

The big "if" about stem cell therapy for injured athletes

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Rafael Nadal of Spain grimaces as he receives a medical treatment to his back in the men's singles final against Stanislas Wawrinka of Switzerland at the Australian Open tennis championship in Melbourne, Australia, Jan. 26, 2014. Nadal had stem cell treatment in 2014 to help his ailing back but hasn't endorsed the procedure. Photo: AP Photo/Andrew Brownbill, File

C.J. Nitkowski had nothing to lose in spring 2011. The tendons and muscles in his left shoulder, that he'd relied on during his 10 years as a major league pitcher, were in tatters. He was 38 and his fastball traveled a Little League-worthy 50 miles per hour.

Surgery and the following lengthy rehabilitation would have killed his career. So Nitkowski paid \$3,000 to have stem cells taken from his waist, separated and then injected back into his shoulder. Stem cell therapy is a new medical

procedure that is supposed to help repair damaged tissue that can't heal by itself. Stem cells from one part of the body are used to treat an illness or disease in another.

"A Last Shot"

"I look at it as a last shot," Nitkowski said.

The "boost" he felt after the procedure helped him sign a minor-league deal with the New York Mets in 2012. Though he never made it back to the majors before retiring in 2013, Nitkowski is confident he'd wrung out every last ounce of talent. While not an advocate for stem cell therapy, as one of the few athletes who have gone public on the treatment, he understands why active players approach him about it.

"I can't give a recommendation," Nitkowski said. "I can only tell my story. I feel like, based on what I believe, that (stem cell therapy) would almost become like maintenance ... if they generate tissue."

No Absolute Lab Results

That's a big "if," particularly for professional athletes and the teams that pay them millions. Several years after Nitkowski's procedure, a lot of questions about stem cell therapy remain unanswered.

Why? Because even though studies still haven't proven for sure what it can and can't do, there is plenty of hype.

This is why players and agents are paying so much attention to it.

"They want the cutting edge. Anything that is cutting edge that can get their guys a couple more years in the league," said Dr. Jim Bradley, orthopedic surgeon for the NFL's Pittsburgh Steelers. "If I was an agent, I'd want the same thing."

Yet while Bradley is excited about its potential, he still spends a fair amount of time explaining what exactly stem cell therapy does. Adult stem cells are undifferentiated cells found throughout the body. Because they are undifferentiated, they don't yet have a role. They can still divide rapidly and differentiate into other cell types to help repair tissue. The belief is that stem cells can serve as reinforcements to an injured muscle or joint.

But nearly all evidence is anecdotal — no absolute lab results show it works. That has done little to dampen interest.

"Everybody wants answers right now and you can't have them right now," Bradley said.

At least not in the United States, where medical regulation is more restrictive than elsewhere. To avoid scrutiny from the Food and Drug Administration, stem cell doctors generally perform same-day procedures similar to what Nitkowski received. That's not the case overseas.

Going Outside The U.S. For Treatment

Clinics in various countries in Europe, Australia and Asia offer stronger therapies. Patients can have stem cells taken out and then grown in a laboratory for weeks, producing millions more cells.

Bradley believes those countries are 10 years ahead of the United States on stem cell therapy. He has referred some patients (not Steelers, following team policy) to a clinic in the Cayman Islands he considers safe.

Athletes who go outside the U.S. for the therapy generally do so quietly. News reports said in 2011 that NFL quarterback Peyton Manning traveled to Germany for the therapy while recovering from neck surgery. Manning hasn't spoken publicly about the issue. Tennis star Rafael Nadal had stem cell treatment in 2014 to help his ailing back but hasn't endorsed the procedure.

Pro teams in the United States can't stop players dealing with injuries from seeking as many opinions as they want. However, teams don't automatically endorse treatments.

"If the player does something we're not recommending, it's more or less on them," Steelers general manager Kevin Colbert said. "We firmly recommend that you stay here."

The doctor who treated Nitkowski, Dr. Joseph Purita, gave stem cell therapy to pitcher Bartolo Colon in the Dominican Republic in 2010. Colon later tested positive for testosterone and was suspended 50 games. Purita denied giving Colon any performance-enhancing drugs but the circumstances only discouraged teams.

In some ways, research on stem cells remains in the embryonic stages.

Obi Wan Or Darth Vader?

"There is so much hype, so much marketing," said Dr. Matthew Matava, president of the NFL's Physician Society. "The market kind of outpaces the research."

Dr. Freddie Fu, head physician for University of Pittsburgh athletics, is even more suspicious. Fu has had stem cells in his lab for 15 years, but he won't use them on humans because of uncertainty, including unpredictability of what manipulated cells will do once introduced to a new area.

"You can have one cell be Obi Wan Kenobi, the other is Darth Vader," Fu said.
"You're not sure which way it's going to go."

Fu is all for progress. Yet for all of sports medicine's advances over the last 50 years, he believes there are some laws of nature we can't escape.

"If you get hurt, it's going to take time to heal," Fu said. "It's a part of life. There's always a way to think that maybe something is better, but it might not be."

Quiz

1 How does the section "Going Outside The U.S. For Treatment" develop the central ideas of the article?

- (A) It compares the choices of professional athletes to the choices of athletes outside the U.S.
- (B) It explains why countries outside the U.S. have a more advanced perspective on stem cell therapy.
- (C) It provides several different perspectives on the safety of stem cell therapy outside the U.S.
- (D) It gives evidence for the argument that stem cell therapy is more popular outside the U.S.

2 Which of the following statements best describe the two main ideas of the article?

1. *Professional sports teams are trying to forbid players from seeking stem cell therapy.*
2. *Though much research has been conducted, many questions remain about stem cell therapy.*
3. *Professional athletes have utilized stem cell therapy but hesitate to endorse it due to unknown elements.*
4. *Scientists recommend seeking stem cell treatments outside of the U.S. due to stronger therapies offered in other countries.*

- (A) 1 and 2
- (B) 2 and 3
- (C) 3 and 4
- (D) 2 and 4

- 3 Which of the following is the correct definition of the word "advocate" in the below sentence?

While not an advocate for stem cell therapy, as one of the few athletes who have gone public on the treatment, he understands why active players approach him about it.

- (A) an act of bravery and goodwill
 - (B) an act that harms or weakens something else
 - (C) a person who is on an opposing side in a game or contest
 - (D) a person who speaks or writes in support of a person or cause
- 4 What is the BEST definition of the word "anecdotal" as used in the sentence below?

But nearly all evidence is anecdotal — no absolute lab results show it works.

- (A) based on experiences, not facts
- (B) based on data, not hypotheses
- (C) based on arguments, not truth
- (D) based on judgments, not feelings