BACKGROUND: Some studies have shown beneficial effects of needle acupuncture on physical performance. OBJECTIVE: To evaluate immediate effects of a standardized acupuncture treatment on vertical jumping performance. SUBJECTS AND METHODS: 12 healthy sport students participated in the study. A randomized crossover design was used to investigate specific effects of real acupuncture, sham acupuncture and a no-acupuncture waiting list condition on myoelectric activity and kinematic parameters (duration of ground contact, maximum jumping height) in one-legged drop jumps. RESULTS: The results of the present study do not demonstrate significant treatment effects on myoelectric and kinematic parameters. However, real acupuncture tends to result in a relative decrease in the duration of ground contact accompanied by increased muscular innervation. CONCLUSION: Acupuncture treatment had no significant impact on muscular performance of lower leg in stretch-shortening cycle under the present conditions. As to further research, the potential efficacy of acupuncture for improving reactive strength should be investigated in terms of controlled trials with stratified randomization according to physical performance capacity.