

[Poster Board #F94] Spirometry Monitoring in the Detection of Bronchiolitis Obliterans in Flavor Manufacturing Workers, [Publication Page: A164]

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**Background:** Bronchiolitis obliterans (BO) associated with diacetyl, in artificial butter and other flavorings, occurs in workplaces without effective exposure controls.

**Methods:** The National Institute for Occupational Safety and Health initiated a spirometry monitoring program for a flavor manufacturing company. We used a volume spirometer interfaced to a personal computer and administered a bronchodilator to assess reversibility of airways obstruction. Surveys occurred in October 2006 and March 2007. **Results:** Among 14 workers with current or past flavor manufacturing experience, initial spirometry revealed severe fixed airways obstruction, later confirmed as BO, in a 37-year-old never-smoker. He developed shortness of breath and cough 1 and 4 years, respectively, after beginning work in powder production. He added diacetyl and other ingredients to powder flavorings, monitored blending operations, and packaged finished products. His work tenure included 6 years in powder production, then approximately 5.5 years in liquid production, followed by less than 1 year in the warehouse due to debilitating respiratory symptoms. Spirometry tests 4.5 months later revealed that a 25-year-old asymptomatic worker had progressed from borderline to mild fixed airways obstruction after a 1 liter drop in FEV<sub>1</sub>. He had a 2 pack-year smoking history. He worked approximately 3 months in powder production and 21 months in liquid production. High-resolution computed tomography showed expiratory air trapping. With exposure cessation, both workers had stable FEV<sub>1</sub> on follow-up. **Conclusions:** Serial spirometry identified a prevalent and an incident case of flavor-related BO. Exposure controls, respiratory protection, and serial spirometry, with removal of those with large decrements or abnormalities, are necessary to protect flavoring workers from permanent, severe disability.

**Session Info:** [\*\*] Thematic Poster Session, [A58] MEDICAL MONITORING AND SCREENING AND SURVEILLANCE

**Day/Date:** Sunday, May 18, 2008

**Session Time:** 8:15 AM - 4:15 PM

**Poster Viewing:** 10:45-12:15

**Room:** Area F (Halls A-B, North Building, Level 300), Metro Toronto Convention Centre

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