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# The Effectiveness of the Functional Movement Screen and Vertical Drop Jump Test as Screenings to Predict Non-Contact ACL Injury

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## MISSION STATEMENT

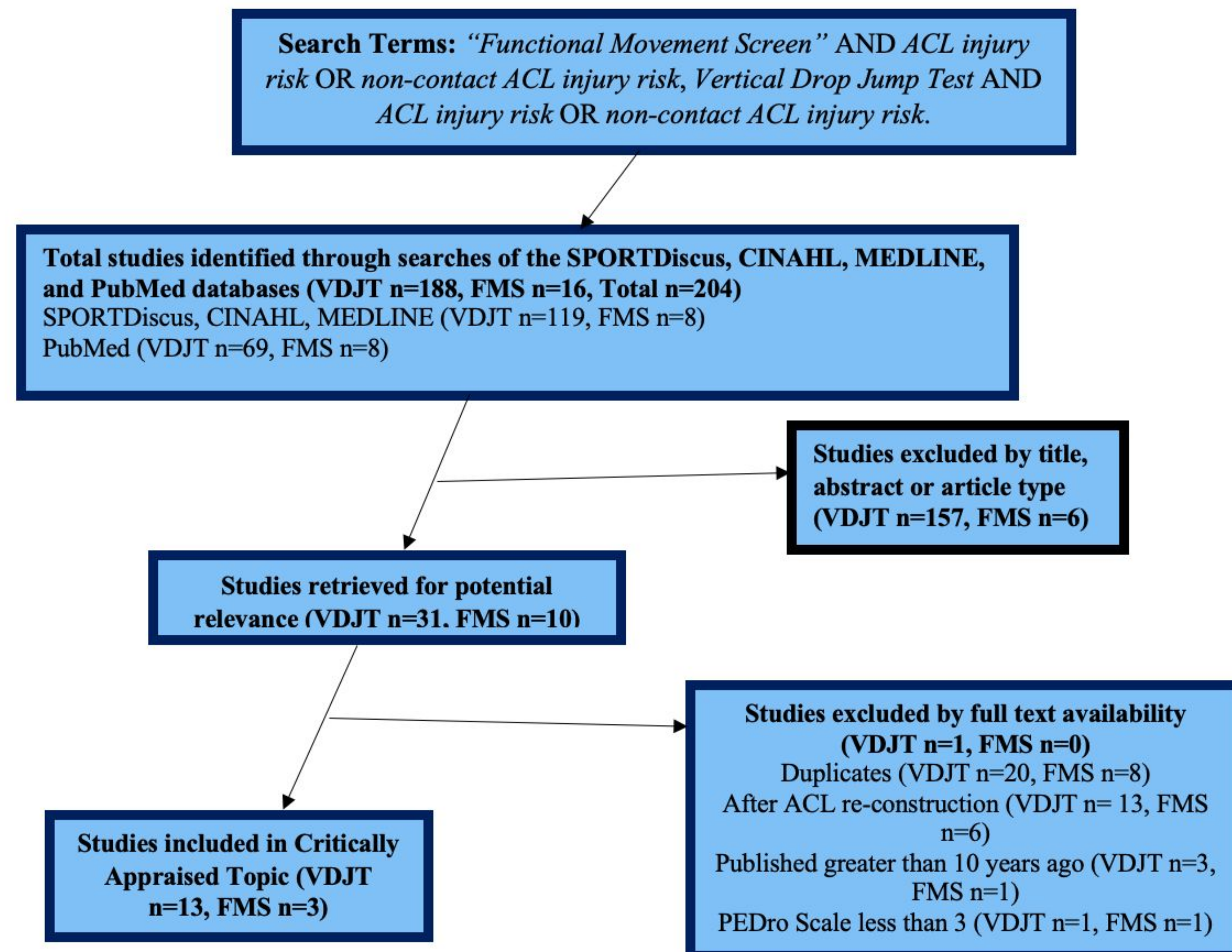
The mission of the Messiah University Doctor of Physical Therapy Program is to graduate ethical, compassionate, autonomous doctors of physical therapy who are competent to practice in diverse settings. Graduates will be life-long learners informed by evidence-based practice who exemplify the values of Messiah University and the physical therapy profession.

### INTRODUCTION / PURPOSE

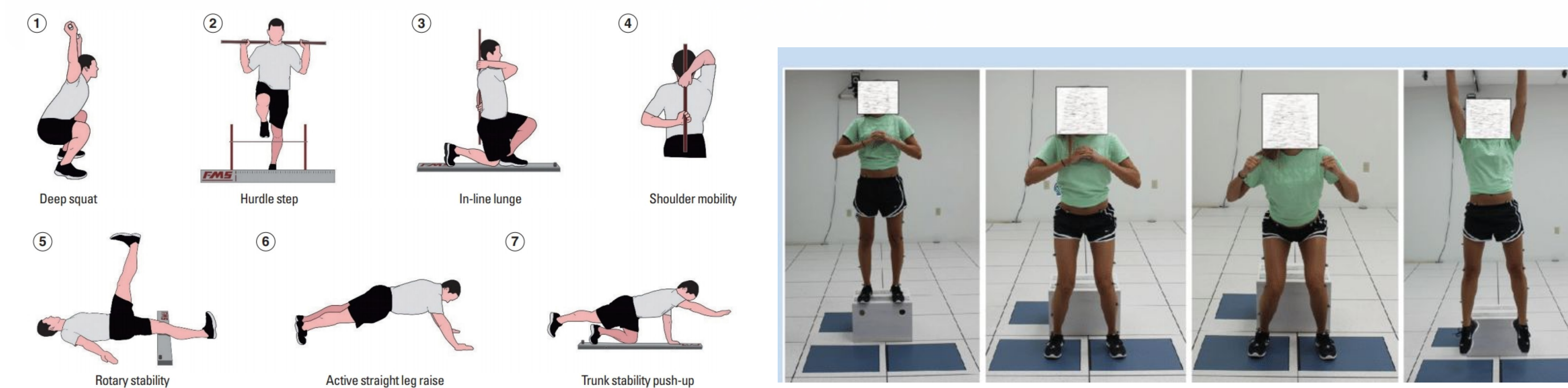
The purpose of this Clinically Appraised Topic (CAT) was to evaluate the predictive validity of two movement screening tools: the FMS, which evaluates kinematic control during functional movement tasks and the VDJT, which evaluates both kinetic and kinematic variables during a high impulse jump task. With both screening tools looking to identify at risk movement patterns, this CAT sought to evaluate predictive screening ability and determine which tool demonstrated superior ability to stratify non-contact ACL injury risk.

### METHODS

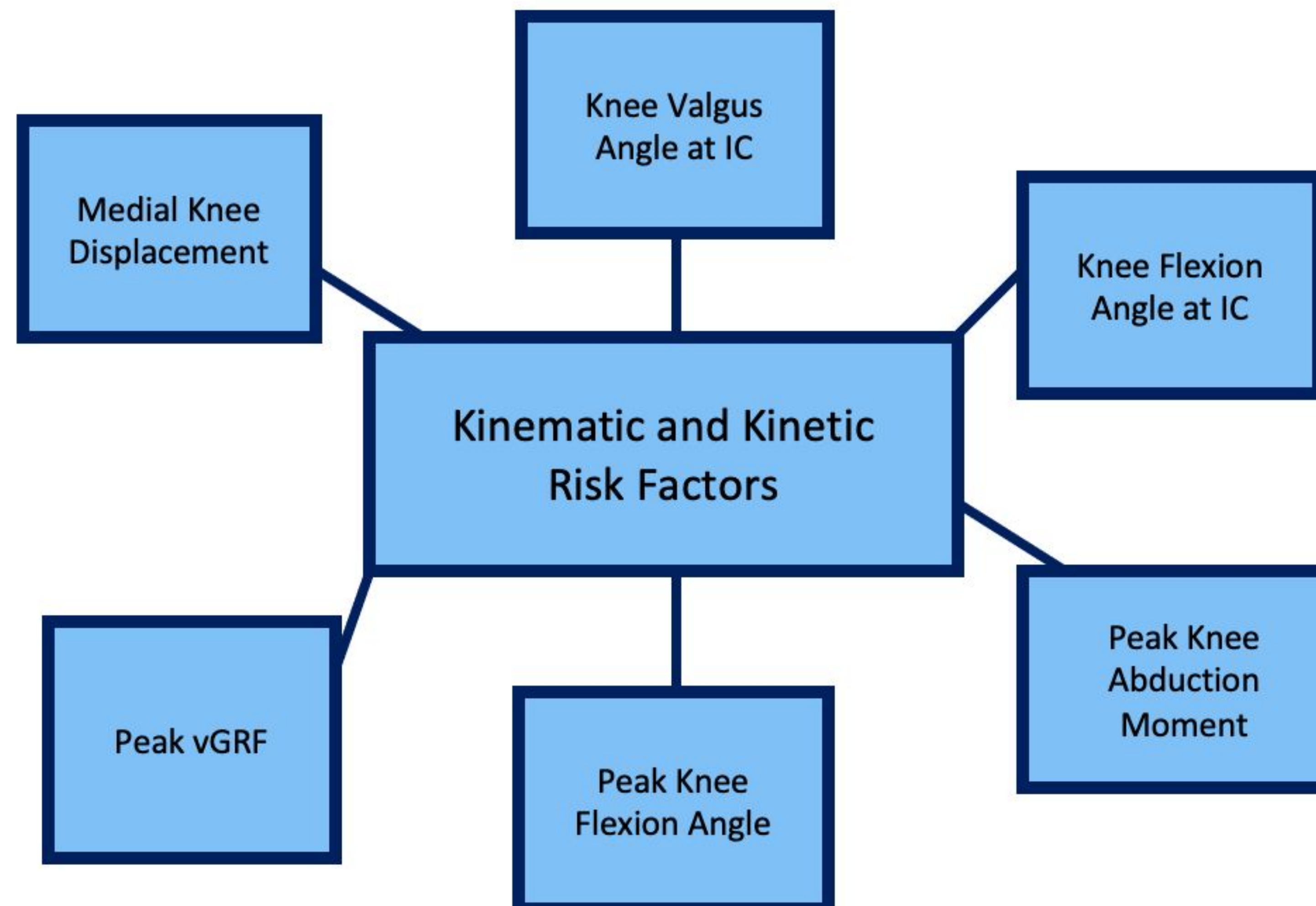
Figure 1-PRISMA flow diagram



### FMS/VDJT<sup>18</sup>



### RESULTS



In the literature the following risk factors reached statistical significance in multiple studies: increased medial knee displacement, decreased knee flexion angle, and increased vGRF. Although these risk factors reached statistical significance, when evaluated for diagnostic screening ability they proved to be poor predictors of non-contact ACL injury risk.

### RESULTS

The FMS has also shown poor ability to predict and screen for non-contact ACL injury risk. Although poor scores of 14 or less in the FMS is associated with up to a 4.5x increase in lower extremity injury risk, in isolation it is inadequate at predicting non-contact ACL injury risk.

### CLINICAL RELEVANCE

The FMS and VDJT can provide the clinician with data on the athletes preferred movement strategy for a dynamic and reactive task, the movement options available to them, and dynamic trunk and lower extremity control and stability. The clinician can then use this data to their discretion to implement interventions that are evidence based to improve any athlete biomechanical or neuromuscular deficiencies seen in either return to play or pre-season scenarios.

### CONCLUSION

The literature suggests that both the FMS and VDJT were poor predictors of non-contact ACL injury. The evidence shows that there is a poor correlation between deficits identified by the FMS or VDJT and future non-contact ACL injury. Though the FMS and VDJT are poor predictors of ACL injury, they are both effective at identifying functional deficits that may predispose athletes to injury.

### REFERENCES

