Combined Effects of Traffic Noise and Cell Phone Radiation on Liver and Thyroid Gland Function

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Abstract

**Background and Aim:** Noise and mobile phone radiation have reported to have major health risk on human body. The aim of this study was to investigate the effects of traffic noise combined with mobile phone radiation on serum thyroid hormones, and SGOT, SGPT, Creatine Kinase and Alkaline Phosphatase in male rats.

**Materials and Methods:** Male Wistar rats were randomly separated into 10 equal groups (n=7): control group, groups exposed to cell phone radiation (940 MHz) for 1, 3 and 6 h/day, groups exposed to traffic noise (100 db, 700-5700 Hz) for 1, 3 and 6 h/day, and groups exposed to cell phone radiation (940 MHz) combined with traffic noise (100 db, 700-5700 Hz) for 1, 3 and 6 h/day. Serum thyroid hormones levels were measured using ELFA technique and SGOT, SGPT, Creatine Kinase and Alkaline Phosphatase activity levels were measured using spectrophotometry method . Statistical analysis was performed using ANOVA.

**Results:** Exposure of animals to traffic noise combined with mobile phone for 6 h/day resulted in significant decrease in T3 and T4 levels; however, did not significantly alter the activity level of serum SGOT, SGPT, Creatine Kinase and Alkaline Phosphatase.

**Conclusion:** We have shown that exposure to traffic noise combined with mobile phone can significantly reduce the thyroid function which in turn may have serious effects on various functions of the body.

**Keywords:** Traffic Noise, Mobile phone radiation, T3, T4, SGOT, SGPT, Creatine kinase, Alkaline phosphatase.