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## Effects of moderate treadmill activity on cardiovascular factors in spontaneously hypertensive rats

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**Introduction:** Hypertension is a major health problem throughout the world because of its high prevalence and its association with increased risk of cardiovascular disease. Oxidative stress, trace element status and exercise have been demonstrated to play a major role in the pathogenesis of hypertension. The objective of this study was therefore to investigate the effect of moderate treadmill activity on cardiovascular factors in the spontaneously hypertensive rat (SHR) model of hypertension.

**Methods and results:** Sixteen SHR and 16 Wistar rats were randomly divided into an exercise (n=8) and a non-exercise (n=8). All the rats in the exercise group were subjected to a progressive treadmill exercise regimen for 8 weeks. Blood pressure, blood glucose and body weight was recorded weekly. At the end of the study, C-reactive protein (CRP), trace elements were measured in the blood and Total antioxidant capacity (TAC) was measured in the skeletal muscle. Hypertension developed in both SHR groups only. Elevated CRP level in both SHR and Wistar exercised groups suggest an inflammatory response associated with hypertension and exercise. There were no significant compensatory increases in TAC during exercise in the SHR. Decreased levels of Iron, Selenium and manganese were also observed in the exercise groups.

**Conclusion:** This study reports that the pathological changes associated with oxidative stress are exacerbated when coupled with exercise in this model of hypertension.

### Biography

Kibwe Mwewa has completed his Masters degree in laboratory Medicine and Medical Science, department of physiology in 2015 at the University of KwaZulu Natal, South Africa. He is currently pursuing his PhD in the same field focusing on pulmonary hypertension.

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