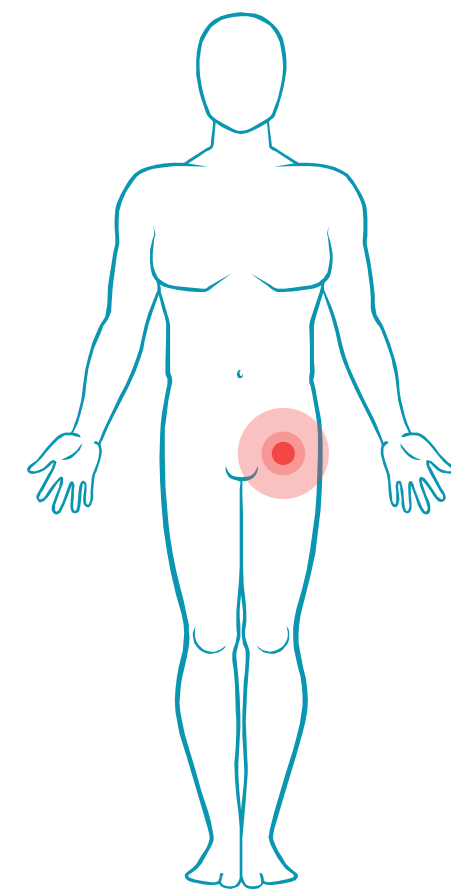


# Investigating open surgical and arthroscopic surgical treatments and non surgical alternatives for femoral acetabular impingement and torn acetabular labrum

Kathryn Givvin  
Thousand Oaks High School

## Introduction

The acetabular labrum is a ring of fibrous cartilage that lines the rim of the acetabulum, or hip socket. Patients with labral tears may have mechanical symptoms including restricted range of motion, groin pain, and dynamic instability. An abnormality of the hip structure that commonly co-occurs with labral tears is a femoral acetabular impingement (FAI). FAI is characterized by an abnormal morphological relationship between the femoral head and acetabular cavity, resulting in abutment of the femur against the acetabulum during flexural motion and internal rotations.



## Possible Treatments

The initial treatment for labral tears and FAI is normally conservative, including physical therapy, steroids, and activity changes (Figure 1). However, more advanced cases require surgery (Figure 2 & 3).



Figure 1. Non surgical treatment.



Figure 2. Open Surgery

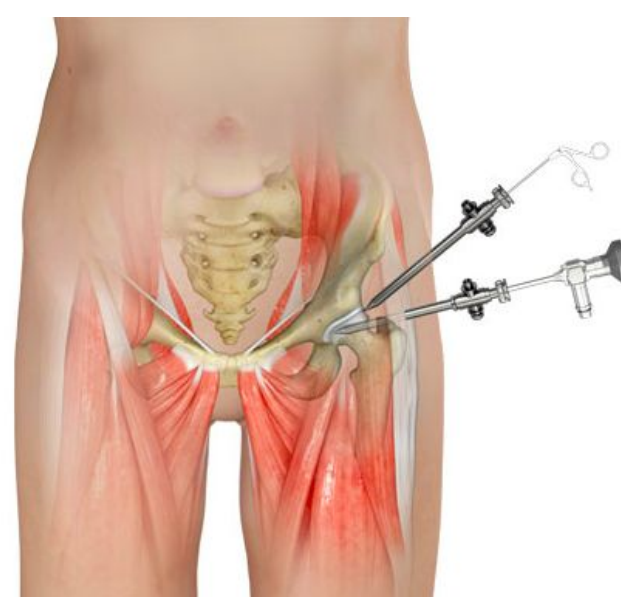


Figure 3. Arthroscopic surgery

## Research Questions

Question 1: What are the comparative benefits of different treatment options for femoral acetabular impingement and torn acetabular labrum, given varying needs of the patient (e.g., post-treatment activity levels)?

Question 2: What is the process by which physicians help their patients choose among treatment options?

## Hypotheses

Hypothesis 1: Treatments vary in their desirability depending on varying patient needs (e.g., post-treatment activity levels). Arthroscopic surgery is most desirable for athletes. Non-surgical treatment is an option for patients with low anticipated levels of post-treatment activity.

Hypothesis 2: Physicians actively help patients choose a procedure. Decisions are informed by a number of things including existing literature, prior experience, their surgical expertise, the opinions of other medical specialists (e.g., physical therapists), and the needs and desires of the patient.

## Method

### Participants

One orthopedic surgeon and twelve physical therapists (PTs) participated in the study. Participants were recruited by letter. Letters were sent to all orthopedic surgeons in the cities of Thousand Oaks and Westlake Village registered on healthgrades.com, after excluding those with specialties in spine, hand, pediatrics, plastics, and joint replacement. In all, twenty-four orthopedic surgeons were contacted. Seventy-five letters were sent to physical therapists in the cities of Thousand Oaks and Westlake Village. They were sent to the first 75 individuals to appear on a search of healthgrades.com.

### Procedure

An interview was conducted with the one orthopedic surgeon who responded to the invitation to participate. The interview consisted of the following questions: (1) How many patients have you seen with a labral tear and FAI within the last year? (2) What is your preferred course of treatment? (3) Are you usually the person with the final say about whether surgery is necessary?

PTs completed a survey that asked things such as their history of work with patients with FAI and acetabular labral tear; the frequency in which they have seen non surgical, open surgery, and arthroscopic surgery; their predictions regarding recovery time; and the benefits and drawbacks of each treatment option.

## Results: Orthopedic Surgeon

In the past few years he had seen several hundred per year but operated on a very small percentage of them because it is uncommon that the patient does not respond to more conservative, non-surgical treatment. He states, "It depends on the patient's activity level and how much change in the femoral head--the ball and socket or the socket side--they have."

## Results: Physical Therapists

PTs identified arthroscopic surgery as the most common treatment they see (Figure 4). PTs varied in the length of recovery time they anticipated for each of the three treatments (Figure 5).

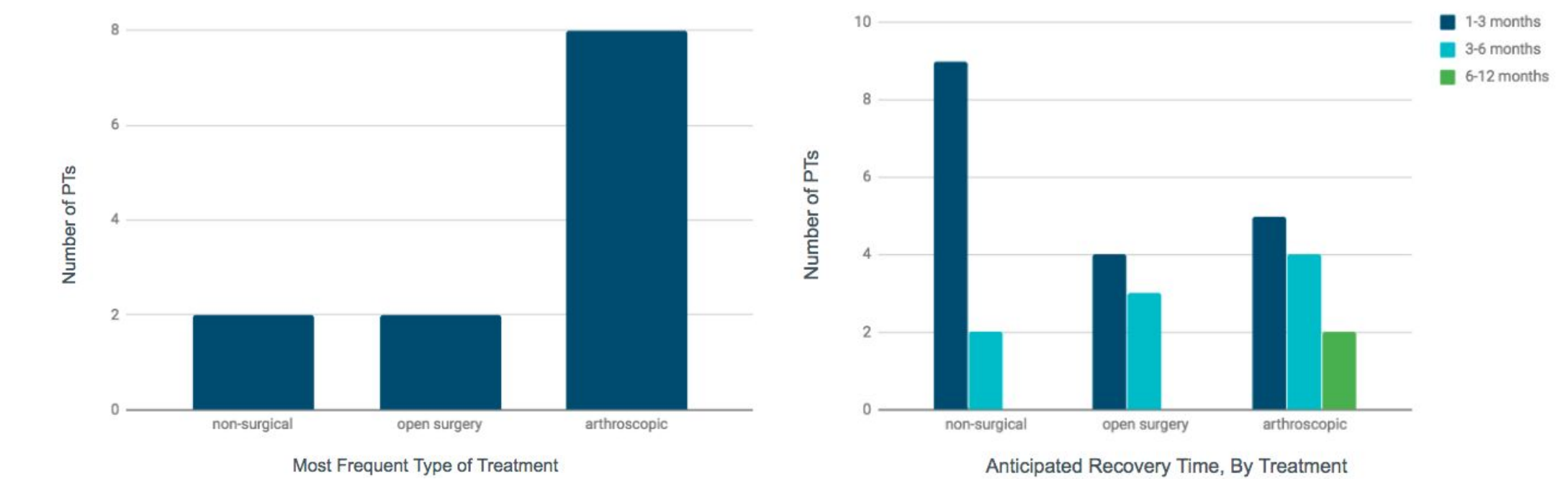


Figure 5. Number of PTs who stated that non-surgical, open surgical, or arthroscopic treatment was the most frequent treatment they had seen for FAI and an acetabular labral tears.

Figure 6. Number of PTs who anticipated various recovery times for non-surgical treatment, open surgery, and arthroscopic surgery for FAI and an acetabular labral tears.

PTs had differing opinions about treatment options, though most prefer to begin with a conservative approach and move to arthroscopic surgery, as necessary. The benefits of arthroscopic surgery are faster recovery, pain resolution, and the decreased risk of developing osteoarthritis. However, PTs stressed that surgery comes with a risk of infection and damage to hip nerves or musculature.

## Conclusion

Treatment of labral tears and FAI can be complex and medical professionals have different opinions about the benefits, drawbacks, and expected recovery time. For that reason, it is wise for patients to become informed themselves about the various procedures that might be used and, as necessary, to seek the advice of multiple professionals.

## Future Work

In a study to follow up the present work, more orthopedic surgeons should be interviewed. Data collection could also be expanded to include X-Ray and MRI technicians who play a critical role in consulting with doctors. Research might also be more narrowly focused on patients with particular ages or activity levels to see if there is variation in treatment desirability.

## Acknowledgements

I am grateful to Dr. Malhotra for her guidance throughout this project. I wish to thank Dr. LeBlanc and Dr. Givvin for their reviews of my work. I am grateful also to the medical professionals in Thousand Oaks and Westlake Village for completing a survey or interview for my research.