

**HSS Teams Up With NFL** Researchers at Hospital for Special Surgery will be giving their all when they begin using their new \$100,000 grant from the National Football League (NFL) Charities. The team will be researching the use of platelet-rich plasma (PRP) and stem cells as treatments for tendon injury and degeneration. For years, PRP has been used to improve healing in various sports injuries, but there is little evidence of its efficacy. The hope is that this research would lead to the development of an effective therapeutic strategy for tendinopathy that may allow NFL players to return to competition more quickly. The researchers also say that it may lead to a decrease in complications related to tendinosis, such as tendon ruptures. The grant money will be used to investigate how degenerated tendons respond to PRP and bone marrow-derived stem cells as well as if these two treatments will be synergistic if they are combined. Researchers will test these treatments in a preclinical model of tendon injury and degeneration. Among the goals of the research are to examine the structural and mechanical properties of the treated tendon tissue and to see how it responds to PRP and stem cells.

**Cole's New Cartilage Is a Single-Stage Knee Repair!** Brian Cole, M.D., M.B.A. is a professor in the Department of Orthopedics at Rush University Medical Center and section head at the Cartilage Restoration Center at Rush. Dr. Cole has recently performed five surgeries using BioCartilage, a desiccated micronized cartilage extracellular matrix tissue provided by Arthrex. He tells *OTW*, "As a field we are in need of a single-stage cartilage repair procedure for chondral defects of the knee. To date, we have used microfracture, but that has shown mixed results. We


have also used autologous chondrocyte implantation, a technique that requires two separate procedures and is relatively expensive. Other current options do not take advantage of readily available autologous biological sources of regeneration through the use of platelet-rich plasma (PRP) and/or microfracture. BioCartilage is a unique new product containing micronized allogeneic cartilage; it is implanted with the addition of platelet rich plasma (PRP) in combination with atraumatically performed microfracture of the defect. The potentiation benefits come through access to the mesenchymal cells present in the subchondral bone in combination with a regeneration-friendly scaffold (BioCartilage) and the pro-anabolic and anti-catabolic effects of PRP."

Describing his experience with the surgery, Dr. Cole tells *OTW*, "In pursuing this procedure, we first needed to determine the best surgical technique. During the process, I learned that we should place the mixture of BioCartilage and PRP into the defect and then place the fibrin glue on top rather than at the base of the defect. Allowing the fibrin to set for 5 to 7 minutes leads to a stable scaffold that is very difficult to dislodge through range of motion. Also, the mixture is currently a 1:1 ratio of collagen scaffold and PRP and if it dries out a bit, the handling properties can be improved by adding a small amount of additional PRP."

"My colleagues and I are actively applying for grant support to perform a prospective clinical trial of patients receiving BioCartilage for the treatment of International Cartilage Repair Society (ICRS) grade 3 articular cartilage defects of the femoral condyle, trochlear groove, patella or tibia that measure between 1-5 cm<sup>2</sup>. While eventually this

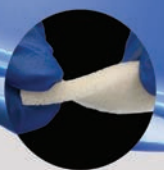
study will be a prospective, longitudinal, non-randomized study of up to 40 human subjects, at present we are adding to the in vivo literature by performing a pivotal equine study beginning October 1, 2012 in collaboration with Dr. Lisa Fortier from Cornell Veterinary School and Jimi Cook, D.V.M., Ph.D. from University of Missouri Veterinary School. We will create two defects in five to six horses and compare this to microfracture alone. This will also be performed entirely arthroscopically."

"As for the multicenter clinical study, we will be using marrow stimulation as a historical control. The protocol is written and we have applied for a grant to support this initiative. We need to move slowly to assure that we are making a difference for our patients and continue to perform sound post-market research with clinical follow up." ♦

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