

# Effects of 8-week High Intensity Maximal Aerobic Speed Training combined with Change of Direction (COD) improving VO<sub>2</sub> max of 16-year-old players

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## Abstract

The purpose of the present study shows the effects of HIIT Maximal Aerobic Speed training at intensity of 120% of MAS but with Change of Direction (COD). Responses in Heart Rate (HR) and maximal oxygen uptake VO<sub>2</sub> max were examined. Eighteen soccer player Age 16-year-old of Football School were divided in two groups, one Test Group and the other Control Group. The Test group participated for 8 weeks in the running circuit 125m with direction change 90 grade (45m) -180 grade (25m) -360 grade (5m) -180 grade (25m) -45 grade (25m). Realization time is 30 sec. Time between breaks is 4.30 min. The Series is 1x. Number of Repeats is First Week 4 Times, Second Week 5 Times and Four Weeks Left 6 Times, Volume 4 Times – 500 meter, 5 Times- 625 meter, 6 Times – 750 meters. Frequency and Duration of Exercise is 3 times a week for 8 weeks. The speed of running 120% of MAS: 3.6m / s (100% SHMA) \* 120% = 4.33 m / s. The control group assigned according the annual plan, aerobic resistance long slow distance training protocol. Result of Test Group show, HR lowering moderately by 3% and VO<sub>2</sub> max in Åstrand Test 6' increased by 7% and Cooper Test 12' by 12.9 %. From 11 soccer player of Test Group, 50% of them increased in meters covered in the Second Copper Test by 240-280 meter, 20% 140-190 meter and 30% 50-90 meter. The Control Group show increase in VO<sub>2</sub> max in Åstrand Test 6' by 8 % and Cooper Test 12' by 4.5 %. From 7 soccer player of Control Group, 20% of them increased in meters covered in the Second Copper Test by 250 meter, 40% 140-170 meter and 40% 50-90 meter. Conclusion: High Intensity Maximal Aerobic Speed Training combined with Change of Direction (COD) Drill with small volume with high intensity 120% speed of MAS may be an exercise for football sports for ages 15-16 years in improving the level of VO<sub>2</sub> max. The data in this study support the idea of the efficiency and the potential for using the circuit running with maximal aerobic speed high-intensity training.

**Keywords:** HIIT, Maximal Aerobic Speed, Soccer Player, Change of Direction (COD).