

## Evaluation of cardio respiratory efficiency in workers of sugarcane factory.

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### Abstract

**Introduction:** Work related dust exposure is a risk factor for acute and chronic respiratory irritation and inflammation with the possibilities of development of atherosclerotic and coronary artery diseases.

**Aim:** To assess the pulmonary functions and electrocardiographic changes in asymptomatic sugarcane factory workers.

**Materials and Methods:** The study was conducted in one of the reputed sugarcane factories near Jamkhandi in Karnataka. Male workers (n=60) exposed to sugarcane dust (with minimum of 5 years of exposure) were compared with age matched controls selected from the same factory but not exposed to dust (office workers, n=60). FVC (L), FEV<sub>1</sub> (L), FEV<sub>1</sub>%, FEF<sub>25-75%</sub> (L/sec), PEF (L/min) and MEP (mm Hg) of all the subjects were recorded. The electrocardiographic recordings were taken using conventional 12 lead Electrocardiograph.

**Results:** No significant changes were observed in Anthropometric (Age, Height, Weight, BMI and BSA) and Physiological parameters (SBP, DBP, Pulse Rate and Respiratory Rate) among sugarcane factory workers compared to controls. The authors observed highly significant reduction in PEF (p=0.000), FEV<sub>1</sub> (p=0.04) and insignificant reduction in FEF<sub>25-75%</sub> (p= 0.40) among sugarcane factory workers compared to controls. A significant increase was observed in PP interval (p=0.013), PR interval (p=0.0015) and ST (p=0.0019) segment and insignificant reduction in Heart Rate (p=0.12) among sugarcane factory workers compared to controls.

**Conclusion:** The present study suggests a possible pulmonary obstructive change in sugarcane factory workers exposed to sugarcane dust indicating occupational health hazard.

**Key words:** Sugarcane factory workers, pulmonary functions, electrocardiogram.

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