When patients ask me about regenerative medicine, pain is usually their second question, right after, "Does this actually work?" Many have lived through months or years of aching joints, a torn tendon that never healed right, or a spine that complains with every step. They are scared of surgery for good reasons. They have heard about stem cells or platelet-rich plasma and want to know if these options are gentler, or just a different kind of misery.

The honest answer is nuanced. Regenerative medicine is usually less invasive and often less painful overall than surgery, but it is not pain free, **Regenerative Medicine Doctor Scottsdale** and the trade-offs matter.

This article walks through what that pain really looks like, how it compares to surgery, and how to think through whether you are a good candidate.

What is a regenerative medicine doctor?

The term "regenerative medicine doctor" is a bit slippery. It is not a standard residency like orthopedics or neurology. Instead, it describes a physician who uses biologic treatments aimed at helping your body repair or regenerate its own tissues.

In practice, these doctors usually come from established specialties:

- Orthopedic surgery
- Physical medicine and rehabilitation (PM&R or physiatry)
- Sports medicine
- Interventional pain management
- Occasionally rheumatology or internal medicine with additional training

They learn to use tools such as platelet-rich plasma (PRP), bone marrow or fat-derived cell concentrates, specialized scaffolds, biologic patches, and sometimes gene-based or tissue-engineered products in research settings. A responsible regenerative medicine doctor balances innovation with evidence, and just as importantly, knows when surgery or conventional care is actually the safer or more effective choice.

Financially, their income typically resembles their base specialty. An orthopedic surgeon who adds regenerative procedures may earn in the high 300,000 to 700,000 dollar range in the United States, depending on location and practice structure. A non-surgical sports medicine or PM&R physician offering these treatments commonly falls in the 250,000 to 450,000 dollar range. Those numbers are rough and vary widely, but it helps anchor expectations.

For comparison, orthopedic surgery and some procedural subspecialties like plastic surgery or interventional cardiology are often near the top when people ask, "Who is the highest paid doctor specialty?" On the other side, primary care fields such as pediatrics or family medicine tend to sit closer to "What is the lowest paying doctor specialty?", especially in non-procedural, insurance-driven settings.

What exactly are we comparing to surgery?

To meaningfully compare pain, we need clear reference points.

When people ask me about regenerative medicine versus surgery, they are usually weighing treatments for:

- Knee, hip, or shoulder arthritis
- Tendon or ligament injuries, like tennis elbow or partial rotator cuff tears
- Spine-related pain, such as facet joint pain or disc-related low back pain

On the surgical side, the usual comparators are arthroscopic procedures (clean-ups, repairs), joint replacement, or certain spine surgeries. These involve anesthesia, incisions, internal hardware, and a significant recovery window with surgical pain plus rehab.

On the regenerative medicine side, the common tools are:

PRP injections

Your blood is drawn, spun in a centrifuge to concentrate platelets and growth factors, then injected into a joint or tendon.

Cell-based injections

Concentrates prepared from your own bone marrow or fat are processed and injected into damaged areas. Many clinics label these "stem cell" treatments, although the products vary dramatically and the term is often overused in marketing.

Prolotherapy and related techniques

Irritant solutions, sometimes combined with platelet products, are injected around ligaments or tendons to stimulate a healing response.

Biologic patches or scaffolds

In some advanced cases, doctors use specialized membranes or scaffolds to support tissue repair, mostly in the operating room or research settings.

The key distinction is this: surgery removes, replaces, or structurally repairs tissue using tools, implants, and sutures, while regenerative medicine attempts to coax your own biology to do more of the work.

Is regenerative medicine painful?

Short term, the main source of pain from these treatments is the injection itself and the inflammatory flare that follows, rather than incision or tissue cutting.

Here is how patients usually describe different procedures, compared with typical orthopedic surgery.

PRP injections

During the blood draw, discomfort is similar to a standard lab draw. The injection into a joint is often brief and manageable, especially when the doctor uses numbing medicine on the skin and sometimes within the joint. In small joints, tendons, or around nerves, the needle placement can sting or burn, especially if anesthetic is limited.

For a few days after PRP, many patients feel a deep ache or pressure in the treated area. In my experience, knee injections are typically sore for 2 to 5 days, sometimes longer if a very concentrated PRP is used. Pain usually peaks in the first 48 hours, then gradually gives way to stiffness or mild aching.

Compared to knee arthroscopy or replacement, most patients consider PRP significantly less painful overall, Regenerative Medicine Doctor Scottsdale with far less disruption of daily function, although high-intensity sport is still off the table for a period.

Cell-based injections (often marketed as stem cell treatments)

There are two pain components: harvesting and injection.

Harvesting bone marrow from the pelvis can be uncomfortable or painful, even with local anesthesia and mild sedation. Some patients describe it as intense pressure or drilling discomfort lasting seconds to minutes. Others tolerate it quite well. Fat harvesting through a mini-liposuction approach can leave bruising and soreness for days.

The injection itself is similar to PRP, though the volume and viscosity of the injectate vary. Afterward, patients often report a more pronounced ache than with simple corticosteroid injections, because the goal is to create a controlled inflammatory stimulus rather than suppress it.

Pain from bone marrow harvesting is still usually milder and shorter lived than the pain of recovering from joint replacement surgery, but it should not be romanticized as "painless." A realistic expectation helps patients prepare and cope better.

Prolotherapy and related irritant injections

These injections are intentionally irritating. The needle passes along painful structures, and the solution (often a dextrose mixture) can burn or sting. Doctors sometimes limit anesthetic to avoid diluting the effect, which means the experience can be sharper than PRP in the moment.

Post-procedure, the treated area often feels more painful for several days. For smaller ligaments around the spine or pelvis, people sometimes report increased low back or sacroiliac pain for a week or more.

Even so, the pain profile is still different from surgery. You usually walk out the same day without surgical wounds, blood loss, or anesthesia hangover. The pain is localized to the treated area instead of accompanied by systemic surgical stress.

Surgical procedures for comparison

Orthopedic surgery varies widely in pain intensity. Arthroscopic meniscus trim with small incisions can produce moderate pain for a few days, then tolerable soreness for a few weeks. Joint replacement has a different

magnitude of pain: significant incision discomfort, deep bony pain, muscle trauma from retraction, and the need for opioids in the early period for many patients. Spine surgery has its own spectrum, especially when muscle dissection or hardware placement is involved.

The acute surgical pain may last weeks, and the rehab process can be physically and emotionally demanding. At the same time, surgery often offers a more predictable structural change, which is why it still has a central place in treatment.

Direct pain comparison: regenerative medicine vs surgery

To condense the contrast, here is a high-level pain comparison that matches what I see clinically.

- Procedure discomfort: Injections (PRP, cell-based) usually cause brief, sharp pain and pressure, but do not reach the intensity or duration of pain from joint replacement or major tendon repair.
- Post-procedure flare: Regenerative treatments often cause a biochemical inflammatory flare for several days. Surgical pain often peaks early but is layered on top of tissue cutting, swelling from trauma, and incision pain.
- Functional limitation: After most injections, walking and basic self-care are possible the same day, with temporary restrictions on heavy activity. After surgery, especially joint replacement or spine procedures, mobility is more significantly impaired and often requires assistive devices at first.
- Need for pain medication: Many injection patients use over-the-counter pain relievers or short courses of prescribed medication. Surgical patients are more likely to need opioids or stronger combinations, with all the related risks.
- Duration of pain episode: Regenerative medicine discomfort is usually intense for days, residual for a few weeks, and then tapers if treatment is successful. Surgical pain is typically more intense and longer lasting, though with the potential for durable structural relief.

From a purely pain perspective, regenerative medicine is usually "less" painful in terms of depth, duration, and life disruption, especially when compared to major surgeries. That said, the pain is real, and some patients prefer a single, aggressive surgery and long rehab over several episodes of injection-related discomfort.

What is the success rate of regenerative medicine?

Here is where expectations need to be precise. "Regenerative medicine" is not a single treatment with a single success rate. Outcomes depend heavily on:

- The underlying condition and its severity
- The specific protocol used
- The skill and honesty of the treating physician
- Patient factors such as age, weight, metabolic health, and activity level

For knee osteoarthritis treated with PRP, reasonably designed studies often show that 60 to 80 percent of patients report meaningful improvement in pain and function at 6 to 12 months, especially with mild to moderate arthritis. Results for severe bone-on-bone disease are less consistent.

Tendinopathies like tennis elbow or chronic Achilles pain respond quite well to PRP in many reports, again with around two-thirds or more of patients experiencing improvement when the diagnosis and technique are appropriate.

Cell-based treatments marketed as "stem cell therapy" are more complex. The best quality evidence is still evolving, and many protocols in private clinics are ahead of the published science. Some studies show promising results for knee arthritis and certain tendon problems, but the range is wide, and marketing claims frequently outpace reality.

Compared with surgery, regenerative medicine often trades a somewhat lower and less predictable success rate for lower risk, less pain, and less downtime. For the right patient, that is a fair exchange. For someone with severe mechanical deformity, such as a knee joint severely worn and misaligned, the structural correction of joint replacement may still win despite the greater pain burden.

What are the 4 types of regeneration?

In basic biology, textbooks often describe four types of regeneration:

1. Physiological regeneration, such as regular turnover of blood cells and skin.
2. Reparative regeneration after injury, like liver regrowth following partial removal.
3. Morphallaxis, where certain organisms reorganize without significant new cell growth.
4. Epimorphosis, where lost parts grow back from a blastema, as seen in salamander limb regrowth.

Medical regenerative therapies mostly harness reparative regeneration, attempting to enhance the body's natural repair capacity, rather than true limb regrowth. When clinics imply salamander-like limb regrowth is around the corner, that should raise red flags.

What is the biggest problem with regenerative medicine?

Pain is not the biggest problem. The pain profile is usually acceptable. The major issues are:

Unregulated marketing and unrealistic promises

Many clinics overuse phrases like "stem cells" and "cure," even for conditions with little high-quality evidence. Patients spend large sums chasing hope, not data.

Regulatory gray zones

Some treatments are FDA-approved for specific uses, such as certain tissue-engineered products, while others are offered under "practice of medicine" or minimally manipulated tissue exemptions. The line can be blurry, especially with off-shore clinics.

Cost and access

Treatments are often expensive and not covered by insurance, which creates a two-tiered system where those with resources access experimental care and those without cannot.

Inconsistent quality

Protocols differ wildly between clinics. Two "stem cell" injections might involve entirely different cell counts, processing methods, and sterility standards. Outcomes and pain profiles track this variability.

When patients ask, "What are the disadvantages of regenerative medicine?" I usually mention cost, limited or evolving evidence for some uses, potential for overpromising clinicians, lack of insurance coverage, and the risk of delaying surgery when it is clearly indicated. That delay can sometimes worsen the eventual surgical outcome.

Will insurance pay for regenerative medicine?

For most musculoskeletal uses in the United States, the answer is no.

PRP for knee osteoarthritis or tendon problems is often considered "experimental" by major insurers, even though the evidence in some areas is reasonably strong. A few plans have started covering PRP in narrow circumstances, but they are the exception.

Cell-based treatments labeled as "stem cell therapy" for orthopedic issues are generally not covered. Patients pay out of pocket.

Branded regenerative programs such as Kinetix often fall under the same exclusion. When people ask, "Does insurance cover Kinetix?" The practical answer is usually no, or only for certain ancillary parts of the program, such as evaluation or physical therapy, not the regenerative injections themselves.

There are approved regenerative technologies that insurers do cover, such as specific bone graft substitutes in spine surgery or certain biologic patches in surgery. However, these are very different from the cash-based joint injections widely advertised to the public.

What is the average cost of regenerative medicine?

Costs vary widely by region, provider experience, and protocol. Typical ranges I see in U.S. Practices:

PRP injections

Around 500 to 2,000 dollars per session for a single joint or tendon. Some protocols recommend a series of 2 or 3 injections spaced weeks apart.

Bone marrow or fat-derived cell concentrates

Often 3,000 to 8,000 dollars for a major joint such as the knee or hip. More extensive protocols, including spine or multiple areas, can climb toward 10,000 dollars or higher.

Combination or branded packages

When regenerative injections are bundled with imaging, bracing, rehab, and follow-up for a year, total program costs may reach 10,000 to 20,000 dollars in some high-end clinics.

These prices are before travel expenses. They also do not guarantee relief. Financial pain can overshadow physical pain if expectations are not carefully aligned.

Medical tourism and “What country is best for stem cell treatment?”

Public figures have drawn attention to stem cell tourism. For example, Joe Rogan has spoken about traveling to Panama for stem cell treatment at a clinic associated with Dr. Neil Riordan. Panama, Mexico, and Costa Rica have become common destinations for Americans seeking treatments not readily available or allowed in the U.S.

Labeling any one country as "best" is dangerous. What matters is:

- Regulatory oversight and transparency about what is being injected
- Laboratory standards and sterility
- Clear reporting of complications and realistic outcomes
- Alignment with your actual diagnosis and goals

The United States and some European countries are stricter about what is allowed, which limits access but also reduces exposure to unproven or unsafe products. Some overseas clinics offer treatments that are genuinely innovative but also less tested, leaving patients to shoulder more risk.

When people ask my opinion, I typically advise exploring high-quality options close to home first, with clinicians who can explain the science, the uncertainties, and the alternatives, including surgery, in plain language. If a clinic anywhere in the world sounds allergic to questions, that is your answer.

Who is a good candidate for regenerative medicine?

Matching the right patient to the right treatment reduces both physical pain and disappointment. A good candidate usually fits several of these traits:

- Has a clearly defined diagnosis, such as early to moderate knee osteoarthritis, a partial tendon tear, or a focal cartilage defect, confirmed by exam and appropriate imaging.
- Has tried structured conservative care, including targeted physical therapy, weight optimization where relevant, activity modification, and simple medications, without adequate relief.
- Does not yet have severe structural deformity that clearly calls for surgery, like a grossly unstable joint or advanced bone-on-bone arthritis with major malalignment.
- Understands that regenerative treatments are not guaranteed cures, accepts the possibility of only partial improvement, and is prepared for the short-term pain flares and downtime required.
- Has medical conditions and medications reviewed for safety, such as bleeding risks, uncontrolled diabetes, or active cancer, and is willing to adjust lifestyle factors, including smoking or heavy alcohol use, that impair healing.

I often tell patients that regenerative medicine is most convincing when it nudges a joint or tendon that is "on the fence" away from surgery, not when it is expected to rebuild a severely destroyed structure.

Does fasting for 72 hours regenerate cells?

Intermittent fasting and prolonged fasts have become entangled with regenerative medicine discussions. A few animal studies and small human trials suggest that extended fasting can trigger cellular cleanup processes and influence the immune system. In mice, 72-hour fasts have been associated with immune cell regeneration under specific conditions.

Translating that into "Does fasting for 72 hours regenerate cells?" In humans is premature. There is intriguing evidence that fasting can:

- Affect white blood cell populations and immune responses
- Activate autophagy, the cellular recycling pathway
- Influence metabolic markers that support healthier tissues

However, we do not have robust clinical data showing that a 72-hour fast meaningfully regenerates cartilage in your knee or repairs a torn tendon. For many patients, especially those with diabetes, heart disease, or on certain medications, such prolonged fasting can be dangerous.

Used carefully and under medical guidance, nutrition strategies, including time-restricted eating, may support overall tissue health and pain control, but they are not replacements for targeted regenerative procedures or necessary surgeries.

Is regenerative medicine “worth” the pain compared to surgery?

The answer is deeply personal, but a few patterns recur in my practice.

Regenerative medicine often makes sense, despite its short-term pain and cost, when:

- You have early to moderate joint or tendon damage, understand the limitations, and want to delay or avoid surgery.
- You are highly active and motivated to follow a structured rehab plan, accepting a few weeks of flare-ups for a realistic chance at better function.
- You value lower systemic risk and quicker overall recovery, even if the probability of complete pain relief is somewhat lower than with a well-matched surgical procedure.

Surgery often makes more sense, despite its higher pain burden, when:

- Structural problems are clearly advanced, such as severe arthritis with deformity or large tendon ruptures that cannot heal on their own.
- You have failed one or more well-executed regenerative or conservative approaches and your daily life is severely limited.
- The surgical procedure in question has a strong evidence base, predictable outcomes, and an experienced surgeon you trust.

Pain should not be the only deciding factor, but it also should not be minimized. A good physician walks you through what the worst 72 hours after PRP might feel like, what the first 10 days after a knee replacement usually entail, and what the longer arc of each option looks like in terms of work, family responsibilities, and emotional resilience.

When those conversations are honest, patients rarely feel blindsided by the pain, whichever path they choose.

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