

## Assessment of Respiratory Health Effects and Immunologic Sensitivity in Epoxy Resin Workers

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**Rationale:** Epoxy resin systems are used widely in industry and have been associated with occupational asthma, dermatitis and hypersensitivity pneumonitis (HP). An epoxy resin worker at a local manufacturing facility developed HP and required lung transplant. This patient had a positive lymphocyte proliferation test (LPT) to an epoxy hardener containing a proprietary amine and polydiamine. Our **Specific Aims** are: (1) To assess the prevalence of respiratory symptoms and abnormal spirometry in epoxy resin workers compared to manufacturing workers who do not handle epoxy resins; (2) To investigate the use of an epoxy resin lymphocyte proliferation test (ERLPT) as a biomarker of exposure and sensitization in at-risk workers compared to unexposed workers; (3) To use this pilot study as the basis for a longitudinal medical surveillance program for epoxy resin workers in this industry to prevent work-related lung disease; and (4) To develop recommendations for ongoing industrial hygiene monitoring and exposure assessment as part of a medical surveillance program. **Methods:** Using employee lists and exposure data, we are recruiting workers from two Colorado manufacturing sites who work directly with epoxy resin components. The comparison population includes a demographically similar set of newly-hired workers at the two sites who do not work with epoxy resin components. We are collecting questionnaire data, spirometry, and results of an ERLPT panel to epoxy resin components and comparing findings between the exposed and the unexposed worker groups. We hope to use the ERLPT to identify a subset of epoxy resin exposed workers who have developed specific sensitization and who may be at risk for lung disease. **Results:** Data collection and analysis are in process and should be completed by March 2010. **Conclusions:** This pilot research program will lay the foundation for a high quality, longitudinal medical and industrial hygiene surveillance program for workers at risk for occupational lung disease in industrial settings using epoxy resins.

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