

Stanford



Jason L. Drago, MD

Associate Professor of Orthopaedic Surgery at the Stanford University Medical Center

 NIH Biosketch available Online

 Curriculum Vitae available Online

CLINICAL OFFICES

- **Stanford Sports Medicine Clinic**

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ACADEMIC CONTACT INFORMATION

- **Academic Administrative Contact**

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Bio

CLINICAL FOCUS

- Sports Medicine
- Orthopaedic Surgery

ACADEMIC APPOINTMENTS

- Associate Professor - Med Center Line, Orthopaedic Surgery
- Member, Bio-X

ADMINISTRATIVE APPOINTMENTS

- Team Physician, Stanford Athletic Department, (2005- present)
- Head, Team Physician, Stanford Football Program, (2007- present)

HONORS AND AWARDS

- Junior Alpha Omega Alpha Honor Society, University of Arizona College of Medicine (1996)
- McGraw-Hill Award-Top Medical Student in the basic sciences, University of Arizona College of Medicine (1996)
- University of Arizona Foundation Top Medical Student at Graduation, University of Arizona College of Medicine (1998)
- Bernard Revsin Scholarship Award for Academic Excellence, University of Arizona College of Medicine (1998)
- Zimmer Research Award, American Orthopaedic Association (2001)

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PROFESSIONAL EDUCATION

- Residency: UCLA Orthopedic Residency (2004) CA
- Internship: UCLA Dept of Surgery (1999) CA
- Medical Education: University of Arizona College of Medicine Office of the Registrar (1998) AZ
- Fellowship: Steadman Hawkins Sports Clinic Fellowship Training (2005) CO

- Board Certification: Sports Medicine, American Board of Orthopaedic Surgery (2010)

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COMMUNITY AND INTERNATIONAL WORK

- North American Representative for Exchange of Surgical Techniques with Europe

LINKS

- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

TISSUE ENGINEERING OF ARTICULAR (JOINT) CARTILAGE

Current Tissue Engineering studies will focus on 3 main areas:

1. The ability to harvest stem cells from a patient, induce them into cartilage cells, and place them back into the patient during the same surgical procedure. Current surgical techniques require 1 surgery to harvest the cells, 2-3 weeks of laboratory processing, and another surgery to implant the cells. These techniques would revolutionize the use of stem cells in Orthopaedic Surgery.
2. Reconfigure the biologic matrices and processing to allow resurfacing of entire joint surfaces. This process would make current metal joint replacements obsolete and would allow the treatment of arthritis with the patients own stem cells.
3. Decipher the genetic induction code and ideal matrix for meniscal cartilage engineering. This would allow the production of meniscal cartilage grafts from the patients own stem cells.

ANTERIOR CRUCIATE LIGAMENT (ACL) STUDIES

1. Female ACL tears-The incidence of anterior cruciate ligament (ACL) rupture in female athletes is two to eight times that in males. Although many anatomical and biomechanical gender differences have been described, evidence is beginning to accumulate that female hormones are responsible for alterations in ligament laxity and strength. Relaxin is a peptide hormone found in the sera of pregnant and non-pregnant females, yet is not detectable in male serum. This hormone is thought to be responsible for connective tissue remodeling secondary to its collagenolytic effects.

We have identified relaxin receptors on the human female ACL. This supports the conclusion that relaxin, a hormone found in some non-pregnant females, may be responsible for the high incidence of ACL rupture in female athletes. We have also shown that the administration of relaxin to female guinea pigs results in ACL laxity and weakness. Recently, we have shown that relaxin levels in female intercollegiate athletes are higher in athletes who experience an ACL injury. We are currently developing a blocking antibody to administer to susceptible female athletes to hopefully decrease the ACL injury rate.

2. ACL tears and Arthritis-We are currently evaluating the body's response to ACL injury, which may damage the articular cartilage in certain athletes. This may explain why certain athletes with ACL injury develop degenerative changes and early arthritis. Identification of cartilage injury patterns will help initiate early treatment intervention protocols to minimize the development of early arthritis in athletes.

3. New Surgical Techniques- We have created a new technique to perform revision (already had an ACL reconstruction, now it is torn again) ACL reconstruction during 1 surgical procedure. Previously, this procedure often required 2 surgeries: 1 to bone graft the previous bone defects and a second surgery 4 months later to reconstruct the ACL. This new procedure would save rehabilitation time and money and would mean less surgery for the patient. Final confirmatory animal studies are currently being performed.
4. Genetics- we are currently exploring possible genetic links to ACL injury using genome wide gene correlations of injuries in patient populations greater than 110,000.
5. ACL injury prevention- We have developed, and are currently testing, new methods for ACL prevention including: 1) New training programs using unstable surfaces, 2) Electronic Smartbraces, which sense the athletes movement patterns and give them feedback via vibration to stay away from dangerous positions.

PLATELET RICH PLASMA (PRP)

This procedure involves concentrating growth factors from the patient's blood and injecting them at the site of injury to accelerate healing. We are currently investigating the use of PRP for tears to the patellar and quadriceps tendon, using a randomized controlled trial. We are also working on new formulations of PRP in the laboratory to improve clinical results.

CLINICAL TRIALS

- Bone Marrow Derived Stem Cells for the Treatment of Rotator Cuff Tears, Recruiting
- Characterizing Knee Pain and Response to Surgery Using Local Biomarkers, Recruiting
- Microfracture Versus Adipose Derived Stem Cells for the Treatment of Articular Cartilage Defects, Recruiting
- Subchondroplasty® Knee RCT, Recruiting
- The Effect of Adipose-Derived Stem Cells for Knee Osteoarthritis, Recruiting
- Effects of Unloader Bracing in Clinical Outcome and Cartilage Physiology Following Microfracture of Chondral Defects, Not Recruiting

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Publications

PUBLICATIONS

- **Single-stage revision anterior cruciate ligament reconstruction using bone grafting for posterior or widening tibial tunnels restores stability of the knee and improves clinical outcomes.** *Knee surgery, sports traumatology, arthroscopy : official journal of the ESSKA*
Dragoo, J. L., Kalisvaart, M., Smith, K. M., Pappas, G., Golish, R.
2019
- **Quantitation of progenitor cell populations and growth factors after bone marrow aspirate concentration.** *Journal of translational medicine*
Schafer, R., DeBaun, M. R., Fleck, E., Centeno, C. J., Kraft, D., Leibacher, J., Bieback, K., Seifried, E., Dragoo, J. L.
2019; 17 (1): 115
- **Effect of Oral Contraceptives on Soft Tissue Injury Risk, Soft Tissue Laxity, and Muscle Strength: A Systematic Review of the Literature** *ORTHOPAEDIC JOURNAL OF SPORTS MEDICINE*
Konopka, J. A., Hsue, L. J., Dragoo, J. L.
2019; 7 (3): 2325967119831061
- **Editorial Commentary: The Use of Allogenic Cells in Regenerative Medicine: Are Amniotic, Umbilical, and Other Allogenic Cell Sources Safe?** *Arthroscopy : the journal of arthroscopic & related surgery : official publication of the Arthroscopy Association of North America and the International Arthroscopy Association*
Dragoo, J. L.
2019; 35 (2): 594-95
- **Platelet-Rich Plasma.** *Clinics in sports medicine*
Le, A. D., Enweze, L., DeBaun, M. R., Dragoo, J. L.

