Pengaruh latihan lari aerobik 30 mill/minggu selama 7 minggu terhadap toleransi sistem vestibuler setelah rangsang gerak yang menimbulkan disorientasi ruang tipe 2 ilusi kuriolis = The influence of aerobic running 30 miles/week within 7 weeks to the vestibuler system tolerance after stimulated with movement that induced coriolis illusion of type 2 spatial disorientation

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Abstrak

ABSTRAK
Ruang lingkup dan cara penelitian : Sistem vestibular memegang peranan penting dalam mabuk gerak dan disorientasi ruang tipe 2 ilusi koriolis. Pada penelitian Cheung, diketahui bahwa latihan aerobik secara teratur dapat menurunkan ambang mabuk gerak. Diperkirakan penyebabnya adalah peningkatan kepekaan nukleus vestibularis medialis dalam sistem vestibuler. Oleh karena itu latihan lari aerobik secara teratur diperkirakan dapat pula mempengaruhi sistem vestibular. Untuk penelitian ini digunakan 14 naracoba yang diberikan latihan lari aerobik 30 mil/minggu selama 7 minggu. Parameter penelitian ini dinilai 2 kali sebelum den sesudah melaksanakan program latihan. Data dari parameter yang dinilai dengan alat Basic orientation trainer (BOT) yaitu durasi reposisi dan sudut kemiringan gondola yang telah dianggap naracoba telah horisontal, ketika naracoba harus mengembalikan gondola SOT ke posisi horisontal setelah diberi rangsang gerak yang menimbulkan disorientasi ruang tipe 2 ilusi koriolis. Data lain yang dinilai yaitu V02 maks, % lemak tubuh dan denyut nadi istirahat untuk memperlihatkan pengaruh program lari aerobik ini terhadap proses fisiologi tubuh.

Hasil dan kesimpulan : Peningkatan VO2 maks 14,56% (P<0,05) dan penurunan % lemak tubuh 2,08% (P<0,05) serta penurunan denyut nadi istirahat 8,57 denyut/menit (Pt0,05) menunjukan telah terjadi proses adaptasi atau perubahan pada proses fisiologi tubuh sebagai efek melaksanakan program latihan lari aerobik tersebut. Pada penilaian dengan BOT didapat peningkatan durasi reposisi 1,54 detik (P<0,05), tetapi masih kurang dari varians kesalahan ketepatan pengukuran 3,90 detik yang digunakan sebagai batas minimal perubahan yang dianggap sebagai akibat dari program latihan lari aerobik. Sedangkan pada sudut kemiringan gondola BOT didapat penurunan 1,610 (P<0,05) yang lebih besar dari varians kesalahan ketepatan pengukuran 1,58°. Maka pada penelitian ini, latihan lari aerobik 30 mil/minggu selama 7 minggu tidak didapat penurunan toleransi sistem vestibular setelah diberi rangsang gerak yang menimbulkan disorientasi ruang tipe 2 ilusi koriolis, dan kemungkinan program latihan ini telah dapat meningkatkan kepeksan sistem vestibular.
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The Influence Of Aerobic Running 30 Miles/Week Within 7 Weeks To The Vestibuler System Tolerance After Stimulated With Movement That Induced Coriolis Illusion Of Type 2 Spatial Disorientation Scope and method of study: Vestibular system plays an important role in motion sickness and the development of coriolis illusion, a kind of type 2 spatial disorientation. Cheung, in his study showed that aerobic training could inversely decreased the threshold of motion sickness, which is suspected caused by the increased

sensitivity of medial vestibular nucleus in vestibular system as the effect of aerobic training. We suspected that coriolis illusion of type two spatial disorientation could be affected by aerobic training. Fourteen healthy male were the subject of this study and trained by aerobic running 30 mil/week ' within 7 weeks. The parameter was compared before and after training. By means of BOT (Basic orientation trainer for pilots), two data are measured: (1) Duration of gondola reposition, (2) Angle deviation between subject perceptive horizontal and true horizontal position, being stimulated by cross-coupled movement. Other data to be compared were VO2 max, % body fat and resting pulse rate to show the effectiveness of this aerobic training program.

Result and conclusion: The effectiveness of the aerobic training program to physiological process can be shown by the increased of VO2 max 14,56% (P<0,05), the decreased of% body fat 2,08% (P<O,05) and the decreased of resting pulse rat 8,56 pulse rate. While the effectiveness of aerobic training to the vestibular system can be shown by the increased of duration of reposition 1,54 second (P<0,05), but still lesser than a variance error of the accuracy measurement from duration reposition 3,90 second. This variance error of the acuracy is used as a minimal changed if the increased duration of reposition caused by aerobic training. But a deviation of angle gondola decreased 1,600 (P<0,05), which is more than a variance error of accuracy measurement for angle of gondola 1,58°. In this study shows running aerobic 30 miles/week within 7 week does not decrease it's tolerance after stimulated by cross coupled movement and the increase the sensitivity of vestibular, system is suspected to be caused by this aerobic training.