

Background

- Balancing stress induced by exercise and recovery is an important crucial for maximizing adaptation
- Many of the methods to assess recovery are impractical due to cost or time required to collect data
- The perceptual recovery status scale was developed to be a non-invasive, cost-effective method to assess recovery status (Laurent et al., 2011)
- While perceptual recovery status correlates strongly with measures associated with neuromuscular fatigue and recovery following high-volume training (Toluoso et al., 2022, Korak et al., 2015), less is known about these relationships following a high intensity training session.

Methods

- 10 resistance trained men came in on 5 separate occasions
- 1RM was assessed on the familiarization session
- 2-10 days following 1RM testing, participants completed the following testing battery establish baseline recovery:
 - PRS before and after a dynamic warm-up
 - 3x1 countermovement jumps (CMJ) using force plates
 - Back squat at 70%1RM using a linear position transducer
- Participants completed 5x5 @85%1RM on the back squat
- Returned to the lab 24,48, 72h following the high intensity session to complete the same testing battery

Table 1. Descriptive characteristics of participants (n = 10)

Age (years)	Weight (kg)	Body Fat (%)	Height (cm)	Back Squat 1RM (kg)
22.5 ± 1.2	88.6 ± 16.4	14.2 ± 5.8	176.5 ± 5.7	172.6 ± 31.8

Results

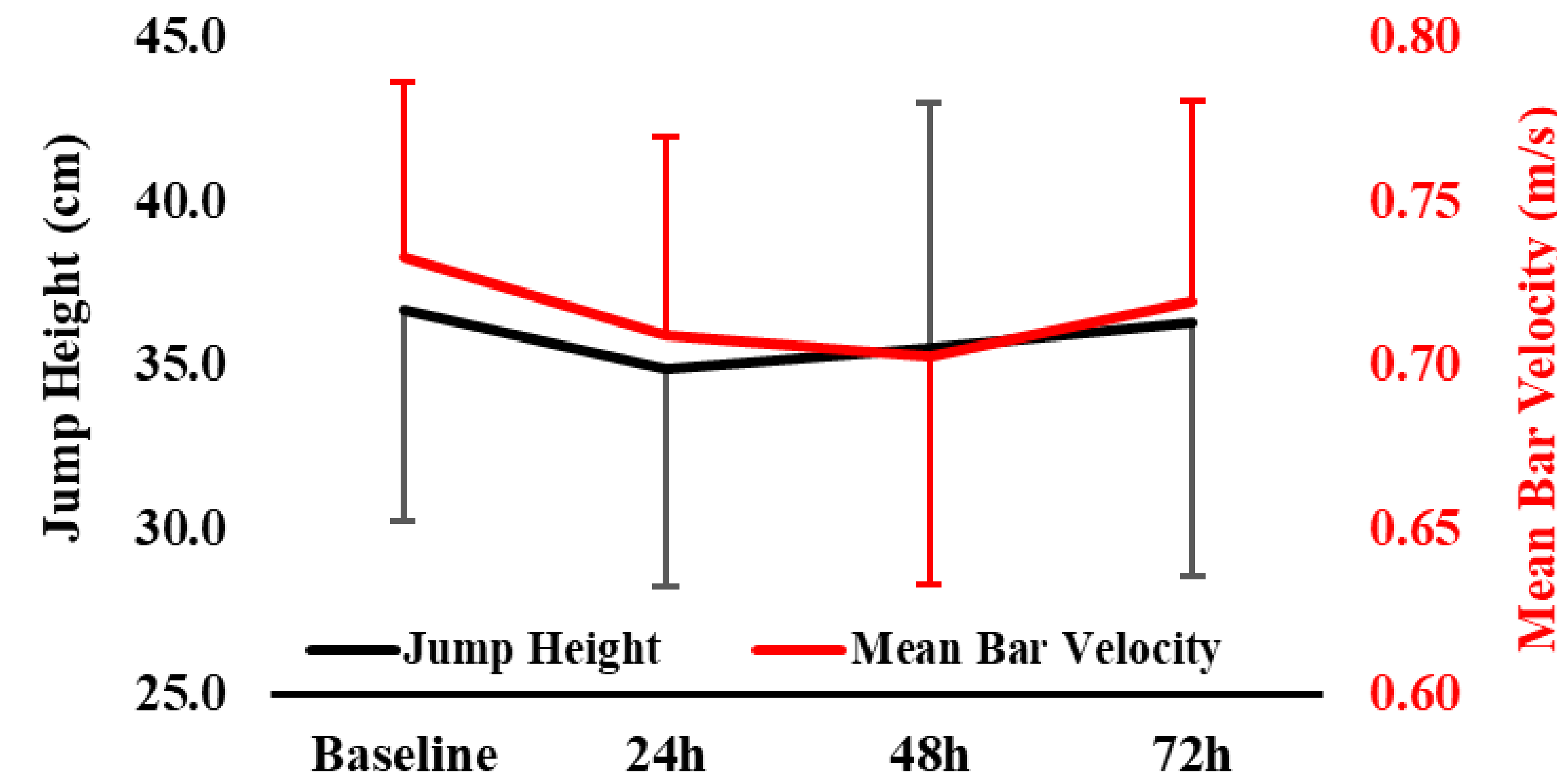


Figure 1. Performance Recovery Metrics Across Time

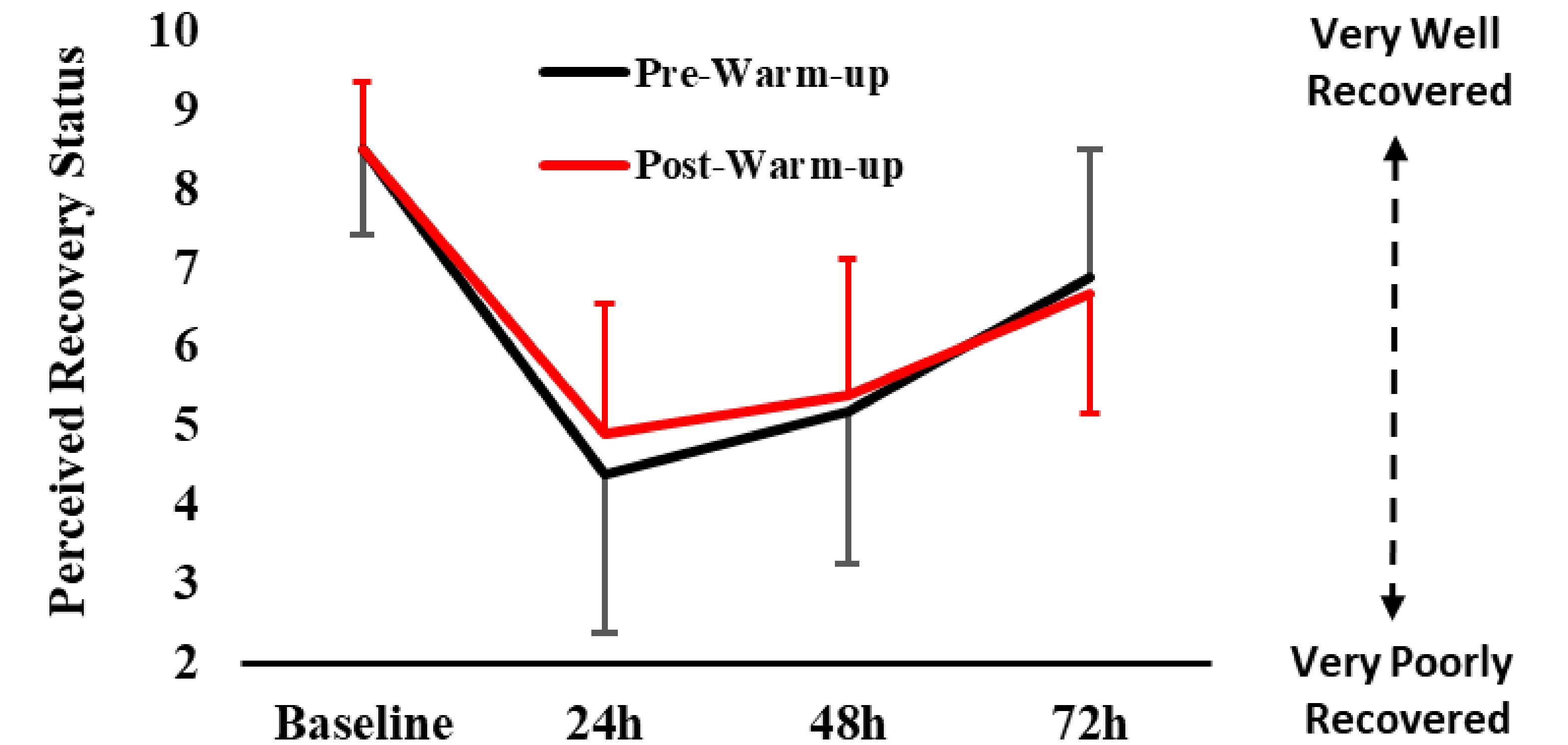


Figure 3 . Reported Perceptual Recovery Status Pre- and Post-Warm-up Across Four days

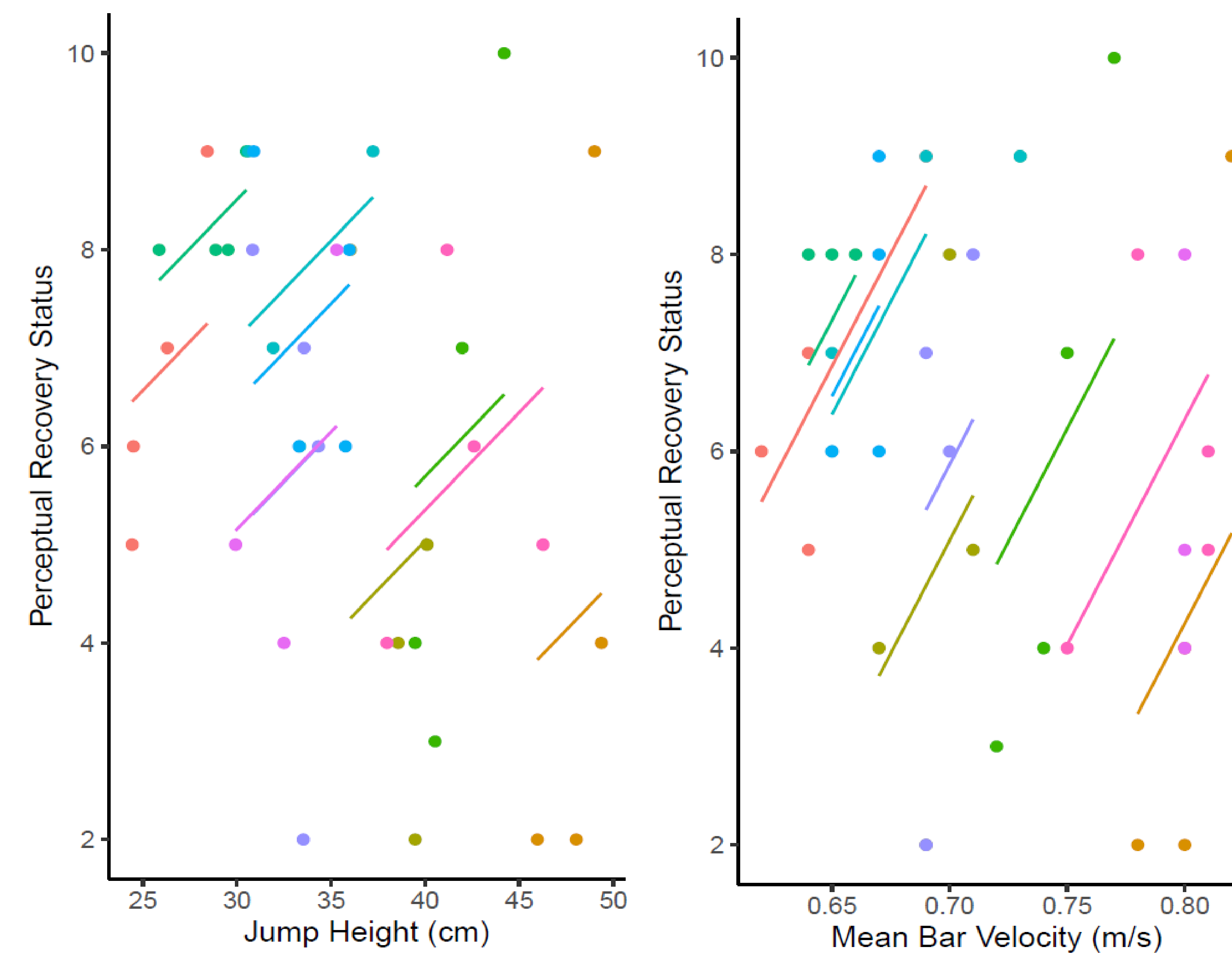


Figure 2. Common Intra-individual Relationships Between Perceptual Recovery Status, Jump Height, and Mean Bar Velocity

- A moderate to strong positive correlation was found between mean bar velocity and pre- ($r = 0.52$) and post- warm-up PRS ($r = 0.54$; $p < 0.001$)
- A small to moderate, albeit non-significant relationship was observed between jump height and pre- ($r = 0.20$) and post-warm-up PRS ($r = 0.20$; $p=0.29$)

Conclusions

- PRS shared moderate to strong correlations with mean bar velocity, but not countermovement jump height showing its validity as a recovery monitoring tool may be dependent upon what is used as the gold-standard
- PRS should be used in concert with other measures of recovery to fully describe the construct.
- Further research considerations should examine the utility of PRS across other exercise modes (e.g., upper extremity resistance training, long-duration aerobic events) and intensities.