

"Effect of Meridian Acupressure on Aerobic Performance of Healthy Young Population"

Shahin Ahmedov, MD(ECFMG), PhD, and Baris Filiz

Abstract:

Objectives: An enhancement of aerobic capacity has always been in the scope of various exercise programs. Apart from traditional, like endurance training, methods to improve aerobic performance, there is growing interest to alternative bodywork techniques, like massage, yoga, and acupuncture. This study aimed to investigate the acupressure effect on maximal aerobic capacity (VO₂max) in healthy young adult males.

Design: Forty young healthy participants were randomly divided into intervention (n = 20) and control (n = 20) groups. The inferred VO₂max level in groups was assessed by the 6-min Harvard step test twice: at baseline and after acupressure session.

Intervention: Three-minute finger-tip point massage of Neiguan, Jueque, and Xinshu acupoints covered by 1 cm² sticky capsaicin-dressed heat plasters was applied in the intervention group, whereas in the control group, placebo acupressure was utilized.

Results: The inferred VO₂max in the intervention group increased from baseline 2.38 – 0.48 L/min to 2.57 – 0.6 L/min (p < 0.003), whereas inferred VO₂max of the control group remained unchanged (2.46 – 0.5 L/ min at baseline and 2.47 – 0.4 L/min after placebo acupressure, p > 0.9).

Conclusions: The results of the study demonstrated that finger-tip acupressure increases aerobic performance of young healthy males on more than 10%. Acupressure probably decreased anxiety level, which allowed better utilization of available energy sources.

Excerpts:

[...]Endurance is defined as the aerobic capacity for cardiorespiratory supply, and muscular utilization of oxygen to meet the metabolic requirements of skeletal muscles during submaximal physical activity.¹⁻⁴ Endurance Performance is an important indicator of the health condition and the fitness level of athletes. An increase in maximal aerobic capacity (i.e., VO₂max) positively impacts the outcome of various medical conditions, improves the quality of life, and delays fatigue in endurance competitions.⁵⁻¹² Clinical studies have shown a positive correlation between conventional endurance training programs and an increase in VO₂max by 10%–12% both in athletes and nonathletes.¹³⁻¹⁵ [...]In addition, various

bodywork techniques, including acupressure, have been recently promoted as alternative choices of intervention to improve fitness performance, including aerobic capacity.¹⁶⁻¹⁹ [...]The stimulation of acupoints by acupressure, [among other modalities] was found to resolve various medical conditions and improve the overall health.²⁰⁻²⁴ Sportsmen seem to be the population most interested in unconventional methods, both for injury treatment/rehabilitation and performance enhancement through the upregulation of the circulatory system.²⁵⁻²⁷

[...]Acupressure has evolved as a safe, noninvasive potential acupuncture substitute in the treatment of various medical conditions. The utilization of acupressure through the stimulation of specific acupoints with finger pressure [...] demonstrated the potential to improve the health condition and benefit the treatment protocol.²⁸⁻³⁰ Although the established treatment effect of acupressure does not address sport-specific conditions, athletes successfully use acupressure for hardly avoidable sport pain, fatigue, and stress relief.^{23,31,32} However, the lack of information on the ability of acupressure to improve strength, power, or endurance interferes with the athletes' intentions to utilize the performance-enhancing properties of this alternative modality.²⁷ [...]Therefore, considering the limitations of previous research results, this study aimed to assess the effect of acupressure on maximal aerobic capacity in a group of healthy young adult

males in Cyprus. This study design was a randomized controlled trial. Forty male students of the Near East University, aged 17-27 years, comprised an intervention group (n=20) for real acupressure and a control group (n = 20) for placebo acupressure[...] To measure the aerobic capacity of all 40 participants, we used the Harvard step test, developed by Brouha et al.³³ and lately adopted for different population groups.^{34,35} Due to its variability, the accurate assessment of VO₂max is possible under "all-out physical effort" conditions[...] Presented step test protocol is one of submaximal exercise tests, which might be not as valid, but still can provide with accurate picture of fitness status of the population without hazard for health.³⁶ [...] The step test was implemented twice: as baseline assessment without acupressure and 1 week later, at the same time of the day immediately after an acupressure session[...] On the day of the assessment, participants were asked to avoid caffeinated food and beverages, and to refrain from any exercise for at least 24 hrs before the step test. [...] The acupressure intervention was performed by the primary investigator with 25 years of experience in traditional Chinese acupuncture. Acupressure over chosen acupoints for the intervention group was applied with consistent, up-to sense-of substantial tissue resistance finger-tip pressure for 3 min in clockwise rotational movements. The study demonstrated a statistically significant increase of aerobic capacity in young healthy adults after an acute positive outcome in this study might be

due to the regulatory effect of acupoint stimulation on blood circulation[...]. Inferred VO_2 max in the intervention group rose after an acupressure session by more than 10% compared to its baseline level. Placebo acupressure, utilized for the control group, failed to demonstrate any changes in the inferred VO_2 max. [...] This safe, noninvasive, and painless method of acupoint stimulation can be easily utilized in various training programs, both for sportsmen and those requiring health improvement[...]. The findings presented in this study highlight the potency of traditional Chinese acupressure to substantially improve submaximal aerobic performance, probably through a decrease in the participant's anxiety level. So it can be speculated that the ergogenic effect of acupressure is based on a better utilization of available energy sources rather than on straining the limits of physical performance.

Conclusion/Results:

The cardiovascular system is the driving force of aerobic capacity at sea level, the function of which could be de limited by various factors, including precompetitive anxiety. The latter may increase oxygen consumption⁵³ and thus decrease the ability to tolerate extremes. The findings presented in this study highlight the potency of traditional Chinese acupressure to substantially improve submaximal aerobic performance, probably through a decrease in the participant's anxiety level. So it can be

speculated that the ergogenic effect of acupressure is based on a better utilization of available energy sources rather than on straining the limits of physical performance

Shahin Ahmedov, MD(ECFMG), PhD, and Baris Filiz

THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE
Volume 24, Number 6, 2018, pp. 589-595
© Mary Ann Liebert, Inc.
DOI: 10.1089/acm.2017.0089