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## **The effects of noise on cardiovascular parameters using isolated rat's hearts**

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### **INTRODUCTION AND OBJECTIVES**

Prolonged exposure to loud noise can have lasting adverse effects on health. Noise damages not just the auditory system but also systematically by activating the sympathetic nervous and hormonal systems. This will lead to changes in blood pressure, heart rate, and other circulatory factors, which consequently can result in many cardiovascular diseases. The present study was undertaken to evaluate the effect of acute and chronic high intensity noise on the isolated hearts of rats using the Langendorff apparatus by determining the effect of noise on the coronary perfusion pressure (CPP), heart rate (HR) and left ventricular diastolic pressure (LVDP).

### **METHODS**

The rats were divided into four groups and they include exposure to noise of intensity 80-100 dBA on duration of 12 hours exposure (acute effect), 8 hours daily for 20 days (chronic effect), 20 days into 3 days exposure and 2 days without 8 hours per day (intermittent effect) and the control group.

### **RESULTS**

Noise of 80-100 dBA was found to cause significant increase in CPP, LVDP and HR ( $p < 0.05$ ) for acute and both chronic groups versus control. On other hand there were no significant differences of the CPP, LVDP and HR between the chronic intermittent group with the chronic continuous noise exposure group of the study.

### **CONCLUSION**

The present study determined that high intensity noise may have an adverse effect on cardiovascular functions and thus noise exposure should be well monitored.