

A Multicenter Study Investigating Factors that Influence Initiation of Return to Sport Functional Testing Following ACL Reconstruction

Seth L. Sherman, MD, Emil Thyssen, BS, Gregory Cvetanovich, MD, William Zuke, BA, Beatrice Go, BS, Jo Hannafin, MD, Brian Forsythe, MD

University of Missouri School of Medicine, Missouri Orthopaedic Institute, Columbia, MO, USA
Rush University Medical Center, Midwest Orthopaedics at Rush, Chicago, IL, USA



PURPOSE:

Despite advances in surgical technique and rehabilitation following anterior cruciate ligament (ACL) reconstruction, re-injury rates after return to play (RTP) are high. There remains controversy over the most effective criteria utilized to initiate RTP functional testing following ACL reconstruction. The purpose of this study is to investigate factors that influence provider decision to initiate RTP functional testing.

METHODS:

A 38 point electronic survey was vetted by a multi-institutional panel of expert allied health professionals and distributed to academically affiliated orthopaedic surgeons and related health providers asking participants to evaluate the importance of functional tests and clinical outcomes in determining RTP. Survey results were analyzed to assess whether the surgeons and other healthcare professionals had distinct responses. RTP protocols were also requested from these providers in order to compare the processes between multiple centers. The results of the survey were analyzed with chi square or fisher tests to determine if the healthcare professionals had different responses. Statistics were also used to compare the content of the RTP protocols that were submitted by the healthcare professionals with the factors that survey respondents deemed important.

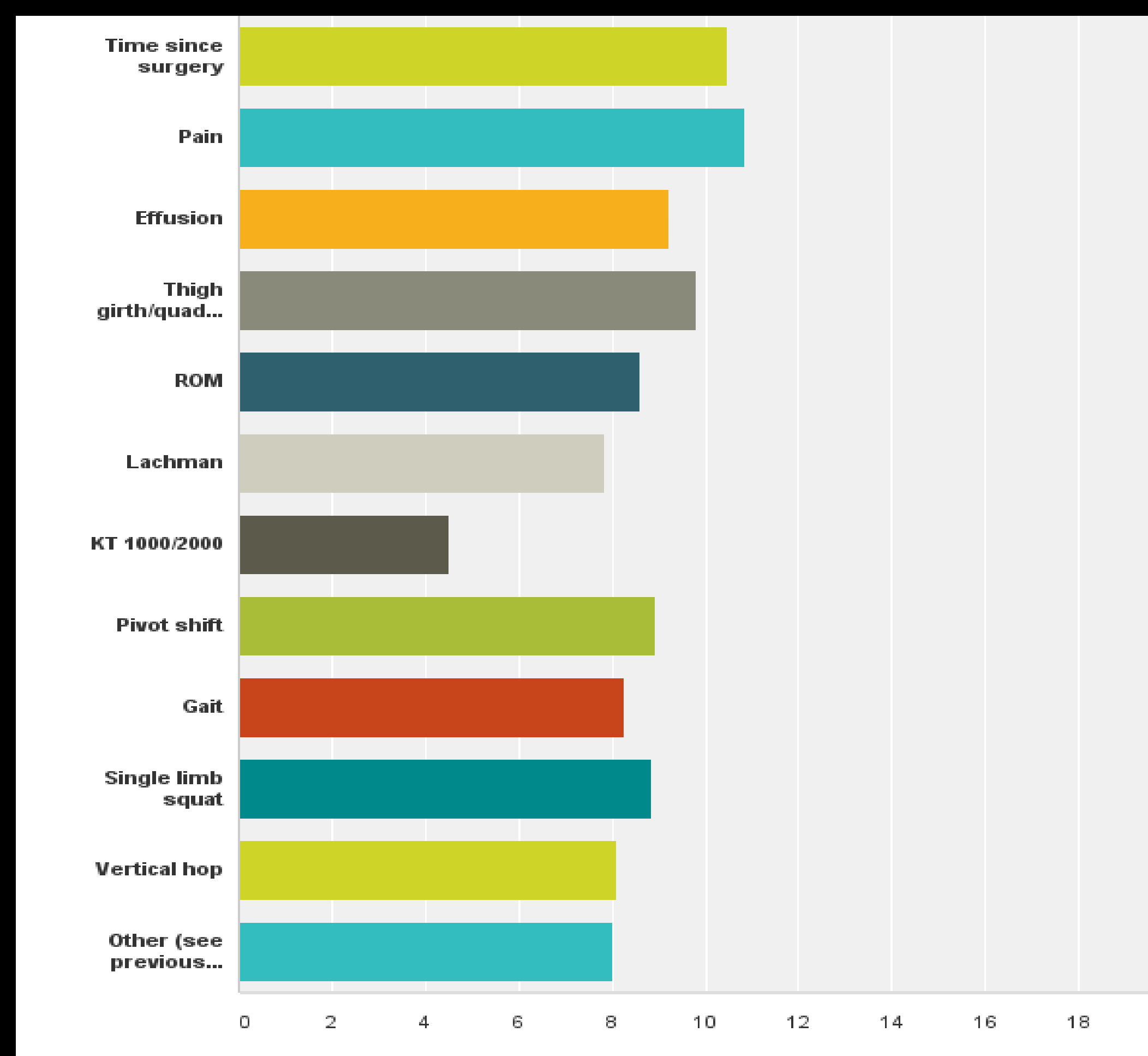


Figure 1. Most important clinical factors for RTP decision making.

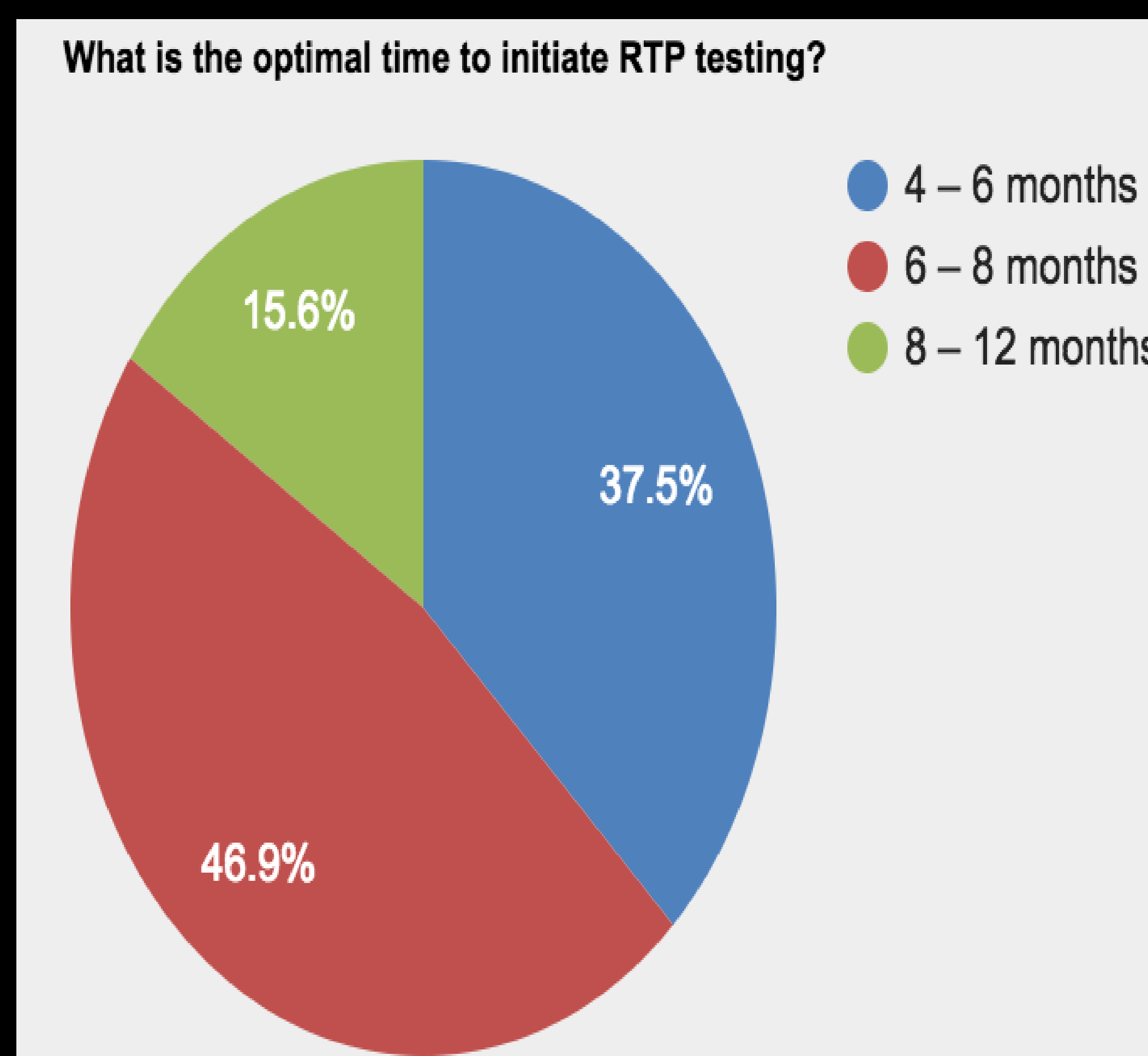


Figure 2. Optimal time to initiate RTP testing among surgeons differed significantly ($p < 0.01$).

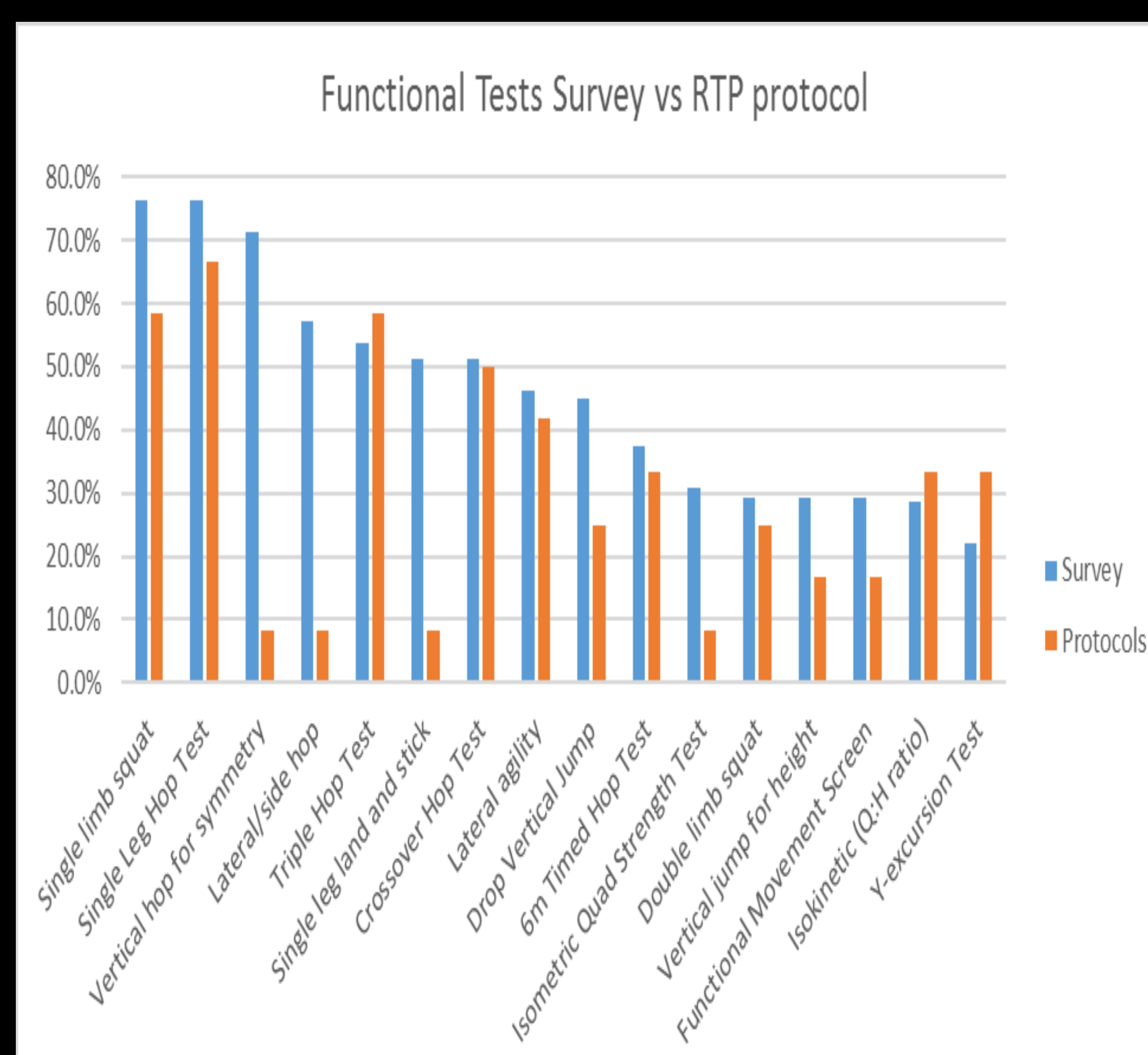


Figure 3. Comparison of functional test importance and presence in RTP protocols.

RESULTS:

The total number of survey respondents was 48, including 35 orthopaedic surgeons and 13 athletic trainers and physical therapists. Of these respondents, 12 provided RTP criteria from their center. Respondents ranked the top 5 variables affecting RTP decision as (1-5): presence of pain, time since surgery, thigh girth/quad strength, presence of effusion, and pivot shift (Figure 1). The optimal time after surgery to initiate RTP differed among surgeons and was determined to be 6-8 months (47%), 4-6 months (38%) and 8-12 months (16%) ($p < 0.01$) (Figure 2). The majority of respondents agreed on 7 functional tests to be “very important” for RTP decisions. These tests were compared to the percentage of protocols that used the tests (Figure 3).

CONCLUSION:

While there remains a general lack of consensus regarding the initiation of RTP testing following ACL reconstruction, this survey has identified several areas of relative concordance. Timing of RTP testing and functional thresholds for initiating RTP remain controversial. Future work is required to prospectively validate these criteria to determine their correlation with athlete performance on RTP functional testing protocols and during RTP.