

Carefully read the description of the experiment below. Be prepared to answer the questions that follow the design description as a class quiz.

A student in the Department of Environmental Health is testing devices to control the amount of dust from various industrial tools that may be breathed in by the operator. One particular instrument examined was a hand-grinding tool tested with a vacuum ventilation system run at 3 rates of air flow (variable of interest). Amounts of respirable dust were measured for each of 6 different operators (not a variable of interest) and several replications of each operator. Respirable dust exposure was measured for each replicate of each operator (see plot below). The objective was to determine if the mean levels of respirable dust varied with the ventilation rate.

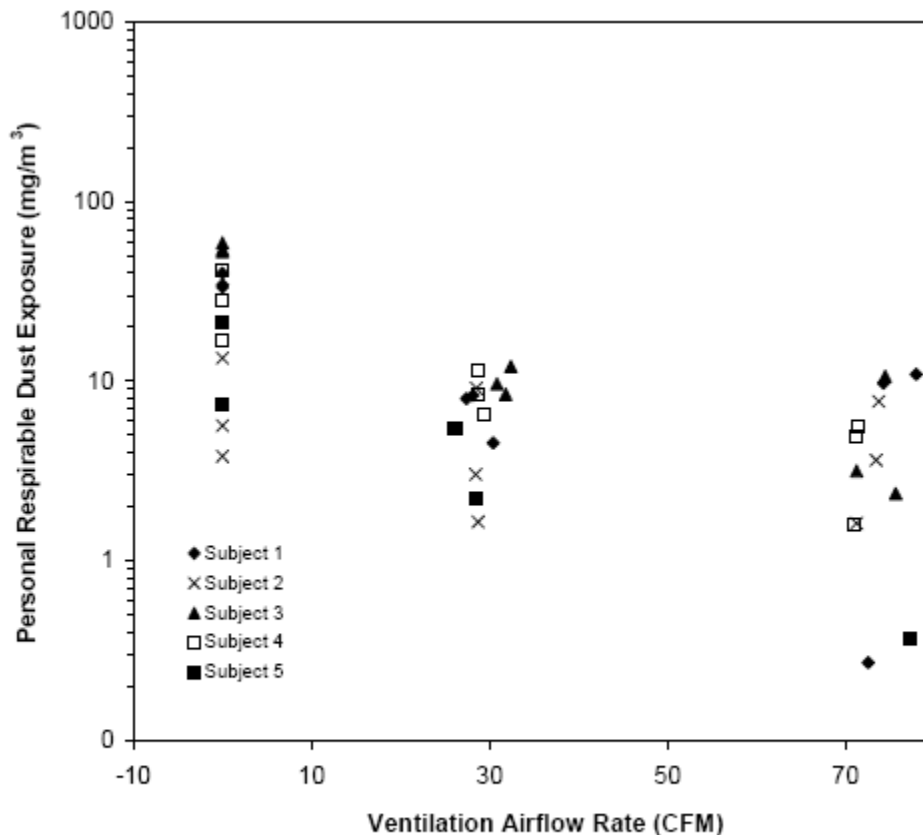


FIGURE 6. Personal respirable dust exposures (mg/m³) resulting from tuck point grinding work activity as a function of ventilation airflow rate