

Technical Analysis of the Displacements of the Centre of Pressure in the Standing Posture Based on Data Obtained Using Selected Stock Market Indicators

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ABSTRACT

BACKGROUND: Commonly used analyses of the ability to maintain balance do not take into account momentary changes appearing during the entire analysis. Looking at the nature of the COP and COM curves, a conclusion can be drawn that such trends could be investigated applying methods used for the technical analysis of stock exchange rates.

OBJECTIVE: The objective of the study was to determine whether the Moving Average Convergence/Divergence indicator (MACD) could be used in the analyses concerning the assessment of the ability to maintain balance.

METHODS: The study group was consisted of 85 healthy individuals in the real environment tests and 12 healthy individuals in the virtual environment tests (with an oscillating scenery). Performed calculations enabled the identification of time intervals between successive trend changes in relation to the COP displacements.

RESULTS: Test results revealed that, when standing, the most frequently appearing time intervals between successive trend changes were restricted within the range of 0.1 s to 0.5 s.

CONCLUSIONS: The above-presented trend was observed both in relation to the measurements conducted in the real environment and those performed in the oscillating virtual environment. The foregoing could indicate that the changes are characteristic and indispensable for the proper maintaining of balance by humans.

KEYWORDS: stock market indicators, stabilography, technical analysis, MACD.