Long term β_2-Agonists administration increases sprint performance in non-asthmatics

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AIM OF THE STUDY

Investigate the ergogenic effect of 5 weeks daily inhalation of long acting β_2-Agonists on Sprint performance.

METHODS

Participants: 23 and 12 non asthmatic males and females

Design: Blind, Randomised, Counter balanced training study

Treatment groups:

- Salmeterol (SAL) 100µg (2 x 50µg twice daily) n=12
- Formoterol (FOR) 12µg (2 x 6µg twice daily) n=12
- Placebo (PLA) (2 x twice daily) n=11

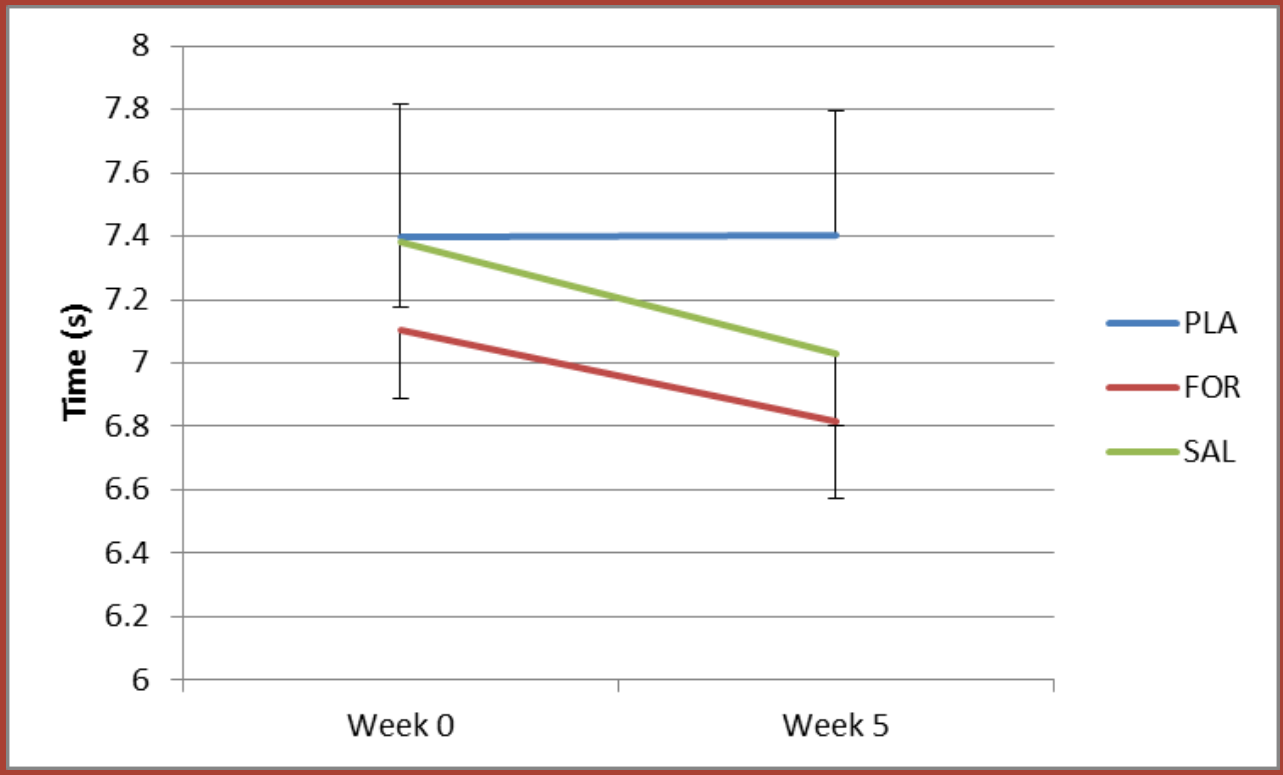
30 mt Sprint → Strength and Power Training → 30 mt Sprint

Week 0 ⟷ Week 6

Table 1: Change in 30 m sprint from week 0 to week 5

	Week 0	Week 5
SAL	7.38 ± 0.74 s	7.03 ± 0.72 s
FOR	7.10 ± 0.70 s	6.81 ± 0.74 s
PLA	7.40 ± 1.33s	7.40 ± 1.23 s

Figure 1: Change in 30 m sprint from week 0 to week 5



<u>30m</u> Sprint was greater 5 weeks post training in FOR (p=0.049) and SAL (p=0.040) compared to PLA.

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CONCLUSION

- Sprint improvement observed over 5 weeks did not differ between SAL and FOR groups. However, FOR and SAL showed a significant improvement in sprint performance when compared with PLA following the 5 weeks of strength training.
- SAL and FOR may increased anaerobic ATP utilization, elevated glycolytic activity and enhanced rates of Ca^{2+} release and uptake from the sarcoplasmic reticulum.
- Future research should investigate potential mechanisms to explain our results.