



# Neuroscience today: neuronal functional diversity and collective behaviors

in the framework of COST ACTION B27 ELECTRIC NEURONAL  
OSCILLATIONS AND COGNITION (ENOC)

Firenze, Accademia dei Georgofili (Logge degli Uffizi)  
26-28 March, 2007

## Poster Sessions



**The effects of PAT, EDR and HRV biofeedback training on cognitive performances in healthy high-school children**

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**A b s t r a c t:** 45 participants (mean age 16.84±0.903) were randomly allocated into three groups depending on the biofeedback method applied (Peak Achievement Training - PAT, Heart Rate Variability - HRV, Electro Dermal Resistance - EDR) and an additional control group. Trail Making Test form A (TMT-A) and form B (TMT-B) and Verbal Span Assessment (WMS-R) were applied prior and after the experiment. T-test for dependant groups revealed significant improvement of the level of concentration ( $t=3.22, p<0.05$ ) in the participants treated with PAT, compared to HRV group ( $t=2.14, p>0.05$ ), and EDR group ( $t=0.26, p>0.05$ ) who did not show improvement. The results suggest that PAT can be successfully used for improving the concentration and attention ( $t=8.302, p<0.05; t=5.137, p<0.05$ ) as well as the Short Term Memory Span ( $t=3.521, p<0.05; t=2.168, p<0.05$ ).

**Key words:** Biofeedback, Neurofeedback, Concentration, Cognitive Performance.