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Catecholamine Excretion and Heart Rate as Factors of Psychophysical Stress in Table Tennis

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Abstract

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Abstract

Table tennis, like tennis, squash and badminton, is a racket sport. All

these sports have in common a rapid succession of mostly short-term maximal or submaximal efforts and short recovery phases. The goal of this paper is to investigate the psychophysical stress in table tennis by means of the stress hormones epinephrine and norepinephrine. The catecholamines were determined from urine samples. 16 Austrian top-level table tennis players were examined. There were 8 female and 8 male players in this group. The catecholamine excretion at rest (R), training (TR), practice competition (PC), competition (C) and treadmill ergometry (TE) are indicated in ng/min of collecting time. When the group is divided according to sex, we find marked differences in the catecholamine release. While the epinephrine excretion during and after training and practice competition is basically the same, it is lower during and after treadmill ergometry and higher after competition. The same result was found with respect to norepinephrine excretion. The ratio between norepinephrine and epinephrine was 4:1 at rest and during and after treadmill ergometry, 6:1 during and after training, 5:1 during and after the practice competition and 2:1 during and after the competition. The investigation showed that a table tennis competition puts high stress on the player. The mental component should therefore receive much more importance in order to keep the stress low.



Key words

Table tennis - catecholamines - heart rate

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