Long term $\beta_2$-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 $\beta_2$-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
30m Sprint was greater 5 weeks post training in FOR (p=0.049) and SAL (p=0.040) compared to PLA.

<table>
<thead>
<tr>
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<th>Week 0</th>
<th>Week 5</th>
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<tbody>
<tr>
<td>SAL</td>
<td>7.38 ± 0.74 s</td>
<td>7.03 ± 0.72 s</td>
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<tr>
<td>FOR</td>
<td>7.10 ± 0.70 s</td>
<td>6.81 ± 0.74 s</td>
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<tr>
<td>PLA</td>
<td>7.40 ± 1.33s</td>
<td>7.40 ± 1.23 s</td>
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Table 1: Change in 30 m sprint from week 0 to week 5
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\textsuperscript{2+} release and uptake from the sarcoplasmic reticulum.
- Future research should investigate potential mechanisms to explain our results.