

Short Communication

## Effect of swimming during pregnancy on vascular endothelial growth factor level of neonatal rat kidney tissue

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### Abstract

**Background and Objective:** The kidney has a key role in homeostatic regulation. Vascular endothelial growth factor (VEGF) is essential regulator of stimulatory and inhibitory processes for neonatal, post-natal endothelial cell differentiation. This study was done to determine the effect of maternal swimming during pregnancy on VEGF level of kidney in rat pups.

**Methods:** In this experimental study, sixteen Wistar rat dams were allocated into interventional swimming and control groups. In the first day of pregnancy, in interventional group, swimming was performed for 30 minutes a day and 5 minutes every day was added until the time of training gradually reached to one hour per workout. Dams swimming endurance training were performed in 5 days per week for three weeks. Pups' kidneys were removed two days after birth and kidney tissue VEGF level was determined using ELISA method.

**Results:** Kidney tissue VEGF level in interventional swimming group (133.13 pg/ml) was significantly increased in compared to controls (48.19 pg/ml) ( $P < 0.05$ ).

**Conclusion:** Swimming endurance training increases the pups' kidney VEGF level.

**Keywords:** Vascular endothelial growth factor, Swimming, Pregnancy, Kidney, Rat

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