

**Vibration syndrome diagnosis using cooling test verified by computerised photoplethysmography**

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**Abstract:** This study addresses itself to the problem of vibration syndrome diagnosis by means of photoplethysmography. The measurement was performed on a small area on the finger-tip plexus in which many arteriovenous anastomoses are present. In the opinion of many authors, flow disorders in this area are more typical of developing vibration syndrome than changes in the microvessels. Cooling test was then performed and it was verified both visually and using the computer method, allowing the functional measurement of the flow to be obtained. Computer method proved to be much more sensitive than traditional tests. The test proposed allows us to detect vascular disorders in the prodromal period and gives time for preventive measures to be taken.

**Key words:** vibration syndrome, microcirculation, computer diagnosis, cooling test, flow sensor modification, planimetric estimation