

# regenerative orthopedic medicine

## GETTING YOU MOVING AGAIN



Did you ever wonder how your body heals itself from injury or why sometimes it doesn't heal, resulting in chronic pain? And why are joint replacements or other orthopedic surgeries so prevalent? It certainly has become commonplace.

osteoarthritis, recipients can experience persistent pain and complications. By the year 2030, knee replacements and revisions are expected to increase by 600% each.

Despite being one of the most commonly performed procedures in this country, arthroscopic meniscectomy (for meniscus tears) lacks good evidence to support its use and may actually cause more harm than good by accelerating arthritis. Spinal fusions for arthritis in the low back are a similar story; evidence to support its use is limited at best and severe persistent pain after surgery or return of pain over time is not uncommon. Despite this, the number of fusion surgeries are up about 600-700% and costs have tripled.

## Is this really the best that modern medicine can do?

Let's discuss how normal healing occurs. All body tissues are struggling with constant wear and tear versus growth and healing. Micro-damage occurs constantly. In normal healing, platelets from the blood go to sites of injury to stop bleeding. They then initiate three phases of healing: inflammation, proliferation, and remodeling. Released growth factors then serve as signals to orchestrate and organize the resources needed to repair the damage and regenerate new tissue. Stem cells (immature cells that can ultimately turn into any type of tissue when signaled appropriately) are also called to the area. Sometimes this process is impaired and unable to overcome the forces of degeneration. As we get older, the wear and tear begins to outpace the growth and healing. Stem cells become less abundant and less effective.

Two common forms of degenerative conditions that result in chronic pain are osteoarthritis (OA) and tendinopathy. OA develops when there is an imbalance between the normal synthesis and breakdown of cartilage, leading to pain and joint stiffness. Common sites include: the neck, low back, hips, knees, big toe, and thumb, affecting a large percentage of the population. Tendinopathy is the degeneration of tendons (at the connections of muscle to bone). It's common in recreational and professional athletes and with occupational repetitive motion. Common tendons affected include: achilles, patellar, hamstring, elbow (Golfer's and Tennis elbow), rotator cuff, and tendons around the hip.

Once conservative options have failed, what exists besides surgery for these chronic degenerative conditions? With its origin in the concepts of prolotherapy (injection of irritants into ligaments as a way to stimulate inflammation and reengage the healing cascade), Regenerative Medicine has continued to gain favor. As an expansion of this concept, concentrated platelets from the blood (platelet rich plasma also known as PRP) or stem cells from one's bone marrow can be placed with strategic precision in these areas of tissue damage to stimulate healing and regeneration.

**“Since 2005, Regenexx has led the way in advancing this new field of Interventional Regenerative Orthopedics...”**

Since 2005, Regenexx has led the way in advancing this new field of Interventional Regenerative Orthopedics with a fervent commitment to researching and publishing basic science and clinical data. All patients are tracked by a full-time professional team in the only national registry database of its kind, containing more than 20,000 procedures. With this, safety and benefit can be better analyzed. Additionally, several randomized controlled trials are currently enrolling patients. Regenexx affiliated doctors are highly trained musculoskeletal experts who are skilled at precise image guided injections utilizing ultrasound and xray. This exclusive group of doctors has been hand-picked to be part of this network and then further trained in highly refined procedural and laboratory techniques. The amount of stem cells obtained can be 10-20 times higher than by any other available techniques. Regenexx has identified many different modifiable factors that can help the doctors help their patients receive the most optimum outcome. Beware of doctors offering fat derived stem cell procedures for orthopedic problems. This is a clear violation of FDA regulation. Fat derived stem cells are also much less studied and are less effective than bone marrow derived stem cells at turning into the type of cells (eg. cartilage). Despite claims, fat contains less total stem cells. Additionally, removing the fat via liposuction is a higher risk procedure with greater side effects than a simple, minimally uncomfortable bone marrow harvesting procedure.

In recent research by Regenexx, patients with knee OA showed that 90 percent feel an average of close to 60 percent improvement for multiple years even with “bone on bone” arthritis using Regenexx protocols. Many conditions can be successfully treated, ranging from tendon tears to ligament tears to arthritis to avascular necrosis (death of bone).

So, if you suffer from OA or tendinopathy related chronic pain, the first step to improving your quality of life is to talk to an experienced Regenexx physician who can discuss your candidacy with you and provide accurate and realistic expectations regarding these new and exciting treatment options.

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