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ABSTRACT

Title: VISUAL CONTRAST SENSITIVITY CHANGES DURING ORTHOSTATIC LOAD.	
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<p>Introduction: Contrast sensitivity (CS) is very important for the ability to recognize details in visual field. Changes in blood distribution caused by +Gz acceleration lead to typical changes in vision quality and CS.</p> <p>Method: Lower Body Negative Pressure method (LBNP) was used to simulate acceleration-induced changes in the blood supply of the human body. The test was done on 28 pilots of the Army of the Czech Republic. The LBNP examination was accomplished as an exposure to the negative pressure level of -70 mmHg in sitting position.</p> <p>CS was tested by means of Vistech Consultants (USA) VCTS charts. Each subject was tested twice: prior and after to LBNP exposition.</p> <p>Results: Obtained data shows demonstrative statistically significant impairment of CS values during LBNP load at higher frequencies, especially at the frequency levels 6, 12 and 18 c.deg⁻¹. It represents drop of CS values approximately from 220 to 150 (at level 6 c.deg⁻¹), from 140 to 100 (at level 12 c.deg⁻¹) and from 45 to 30 (at level 18 c.deg⁻¹). Statistically significant results of CS changes in the first minute of LBNP load were obtained and the deterioration of vision was proved.</p> <p>Conclusion: Results from our testing demonstrate the significant impairment of CS during orthostatic load. Our study confirmed substantial similarity of LBNP load influence on blood pressure regulation to +Gz acceleration load. LBNP method is possible to use as a method of visual changes evaluation during +Gz load.</p>	
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