

Report 84: Workplace Exposure to Particulate Agents

Convener: Frank Mirer

Brief History:

Human health effects from exposure to particulate agents at prevailing exposure levels has emerged with considerable force in recent decades, with health effects including mortality and hospitalization from cardiovascular and respiratory causes, and cancer. Agents which are common between workplace and community include particulate NOC (PM_{2.5}), diesel particulate matter, metal oxides (welding fume), environmental tobacco smoke, among others. Agents with limited health effects information, such as emissions from compressed natural gas engines and directed fired gas heaters are expanding. An anchor in human health effects permits a laboratory research program which will inform low dose potency by comparing effects in model systems for agents known to pose a hazard to novel agents such as various engineered nanoparticles.

Discussion Highlights:

The locus for sponsorship of this research was discussed as problematic. NIOSH supports the regulatory mission of OSHA (which itself conducts no research) with research intramural and limited extramural research, while both EPA and NIEHS support work on possibly similar agents outside the workplace. The NTP division of NIEHS is responsible for “testing” of agents.

Recommendations:

1. Laboratory testing of particulate agents including combustion particulate and metal oxides should have an increased priority at NTP
2. Studies of behavior in sophisticated laboratory test systems of agents anchored in human health effects or already conducted bioassays should be conducted in parallel such experiments with related but untested agents to illuminate relative potency.
3. Health effects research on particulate agents by NIEHS should expand in priority because of the demonstrated effects of these agents at prevailing exposure levels.

Discussion Participants:

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