ACUTE NORADRENALINE REUPTAKE INHIBITION DECREASES PERFORMANCE
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Introduction
Acute dopamine/noradrenaline (DA/NA) reuptake inhibition (bupropion) significantly improved time trial performance, hormonal response to exercise and thermoregulation in the heat (30°C; Watson, 2005). Acute Ritalin, a selective DA reuptake inhibitor, had similar or even more pronounced effects on performance and core temperature (Tcore; Roelands, in submission). The aim of the present study was to determine the effects of acute administration of a NA reuptake inhibitor on performance and thermoregulation.

Methods
Nine healthy well-trained male cyclists (Age 23±6; yr; Ht 176±6; cm; BM 73±6; kg; Wmax 320±6; 35W) completed a preliminary maximal exercise test, a familiarization trial and four experimental trials (two in 18°C and two in 30°C) in a double blind-randomized crossover design. Subjects ingested either a placebo (PLAC; lactose; 2x8mg) or Reboxetine (REBOX;2x8mg) on the evening before and the morning of the trial. Subjects cycled for 60 min at 55% Wmax (FIX), immediately followed by a time trial (TT) to measure performance. Tcore, skin temperature, heart rate, blood pressure, sweat loss, ratings of perceived exertion, thermal stress, blood lactate and hormonal data were recorded. Statistical analysis were conducted using two-way (temperature-by-drug) repeated measures ANOVA to evaluate differences between and within trials. The significance level was set at p<0.05.

Results
Both in normal (p=0.018; PLAC:29.9±1.3min vs REBOX:32.9±3.5min) and warm temperature (p=0.007; PLAC:40.6±6.4min vs REBOX:48.6±10.9min) subjects took longer to finish the REBOXTT. Acute REBOX increased resting HR in both conditions (18°C: p=0.015; 30°C: p=0.005) and increased HR during the last 30min of the FIX in the temperate trials (p<0.028). During the warm REBOXTT subjects felt significantly colder then in the PLAC trial (p<0.033). Subjects further produced significantly more lactic acid after the cold PLACTT and recuperation (p=0.027 and p=0.028 respectively). An interesting finding is the trend towards a lower Tcore during the warm REBOXTT, however no significance could be shown.

Discussion/Conclusion
The negative influence of NA reuptake inhibition on performance (in 18 and 30°C) is a strong confirmation of the trend found by Piacentini (2002) in normal temperature. REBOX influenced thermal sensation, since subjects all complained about cold feelings the night before the test days and even during the tests in the heat. The increased resting HR confirms results by Fava (2003) and is a sign of a rather weak peripheral effect of REBOX.

In conclusion, acute NA reuptake inhibition decreased performance and did not significantly influence core and skin temperature in healthy subjects, both in normal and warm temperatures.

References
Roelands et al. In submission at Journal of Applied Physiology

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