

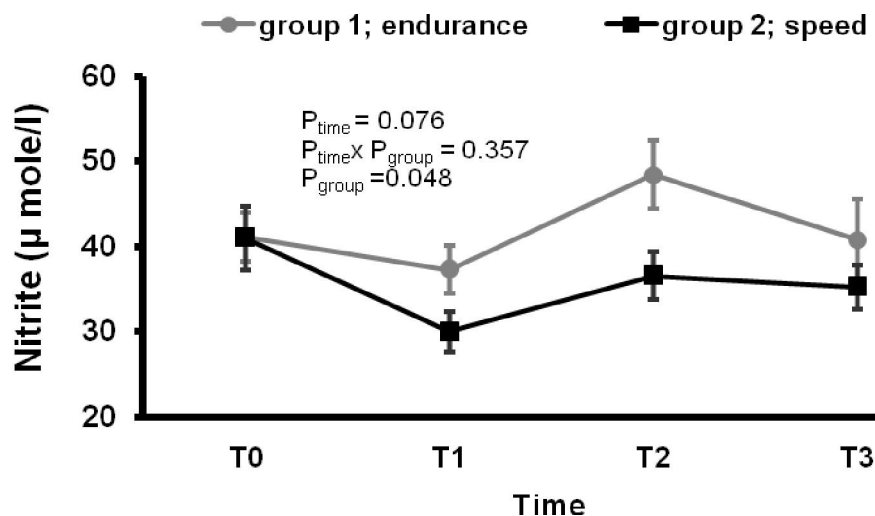
## The Serum level of Nitric Oxide Metabolite in Two Different Protocols of Endurance and Speed Trainings in Healthy Young Men

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Nitric oxide (NO) is a vasodilator factor, and it has been known as a biomarker for endothelial function in health and disease<sup>[1]</sup>. The variation of this biomarker also has been subject of research in exercise training field in animal model and human subjects<sup>[2-6]</sup>. Although some documented data reveal that exercise increase the level of NO or NO synthase<sup>[3,4,7]</sup>, however it is reported that NO dietary supplement has a small effect on NO metabolite levels in resistance trained men<sup>[5]</sup>. The half life of NO in blood circulation is very short, but its metabolites; nitrite or nitrate are stable and measurable. We measure the serum level of nitrite in two different protocols of endurance and speed trainings in healthy young men. Twenty healthy young male volunteer (age:  $21 \pm 0.35$  years) were randomly divided into two groups with endurance (group 1,  $n = 11$ ) and speed (group 2,  $n = 9$ ) exercises protocols for period of six weeks as described and published before

<sup>[8]</sup>. The blood samples were obtained before starting protocol (T0), twelve hours after the first acute session (T1), thirty six hours after the last session of training (T2), and after second acute session (T3). The serum level of nitrite (stable NO metabolite) was measured using a colorimetric ELISA kit (Promega Corporation, USA) that involves the Griess reaction. Data are reported as mean  $\pm$  SEM. Two-way ANOVA analysis indicated significant differences between the groups ( $P=0.048$ ) and statistical difference within the groups ( $P=0.08$ ) (Fig. 1). We can concluded that the variation of serum nitrite level is related to kind of exercise training, and however the exercise training itself may influenced on serum level of NO metabolite. The variation of other NO metabolite; nitrate is suggested to investigate.

**Key Words:** Nitric oxide; Physical Endurance; Endothelial Function



**Fig. 1:** The serum level of nitric oxide metabolite (nitrite) in two different protocols of endurance and speed trainings in healthy young men

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