Giving ‘live’ GPS feedback to athletes: Does it alter locomotor performance during small-sided games?

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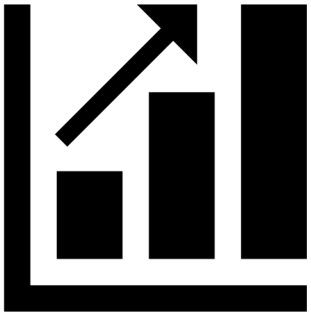
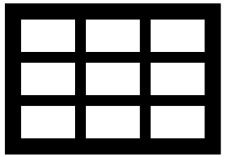
@DaleRead4

V

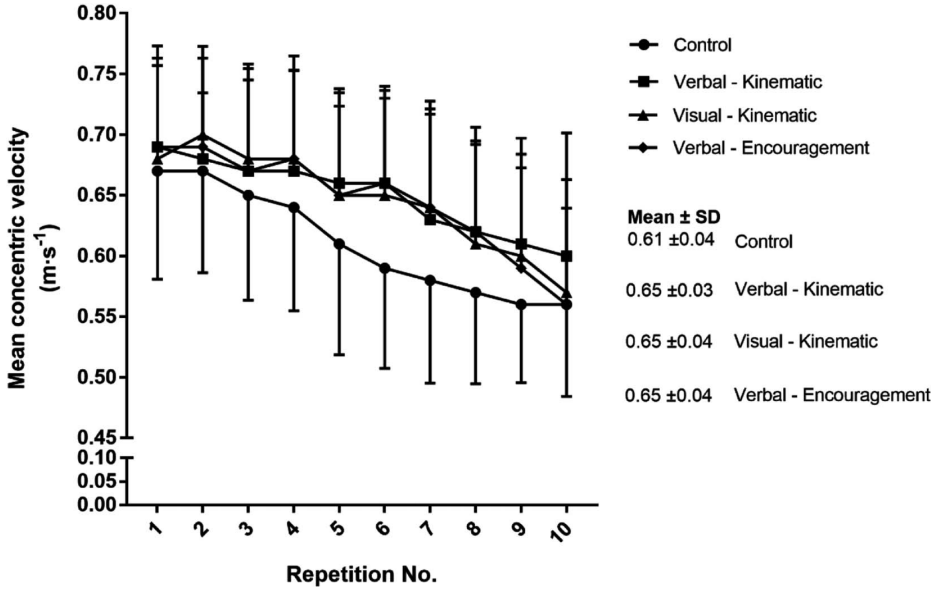


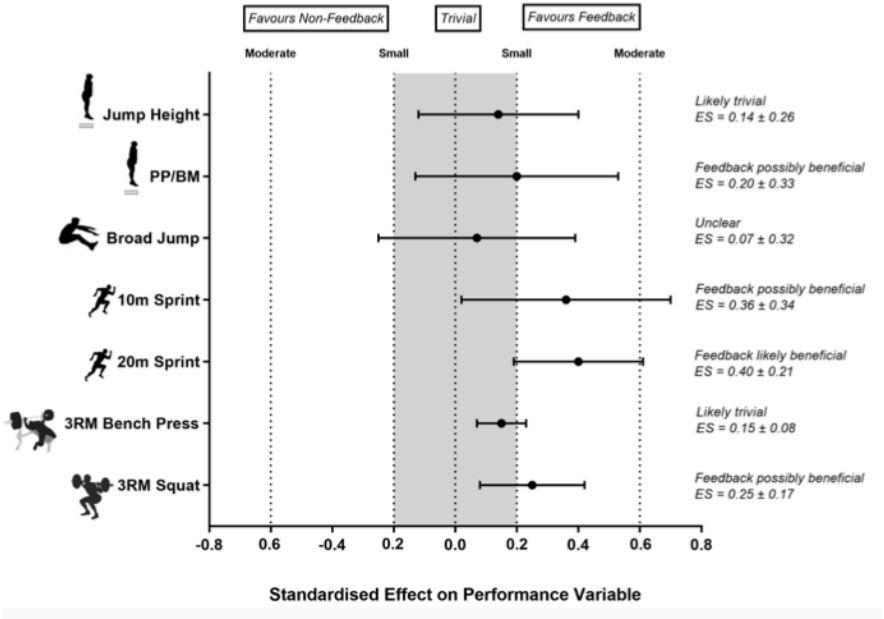
$\dot{V}O_{2max}$

Sport specific skills



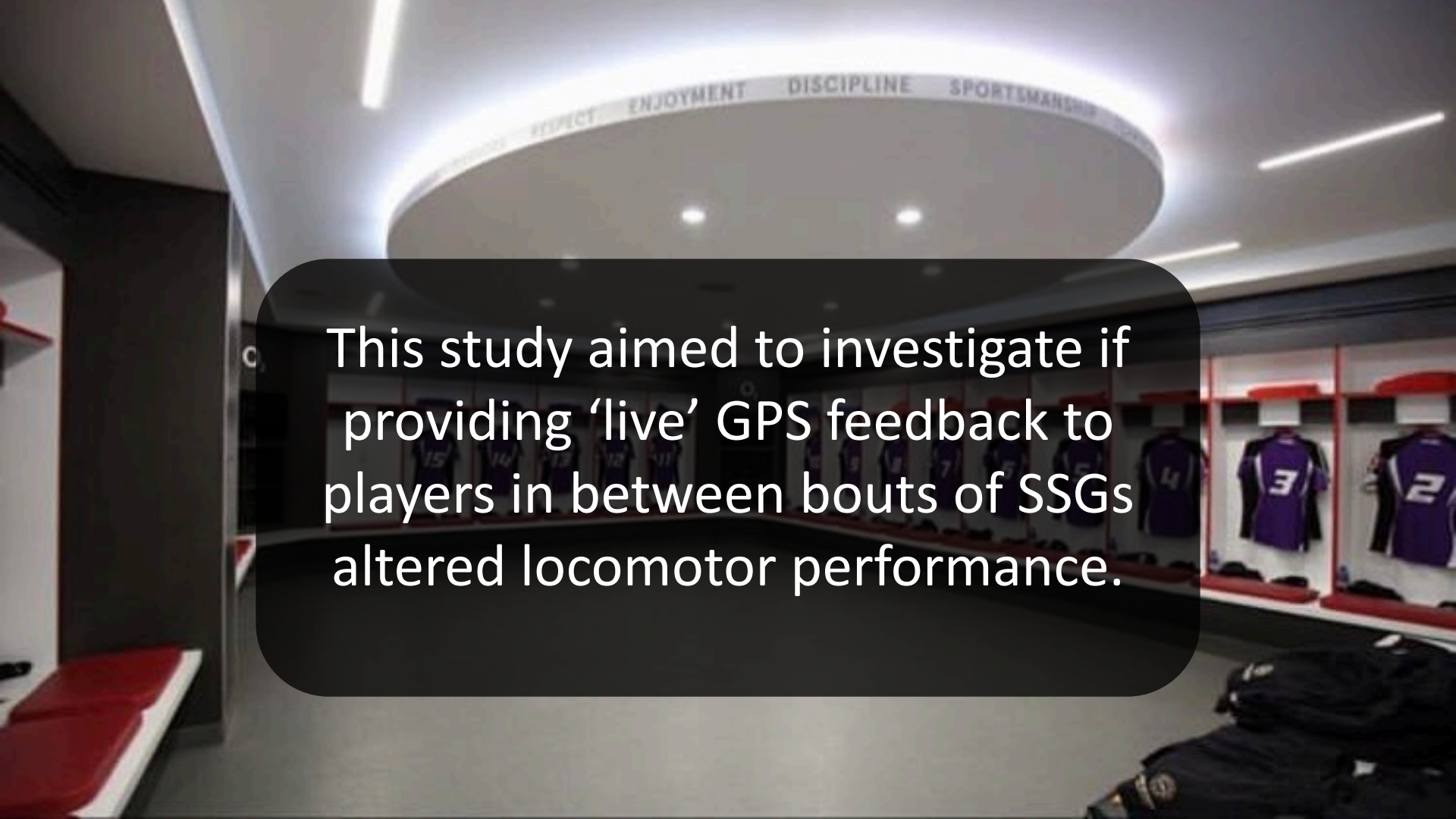
Moran et al., *SpMed. 2019:49(5):731-742.*
Hammami et al., *JSMPF. 2018:58(10):1446-1455.*





Weakley et al. *JSCR. (in press).*

Weakley et al. *IJSPP. (in press).*



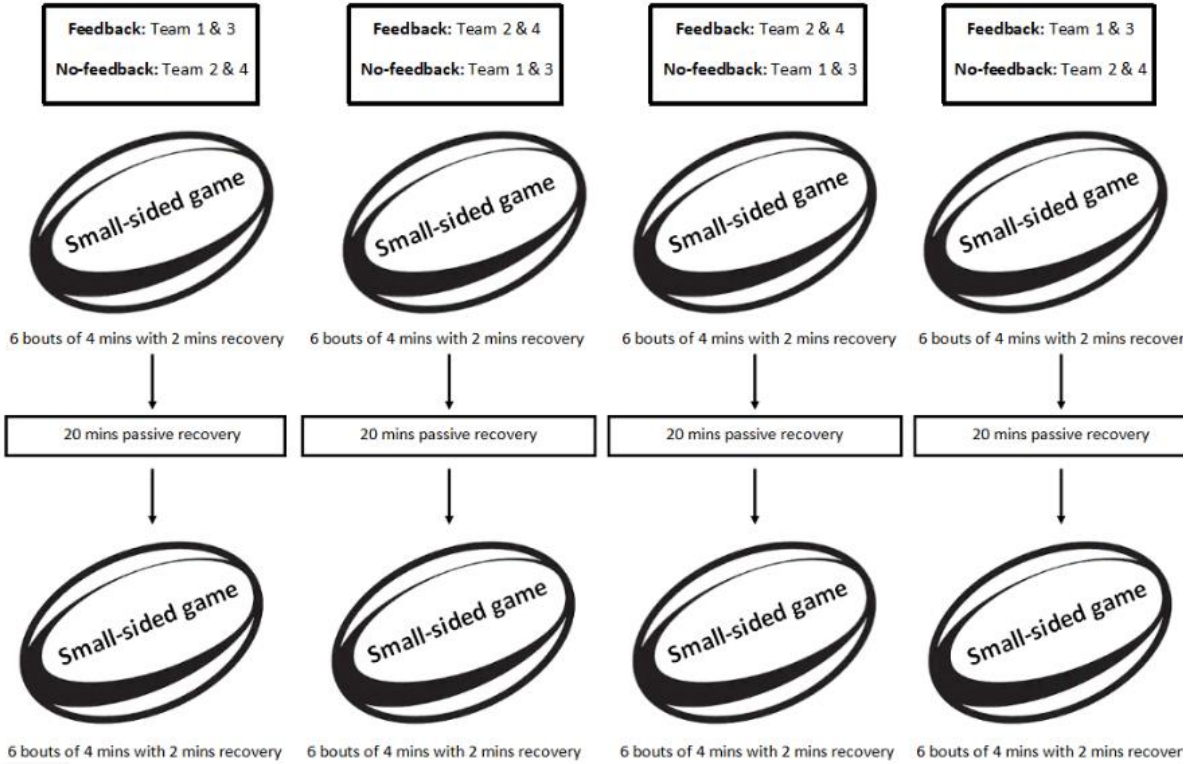
This study aimed to investigate if providing ‘live’ GPS feedback to players in between bouts of SSGs altered locomotor performance.

Physical testing

6 bouts of 4 mins with 2 mins recovery

Testing occasion 1
- Physical Testing

Testing occasion 2
- SSG Familiarization



Testing occasion 3
- SSG Testing

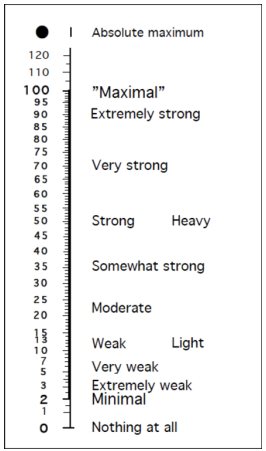
Testing occasion 4
- SSG Testing

Testing occasion 5
- SSG Testing

Testing occasion 6
- SSG Testing

Sampson et al., *JSS. 2015:33(1):85-98.*

- 20 m width x 40 m length
- Same referee, same rules
- Off-side touch (6 plays)
- Same sport scientist providing the feedback
- Verbal feedback on the distance (m) each member covered in the preceding 4 minute bout in a descending order
- Opposition did not receive or hear feedback



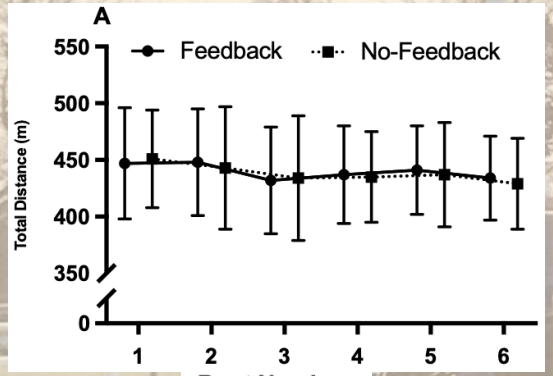
- Linear mixed model
- SPSS (v24)
- 3 analyses
  - SSG (24 min)
  - Bout (6 x 4 min)
  - First minute
- Fixed = feedback or no-feedback
- Random = participant code
- Effect sizes, 90% CI, MBI

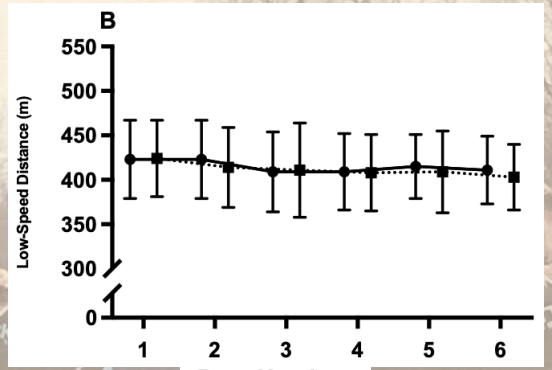
SSG (24 min)

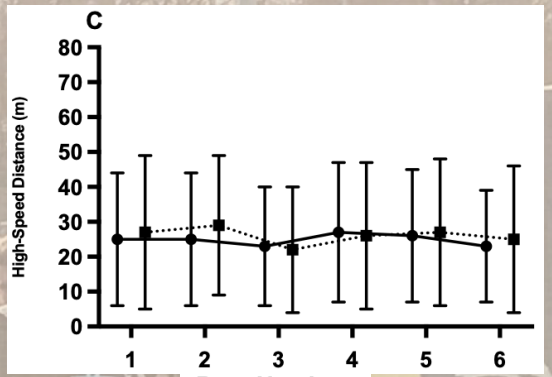
	Feedback	No-Feedback	Effect Size [90% CI lower, upper]	Magnitude-Based Inference
Total Distance (m)	2200 (156)	2177 (186)	0.15 [-0.03, 0.34]	0/66/34 – Possibly trivial ↔
Low-Speed Distance (m)	2074 (152)	2046 (182)	0.18 [0.00, 0.37]	0/56/44 – Possibly trivial ↔
High-Speed Distance (m)	126 (55)	131 (67)	-0.07 [-0.27, 0.13]	14/85/1 – Likely trivial ↔
Maximal Sprint Speed ($m \cdot s^{-1}$)	6.8 (0.6)	6.8 (0.6)	0.11 [-0.11, 0.34]	1/74/25 – Possibly trivial ↔
Mean Acc/Dec ($m \cdot s^{-2}$)	0.56 (0.06)	0.56 (0.05)	0.15 [0.02, 0.28]	0/68/32 – Possibly trivial ↔
$TRIMP_{mod}$ (AU)	50 (19)	52 (20)	-0.05 [-0.17, 0.06]	2/98/0 – Very likely trivial ↔
RPE-L (AU)	50 (13)	50 (11)	0.05 [-0.21, 0.32]	6/75/19 – Unclear
RPE-B (AU)	48 (12)	49 (12)	-0.09 [-0.32, 0.14]	22/76/2 – Likely trivial ↔

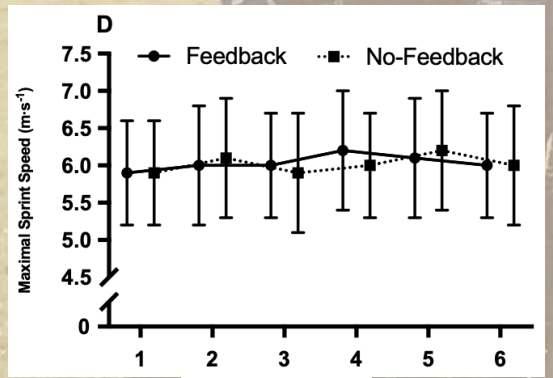
NB: Bout 1 is excluded from all analyses as feedback was first provided after bout 1

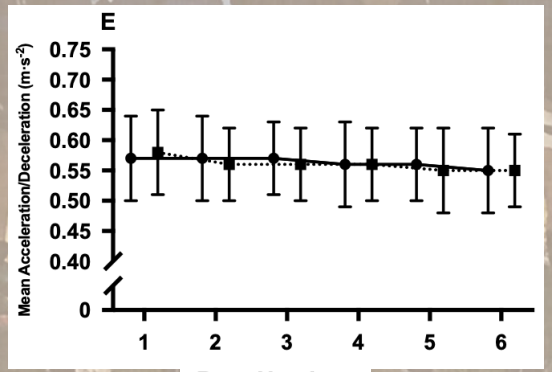
Bout (6 x 4 min)

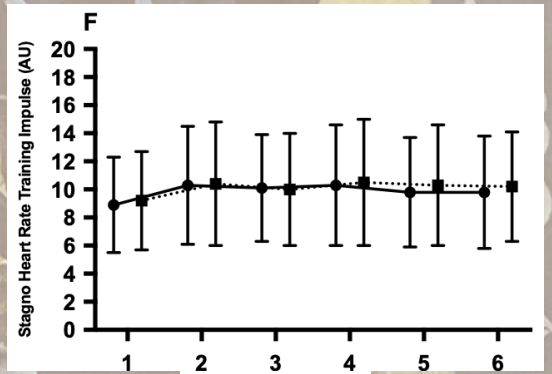

A
Feedback
No-Feedback
Total Distance (m)
550
500
450
400
350
0
1
2
3
4
5
6
Bout Number


B
Low-Speed Distance (m)
550
500
450
400
350
300
0
1
2
3
4
5
6
Bout Number

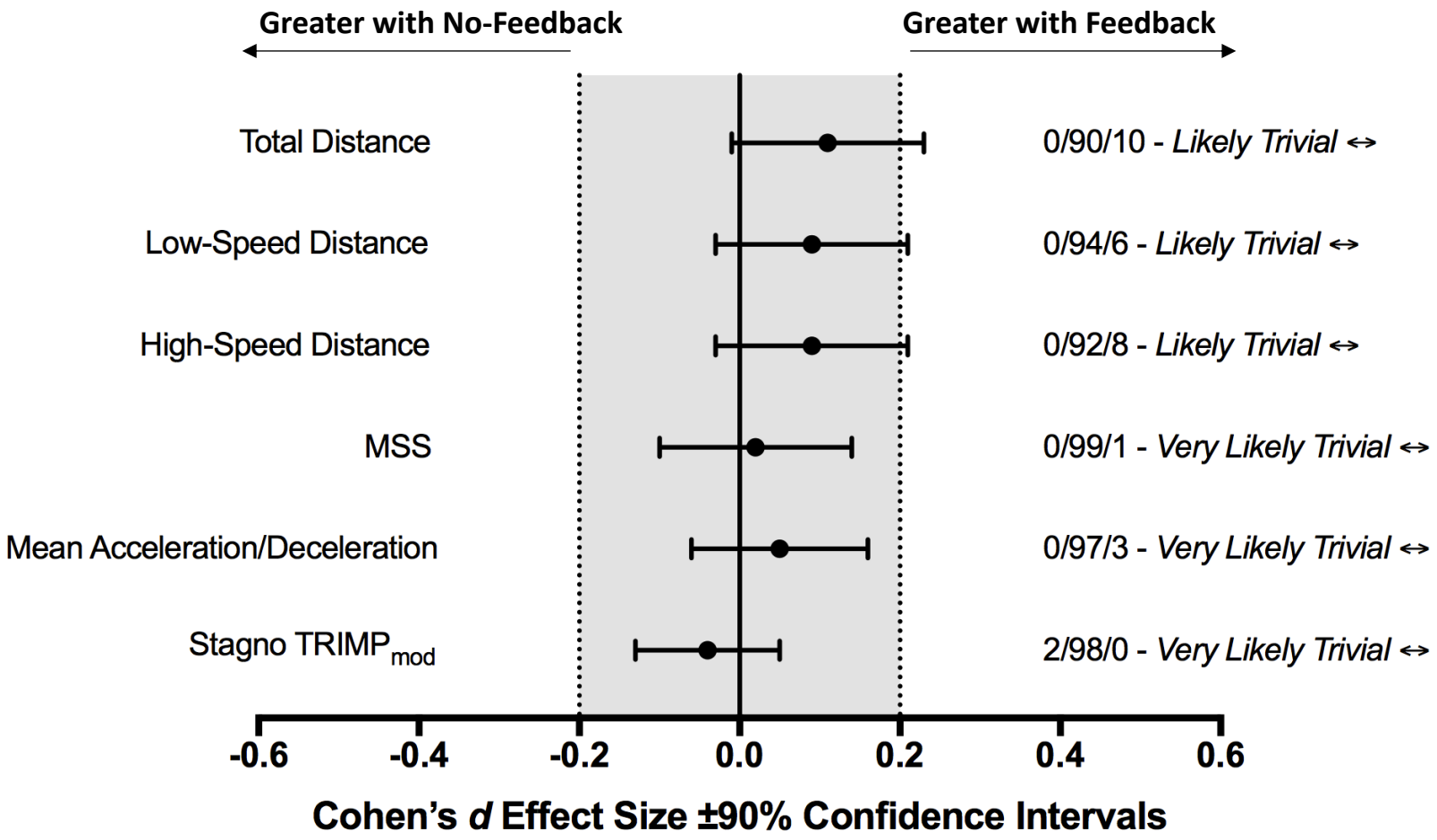

C
High-Speed Distance (m)
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
Bout Number


D
Feedback
No-Feedback
Maximal Sprint Speed (m·s-1)
7.5
7.0
6.5
6.0
5.5
5.0
4.5
0
1
2
3
4
5
6
Bout Number


E
Mean Acceleration/Deceleration (m·s-2)
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0
1
2
3
4
5
6
Bout Number

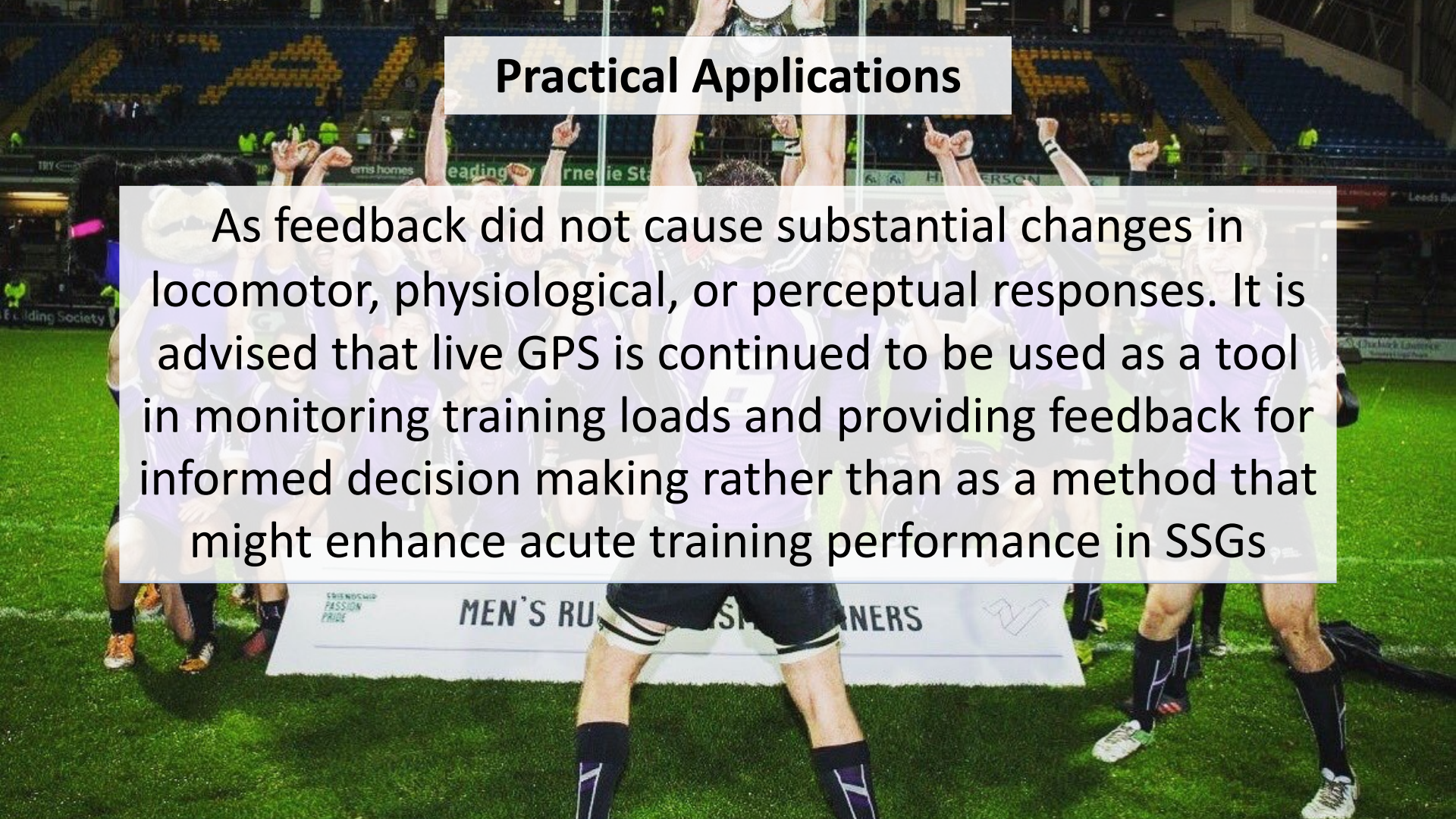

F
Stagno Heart Rate Training Impulse (AU)
20
18
16
14
12
10
8
6
4
2
0
1
2
3
4
5
6
Bout Number

First minute



Discussion

- Did providing GPS feedback alter locomotor performance?
- Feedback did not alter subsequent locomotor performance
- The assessment of ‘performance’ was not related to the task goal (winning the SSG)
- Frequency and type of feedback provided
- Future research: other forms of feedback, bout durations, football codes, playing levels or training modalities



Practical Applications

As feedback did not cause substantial changes in locomotor, physiological, or perceptual responses. It is advised that live GPS is continued to be used as a tool in monitoring training loads and providing feedback for informed decision making rather than as a method that might enhance acute training performance in SSGs

Conclusion

In this study, verbal feedback of distance covered provided in between bouts of small-sided games did not alter subsequent locomotor performance in rugby players.

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