

**[Poster Board #K9] Severe Fixed Obstructive Lung Disease in Flavoring Workers,
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Introduction: Flavoring workers have developed clinical bronchiolitis obliterans (BO) at several plants with inhalation exposures to chemicals such as diacetyl, a butter flavoring chemical which has caused severe respiratory epithelial necrosis in animal tests.

Methods: We aggregated clinical case data from investigations at three plants where workers produced flavorings by adding liquid flavoring chemicals, including diacetyl, to powder bases. Results: Out of approximately 30 production workers, six non-smokers (aged 26 - 45 years-old) developed progressive shortness of breath after working five months to 8 years handling flavoring ingredients in open containers. All had severe fixed obstructive lung disease on spirometry testing. Diffusing capacity was normal in five affected workers. High resolution chest CT scans showed heterogeneous air trapping, cylindrical bronchiectasis, and patchy ground-glass opacities. An open lung biopsy in one affected worker showed peribronchial fibrosis and some granulomas. Peak diacetyl air concentrations at one flavoring plant (greater than 100 parts per million) were similar to peak air concentrations at two microwave popcorn plants where workers exposed to butter flavoring chemicals developed clinical BO. Conclusions: Use of diacetyl and other flavoring chemicals to make powdered flavorings puts workers at high risk of developing severe fixed obstructive lung disease. Engineering controls, respiratory protection, and medical surveillance with spirometry are essential in such work settings. Disclaimer: The contents of this abstract have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy.

Session Info: [**] Thematic Poster Session, [B56] CONTROVERSIES IN OCCUPATIONAL AND ENVIRONMENTAL ASTHMA AND AIRWAYS DISEASE

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

Presentation Time: 8:15 AM

Poster Viewing: 10:45 AM - 12:15 PM

Room: Area K (Hall D, Lower Level), Moscone Center