uals with a labral tear. Diagnostic accuracy of the clinical test was assessed by calculating sensitivity, specificity, and likelihood ratios.

Results: As hypothesized clinical tests had better than moderate agreement with kappa values as follows: Flexion-internal rotation impingement test κ =.69, log roll test κ =.53, greater trochanteric tenderness κ =.72 and FABER test κ =. 45. Diagnostic accuracy of clinical tests in diagnosing individuals with a labral tear was as follows: Flexion-internal rotation impingement test sensitivity =.75, specificity =.07 and a positive likelihood ratio = .81; FABER sensitivity =.65, specificity =.19 and positive likelihood ratio =.80; Flexion with external rotation sensitivity =.29, specificity =.67 and positive likelihood ratio = .89.

Conclusions: The flexion-internal rotation impingement test, log roll test and assessment for greater trochanteric tenderness seem to be reliable clinical tests. The reliability of the FABER test seems to less than the other clinical examination tests. While the flexion-internal rotation and FABER had very high sensitivity, the specificity was low. Contrary to this the flexion-external rotation test had low sensitivity but high specificity. Further studies are needed to examine the diagnostic accuracy of these tests when exam findings are clustered together. In conclusion, the results of this study will allow the clinical examination for an individual with a potential labral tear to be more meaningfully interpreted.

Outcomes Following Hip Arthroscopy With Microfracture (SS-21). *Marc J. Philippon, MD, Karen Briggs, MPH, David Kuppersmith, MD, Sophia Hines, BS, R. Brian Maxwell, MD*

Summary: The purpose of this study was to document 1 year outcomes in patients who underwent hip arthroscopy with microfracture. Microfracture technique to treat full thickness chondral defects in the hip can increase level of function, result in high patient satisfaction, and reduce symptoms as shown by the Harris Hip Score, non-arthritic hip score, and the hip outcome sports scale. Younger patients had better outcomes according to the non-arthritic hip score and showed a significant change in level of function.

Purpose: Indications for microfracture in the hip include full-thickness loss of articular cartilage in the weight-bearing region between the femur and acetabulum. The purpose of this study was to document 1 year outcomes in patients who underwent hip arthroscopy with microfracture.

Methods: Between 3/2005 and 6/2005, 19 hips underwent hip arthroscopy with microfracture. Average age at time of surgery was 47 years (range: 20-73).

Surgical data and patient completed questionnaires were collected. The hip outcome score (HOS) sports scale, Harris Hip Score, and non-arthritic hip score were used to compare symptoms and level of function. Patient satisfaction was obtained (1= unsatisfied ; 10=satisfied).

Results: Average pre-operative non-arthritic hip score was 64 (range: 14-81) and 77 post-operative (range: 53-95; p=0.010). The average pre-operative Harris Hip Score for all patients was 58 (range: 18-77) and post operatively 74 (range: 31-96; p=0.03). The average pre-operative HOS sports score was 44 (range: 3-61) and 62 post-operative (range: 0-91; p=0.039). Eleven patients had microfracture solely on the acetabulum, 6 only the femoral head, and 2 patients had microfracture on both acetabulum and femoral head. Patients with microfracture on the femoral head showed better improvement in the Harris Hip Score (22 points) when compared to patients who underwent acetabular microfracture (11 points). Patient satisfaction was 8.6 out of 10 (range: 2-10). In patients less than 40 years old, the non-arthritic hip score was higher (86) than those patients 40 years or greater (72) (p=0.038).

Conclusions: Microfracture technique to treat full thickness chondral defects in the hip can increase level of function, result in high patient satisfaction, and reduce symptoms as shown by the Harris Hip Score, non-arthritic hip score, and the hip outcome sports scale. Younger patients had better outcomes according to the non-arthritic hip score and showed a significant change in level of function.

Does Slower Rehabilitation After Arthroscopic Rotator Cuff Repair Lead to Stiffness? (SS-22). *Kenneth J. Accousti, MD, Bradford Parsons, MD, James Gladstone, MD, Raymond Klug, MD, Evan Flatow, MD*

Summary: Early passive range of motion (PROM) has been advocated following open rotator cuff repair to prevent stiffness. We sought to examine the effect of a conservative post-operative regimen. Six weeks of sling immobilization after arthroscopic rotator cuff repair did not result in stiffness at one year follow-up. Additionally, patients with perioperative stiffness trended toward better tendon healing rates.

Purpose: Early passive range of motion (PROM) has been advocated following open rotator cuff repair to prevent stiffness. Because of concern over re-tear rates after arthroscopic repair, many authors have advocated slower rehabilitation. We sought to examine the effect of

a conservative post-operative regimen, sling immobilization for 6 weeks, on ROM following arthroscopic cuff repair.

Methods: 56 patients with full-thickness rotator cuff tears were prospectively followed for 1 year. Patients with preoperative stiffness were excluded. ROM was assessed preoperatively and at 2, 6, 12, 24, and 52 weeks postoperatively. Pre- and postoperative ASES and Constant scores were recorded. 43 patients (77%) had an MRI at one year postoperatively to assess repair integrity.

Results: During the first 6 weeks postoperatively 43 patients (77%) had "good" PROM (elevation $> 100°$ and external rotation (ER) $>30°$), while 13 (23%) were "stiff" (elevation $< 100°$ and/or ER $<30°$). No patients were stiff at one year. 44% of the repairs were intact at 1 year by MRI. There was a trend for better healing in the "stiff" group: 70% of repairs were intact on MRI, compared to 38% in the "good ROM" group ($p=0.13$). There was no difference in ASES, Constant scores, or ROM at 1 year between groups.

Conclusions: Six weeks of immobilization after arthroscopic rotator cuff repair does not appear to result in long-term stiffness. Additionally, patients with perioperative stiffness trended toward better tendon healing. Early PROM is not necessary to avoid stiffness after arthroscopic rotator cuff repair, and may have a detrimental effect on tendon healing.

The Effect of Rehabilitation on Cuff Integrity and Range of Motion Following Arthroscopic Rotator Cuff Repair: A Prospective, Randomized Study of a Standard vs. Decelerated Rehabilitation Protocol (SS-23). *Allen Deutsch, MD, David Guelich, MD, George Mundanthanam, MD, Christopher Govea, MD, John Labis, MD*

Summary: A prospective, randomized study of 70 patients determined the effect of 2 rehabilitation protocols on repair integrity and motion following arthroscopic cuff repair. The only difference between protocols was that passive forward elevation began on post-op day #7 in the Standard group and after 4 weeks in the Decelerated group. Patients underwent ultrasound at 1, 2, 3, and 6 months. For post-op ROM, no significant difference was found between groups. At 6 months, 81% of cuffs were intact for the Standard group vs. 91% for the Decelerated group. ($p>0.05$) The decelerated rehabilitation protocol resulted in fewer re-tears without postoperative stiffness.

Purpose: The effects of rehabilitation on repair integrity following arthroscopic cuff repair have been poorly studied. A prospective, randomized study was carried out in order to determine the effect of 2 different rehabilitation protocols on structural integrity and range of motion (ROM) following arthroscopic cuff repair.

Methods: Seventy patients undergoing arthroscopic rotator cuff repair were randomized to either a Standard (37 patients) or Decelerated (33 patients) rehabilitation protocol. The average age (57 years; range: 29-78 years) and intraoperative tear size were similar for both groups. All repairs were performed by the senior author with a single row of metal anchors with simple sutures. All patients were immobilized in an ultrasling for 6 weeks. For both groups, pendulum exercises were initiated on post-op day #1, supine passive external rotation stretches on post-op day #7, and passive internal rotation stretches at 4 weeks. The only difference between groups was that supine passive forward elevation exercises were started on post-op day #7 in the Standard group and after 4 weeks in the Decelerated group. The strengthening phase was identical for both groups. All patients underwent post-op range of motion measurement and ultrasonography of the shoulder at 1 month, 2 months, 3 months, and 6 months. Dynamic images were reviewed by the senior author and 2 blinded musculoskeletal radiologists. Interobserver reliability was calculated. Chi-square and Student t test were used to determine whether a significant difference could be found between groups with respect to the number of re-tears and postoperative ROM.

Results: For postoperative ROM, no significant difference was found between groups at any of the time intervals. Interobserver reliability for the ultrasound readings was good to excellent with a Kappa value of 0.834. At 6 months, 81% (30/37) of cuffs were intact for the Standard group vs. 91% (30/33) for the Decelerated group. ($p>0.05$) For both groups, 35% (8/23) of large to massive tears were re-torn vs. 4% (2/47) of small to medium tears. ($p<0.05$) There was a trend for re-tears to occur in older patients: re-tear, 62y vs. intact, 56y. ($p=0.11$).

Conclusions: A statistically significant difference was not found between the re-tear rates in the Standard and Decelerated groups (19% vs. 9%); however this difference may be clinically relevant. This study supports the use of a decelerated rehabilitation protocol following arthroscopic cuff repair because it resulted in fewer re-tears and was not associated with postoperative stiffness.

The Operative Management of Rotator Cuff Disease Results in Superior Pain Relief and Functional Improvement Compared to Non-operative Treatment (SS-24). *Theodore A. Blaine, MD, John-Erik Bell, MD, Jessica Lee, MD, Jonathan Packer, MD, Sara Edwards,*