Effect of chronic hypoxia on penile erectile function in rats

D.P. Yu¹, X.H. Liu² and A.Y. Wei³

¹Department of Urology,
The First People’s Hospital of Jining City in Shandong Province,
Jining, Shandong, China
²Shandong Academy of Medical Sciences, Third Affiliated Hospital,
Jining, Shandong, China
³The First Clinical Medical College, Southern Medical University,
Baiyun, Guangzhou, China

Corresponding author: D.P. Yu
E-mail: dapengyu_cn@yeah.net

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ABSTRACT. We examined the relationship between chronic hypoxia and erectile dysfunction in rat and its possible pathogenic mechanism. Forty-eight white male adult Sprague-Dawley rats were randomly divided into a test group and a control group. In accordance with the experimental time (2, 6, and 10 weeks), each group was divided into 3 subgroups, with 8 rats in each subgroup. Rats in the test group were fed in an airtight hypoxia cabin, while rats in the control group were maintained in a normal environment, with other conditions kept the same. At 2, 6, and 10 weeks, the rats in each group were observed for erectile function. Affinity purification was used to detect neural nitric oxide synthase (nNOS)-positive nerve fibers and endothelial nitric oxide synthase (eNOS) expression. After hypoxia, erectile frequency decreased significantly compared to before hypoxia (P < 0.001). Comparison of the test group and control group revealed a significant difference in the quantity of nNOS-positive nerve fiber and eNOS protein expression (P < 0.01). Hypoxia may influence erectile function.
and nNOS and eNOS expression in rats. The decrease in the quantity of nNOS nerve fibers and expression of eNOS may contribute to erectile dysfunction under hypoxic conditions in rats.

**Key words:** Erectile dysfunction; Hypoxia; Nitric oxide synthase; Rat