under 50 years of age. Careful evaluation of many aspects of a joint injury are necessary to develop a successful cartilage treatment plan.

Micro-fracture Plus

The original standard treatment for small cartilage injuries was a technique known as micro-fracture. This involves shaving the area of damaged cartilage and mechanically stimulating the underlying bone and marrow. This causes bone marrow to produce a cartilage substitute. This so-called fibrocartilage acts as a new cushion for the knee, restoring more normal joint structure and function. Newer research has found combining micro-fracture with other juvenile cartilage treatments is superior to micro-fracture alone and is the treatment offered at Orthopedic Specialists of Seattle.

Osteochondral Autograft Transplantation

In specific situations a patient's own cartilage may be harvested and surgically transferred from one part of the joint to another area. The surgeon removes a small piece of healthy cartilage and bone, typically from a non-weight-bearing area of the joint. The graft will then be used to reconstruct the area of damaged cartilage. This procedure is being supplanted by allograft transplantation (discussed below) and micro-fracture plus with similar success and fewer complications.

Osteochondral Allograft Transplantation

Just like an organ, such as a heart or kidney, cartilage can be transplanted from another person. The donor cartilage is shaped and transplanted into the area of cartilage damage, restoring the smooth healthy joint surface. This procedure is well suited for active individuals and for those who have failed other cartilage restorative procedures. Unlike other forms of tissue transplantation, rejection doesn't occur and immunosuppressive medications are not required.

Autologous Chondrocyte Implantation

This is a two-stage procedure that requires harvesting of cartilage from a patient's knee during the first procedure. The cartilage cells are grown in a lab and implanted into the joint during a second surgical procedure. This procedure is ideal for cartilage defects in the patellofemoral joint (behind the knee cap) or in young patients who have lost areas of cartilage and who have relatively normal underlying bone.

Meniscus Transplantation

This procedure is generally reserved for patients who have had the meniscus completely removed in a previous surgery and have residual pain. Donor meniscus cartilage is tested to be free of transmittable disease. The meniscus can be accurately matched and sized to provide an anatomic replacement. Rejection does not occur with cartilage transplantation, and immunosuppressive therapy is not required after surgery.

The procedure can be performed as a minimally invasive arthroscopic procedure using only small incisions. The transplanted meniscus is very similar to the patient's original healthy meniscus cartilage. This leads to a more stable and less painful knee that might otherwise have developed progressive arthritis.

Dr. Garcia at Orthopedic Specialists of Seattle specializes in these therapies and develops a customized plan for every patient. This allows him to tailor the appropriate mix of Orthobiologics and surgery if required to reduce pain and improve return to sports and recreational activities. Please contact his office for a consultation.