

ABSTRACT

The Effect of tobacco smoke exposure on body weight and blood glucose on mice.

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Introduction: For most smokers, cigarette smoking is one of the most difficult habit to stop. Nicotine in cigarette has known to increase leptin and reduce body weight. Besides, smoking is one of predisposition factors of diabetes mellitus. Thus, this study aims to find out the influence of smoking on body weight and blood sugar in mice. **Methods:** After undergone acclimatization for a week, the treatment group was exposed to cigarette smoke from 2 cigarettes 1 time a day and 5 times a week for 4 weeks, while the control group was not exposed to cigarette smoke. **Result:** Both groups showed weight loss in the first week, but then showed gradually increased weight. At the end of the experiment, the control group had 4.7 gram weight gain and the treatment group had a weight gain of 2.9 grams. There was no significant correlation between body weight and cigarette smoke exposure ($p=0.132$). Blood glucose level in both groups decreased at the end of the experiment, the control group decreased by 40.45 mg/dl and the treatment group decreased by 12.1 mg/dl. There was significant correlation between blood glucose level and cigarette smoke exposure ($p=0.022$). **Conclusion:** Exposure to cigarette smoke from 2 cigarettes once a day for 4 weeks had a significant effect on blood glucose level, but not body weight. These results might be different in experiment with better control on laboratory environment, higher cigarette smoke exposure, or usage of female mice which have more fat.

Keywords: Smoking, body weight, blood glucose