Take a Shot

Surgery isn't the only option for those suffering from chronic pain.

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Although using stem cell prolotherapy is considered an experimental therapy by many insurance companies—and therefore the procedure isn't commonly covered—the treatment is currently used by doctors to help repair injured tissue so it regains strength.

In stem cell prolotherapy, doctors retrieve healing cells from a patient's own bone marrow, fat, and blood (alone or in various combinations) and inject them straight to the area where there is a cellular deficiency. The adult stem cells extracted from the patient's body is used to create a healing solution containing platelet-rich plasma and stem cells. Once the doctor injects the solution into degenerated joints and ligaments, the patient's own newly activated stem cells go to work and regenerate joints, tendons, ligaments and muscle.

Here, Marc Darrow, MD, an associate professor at UCLA Medical School, who is board certified in physical medicine and rehabilitation, explains more about the procedure.

How long does it take to extract stem cells from bone marrow, and how much bone marrow must you remove?

The procedure of aspirating bone marrow depends on the person's size. If they're thin, the area that I draw the bone marrow from is on the surface. We get to that area instantly and drilling into the bone marrow cavity takes maybe three to five seconds. Then we put a syringe on the needle that's being used and we aspirate, or remove, the bone marrow. Depending on what we need, this could take five seconds to a couple of minutes.

What quantity of stem cells can you extract from one person?

It's inexhaustible.

How much healing solution do you need for a patient for any given treatment?

How much of the healing solution I need depends on how large the area is for the patient that needs repair. If we're talking about an elbow, which is a very small area and very superficial, I may only need one and a half milliliters [of healing solution]. If it's something like a hip joint, I might

need 3 milliliters. If it's a shoulder, where we have to inject all of the tendons, the joints and the bursa, it could be 12 milliliters. But we wouldn't want to do everything in one day if a person is really beat up, or he or she is an older athlete or something like that. For one gentleman I treated who flew in from London, I did his ankle, his knee, his hip and his entire back. That took me, probably, an hour and a half of injections with him. But that's unusual that someone would want that much work done on themselves at one time.

What's typically done during a therapy session and how long is the procedure?

I usually do one or two joints, or one or two body parts. The whole procedure is 30 minutes from walking into the door to leaving.

Essentially, how does stem cell prolotherapy work?

I use dextrose, a type of sugar, as an agent to create an inflammatory cycle by irritating the tissue. This draws fibroblasts to the area. (Fibroblasts are a type of cell that generates the extracellular matrix and collagen needed to build connective tissue.) Fibroblasts grow back the muscles, tendons and ligaments, things of that nature. About four years ago or so, I've also been using patients' blood platelets for the procedure. We draw the blood from the arm, spin it in the centrifuge then harvest the platelets, which work really great too. A lot of athletes get that procedure done. But there's no question in my mind that the stem cell procedure, which I've been doing for a couple of years now, is much more efficient than anything else on the planet at this time that I know about.

How would you rate stem cell prolotherapy when compared with surgery?

Why do surgery when you can regenerate and rejuvenate the tissue? Stem cell prolotherapy does the job. It's simple; it's fairly non-invasive and there are very rare side effects. A person can come in and take their shot and go back to work if they want. What's more, now studies are showing that surgeries [for these kinds of injuries] don't really work.

Does stem cell prolotherapy repair injuries forever?

It's different for everyone. Everything in medicine is different for everyone.

If there was only one major thing that you could say to someone about stem cell prolotherapy, what would that be?

The message is obvious: Don't have surgery; regenerate the tissue. Don't take good tissue out of the body. Don't take the chance of infection; don't take the chance of prostheses in the body that can loosen up and, perhaps cause a patient to have one limb be longer [than the other]. That can cause all kinds of pain. Don't take the chance; do something that's simple. In medicine, the first law to me is be conservative; do no harm.

How come stem cell prolotherapy isn’t in widespread use?

Unfortunately, medicine is a business. It is very simple. I don’t want to get into the politics of it because it makes me very angry. Almost every day I’ve seen people who’ve had surgery that turned out to be an abomination, where they say, ‘I wish I had known about this before. I am so sorry that I had surgery.’ Our job is to educate people and to bring a level of awareness about how things work in medicine.
