A Respiratory Epidemiologic Survey of Grain Mill Workers in Cape Town, South Africa. 

Introduction: A variety of manifestations related to occupational exposures to grain dust have been described since Ramazzini, an 18th century Italian physician, reported a group of diseases afflicting the sifters and measurers of grain…Grain workers are exposed not only to grain dust (wheat, barley, rye, oats and maize) but also to other materials (silica, fungi, insects, rodent hairs, and pesticides), many of which have the potential to induce disease.

Objectives: to compare the prevalence of respiratory abnormalities among grain workers in Cape Town with a control group of workers not exposed to grain dust; to evaluate whether workers were related to subjectively reported mill dust levels. Particular attention was directed to lung function variation during the working week.

Methods: Subjects: 669 (89%) of workers in 4 grain mills in Cape Town, and 202 workers (82%) of workers in a packaging factory. Informed consent was obtained from all subjects. Investigations included an interview, skin prick tests and pulmonary function tests at the start of the Monday shift and before and after bronchodilator the end of the Thursday shift. Surveys were conducted between August and November 1983 by the same survey team using the same procedures.

Results: There were no significant differences in age, height, weight, years of exposure and or smoking habits between all mills combined and controls. Grain workers showed significant deterioration over the working week (4% in FEV$\textsubscript{1}$ ) compared to an increase of 3.35% in the controls. Grain workers had significantly higher prevalences than did controls for regular cough (46 vs 30%), expectoration (36 vs 17%) wheeze and watery eyes (25 vs 10%). These symptoms were not related to duration of employment. A dose -response relationship, independent of smoking habits, was demonstrated between reported dust exposure and symptoms as well as dust exposures and PFT.

Conclusions: Workers occupationally exposed to grain dust had an increased prevalence of respiratory and allergic symptoms, and further, showed greater deterioration in lung function over 4 days of the working week than did control subjects. These effects were strongly related to subjective reported dust levels and only weakly related to smoking habits and atopic status… These results have important implications for the grain mill industry in South Africa where there is insufficient legislation and worker compensation.