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Agricultural Exposures and the Lungs: What do we know now?

Exposures during agricultural work, either with crops or with animals, is known to increase the risk for respiratory health conditions including acute and chronic cough, phlegm, wheeze, bronchitis, and increased incidence of occupational asthma. The response is additive in multiple exposures, such as dust and herbicide, and differs by sex.

Multiple studies have been undertaken from epidemiologic to bench to Canadian Light Source Imaging, to understand the inflammatory response to inhaled agricultural exposures. An overview of these results to date including the live imaging of mouse lungs after 5 days of exposure to dust and glyphosate will be presented. The differences in inflammatory markers and lung histology will also be presented, by time (1, 5 and 10 days of exposure) and by sex (male and female).

Exposure to agricultural contaminants increases lung inflammation over time and by sex. The additive effect of multiple exposures impacts inflammatory response.