## Beginning:

Many athletes, especially young ones, undergo ACLR surgery, which has a high possibility of having negative ripple effects on their athletic future and overall well being. Increasingly ACLR surgery has been paired with other procedures, such as LET and ALLR. Unfortunately, possible data on if the additional procedures improve recovery results is not super available. (\*insert the grouped horizontal bar graph and discussion on how had to impute\*)

In the future the effectiveness or recovery costs of additional procedures might be more clearly compared. However, while comparing ACLR surgery alone against ACLR with additional procedures might not be feasible at this time, analysis of post surgery recovery still offers opportunities to advance the recovery rates of future patients, as well as their confidence.

## Middle:

Post surgery recovery is crucial, no matter the procedure(s) that the patient undergoes. With the majority of patients being athletes, knee strength and ability holds even more importance to a return to their pre-surgery pace of life. ACLR surgery alone requires intensive physical therapy, yet the data does not illustrate full recovery occurring within 9 months post surgery. It would be pretty unusual for someone with any sort of previous surgery to not have any pain related to the procedure ever again. However with ACLR surgery, patients' typically report a decrease in their overall quality of life throughout the last 6 months of post surgery recovery. (\*insert the radar chart\*)

A potential patient could learn of this and become hesitant, would they ever truly recover post surgery. Doctors and medical professionals cannot guarantee a path to recovery without utilizing recovery data. As the recovery data is not always positive in the case of ACLR surgery, doctors must instead turn to reassuring their patients through comparisons with surgery peer groups. For example, this can be simulated by the doctor's inputting metrics/ patient's characteristics to see whether the patient falls within the benchmark for average pain ( Koos Pain). This serves as a tool that doctors may use to know whether they would need further testing

## End:

In the end, patients should choose whatever procedure or combination of procedures works best for them. Yet it is crucial post surgery that the patient and their medical team have a straightforward way of tracking the patient's progress, especially with the trends of recovery appearing to slide backwards. Given the lasting nature of various quality of life and athletic ability related deteriorations, transparency on typical progression post surgery is much needed. The patient must not be left to simply assume they are fine, when the reality is their pain is abnormally high, or that they are never going to recover or they should worry when their The recovery rate is slow. Doctors must be able to reassure their patients, which is possible through providing a comparison of their recovery with peers. (\*insert dashboard\*)