When people ask about regenerative medicine for tendon and ligament problems, they rarely start with the science. They start with stories: a friend whose tennis elbow calmed down after platelet rich plasma (PRP), a professional athlete who avoided surgery with stem cell injections, or Joe Rogan flying to Panama for stem cell treatment and returning saying his shoulders felt "brand new."

Stories are powerful, but they also create inflated expectations. As a clinician who has seen both big wins and frustrating non responders, I can say this plainly: regenerative medicine can help a meaningful number of patients with tendon and ligament injuries, but it is not magic, and the success rate depends heavily on the details.

This article walks through how often these treatments actually work, what affects those odds, and the trade offs you should weigh before you spend thousands of dollars on something your insurance may not cover.

What exactly is a regenerative medicine doctor?

A lot of confusion starts with job titles. Patients ask, "What is a regenerative medicine doctor?" as if it is a separate specialty like cardiology or dermatology. It is not.

Most physicians offering regenerative treatments come from one of a few home specialties:

- Sports medicine or orthopedic surgery
- Physical medicine and rehabilitation (physiatry)
- Interventional pain management
- Rheumatology
- Occasionally primary care or functional medicine with advanced procedural training

"Regenerative medicine doctor" usually means a clinician who has training in using biologic treatments such as PRP, bone marrow or fat derived cell preparations, prolotherapy, or orthobiologic scaffolds, often guided by ultrasound or fluoroscopy. The quality gap between practitioners is wide. Some spend years training in musculoskeletal ultrasound and evidence based protocols. Others take a weekend course and start injecting.

When you hear success statistics, always ask what kind of doctor performed the procedures and how many they do per week. Experience matters more than the brand name of the product in the syringe.

The big question: what is the success rate of regenerative medicine for tendons and ligaments?

First it helps to define "success." Most research and clinical programs use one or more of these benchmarks at 6 to 12 months after treatment:

- Meaningful pain reduction, often a 50 percent or greater improvement on a pain scale
- Better function, such as the ability to return to sport or work
- Patient satisfaction, sometimes measured simply as "would you do it again?"

Complete, permanent cure is not usually the metric. Instead, we look for durable improvement that lets someone avoid surgery or major lifestyle limitations.

Across published studies and what I see in practice, a realistic range for chronic tendon and ligament problems treated with PRP or cell based injections looks roughly like this:

- About 60 to 80 percent of patients get clear, noticeable improvement
- Perhaps 15 to 25 percent have modest response
- Around 10 to 20 percent do not feel much better at all

Those ranges shift up or down depending on the specific injury, technique, and patient profile.

Tendon injuries: where evidence is strongest

Tendon problems are where regenerative approaches have the most research support. This includes conditions such as:

- Tennis elbow (lateral epicondylitis)
- Golfer's elbow (medial epicondylitis)
- Patellar tendinopathy (jumper's knee)
- Achilles tendinopathy
- Proximal hamstring tendinopathy
- Rotator cuff tendinopathy or partial tears

For chronic tendinopathies that failed standard care like rest, physical therapy, and anti inflammatory medications, high quality studies on PRP often report success rates in the 65 to 85 percent range at 6 to 12 months. "Success" usually means meaningful pain reduction plus improved function.

Two patterns stand out:

First, the benefit is rarely immediate. Many patients actually feel worse for 1 to 2 weeks after a treatment, then notice gradual gains over 3 to 6 months.

Second, the response is dose dependent in a broad sense. A single injection may help, but some stubborn tendons require a series of 2 or 3 treatments spaced weeks apart, combined with structured rehab.

For **Regenerative Medicine Doctor Scottsdale ispwscottsdale.com** cell based treatments derived from bone marrow or adipose tissue, the research is less robust but early data for patellar and Achilles tendinopathy is encouraging, often in the same ballpark as PRP or slightly better for severe cases. These approaches cost more, and we do not yet have the same volume of randomized trials.

Ligament injuries: more nuanced outcomes

Ligaments behave differently from tendons and heal more slowly. Examples include:

- Medial collateral ligament (MCL) sprains of the knee
- Partial anterior cruciate ligament (ACL) tears
- Ankle sprains with chronic instability
- Ulnar collateral ligament (UCL) injuries in the elbow
- Spinal ligament laxity contributing to chronic back pain

Here, regenerative medicine can support healing and improve stability, but expectations must match the severity of the injury.

Chronic ankle instability with stretched ligaments often responds reasonably well to prolotherapy or PRP, especially when combined with balance, strength, and movement retraining. Success rates in clinical series often fall in the 60 to 80 percent range for less severe cases.

Partial MCL tears treated with PRP and bracing can often heal fully without surgery, particularly in younger, healthy patients.

Partial ACL tears are more controversial. A subset of partial injuries in the right alignment, treated early and reinforced with rehab, may do well with PRP or cell based injections. However, a fully ruptured ACL that leaves the knee unstable usually needs surgical reconstruction if the person wants to return to pivoting sports. No amount of biologic injections can reliably “re grow” a completely torn ACL to its original strength.

The same applies to full thickness rotator cuff tears that retract significantly. Regenerative treatments can sometimes reduce pain by calming inflammation around the joint, but they rarely restore the anatomic continuity of a tendon that has snapped and pulled back.

When patients ask, “Will this replace surgery?” the honest answer is, sometimes. In partial tears and chronic degeneration without gross mechanical failure, the odds of avoiding surgery with a well planned regenerative program can be quite good. Once a structure is fully torn or severely unstable, biologics become more of an adjunct to surgical repair rather than a standalone cure.

Factors that change your odds of success

Published percentages are averages across very different people. Individual success rates rise or fall with several key variables.

1. The specific diagnosis

A vague label like “shoulder pain” tells us little. Outcomes are quite different for:

- Mild rotator cuff tendinopathy
- Partial thickness rotator cuff tear
- Massive full thickness tear with retraction and muscle atrophy
- Adhesive capsulitis (frozen shoulder)

The first two often respond well to PRP if rehab has failed. The last two typically need other strategies.

A careful ultrasound or MRI based diagnosis is non negotiable. If a clinic is ready to inject biologics without imaging and a clear mechanical understanding of the problem, take that as a red flag.

2. Chronicity of the injury

Tissues that have been degenerating for years usually need more help and more time. But they can still respond.

Acute partial tendon injuries sometimes heal beautifully with conservative care plus a single biologic treatment. Chronic tendinopathy that has failed multiple treatments might still respond, but the probability of complete resolution is lower, and serial injections plus months of targeted rehab are often necessary.

3. Age and overall health

Younger, metabolically healthier patients generally:

- Mount a stronger healing response
- Progress faster through rehab
- Have fewer competing sources of pain

Older patients, smokers, and those with poorly controlled diabetes or autoimmune disease can still benefit, but improvement tends to be slower and less dramatic. When someone asks "Who is a good candidate for regenerative medicine?" I walk them through a simple short checklist.

Here is one of the two lists for clarity:

1. A clear, imaging supported diagnosis of a tendon or ligament problem
2. Symptoms that persist despite good quality physical therapy and activity modification
3. No gross instability or complete rupture that clearly requires surgery
4. Reasonably good overall health, or at least stable chronic conditions
5. Realistic expectations about probabilities, cost, and rehab effort

People who are looking for a quick fix without any commitment to rehab fall on the lower end of the success spectrum regardless of the product used.

4. The exact protocol and preparation

Not all PRP is equal. The concentration of platelets, presence or absence of white blood cells, volume injected, activation method, and guidance technique all matter.

A clinic that uses a basic "kit" centrifuge to make very low concentration PRP, then injects blindly into the area of maximal tenderness, will not deliver the same results as one that uses image guidance, customizes PRP type for the tissue, and structures post procedure rehab.

Cell based therapies show similar variability. "Stem cell treatment" is a marketing phrase, not a standardized protocol. Some programs use point of care bone marrow concentrate. Others offer minimally manipulated adipose tissue. Overseas clinics may claim to use expanded mesenchymal stem cells, which introduces additional regulatory and safety questions.

Which leads to the question many patients ask very directly: what country is best for stem cell treatment?

From a safety and evidence standpoint, countries with strong regulatory frameworks and transparency tend to be safer: the United States, parts of Europe, Canada, and Australia. However, some high profile figures, including Joe Rogan, have traveled to Panama for stem cell therapy at the Stem Cell Institute, drawn by permissive laws allowing expanded cell preparations.

There is no official "best country." What matters more are:

- The specific condition being treated
- The exact product and cell handling methods
- The clinic's transparency and follow up data
- Your risk tolerance for therapies considered experimental in your home country

Is regenerative medicine painful?

Pain around these treatments falls into three buckets:

The procedure itself

PRP and prolotherapy injections can sting, particularly when delivered into thick, diseased tendon tissue or near joint capsules. Local anesthetic helps, but some clinicians minimize anesthetic inside the target tissue because it

can blunt the biologic response. Bone marrow aspiration for cell harvesting can be uncomfortable, even with numbing, though most patients tolerate it with mild sedation or oral medication.

The flare period

It is very common to feel more sore for several days after a regenerative injection. For tendons and ligaments, this inflammatory flare can last 3 to 10 days. Ice, relative rest, and short use of non sedating pain medications that are not strong anti inflammatories are typical. Strong NSAIDs are often avoided, particularly in the first few days, so as not to blunt the regenerative cascade.

The rehab phase

As tissue heals and remodels, rehab exercises can bring some discomfort. This is usually a “good hurt” as strength and load tolerance improve, but it still takes mental buy in.

Most patients I see describe the entire process as uncomfortable but manageable. Fear of pain should not be the primary barrier, but it should be discussed honestly, especially if previous injections or medical procedures have been traumatic.

What are the disadvantages of regenerative medicine?

The marketing hype around regenerative treatments is strong, so it helps to name the downsides explicitly.

Here is the second and final list, limited to five items:

1. Cost is often high, and insurance rarely pays
2. Results are not guaranteed, even with perfect execution
3. Evidence for some products and uses is still limited or mixed
4. There is short term pain and downtime, sometimes for weeks
5. The industry has a problem with overpromising and under regulating

When people ask, “What is the biggest problem with regenerative medicine?” I usually point to that last one. The field evolved faster than regulations and physician education. That gap created space for clinics that oversell benefits and gloss over the subtleties of success rates.

Cost, insurance, and the economics behind the scenes

Questions about success rates quickly run into questions of money.

Will insurance pay for regenerative medicine?

For musculoskeletal conditions in the United States and many other countries, the short answer is: usually not, at least not yet.

Most major insurers label PRP, prolotherapy, and many cell based products as “experimental and investigational” for tendon and ligament injuries. That designation allows them to deny coverage, even when reasonable evidence exists for specific indications.

Occasionally, insurers will cover certain biologic preparations used in surgical settings, or PRP for very specific diagnoses under strict protocols, but that remains the exception.

Patients sometimes ask specifically, “Does insurance cover Kinetix?” referring to a particular injectable biologic product promoted for joint and soft tissue problems. As of now, most insurance plans do not cover Kinetix and

similar orthobiologic injections, treating them as elective or experimental. Policies change over time and vary by carrier, so it is always worth checking, but planning as if you will pay out of pocket is safer.

What is the average cost of regenerative medicine?

Costs vary by region, provider expertise, and the complexity of the procedure. Typical United States ranges for musculoskeletal treatments look roughly like this:

- PRP for a single region, such as an elbow or Achilles tendon: 500 to 2,000 USD per treatment
- Prolotherapy session: 300 to 1,000 USD per visit, sometimes requiring multiple sessions
- Bone marrow aspirate concentrate (often marketed as stem cell therapy): 4,000 to 10,000 USD depending on areas treated
- Adipose derived cell procedures: often in the 4,000 to 8,000 USD range

Many physicians bundle ultrasound guidance, post procedure visits, and rehab coordination into these prices, but not always. A clear written quote that specifies what is included is essential.

How much do regenerative medicine doctors make?

People also wonder about the clinician’s side. “How much do regenerative medicine doctors make?” is not a straightforward question because there is no formal specialty code.

A sports medicine physician adding PRP and prolotherapy to a standard insurance based practice might earn in the 250,000 to 400,000 USD range annually, depending on volume, region, and overhead. Someone who runs a high volume, cash only regenerative clinic with expensive cell based offerings can earn significantly more, sometimes approaching or exceeding the earnings of procedural specialists.

For context, recent physician compensation surveys place orthopedic surgery, plastic surgery, cardiology, and some neurosurgical subspecialties near the top. Those fields often compete for the title of “Who is the highest paid doctor specialty.” On the other end, primary care disciplines such as pediatrics and family medicine tend to rank near the lower income tiers, often mentioned when people ask, “What is the lowest paying doctor specialty?”

This income spread matters because it creates financial pressure and incentives. When a single injection can reimburse several thousand dollars, the temptation to over recommend it is very real. Patients should feel empowered to ask, “What are my non procedural options, and how do outcomes compare?” A trustworthy physician will take that conversation seriously.

Common side questions and myths

Regenerative medicine attracts broader health and longevity claims that spill beyond tendons and ligaments. A few come up so often that they are worth addressing briefly.

Does fasting for 72 hours regenerate cells?

A 72 hour fast does not regrow a torn ACL or rebuild a degenerated rotator cuff. Some research suggests that prolonged fasting or fasting mimicking diets may trigger autophagy and changes in immune cell populations, which could have systemic health benefits. But that is very different from targeted structural regeneration of injured tendons or ligaments.

Fasting can be a useful tool for some individuals when done safely and with medical guidance, especially in the context of metabolic disease. It is not a replacement for a carefully delivered biologic treatment and structured

rehab program.

What are the 4 types of regeneration?

Biologists use several different frameworks, which adds to the confusion. In a medical, human focused context, when I talk to patients about “types of regeneration,” I tend to simplify them into four practical buckets:

1. Physiologic regeneration

   Ongoing routine replacement of cells in tissues like skin, gut lining, and blood.

2. Reparative regeneration

   Healing after injury, where tissue attempts to restore structure and function. Scar formation is a form of imperfect reparative regeneration.

3. Induced or therapeutic regeneration

   What we aim for with regenerative medicine treatments like PRP, cell based injections, tissue engineered scaffolds, and gene therapies.

4. Pathologic regeneration

   Abnormal or uncontrolled growth, as seen in some tumors, or disorganized scarring that impairs function.

For tendon and ligament injuries, we are trying to push the body from a state of failed or incomplete reparative regeneration into more complete, organized healing using induced or therapeutic tools.

How to decide if regenerative medicine is worth trying

Given all the nuance, how does a real person decide what to do with their own knee, shoulder, or ankle?

A few practical steps help:

Seek a precise diagnosis

Imaging and a hands on exam from a musculoskeletal specialist should come first. You want a clear answer about partial vs full thickness tears, alignment issues, and joint stability.

Maximize foundational care

Before paying for injections, make sure you have genuinely tried high quality physical therapy focused on load management, strengthening, movement retraining, and addressing kinetic chain problems above and below the injury. Many tendinopathies improve dramatically with this alone when it is done properly and persisted with.

Clarify your goals and time horizon

A recreational runner willing to reduce training volume and shift to cross training might make different choices than a professional athlete on a contract timeline. A 30 year old may invest more aggressively in biologics to avoid early joint surgery than a 75 year old content to focus on comfort and basic function.

Ask your physician for numbers, not just enthusiasm

Whenever possible, request outcome data from that specific practice: what proportion of patients with your diagnosis experience meaningful improvement, how many require retreatment, how many ultimately go to surgery anyway.

Check safety and regulatory status

If a clinic heavily markets “stem cells” but cannot clearly explain the tissue source, processing method, and regulatory classification of their product, be cautious. Autologous preparations (using your own blood or bone marrow) within standard minimal manipulation guidelines generally carry fewer regulatory and safety concerns than imported or expanded allogeneic cell products.

Weigh the cost against potential benefit

If you are stretching finances to afford treatment, ask yourself: “If I end up in the 20 to 30 percent who do not improve much, will I still feel this was a reasonable risk?” There is no wrong answer, but it should be conscious and informed.

Where does this leave the success rate question?

When stripped of hype and fear, regenerative medicine for tendon and ligament injuries stands on reasonably solid ground for selected problems, especially chronic tendinopathy and certain partial ligament tears. In those settings, a well executed PRP or cell based program, wrapped inside thoughtful rehab, helps a majority of appropriately chosen patients.

It does not work for everyone. It does not replace surgery for grossly unstable or completely ruptured structures. It does not justify every price point or every overseas stem cell package advertised online.

The best outcomes occur when a patient, a skilled regenerative medicine doctor, and a realistic plan meet in the middle: clear diagnosis, honest probabilities, disciplined rehab, and an understanding that healing is a spectrum, not an on off switch.

Integrated Spine, Pain and Wellness
7425 E Shea Blvd Suite 102, Scottsdale, AZ 85260
4806608823