ENCL. 1

"Lung Cancer and Passive Smoking:

Conclusion of Greek Study"

Some comments on the letter in the Lancet of September 17th, 1983

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Having just finished preparing my updated review of passive smoking for the conference in Sicily early in October, I was interested to read that Trichopoulos and his colleagues have produced some updated results from their Athens case-control study (Appendix 1). The methodology and layout of their results is identical to that in their paper published in the International Journal of Cancer in 1981 (Vol.27,pp.1-4) and their conclusions are apparently similar. The difference lies that in the first paper the results were based on the husband's smoking habits of 40 non-smoking women with lung cancer and 149 controls, while the current data present results based on 77 cases and 225 controls respectively, the earlier results presumably being a subset of the later results.

I was struck by the great similarity between the relative risks in the letter and in the earlier paper

	Non-smokers	Ex-smokers	Current 1-20/day	Current 21+/day
1981 paper	1	1.8	2.4	3.4
1983 letter	1	1.9	2.4	3.4

so I decided to do some check calculations. For the earlier paper,

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where the numbers of cases and controls were as follows:

1981 paper	Non-smokers	Ex-smokers	Current 1-20/day	Current 21+/day
Cases	11	6	15	8
Controls	71	22	41	15

the relative risks appeared to be correct. Thus:

for ex-smokers : non-smokers (6 x 71)/(11 x 22) = 1.8
for current 1-20/day: non-smokers (15 x 71)/(11 x 41) = 2.4 and
for current 21+ /day: non-smokers (8 x 71)/(11 x 15) = 3.4

However, for the 1983 letter, based on the data:

1983 letter	Non-smokers	Ex-smokers	Current 1-20/day	Current 21+/day
Cases	24	15	24	14
Controls	109	35	56	25

I did not get agreement. Thus:

for ex-smokers : non-smokers (15 x109)/(24 x 35) = 1.9 O.K. but
for current 1-20/day: non-smokers (24 x109)/(24 x 56) = 1.9 not 2.4 a
for current 21+ /day: non-smokers (14 x109)/(24 x 25) = 2.5 not 3.4.

Thus it appears that miscalculations have resulted in the authors giving the impression that the results show as strong an association of lung cancer risk with husband's smoking habits as before, when in fact the relative risks have decreased for current smokers versus non-smokers and the trend has become less smooth.

I did, however, agree with their estimate of $\chi^2 = 6.7$ for linear

trend in their latest data, with a significance of about p = 0.01.

If one looks at the new data, i.e. the difference between the 1983 letter and the 1981 paper, the relative risks become even smaller, though still positive:

1983 letter minus 1981 paper	Non-smokers	Ex-smokers	Current 1-20/day	Current 21+/day
Cases	13	9	9	6
Controls	38	13	15	10
Relative risk	1.0	2.0	1.8	1.8

I will not comment on the limitations of their data as these are discussed in my review paper. However, it is notable that in their brief review of the evidence, they fail to point out that the "positive results ... reported from Pennsylvania and Germany" are both based on demonstrably unsound statistical methodology.