

Respiratory Inflammation Among Workers Exposed to Airborne Dust With Endotoxins in a Coffee Curing Factory

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Abstract

Objective:

To study dust exposure and inflammatory reactions in the respiratory tract among coffee curing workers in Tanzania.

Methods:

A cross-sectional study was conducted in a Tanzanian coffee curing factory. Coffee workers (n = 15) were compared with unexposed controls (n = 18); all workers were nonsmokers. Exhaled nitric oxide was examined using an electrochemistry-based NIOX MINO device. Personal air samples were analyzed for total dust and endotoxins, using gravimetric analysis and the chromogenic Limulus amoebocyte lysate endpoint assay, respectively.

Results:

Total dust levels ranged from 0.2 to 27.9 mg/m³, and endotoxin levels ranged from 42 to 75,083 endotoxin units/m³. Concentrations of exhaled nitric oxide, analyzed by linear regression and adjusted for age ($\beta = 0.57$; 95% confidence interval, 0.08 to 1.06; $P = 0.02$), was higher among coffee workers than among the control group.

Conclusion:

The results indicate a relationship between the coffee dust and signs of respiratory inflammation.