



# The Difference in Flagging Athletes During Athlete Monitoring Using Jump Mats and Force Plates



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## Purpose

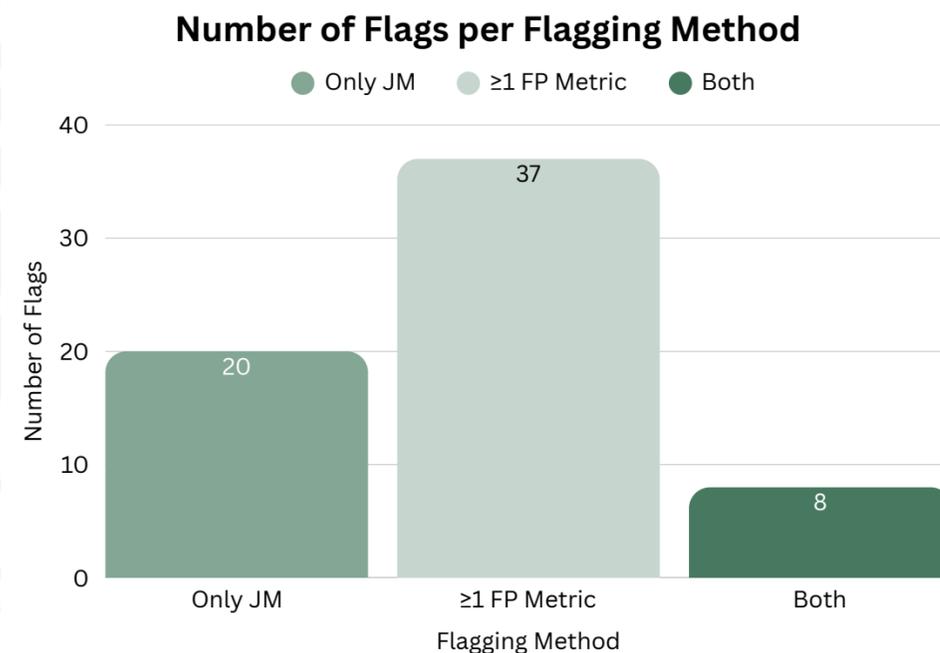
This study investigated the difference in flagging athletes on a jump mat versus a force plate in collegiate men's volleyball athletes during a season.

## Methods

Sixteen NCAA Division I men's volleyball players completed a hips counter movement jump (hCMJ) on both the force plate and jump mat at the beginning of every week throughout the season. Key metrics included the Force Plate's reactive strength index-modified (RSI MOD), jump height (flight time and impulse momentum), and take-off velocity, as well as the jump height from the Jump Mat. Athletes were flagged if the athlete's vertical jump value was one coefficient of variation below the all time average.

**Jump mats are convenient, but can be misleading. If used alone, they may cause wrong decisions about an athlete's condition.**

**Force plates provide a more accurate picture of an athlete's true performance and should be preferred for monitoring fatigue and recovery.**



## Results

There were only eight out of 93 (8.6%) total instances when athletes were flagged on both the force plate and the jump mat. The force plate's impulse momentum and jump mat flagged athletes 24 and 20 times throughout the season, respectively. Twelve out of twenty (60%) jumps that were flagged on the jump mat were not flagged by any force plate metric.

## Conclusions

When compared to force plates, jump mats do not accurately flag athletes deviation in performance, and therefore should not be utilized during neuromuscular status monitoring.

## Practical Application:

If jump mats are to be used, it may misinform practitioners and coaches resulting in erroneous treatment strategies. Therefore, practitioners should be cautious using jump mats to monitor athletes neuromuscular status, due to the likelihood of inaccurate information that may lead to inappropriate decisions.