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Cigarette Smoke and Pulmonary Emphysema

1. The cover memo by Alex Holtzman to various P.M. executives is excessive in its praise of Avlado's study as published in the April issue of Archives of Environmental Health. I cannot agree either with Alex's praise or with Avlado's conclusion that "the experiments in rats have failed to support the widespread belief that cigarette smoke can induce experimental pulmonary emphysema."
2. My quarrel with the study as printed lies in the method of exposing the rats to smoke. There is no way of knowing what the dose of smoke was. How much smoke (and how was it generated and delivered) is there in one cigarette? Since this is unknown, how can one know the dilution factor when the smoke from one cigarette is put into a chamber of four cubic feet? And if one knew all these measurements, the conclusion is unwarranted because this is the only exposure made. It would have been more meaningful if Dr. Avlado had tried several dose levels, preferably five or six levels over the one reported. He might also have continued the exposure for a longer time. Or he might have tried old rats instead of very young ones. Only then could he reasonably say that "the experiments in rats failed to support the widespread belief that cigarette smoke can induce experimental pulmonary emphysema."
3. This study is a good pilot. Perhaps it should be extended to make it more meaningful.

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