Every few months a new claim cycles through health podcasts and social media: if you fast for 72 hours, your body will “reset,” your immune system will “rebuild,” and you will “regenerate” new cells as if you had a new lease on life.

There is a grain of truth buried inside that promise, but it is surrounded by a lot of wishful thinking and marketing language. As a physician who works with metabolic health and regenerative medicine, I see both sides: the genuinely exciting science and the very real risks when people treat early data as settled fact.

This article walks through what we actually know about 72 hour fasting, autophagy, stem cells, and “regeneration,” and how that intersects with the broader field of regenerative medicine. I will also address practical questions patients often ask me, including cost, insurance, discomfort, and who is and is not a good candidate.

What “cell regeneration” really means

The phrase “cell regeneration” gets used loosely. In biology and in clinical practice, it usually means one of three things.

First, routine cellular turnover. Your gut lining renews roughly every few days, your skin over several weeks, and your red blood cells every 3 months or so. This is normal physiology, not a special hack.

Second, repair after injury. When your liver is damaged by alcohol or toxins, it can regenerate large portions of itself if the injury is not too advanced. Skeletal muscle, bone, and even some heart tissue can remodel after damage, although not perfectly.

Third, true regenerative processes. In research laboratories, scientists talk about regeneration at several levels. A simple textbook breakdown of the 4 types of regeneration includes:

1. Epimorphosis, where cells at the injury site de-differentiate and form a blastema that regrows a lost structure, as in salamander limb regrowth.
2. Morphallaxis, where remaining tissue reorganizes to form a smaller but complete organism, as in some hydra species.
3. Compensatory regeneration, where remaining cells divide to restore function without forming a blastema, as seen in mammalian liver regeneration.
4. Cellular regeneration, where specific cell populations, often stem or progenitor cells, repopulate damaged tissue.

Humans have limited epimorphic ability compared to animals like salamanders, but we do use compensatory and cellular regeneration constantly. The excitement around fasting comes from its potential to push the body toward more efficient cellular cleanup and renewal, especially through autophagy and stem cell activation.

What happens in a 72 hour fast

In my practice, I rarely recommend an unsupervised water-only 72 hour fast, especially for first timers. But to understand why people are drawn to it, you need a clear view of the physiology.

The human body stores energy first as glycogen in liver and muscle, and second as fat. Short fasts mostly deplete glycogen. By around 24 hours without calories, most people have burned through a substantial portion of liver glycogen and are relying more heavily on fat stores, producing ketones as an alternative fuel.

Between roughly 24 and 72 hours, several important shifts occur:

Glucose and insulin fall. Lower insulin means less anabolic signaling and more catabolic cleanup. For those with insulin resistance, this period can feel surprisingly stable once they get over the first day.

Ketones rise. Beta-hydroxybutyrate, a primary ketone, increases and serves as fuel for the brain and muscles. Many people report better mental clarity and reduced hunger once they are fully in ketosis.

Autophagy becomes more active. Autophagy is an intracellular housekeeping process where cells break down damaged proteins and organelles. Nutrient deprivation is one of the stronger triggers. Most of the detailed autophagy data comes from animal and cell models, but indirect markers in humans suggest that fasting and significant caloric restriction increase autophagic activity.

Immune cell dynamics shift. This is where the “immune regeneration” headlines come from. In mouse studies, repeated cycles of prolonged fasting have been shown to reduce circulating white blood cells, then stimulate hematopoietic stem cells to generate new ones during refeeding. It is a logical, energy-efficient strategy: during scarcity, the body prunes older or less efficient immune cells, then repopulates when food returns.

Hormones adjust. Growth hormone rises significantly in many people during longer fasts, which conserves muscle mass and supports lipolysis. Thyroid hormone conversion can shift, sometimes lowering triiodothyronine (T3) as the body conserves energy.

So is the body “regenerating” during a 72 hour fast? Parts of it, in a limited and context-dependent way: more autophagy, some degree of immune cell turnover, and a metabolic environment that tends to favor cleanup over growth.

What we do not have is strong human evidence that a single 72 hour fast “resets” your immune system or broadly regenerates organs in a way that would translate into dramatic long term health improvements on its own.

Human data: what is known, what is not

Most of the eye catching claims about prolonged fasting and regeneration trace back to work by Valter Longo, PhD, and colleagues. In mice, cycles of prolonged fasting led to:

- Reductions in IGF-1 and other growth signals associated with aging
- Increased autophagy
- Enhanced hematopoietic stem cell driven regeneration of white blood cells after refeeding
- Benefits in models of autoimmunity and chemotherapy toxicity

In humans, the data set is smaller and more nuanced:

Fasting mimicking diets. Instead of strict water fasting, Longo's group tested a 5 day very low calorie, low protein "fasting mimicking diet." In small trials, participants saw reductions in IGF-1, blood pressure, and trunk fat, and favorable changes in certain inflammatory markers. There were hints of immune cell profile shifts, but not the dramatic "wipe and replace" seen in mice.

Shorter fasts. Intermittent fasting and time restricted eating have more human data, especially for metabolic benefits: improved insulin sensitivity, weight loss, and possibly better blood pressure and lipids. These protocols rarely reach the 72 hour mark.

True 72 hour water fasts. Here, human data is mostly from small experimental studies or observational reports, often with fewer than a few dozen participants. Outcomes like weight loss, ketone production, blood pressure, and subjective well being improve in many people. Markers of autophagy in humans are harder to measure directly, so much of what we infer comes from known physiology and animal data.

As a clinician, I interpret the current state like this: a 72 hour fast probably increases autophagy meaningfully and may nudge certain stem cell populations to be more active during refeeding. It is very unlikely to regenerate organs in any dramatic way, and certainly not on the level of what we attempt with regenerative medicine procedures like stem cell injections or tissue engineering.

Does fasting for 72 hours regenerate cells?

The honest answer is: it depends what you mean by "regenerate," but for most people the effect is modest, localized, and heavily dependent on what you do afterward.

Here is a pragmatic breakdown:

Cellular cleanup is very likely. Autophagy and related processes help cells remove damaged proteins, misfolded structures, and old mitochondria. A sustained period of nutrient deprivation is one of the better triggers we know. This cleanup is a key part of healthy cellular renewal.

Some stem cell activation is plausible. In animal studies, hematopoietic and intestinal stem cells respond strongly to fasting and refeeding cycles. In humans, we suspect similar patterns, but do not have large scale, robust data. If stem cells are stimulated, the effect will be most evident in fast turnover tissues like blood and gut.

Tissue level regeneration is limited. You are not regrowing cartilage or reversing a long standing tendon tear with a weekend fast. Chronic joint or spine damage, for instance, usually requires mechanical unloading, targeted rehab, and sometimes regenerative injections to see structural improvement.

The benefit is cumulative. If you pair periodic fasting with resistance training, nutritional adequacy on eating days, sleep, and management of chronic diseases, you are likely to see significantly better function and longevity over time. A single isolated 72 hour fast is more like a metabolic stress test than a magic reset.

So yes, fasting for 72 hours probably supports certain regenerative processes at the cellular level, especially cleanup and turnover in rapidly renewing tissues. No, it is not a substitute for comprehensive care, nor is it a guarantee of long term benefits.

When a 72 hour fast is a bad idea

In clinic, I spend more time talking people out of unsupervised prolonged fasting than talking them into it. The risks are real, especially if you have underlying conditions, take medications, or have a history of disordered eating.

Here is a concise list of Regenerative Medicine Doctor Scottsdale people who should completely avoid a 72 hour water-only fast unless they are in a formal, medically supervised program:

1. Those with type 1 diabetes or advanced type 2 diabetes on insulin or sulfonylureas
2. Pregnant or breastfeeding individuals
3. Anyone with a history of eating disorders, especially anorexia or bulimia
4. People who are underweight, frail, or have significant unintentional weight loss
5. Patients with advanced heart, kidney, or liver disease

There are other gray zones. People on blood pressure medication, those with a history of gout, and those on multiple psychiatric medications need a careful, individualized plan and close monitoring if they fast beyond 24 hours. Electrolyte disturbances, severe hypotension, and mood changes are all possible.

If someone is curious about fasting, I usually start with 12 to 16 hour overnight fasts, then progress gradually. Jumping straight to 72 hours is like going from couch to ultra-marathon with no training.

Where fasting and regenerative medicine intersect

Regenerative medicine is a broad, sometimes overhyped field that aims to repair, replace, or restore damaged cells, tissues, or organs. Patients come in asking: What is a regenerative medicine doctor exactly, and how does that connect to something as simple as not eating for a few days?

A regenerative medicine doctor is usually a physician trained in a core specialty such as orthopedics, physical medicine and rehabilitation, sports medicine, internal medicine, or sometimes neurology, who then develops focused expertise in treatments that harness the body's own repair mechanisms. That can include platelet rich plasma (PRP) injections, autologous stem cell procedures (using your own cells), certain scaffold or matrix implants, and in some cases biologic drugs that influence tissue regeneration.

The most effective regenerative programs I have seen combine procedural therapies with systemic strategies. Metabolic health, sleep, resistance training, and nutrition directly affect how well your tissues respond to PRP or stem cell injections. Fasting sits squarely in that systemic bucket. A metabolically flexible person who tolerates light fasting, maintains a healthy weight, and has good glycemic control heals more predictably after a regenerative procedure than someone with uncontrolled diabetes and chronic inflammation.

So while fasting is not regenerative medicine in the procedural sense, it can influence the internal environment in which regenerative therapies operate.

The biggest problems and disadvantages of regenerative medicine

Patients often arrive with sky high expectations, in part because they have heard stories from athletes or celebrities. Joe Rogan, for instance, has spoken frequently about receiving stem cell treatment in Panama, specifically at the Stem Cell Institute in Panama City, for joint and back issues. Clinics like that operate in a relatively permissive regulatory environment, which allows them to use cell types and protocols that are not approved in the United States.

This highlights several core problems in the field. To keep it concrete, here are five of the most important disadvantages and challenges in regenerative medicine today:

1. Variable evidence quality. Some uses, like PRP for certain tendon injuries, have decent randomized trial data. Others rely on case series, registry data, or marketing claims with very little rigorous backing.
2. Regulatory gray zones. In the United States, the FDA tightly regulates expanded or culture grown stem cells, but allows some minimally manipulated autologous preparations. Other countries have looser rules, which can attract "stem cell tourism" without strong safety oversight.
3. Cost and access. Many regenerative procedures are expensive and not covered by insurance, putting them out of reach for most patients.
4. Training and standards. "Regenerative medicine" is not a protected term. A weekend course can turn a physician or chiropractor into a self described expert, even if they lack deep training in imaging, anatomy, or orthobiologics.
5. Unrealistic expectations. Marketing often implies near miraculous recovery, which does not align with the incremental gains I typically see in real clinic populations.

Beyond those systemic problems, individual patients can experience clear disadvantages: out of pocket costs, travel burden, variable pain during and after procedures, and the emotional toll of hope followed by partial or no improvement.

Costs, insurance, and financial realities

Money questions come up in almost every consultation. People ask: What is the average cost of regenerative medicine? Will insurance pay for regenerative medicine, or for something specific like Kinetix injections? How much do regenerative medicine doctors make, and does that create conflicts of interest?

The financial landscape is complicated and varies widely by country and by procedure, but a few patterns hold in the United States.

For musculoskeletal regenerative procedures such as PRP or bone marrow derived cell injections, typical cash prices range from about 500 to 2,000 USD for standard PRP, and 2,000 to 8,000 USD or more for stem cell based procedures involving bone marrow or adipose tissue. Complex multi site treatment plans can exceed those numbers.

What is the average cost of regenerative medicine, broadly speaking? If you force a general range, many common orthopedic biologic treatments land somewhere between 1,500 and 6,000 USD per episode of care, depending on complexity and geography.

Will insurance pay for regenerative medicine? For most biologic injections, the current answer in the United States is no. Some carriers are beginning to reimburse certain PRP indications, and occasionally adjunctive biologics used during surgery, but the majority of PRP and cell based procedures remain self pay.

Patients specifically ask: Does insurance cover Kinetix? Kinetix is a brand associated with certain regenerative or orthobiologic treatments marketed for joint pain. Coverage depends on the exact product, how it is billed, and the insurance plan, but practically speaking, most insurers still categorize these treatments as experimental and deny payment. I always tell patients to assume a cash model unless they see a written preauthorization from their insurer.

On the physician side, how much do regenerative medicine doctors make is hard to answer precisely, because very few are coded as such. Income tracks more with the underlying specialty. In most surveys, the highest paid doctor specialty categories include neurosurgery, orthopedic surgery, cardiology, and some interventional fields, often in the 600,000 to 1,000,000 USD per year range at the top end. The lowest paying doctor specialty categories tend to include pediatrics, family medicine, and some primary care oriented fields, often in the 200,000 to 260,000 USD per year range. A regenerative medicine oriented orthopedist who runs a high volume cash-based clinic will sit much closer to the high income side than a primary care physician who occasionally refers for PRP.

Financial incentives do matter. When a physician's income depends heavily on performing expensive, non covered injections, patients have to rely even more on the doctor's integrity. I encourage people to ask directly about success rates, alternatives, and whether the physician would recommend the same procedure to a close family member.

Pain, success rates, and who makes a good candidate

Another frequent concern is whether regenerative medicine is painful. Most regenerative injections involve needles, sometimes guided by ultrasound or fluoroscopy. With good local anesthesia, many patients describe the procedures as uncomfortable but tolerable, similar to a dental visit. The post procedure period can be more challenging, especially with PRP or bone marrow derived injections to joints or tendons, because we often provoke inflammation as part of the healing response. Expect soreness that can last days to a couple of weeks, along with temporary activity restrictions.

What is the success rate of regenerative medicine? That phrase is almost meaningless without specifying the condition, the treatment, and the definition of success. For example:

PRP for chronic tennis elbow has reasonable data suggesting that a majority of patients, often in the 60 to 80 percent range, report meaningful pain reduction and functional improvement compared with steroid injections or placebo, especially over 6 to 12 months.

Stem cell like injections for knee osteoarthritis show a more mixed picture. Some trials and case series report significant pain relief and functional gains in perhaps half to two thirds of patients, others show more modest or no benefit compared with hyaluronic acid or physical therapy. Structural regeneration of cartilage visible on MRI is less consistent than symptom relief.

Who is a good candidate for regenerative medicine depends on several practical factors: the nature and severity of the injury or degeneration, the patient's metabolic and overall health status, their willingness to commit to rehabilitation, and their financial situation. A middle aged patient with a focal tendon tear, good metabolic health, and realistic expectations is a far better candidate than someone with end stage bone on bone osteoarthritis who is hoping to avoid an inevitable joint replacement with one injection.

Interestingly, fasting and other metabolic interventions can move someone from marginal to better candidate by improving inflammation, insulin resistance, and body weight. I have seen patients who lost 10 to 20 percent of their body weight and improved their sleep and blood sugar achieve better, more durable results from regenerative procedures.

Is there a "best country" for stem cell treatment?

Regenerative Medicine Doctor Scottsdale Integrated Spine, Pain and Wellness

Patients sometimes phrase it bluntly: What country is best for stem cell treatment? They have heard about Panama, Mexico, Germany, or clinics in Eastern Europe, often through athletes or podcasts.

The reality is uncomfortable. Countries like Panama and Mexico host clinics that use cell preparations, doses, and routes of administration that go beyond what is allowed in the United States. Some are run by capable teams with genuine scientific intent, others are barely regulated businesses. Rigorous outcome data across large numbers of patients is sparse.

From a strictly evidence based standpoint, no country can honestly claim to be "best" right now. The United States lags in access but has tighter safety oversight for approved uses. Some European systems have strong academic programs, but patients may not qualify for trials. Countries with more liberal regulations offer access, but at the cost of weaker safety and efficacy data.

My advice is to focus less on geography and more on:

- The specific condition you want treated
- The type of cells and delivery method proposed
- The clinic's data, including complication rates and long term follow up
- The transparency of their consent process and willingness to discuss alternatives

A weekend fast at home will not substitute for any of this, but it is a reminder that powerful biological shifts are still accessible without getting on a plane.

How to think about 72 hour fasting in a long term plan

Instead of chasing a singular "regenerative" fast, I encourage people to think in terms of cycles and context.

A person in their 30s or 40s with no major medical issues who eats a whole food diet, maintains a healthy weight, exercises regularly, and sleeps well will get more from an occasional 24 to 48 hour fast than a metabolically unhealthy person will get from a heroic 72 hour water fast once a year.

If you are curious and medically appropriate, it is reasonable to:

Start with daily time restricted eating, such as a 12 to 14 hour overnight fast, then gradually explore 16 hours once a week. Monitor how your energy, mood, and blood sugar respond. Work with your physician if you take medications, especially for blood pressure, diabetes, or mood disorders.

Once you are comfortable and stable with shorter fasts, a carefully planned 24 hour fast can extend the metabolic benefits, often without major side effects. Continue to prioritize hydration, electrolytes, and good nutrition on eating days.

Only after you and your clinician are confident about these shorter fasts should you even consider a 48 to 72 hour fast, and even then, it may not add much beyond what consistent, moderate interventions already achieve.

Fasting is a tool, not an identity. Used wisely, it can support the same cellular processes that regenerative medicine aims to harness: better autophagy, healthier mitochondria, and more resilient tissues. Used recklessly, it can aggravate underlying conditions and distract from more important work like strength training, blood sugar control, and addressing sleep apnea.

The promise of regeneration is seductive, whether it comes from a clinic overseas or a three day fast at home. The real gains usually arrive quietly, over months and years, built from hundreds of small, repeatable choices rather than a single dramatic intervention.

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