

SUMMARY OF BOARD ITEM

ITEM # 03-6-1: HEALTH UPDATE – Diesel Exhaust Particles:
Potential Mechanisms for Cardiovascular Toxicity

STAFF RECOMMENDATION: Informational Item

DISCUSSION: The ARB staff provides the Board with regular updates on recent research findings on the health effects of air pollution. This month's update will report on the results of a study in which hamsters were treated with solutions containing diesel exhaust particles (DEP) at several concentrations considered relevant to ambient exposures. The investigators measured factors that relate to blood clotting and lung inflammation in the animals and found them to increase in treated versus untreated animals. These observations exhibited a dose-response nature where animals receiving more DEP showed more clotting and inflammatory effects. The investigators propose that these sorts of inflammatory and clotting processes are likely to occur in people exposed to DEP and other particulate matter in urban air.

SUMMARY AND IMPACTS: The health outcome responses observed in this study suggest mechanistic explanations of recently reported cardiovascular mortality and morbidity found by epidemiologists who study human populations. Such mechanistic findings reinforce the importance of reducing levels of DEP in California. The many adverse health consequences of DEP and particulate matter are of considerable concern to the Board.

