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"Negative phase" of the heart rate and stroke volume in young athletes after the Harvard step test

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Abstract

Changes in the heart rate (HR) and stroke volume (SV) after the Harvard step test have been studied in young athletes at different stages of multiyear training. At the initial stage of training, the HR of young swimmers and skiers transiently decreased after the test below the starting values; i.e., during the recovery period, a "negative phase" of the HR was observed. After the test, the SVs of these athletes also decreased below the starting values, following the pattern of the pulse negative phase. However, the HR and SV negative phases were not synchronous. With advancement in the training level of the young swimmers and skiers, decreases in the HR and SV below the starting values were observed more seldom, and such decreases were virtually absent at the advanced stage. No decreases in the HR or SV after the Harvard step test were observed in young ice hockey players or gymnasts. © Pleiades Publishing, Inc. 2006.

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