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I'm Shane Shapiro, an Assistant Professor of Orthopedic Surgery at Mayo Clinic in Florida, and I lead our orthopedic regenerative medicine efforts on the Florida campus. I'm pleased to report the results of a clinical trial that we've recently conducted to test the effect of stem cells to treat knee pain from osteoarthritis. We conducted this trial alongside FDA monitoring to determine if the procedure was safe and viable to perform for patients who have knee arthritis. We found that the procedure produces a viable product which has stem cells in it and can be used to inject back into the patient's knees on the same day that they're harvested.

This is very important because it forms the basis for our future clinical trials, as we try to regrow cartilage for knees that have osteoarthritis from stem cells. Our future studies will involve expanding the number of cells that we are able to administer patients at any one time and looking to see if we have MRI evidence of cartilage regrowth. We designed this study as a very early test of safety and feasibility. This is a procedure that we helped to develop over the last couple of years that has really expanded in the last couple of years, and is being used quite frequently now. And we wanted to see whether or not it works to help treat knee pain from osteoarthritis.

Stem cells are the building blocks of many types of adult human tissues. They can go on to form things like bone, ligament, cartilage, things that make up the joints in our body. The significance is that it's the first study to be conducted that is randomized and placebo controlled, in that the patients did not know whether or not they were receiving stem cells or a placebo control. These stem cells have never been studied in that rigorous of a scientific fashion.

Well, this is just the tip of the iceberg. We just proved that we are able to perform this procedure and that it can work to relieve pain. What ultimately we want to do is learn to regrow cartilage in a manner so that we can actually cure the osteoarthritis.