

Complete Transcript of Newer Orthopedic Modalities and Therapies

[00:00:03] Welcome to SMA's Women's and Children's Health podcast, a publication of the Southern Medical Association. This podcast explores all aspects of care of the female patient across her lifespan. It will also explore the special and unique care of children and adolescents.

[00:00:23] Welcome to the Southern Medical Association's Women's and Children's Health Podcast. I'm Lee Boughton. Today we are pleased to have Dr. David Joyner on the line. Dr. Joyner serves as senior vice president and executive director of the Andrews Institute. Dr. Joyner is a board-certified orthopedic surgeon with a sports medicine emphasis. Dr. Joyner is also a faculty member of SMA's 2019 Focus on Women's Health Conference in Kiawah, South Carolina. Welcome Dr. Joyner.

[00:00:52] Thank you very much. I'm very happy to be here.

[00:00:56] Thank you for joining us today to discuss one of the topics you will cover at this year's meeting "Newer Orthopedic Modalities and Therapies.

[00:01:04] So let's discuss blood flow restriction. What is BFR therapy and what are potential benefits to patients and athletes?

[00:01:13] Blood flow restriction. Also known as B. F. R. Has been around for a number of years in relationship to building muscle strength and in accentuating conditioning exercises such as strength training exercises. And what the principle behind that is that it's been known that blood flow restriction you really apply, in a sense, blood pressure cuffs to your upper arms and maybe upper thighs if it's the lower extremity you're exercising. And by the restricting that blood flow you get a much more - in a sense - stimulated result. Of your strength training and doing less reps and the higher result. And what happens is that we've seen changes in lactic acid nor epinephrine increases in growth hormone and this has helped build muscle strength beyond what you'd do without the BFR.

[00:02:17] So relative to that though, one of our physicians' Dr. Adam Anz, thought what if, I wonder if there is a systemic effect with high intensity exercise. And wondered if exercise up regulates cell mobilization in humans which was shown to happen in rats. And that BFR initiates a sympathetic response. But what if we did an experiment to find out if there was a mobilization of stem cells, if you will, and it's interesting - with exertion is the key. In a study that was done at the Andrews institute, it did demonstrate that there is an uptick shortly after this high intensity exercise with blood flow restriction in your systemic stem cell reception.

[00:03:09] How can biologics potentially help graft healing and ACL reconstruction surgery?

[00:03:17] Another area of interest in biologics or stem cells, if you will, have a lot of interest not just in oncology etc, but there is a high level of interest in the orthopedic surgical world. And one of the theorems was the wonder if a controlled environment in augmentation of ACL reconstruction or anterior cruciate ligament reconstruction which is an extremely common injury in athletics or anyone in an active population such as skiers etc.. And the theorem was, you know if we augmented the reconstruction with the graph that you actually harvest from the patellar tendon of the individual having the ACL

reconstruction and then that becomes the new ACL, if you will. If we wrap that graft in an amnion collagen Matrix Wrap before it was reinserted back into that patient and then injected bone marrow donor aspirate concentrated stem cells would that affect the rapidity and the strength of the graft, and would that augment that and increase that. It's very interesting concept.

[00:04:41] And I think people would want to come to the conference to find out what the results are looking like with that.

[00:04:50] What interventions are being studied to potentially assist in articular cartilage repair reconstitution?

[00:05:00] So another thought with the use of biologics or stem cells is can we utilize principles that have been utilized in the hematology and oncology world and apply that thought to sports medicine. I.e. to pharmaceutically mobilized cells which is done when you do, in a sense, a marrow transplant. And the same practice of stem cell collection you know, has been applied and we're in a Phase 3 study now with pharmaceutically mobilized cells. And then the cells are harvested by apheresis. And then those cells are stored over liquid nitrogen and with about an 80 percent preservation rate - what we have done is in a surgical procedure with utilizing a micro fracture technique and repeated injections of those pharmaceutically mobilized stem cells to see if we can cause the regeneration, if you will, of Hyaline cartilage - which is the cartilage at lines the end of the bone. Which is the cartilage that goes away when you have degenerative joint disease or degenerative arthritis, as we say. We know that we've been able to generate scar cartilage - quote unquote - by doing those microfractures but its make up in the collagen Matrix is not the same as what you were born with. It's not as good. So we want to see if we can actually cause to come back - what you once had.

[00:06:43] Why is this topic important to talk about at Focus on Women's Health?

[00:06:50] I think the whole idea in, and particularly worth orthopedic medicine, Dr. Andrews, per Dr. Andrews statements, he believes that the arthroscope was probably in our lifetime one of the major inventions or interventions in the world of sports and reconstructive or sports like surgery and you know lots of people have sports like surgery that aren't professional athletes. It applies to the whole general population of females as well as males as well as you know young people. And the use of these biologics look very promising. And the question is we need to study them and decide on where they can be applied and where can they do the most good if they do really work. So, I think coming to this conference and finding out where the newer thoughts are and what are some of the results - early results - that are coming in with doing, you know, subjecting these things to the Scientific Method. To me it would be a very interesting thing to come away, come away with after that conference.

[00:08:02] Thank you for joining us again today. Dr. Joyner I'm looking forward to learning more about this topic at Focus on Women's Health in July.

[00:08:10] Thank you very much I'm very much looking forward to being a part of this conference and not just learning about what I might be able in some small way to contribute but also to all the other great and interesting topics that are going to be discussed while we're there. So, I thank you very much for giving me the opportunity to be there.

[00:08:36] If you're interested in learning more, please visit our website – sma.org/whpodcast. The meeting is held at Kiawah Golf Resort in beautiful, Kiawah, South Carolina on July 15th through 18th.