Dear Mr. James,

I have glanced at some of the questions which you left with me, and in the first case I do not think it matters whether doctors are to be regarded, or not, as a random sample of the population, or as having the same incidence of lung cancer. In fact I should expect any section of the population, other than a truly random sample, to be liable to show differentiation in this respect. The importance of Doll's figures for the physicians lay in the comparison of the smoking habits of those who died of lung cancer, according to the Registrar, and those who did not.

(2) I do not think one can dismiss the existence of a constitutional factor, and I am sure that it would be exceedingly rash to do so.

(3) I have not a copy handy of Hill's book on "Clinical Experimentation" (or whatever in detail its title may be), but other writers on the design of experiments do stress the importance of randomization in the allocation of material to different treatments. I should be surprised if Hill does not mention this also.
(4) I do not feel there is much meaning in speaking of doing anything on a statistical basis only, but with a properly conducted experiment statistical tests can, in my opinion, be conclusive on the question of causal relationship; and this is what we should do with flies or rabbits, even though the detailed sequence of physiological causation was still not filled in. I have not got the hang of questions (5) and (6).

On question (7) I have just received a reply from Verschuer, who seems to be alive and kicking, and if I understand him right, has massive twin material available who could be questioned about their smoking habits. I think he should be got to estimate the office and organization costs of such a research, and be offered a substantial additional fee if he will undertake it. He may very well be poor since the last war, but he is a man of very great distinction.

(8) Yes, Doll and Hill quite surprised me by the confidence with which they were willing to infer direct causation on the basis of data which did not, to my mind, even very strongly suggest it.

Sincerely yours,