

# IUPS 2013, Line dance turnitin

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## Poster Communications

PCC252

**Line dance class with their spouse increase participation on exercise and Improve physical fitness and health status among Palembang's traffic police officers**

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Lack of physical activity and increase risk of degenerative disease have become problems among traffic police officers. Demanding schedule and exposure of air pollutants are daily life cycle through the years. A delightful line dance class has been organized in traffic police quarter. The officers were asked to join the course with their spouse to increase participation. Most of total 70 traffic police officers in Palembang were interested to join the class, but class only received 40 officers with their spouse due to limited room. Line dance training packet was transpired for 2 months, 3 times a week, and 45 minutes for each session. The class was opened flexible adjusted shift schedule. The couple could choose 1 of 2 time options in each their schedule day in the morning or afternoon. There are 37 officers aged 35-48 years old complete their class properly and participated in physical fitness test before and after the course. In 2 months, line dance training could significantly improve physical fitness capacity among officers. The VO<sub>2</sub>max increase from 33.6±2.1 to 36.3±2.2 ml/kg/min (p<0.001), BMI decrease from 26.7±2.8 to 26.5±2.7 (p=0.01), sit and reach flexibility test improve from 42.4±4.7 to 43.5±4.5 cm (p<0.001) and relative muscle strength increase from 4.7±0.9 to 4.9±0.8 (p<0.001). The training also improves resting mean arterial pressure from 106.2±9.7 to 102±8.8 mmHg (p<0.001).

A delightful line dance could improve physical activity and physical fitness among traffic police officers. Training with their spouse could increase their participation.

To Palembang's Traffic Police officers for their participation in this study.

To Palembang's Traffic Police Department for their permission to publish the result of this study

*Where applicable, the authors confirm that the experiments described here conform with The Physiological Society ethical requirements.*

PCC253

**Effects of long-term exercise on norepinephrine transporter gene expression of cardiac sympathetic ganglion in SD rats**

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Background: Norepinephrine transporter (NET) is synthesized in sympathetic ganglion and arrived to presynaptic membrane of sympathetic nerve ending by axoplasmic transport. The synaptic norepinephrine concentration is regulated through norepinephrine release and norepinephrine re-uptake by NET, thus maintaining cardiac function. Regular exercise training has been associated with improvement of the sympathetic nervous system in several animal models and in some human studies. Although these data are consistent with the hypothesis that exercise training reduces the incidence of cardiovascular diseases, ameliorates cardiac function and enhances exer-

cise performance via reduced sympathoexcitation, the mechanisms are unknown. Objective: The present study was to observe the effects of long-term exercise on NET gene expression of cardiac sympathetic ganglion in SD rats and to investigate the possible mechanism of exercise-induced improvement of cardiac sympathetic nerve function. Methods: Ten SD rats performed 12-week aerobic treadmill running (exercise group, EG) and the other ten SD rats as control group (CG) maintained resting state. After experiment and coeliac anesthesia with 1% pentobarbital (30mg/kg), exhaust time (ET) was determined during incremental treadmill test; left ventricular end-systolic diameter (LVESD), left ventricular end-diastolic diameter (LVEDD), fractional shortening (FS), left ventricular ejection fraction (LVEF) and heart rate (HR) using echocardiography; myocardial and plasma norepinephrine (NE) by high pressure liquid chromatography-electrochemical detection; cardiac sympathetic ganglion and myocardial NET mRNA level were determined by real-time fluorescent quantitation PCR; cardiac sympathetic ganglion and myocardial NET protein and myocardial tyrosine hydroxylase (TH) protein by Western blot. Results: Compared with CG, ET (42.6±4.2 vs 27.4±3.8 min, P<0.01) increased; LVEDD (7.15±0.81 vs 8.82±0.91 mm, P<0.05), FS (57.8±4.6 vs 45.0±4.3 mm/s, P<0.01) and LVEF (67.6±5.8 vs 52.4±4.7%, P<0.01) raised but HR reduced (314±37 vs 395±39 b/min, P<0.05); both plasma NE (375.7±47.2 vs 464.6±42.9 pg/ml, P<0.01) and myocardial NE (528.2±54.4 vs 664.1±39.8 ng/g, P<0.01) lowered; NET mRNA (1.75±0.20 vs 1.00±0.07, P<0.01) and protein (1.82±0.17 vs 1.00±0.09, P<0.01) of sympathetic ganglion elevated; NET mRNA of heart was not detected but NET protein step-up (1.69±0.18 vs 1.00±0.08, P<0.01); TH protein was not significantly different (1.15±0.22 vs 1.00±0.12, P>0.05). Conclusion: Long-term exercise training improved cardiac conduction and sympathetic nerve function, as well as enhancing exercise capacity, the mechanism of which might be related to upregulation of NET gene expression of cardiac sympathetic ganglion.

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