(12) ABSTRACT OF INVENTION

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(54) DIAGNOSTIC TECHNIQUE FOR FUNCTIONAL STATUS OF MICROCIRCULATION SYSTEM IN VIBRATION SICKNESS

(57) Abstract:
FIELD: medicine.

SUBSTANCE: invention refers to medicine, specifically to therapy and functional diagnostics, and may be used for diagnosing of the status of finger microcirculation system in vibration sickness. For this purpose, an infrared thermograph is used to find the coldest finger on every extremity. After that, a laser Doppler flowmeter probe is set on this finger. Then, a closed test with arterial occlusion is conducted. That is combined with recording a blood microcirculation value by the flowmeter and skin surface temperature by a thermograph within a nail bone of the specified finger in pre-occlusive, occlusive and post-occlusive period of the standard duration. Thereby, dependences of the skin surface temperature and the blood microcirculation value on the test time are derived. Additionally, a human tissue persistence parameter $\tau$ is calculated. If $\tau$ is less than 30 s and the blood flow reserve BFR is no more than 145%, the absence of signs of vibration sickness is diagnosed. Increasing the BFR more than 145% and $\tau$ up to 50 s, the development of the first stage of the disease is stated. If the BFR is more than 145% and $\tau$ is more than 50 s, the second stage of the disease is diagnosed.

EFFECT: technique ensures higher accuracy and information value of the occlusion tests that allows typing the microcirculation more reliably, finding out functional diseases and determining the stage of this disease.

4 dwg, 2 tbl, 1 ex