



Suunto t6 – A Reliable and Accurate Measuring Instrument for Performance Diagnostics and Training Control!

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Suunto, a Finnish manufacturer for sports instruments, has launched the Suunto t6, a new kind of sports computer that provides the possibility for optimum training for leisure-time and competitive athletes. According to the manufacturer's instructions, the sport watch not only measures heart frequency, but six further body parameters, including respiration rate, ventilation, oxygen consumption and EPOC with nearly laboratory accuracy across a broad range of training intensities. The athletes receive precise information on how to train in a health-conscious, goal-oriented and effective manner.

Measuring accuracy high up to very high

In the framework of an extensive study at the faculty of sports medicine at the University of Bayreuth, the Suunto t6 revealed high to very high validity when measuring respiration rate, ventilation and oxygen consumption against performance intensity. With its measuring accuracy up to 94% for oxygen consumption, the wrist computer might be recommended for ambitious and professional athletes.

Extremely reliable measuring device

Reliability verification within the sub-maximum load range identified the Suunto t6 to be a sport measuring device with excellent reliability. Only minimal variances (1,8 – 5,7%) showed up for the test persons during the test-retest-measurements, which clearly argues for the replication of the sport computer's data.

Correlation between EPOC and lactate

A highly interesting fact appeared when confronting the physiological parameters EPOC and lactate: The kinetic of both values, as well as a very high correlation coefficient ($r=0.987$), shows a most strong connection between the EPOC data of the sport watch and the lactate data measured in the laboratory. Although this topic requires more detailed analysis, it is to be confirmed that the EPOC measurement of the Suunto t6 might give evidence on the level of fatigue as well as on the training load.

Effective training analysis

The Suunto t6 gives its user a comprehensive, professional and effective training analysis. Compared with conventional heart rate instruments that only measure heart rate, the additionally calculated body parameters permit more precise analysis and comparison of training level, intensity and performance. This assures improved performance documentation and more detailed tailoring of training plans. Not only leisure-time and ambitious athletes, but also clubs, federations and research establishments may profit from this knowledge advantage.

Furthermore, training science and sports medicine could conduct straightforward, less time-consuming and cheap research with large test groups in epidemiologic studies. Based on the very good results during maximum load and due to the maximum values, it might be assumed that the sport computer could at least be used for the approximate determination of the maximum performance parameters.

Without expensive performance diagnostics, the sports watch gives interested and ambitious leisure-time athletes important data that, up to now, had mostly been limited to professional athletes. Above all, the EPOC measurement of the sport computer might possibly soon replace or supplement the lactate diagnostics that is actually only done in laboratories; however, this still requires a lot of research. EPOC would thus allow statements about the training efficiency and the fatigue level of single training units.

Conclusion

It may be confirmed that the Suunto t6 – especially in the upper intensity levels - is an accurate and reliable measuring instrument which is appropriate for performance diagnostics and training control and might highly contribute to successful training.