

MORTALITY FROM SMOKING-ASSOCIATED DISEASES

IN GREAT BRITAIN

A statistical analysis of British data from the
U.S.A.-U.K.-Norway migrant study

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SUMMARY

Mortality from four major smoking-associated diseases, lung cancer, coronary heart disease, chronic non-specific lung disease and stroke, and also from all other causes combined and all causes combined, has been studied in two samples from a prospective study. A total of 17,696 people completed questionnaires at ages 35-69 in 1964/5, 3,170 of which had died by October 1977.

Mortality from all causes except stroke was higher in cigarette smokers than in those who had never smoked over the whole of the follow-up period.

Only for lung cancer was a significantly increased mortality seen in heavy smokers compared with lighter smokers.

No relationship between mortality from any cause and age of starting to smoke or inhalation was seen.

Total mortality of smokers of filter cigarette smokers was 14% less than that of plain smokers, mainly due to differences in stroke and coronary heart disease mortality.

Total mortality was 20% higher in social classes IV or V than in social classes I or II, though no clear difference was seen for any individual cause of death.

Mortality was not strongly related to degree of urbanization, though in "truly rural" areas, less lung cancer and chronic non-specific lung disease, but more stroke was seen than in conurbations.

Overall mortality was not significantly related to obesity, a higher mortality from coronary disease among fatter people being balanced by a lower mortality from other causes.

Mortality from all causes was almost twice as high in those taking no exercise as in those taking heavy exercise.

The relationships seen between cardiorespiratory symptom prevalence and mortality were similar to those reported by Todd, Hunt and Lambert (1973), based on results for one of the samples, except that their finding that the association between chest pain and coronary mortality was stronger earlier in the follow-up period than later in it was not repeated for the other sample. Additional results presented show an association between claudication and mortality and a general consistency of the relationships between symptom prevalence and mortality among differing social class, urbanization or exercise groups.

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- II Detailed definitions of specific variables
- III Definition of factors used for crosstabulations
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1. INTRODUCTION

Reid (1966) has described the U.S.A.-U.K.-Norway collaborative study on migrants. Two of the samples used in the study were of populations resident in Great Britain and this paper is restricted to results from these samples only.

One sample, the SIBLINGS sample, consisted of brothers or sisters of British born migrants to the United States. The other, the POPULATION sample, was a nationally representative survey selected by a randomised procedure (Lambert and Reid, 1970) in which the sampling fraction in Scotland was increased to four times that in England and Wales, so that the sample should approximately match the constitution of the sample of British migrants to the U.S.A.

Details of response rates and time of interview are given elsewhere (Lambert and Reid (1970); Todd, Hunt and Lambert (1978)) and will not be elaborated on here. Suffice it to say that the data transferred from Prof. G.A. Rose's department at the London School of Hygiene and Tropical Medicine to the Tobacco Advisory Council for statistical analysis consisted of self-completion questionnaire data on 8,264 siblings aged 35+ obtained around April 1964 and 10,063 of the population sample aged 35-69 obtained around May 1965 together with information on any deaths in either sample occurring before October 1977.

The statistical analyses described here concentrate on mortality from smoking-associated diseases and factors related to this. For this reason, our analysis concerns itself only with selected variables from the full data available. These variables include cause and date of death, smoking habits, presence of cardiorespiratory symptoms, social class, area of residence, obesity and exercise. The analyses carried out were quite extensive and the full results are excessively space-consuming. The purpose of this report, therefore, is to describe the method of analysis and to summarise the findings. The full tabular material available is made clear and interested readers wishing to pursue any finding in more detail are welcome to refer to the computer output, copies of which are held at Glen House and at the London School of Hygiene. This report is not intended to be an interpretative document and reference is not made to findings from other workers. It is essentially a condensation of computer output intended to serve as a reference document. Some of the results described here for the population

sample have already been used as the basis of a paper "Four cardio-respiratory symptoms as predictors of mortality" (Todd, Hunt and Lambert (1978)).

2. METHOD

2.1 Data extracted

Using magnetic data tapes supplied by the London School of Hygiene, a data file consisting of 53 variables for each person was created for each sample. A brief description and definition of each of the variables preserved for analysis, together with their frequency distribution (separately for males and females) is given as Appendix I. For the siblings, Appendix I contains frequency distributions not only for the whole sample aged 35 or over but also, for comparability with the population sample, for those in the age range 35-69 at time of interview. For some variables, a more detailed definition is given in Appendix II.

2.2 Crosstabulations produced

The next stage in the analysis was to produce a number of crosstabulations of the data. Some of these were stored on disc for further analysis, whilst others were simply printed. A preliminary stage before the production of crosstabulations was the definition of a list of 33 "factors". These factors represented all the discrete categorizations of the data into two or more levels (e.g. for factor "sex", level 1 = male, level 2 = female) that would be required for the crosstabulations and the definition of the factor list is given in Appendix III. An index of the tables produced is presented as Appendix IV. It will be seen from these tables that a number of the 53 variables held on file are not used in any crosstabulations. No results for these variables are therefore reported in this document (except see section 3.12).

2.3 Significance tests

Using the stored tabulations described in Appendix IV as input data, a specially written program was used to carry out significance tests of associations between various factors and various causes of death, after standardising for various combinations of confounding variables such as age and smoking habits. In each analysis the follow-up period was split into small time intervals and, within each interval, the observed number of deaths occurring at each age/smoking habit group (or other strata if different confounding variables were chosen) were compared with the number expected assuming that the factor had no association with the cause of death concerned. Total observed and total expected numbers were then calculated over all intervals and age/smoking habit groups, and the significance of their deviation tested by a chi-squared statistic as described by Peto and Pike (1973)

using the method of Cox (1972). Results are then conveniently expressed by presenting for each level of the factor the ratio of the total observed to total expected multiplied by 100. This form of the relative death rate is analogous to the standardised mortality ratio.

The results from these significance tests are summarised in section 3, which considers findings relevant to each of the main variables in turn. In most of the analyses significance tests are given separately related to risk of death from lung cancer, CHD, CNSLD, stroke, other causes and all causes. All the analyses consider each sex separately and most are based on the full follow-up period, the time interval being split into approximate 2 year intervals for the analyses. Most results quoted for non-smoking characteristics are based on risks standardised for age and a three level broad smoking group (never smoked, current cigarettes and others). Those for smoking characteristics are based normally on risks standardised for age and number of cigarettes smoked. Where analyses differ from the normal situation described above this is made clear in the text.

Though the crosstabulations produced for the siblings contain data on people aged 70 or over at time of entry, these people have been excluded from all the results presented here, so as to make comparison of the population and sibling samples direct. The number aged 70+ in the sibling sample, 631, is in any case only 7.5% of the total sibling sample and 3.4% of the overall sample.

3. RESULTS

3.1 Overall mortality

Survival by year of follow-up is summarised in Table 1. As can be seen survival in the siblings sample is very similar to that in the population sample. In each sample, the proportion of males dying over the full follow-up period is about 60% greater than the proportion of females dying.

Mortality by cause of death is summarised in Table 2. In both samples numbers of deaths from the four main causes of interest form about 62% of male deaths and 45% of female deaths. Deaths from coronary heart disease outnumber deaths from lung cancer, CNSLD and stroke combined in both sexes. Total numbers of deaths in females from lung cancer and from CNSLD are much smaller than for any other sex/cause grouping.

3.2 Age at entry

The age distribution of the samples is given in Table 3. Compared with the population sample, the siblings, in both sexes, show a relative deficiency of people in the age group 35-39 and to a lesser extent in the age group 40-44, but otherwise a fairly similar distribution.

Mortality by age at entry is given in Table 4. In males mortality from all causes considered rises steeply and highly significantly with age. This is also true for females for all causes combined, coronary heart disease, stroke, CNSLD and the other causes group. For lung cancer, though deaths are rather few, there seems evidence of a flattening off of the curve above the age group 45-54, rates in the 65-69 age group showing no increase above those of 55-64 year old females.

3.3 Smoking group

The distribution of the population into a 12 group smoking categorization is given in Table 5. The two samples show very similar distributions. Compared with males, females contain more people who have never smoked, less cigarette smokers (especially heavy smokers), virtually no pipe or cigar smokers, fewer ex-smokers and more who did not state their smoking habits.

In comparing mortality of different smoking groups it is useful to be aware of differences in age distributions of the groups being compared. To illustrate this Table 6 gives the percentage of older people (55 or

over at time of entry) in the smoking groups. In males, pipe and cigar smokers, ex smokers and not knowns tend to be older than current cigarette smokers and those who have never smoked who are of similar age. In females on the other hand current cigarette smokers are considerably younger and ex-smokers somewhat younger than those who have never smoked. In both sexes heavier cigarette smokers tend to be younger than lighter cigarette smokers.

Mortality by these detailed smoking groups and by two sets of broader groups are given in Table 7. Mortality was significantly higher in cigarette smokers than in those who had never smoked for all causes combined, lung cancer, coronary heart disease, CNSLD but not for stroke. Mortality from other causes was also higher in cigarette smokers in each of the four sex/sample combinations but in no case was this statistically significant.

Mortality by amount smoked, for current cigarette only smokers, is summarised in Table 8. Only for lung cancer in the male population sample was any significant difference seen between mortality at the four levels of smoking considered, though in general mortality tended to be higher in the 20+ a day smokers than in those smoking less than 10 a day.

As there is no doubt that a substantial proportion of the populations studied will have changed their smoking habits at some point during the follow-up period it is of some interest to see how smoking category as determined at entry predicts mortality during different periods of the study. Analyses were therefore carried out for various follow-up periods for each cause of death. The results are too lengthy (and often based on too small numbers) to be worth giving in full here. Table 9, therefore, simply gives all cause mortality by smoking group for the first 5 years of the study and for the remaining period. It is interesting to note that smoking tends to be better correlated with mortality in the latter "half" of the follow-up period than in the former. In particular the trends of mortality with amount smoked for current cigarette only smokers are more clearly marked in the latter "half" of the study. This may be related to the fact that heavy smokers may cut down when ill.

3.4 Age of starting to smoke

About half of the current cigarette smoking males studied started smoking at ages 16-19 with 30% starting younger. By contrast half the

females started at 20 or later with only 10% starting below age 16 (Table 10).

In males there is little relationship between age and age of starting to smoke, but in females women starting at age 19 or less tend to be markedly younger than later starting women. In both sexes people starting to smoke earlier tended to smoke more heavily than people starting later (Table 11).

After standardising for age and number of cigarettes smoked no significant relationship between age of starting to smoke and mortality was seen (Table 12).

3.5 Inhalation

86% of male and 65% of female current cigarette smokers said they inhaled (Table 13). Inhalers tended to be younger and to smoke more than non-inhalers (Table 14). No significant relationship between inhalation and mortality was seen (Table 15).

3.6 Type of cigarette

In the male population sample, 40% of current cigarette smokers smoked only filter cigarettes and 40% only plain, 14% smoking hand-rolled and 6% mixed. In the male sibling sample, which was studied over a year earlier when the market was switching rapidly from plain to filter, 51% smoked plain and 30% filter. Hardly any females smoked hand-rolled cigarettes and of the rest the majority smoked filter, as for males the proportion being higher for the population sample (69%) than for the sibling sample (60%) (Table 16).

Compared with male plain smokers, male filter smokers were very slightly younger, smoked slightly less, inhaled slightly less and were less likely to have started to smoke young. Similar differences were seen for females except that the difference in inhalation was more marked and no clear difference in age was seen. Hand-rolled smokers tended to smoke far fewer cigarettes than smokers of manufactured cigarettes.

After standardising for age, amount smoked, inhaling and age of starting to smoke there was some evidence, statistically significant in some cases, of a lower mortality of filter smokers compared with plain smokers (Table 18). As the differences are fairly small, Table 19 gives combined estimates for both sexes and both studies for each cause of death. As

can be seen, overall, filter smokers all cause mortality is 86% of that of plain smokers, a difference significant at the 95% confidence level. A significant difference is also seen for stroke and a lower, but not significant difference for coronary heart disease and other causes. CNSLD death rates of filter smokers are similar to those of plain smokers while lung cancer death rates are slightly but not significantly higher.

3.7 Social class

The social class distributions of the study populations are given in Table 20. There is little relationship between social class and age, but, in males only, there is a tendency for people in lower social classes to be current cigarette smokers more often than people in higher social classes (Table 21). Although within any study and sex, an association of all causes mortality with social class significant at the 95% confidence level is not seen (Table 22), when the results are combined the differences between mortality in the different social classes is significant (I or II R = 91, III R = 98, IV or V R = 109, $p < 0.01$). No clear trend is seen for any individual cause of death.

3.8 Urbanization

Table 23 gives the distribution of the study populations by urbanization. No relationship between age and urbanization is seen (Table 24) but there is a tendency for the proportion of current cigarette smokers to increase with increasing urbanization (Table 25).

The relationship between mortality and the Registrar General's main urbanization categories is shown in Table 26. Although in some cases particular sexes in particular studies show significant differences between mortality in different urbanization categories no cause of death shows any significant relationship to urbanization when the results are accumulated over both studies and both sexes.

Table 26 also gives results for the 165 people found to live in "truly rural" areas. Combining results for the comparison with conurbations for both studies and both sexes it is interesting to note that for lung cancer and CNSLD combined, no deaths were observed in truly rural areas as against 3.25 expected ($p < 0.05$ using Poisson assumptions) whilst for stroke 8 deaths were observed compared with 2.39 expected, a highly significant excess ($p < 0.005$).

3.9 Obesity

The distribution of the samples by obesity index is given in Table 27.

Women have a higher proportion with index less than 23 than men, though a similar proportion with index 28 or over. Fatter women tend to be markedly older than thinner women and to be less likely to be smokers. Whilst the relationship between obesity and smoking holds for men also, that between obesity and age is far less clear for men (Table 28).

Overall mortality varies little by obesity index (Table 29). This overall balance conceals a consistently lower coronary heart disease mortality and higher mortality from other causes amongst thinner people with the reverse situation true for fatter people. Both trends are highly significant when studies and sexes are combined.

3.10 Exercise

In both sexes 60% or more claim to take a "moderate" amount of exercise. More men (13% or so) take heavy exercise than women (5%) (Table 30).

In women heavier exercisers tend to be markedly younger and to smoke more often than lighter exercisers. The relationship between exercise and age can also be seen for men but, in contrast, smoking does not seem related to exercise in men (Table 31).

Some very marked relationships between mortality and amount of exercise taken can be seen in Table 32. Of course, illness preceding mortality may have been an important reason why people took little or no exercise.

3.11 Cardiorespiratory symptoms

Table 33 gives the percentage of people having each one of six different symptoms or syndromes. With the exception of angina, where rates were similar in both sexes, men tended to have higher symptom rates than women. Symptom prevalence was very similar in the population and siblings studies.

For any of the six symptoms, symptom-positive men are older on average than symptom-negative men. This difference in ages between those with and those without symptoms was not clear for persistent cough and phlegm, chronic bronchitis syndrome or claudication in women (Table 34).

A clear relationship between respiratory symptoms and smoking can be seen for both sexes. No relationship to smoking was seen for cardiovascular symptoms, with the exception of claudication (Table 35).

The ability of symptoms to predict subsequent mortality is illustrated in Table 36. The relative mortality of those with symptoms to those without for the population sample has been presented previously in Table 8 of Todd, Hunt and Lambert (1978) except that claudication was not studied there.

The results for the sibling sample are broadly consistent with those reported for the population sample and the main conclusions are summarised by Todd, Hunt and Lambert. Claudication is related to mortality from all causes, from coronary heart disease and from the "other causes" group in men. There is some indication of an association with "other causes" mortality in women but no relationship between claudication and coronary mortality.

Todd, Hunt and Lambert (their Table 9) also studied how the association of CHD and all causes mortality with symptoms changed during the follow-up period. They did not include CNSLD because there were so few deaths from this cause in persons without symptoms, and excluded lung cancer and stroke because the symptomatic associations were anyway relatively weak. Our Table 37 presents similar results for the siblings sample as well as giving those for the population sample. The conclusion previously reached, that the association between chest pain and death from CHD mortality was much stronger in the first period of follow-up than in the later period was not confirmed in the results from the siblings sample. No more detailed analysis studying shorter follow-up periods is given here but the material is available for such analysis as required.

Some of the association between cardiorespiratory symptom prevalence and mortality may in theory be due to a joint association of another factor with both symptoms and death. In the final set of tables presented in this report this possibility is investigated. Firstly, Table 38 gives symptom prevalence rates by three factors considered, social class, urbanization and exercise. Respiratory symptoms in men are more common in the lower social classes, in those who take less exercise and in those living in more urban areas. The relationship with urbanization is also apparent for women but those with social class and exercise are less clear. In general trends with respect to the chronic bronchitis syndrome were rather clearer than with respect to the more common persistent cough and phlegm symptom. Respiratory symptom prevalences are also presented for those people living in truly rural areas. With one minor exception these rates were lower than in any of the three main urbanization groups.

In men, but not in women, cardiovascular symptoms were more common in those who took less exercise. In both sexes, angina, and to some extent claudication, but not infarction, was more common in the lower social classes. All three cardiovascular symptoms were less common in men living in rural areas but this relationship was only evident for angina in women.

Next the relative mortality of those with symptoms as compared with those without was computed for people lying in social class, exercise and urbanization groups. Though these calculations were in fact made for each symptom and each cause of death, results are only presented in Table 39 for the chronic bronchitis syndrome and angina, the two symptoms showing the clearest and most consistent association with these factors in Table 38 and for all causes and coronary disease mortality, where numbers of deaths were largest. In general, where relative mortality ratios are based on adequate numbers of deaths for meaningful comparison, the results show little variation within level of any of the three factors considered. Certainly the overall association between symptoms and mortality cannot be explained to more than a minor extent at most in terms of a joint association of symptoms and mortality with any of these three factors. These findings confirm the belief that these symptoms are independent predictors of increased mortality.

3.12 Contributory causes of death

All the results quoted are based on the underlying cause of death. Information was also available on contributory causes of death and variables 49-52 (see Appendix 1) classified people as dying with any mention of one of the four main diseases considered, with no mention of that disease, or as surviving. In some previous work on the population sample only (results of which can be inspected on request) using somewhat different smoking groups, relative mortality standardised for age and smoking of symptom-positives and symptom-negatives was calculated for "any mention" of disease. Results were so similar to those for underlying cause of death that they are not presented separately here. This was perhaps not very surprising since, for lung cancer, heart disease and stroke, mentions as underlying cause formed 96%, 89% and 80% respectively of cases of any mention of the disease, and for CNSLD, though underlying causes formed only 53% of the total mentions, numbers of deaths were rather small to pick up any significant difference even if one existed.

4. ERRATUM

Due to an error in the program that translated the data from the London School of Hygiene magnetic tape onto the ICL computer used for these analyses, smokers starting to smoke at ages 22 or 29 were coded incorrectly as not known. This meant that results relating to those starting to smoke at age 20+ (Tables 10-12) were based on slightly less people than were actually observed in the study. It was not felt justified to rerun these analyses given the labour involved and the minor difference it would make to the answers.

Some of the frequencies given in Appendix 1 for other variables that were not used in the main analysis which could take values 22 or 29 are also subject to minor errors. Variable 53 group 4, current regular smokers of 20 or more cigarettes a day, used in many analyses, is correct, however.

5. ACKNOWLEDGEMENTS

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7. TABLES 1-39

Note that all results quoted in Tables 1-39 are concerned with those people aged 35-69 at entry.

Key to significance levels:

- **** Overall difference between mortality ratios significant at the 99.9% confidence level ($p < 0.001$)
- *** Significant at 99% confidence level ($0.001 < p < 0.01$)
- ** Significant at 95% confidence level ($0.01 < p < 0.05$)
- * Significant at 90% confidence level ($0.05 < p < 0.1$)
- N.S. Not significant ($p > 0.1$)

Note that significance levels are based on the equivalent of an uncorrected chi-square and therefore, when expected numbers of deaths are low, may overestimate the true significance to some extent. Mortality ratios based on expected numbers of deaths less than 5 are bracketed to warn of a possible need to consider more precise estimation of significance levels. Actual expected numbers (E) can be calculated from the tables by the formula $E = 100 D/R$ where D is deaths and R mortality ratio or can be read off the available computer output.

TABLE 1 Survival by year of follow-up

Numbers at risk (N) and percentage survivors (%)

	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
	At start	4770	100.0	3319	100.0	5293	100.0	4314
After year								
1	4718	98.9	3293	99.2	5272	99.6	4293	99.5
2	4659	97.7	3243	97.7	5243	99.1	4255	98.6
3	4588	96.2	3196	96.3	5195	98.1	4219	97.8
4	4516	94.7	3154	95.0	5145	97.2	4182	96.9
5	4448	93.2	3109	93.7	5093	96.2	4140	96.0
6	4377	91.8	3063	92.3	5054	95.5	4097	95.0
7	4290	89.9	3016	90.9	4999	94.4	4063	94.2
8	4189	87.8	2944	88.7	4950	93.5	4006	92.9
9	4103	86.0	2877	86.7	4875	92.1	3956	91.7
10	3995	83.8	2808	84.6	4790	90.5	3907	90.6
11	3885	81.4	2729	82.2	4722	89.2	3849	89.2
12	-	-	2645	79.7	-	-	3782	87.7
At end	3732	78.2	2533	76.3	4590	86.7	3671	85.1

Note: Follow-up period is 12 years 5 months for the population sample and 13 years 6 months for the sibling sample.

TABLE 2 Mortality by cause of death

Numbers of deaths (N) and percentage of total (%)

Cause of death	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Lung cancer	127	12.2	91	11.6	20	2.8	21	3.3
Coronary heart disease	377	36.3	265	33.7	181	25.7	155	24.1
CNSLD	60	5.8	41	5.2	8	1.1	15	2.3
Stroke	94	9.1	82	10.4	98	13.9	104	16.2
Others	380	36.6	307	39.1	396	56.3	348	54.1
Total	1038	100.0	786	100.0	703	100.0	643	100.0

TABLE 3 Age at entry

Numbers at risk (N) and percentage distribution (%)

Age at entry	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
35-39	718	15.1	351	10.6	719	13.6	427	9.9
40-44	761	16.0	515	15.5	835	15.8	631	14.6
45-49	673	14.1	489	14.7	715	13.5	627	14.5
50-54	811	17.0	616	18.6	876	16.6	797	18.5
55-59	761	16.0	603	18.2	881	16.6	716	16.6
60-64	608	12.7	434	13.1	719	13.6	626	14.5
65-69	438	9.2	311	9.4	548	10.4	490	11.4
Total	4770	100.0	3319	100.0	5293	100.0	4314	100.0

TABLE 4 Age at entry

Numbers of deaths (D) and unstandardised mortality ratios (R)

Age at entry	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
35-44	94	27	49	22	44	20	45	27
45-54	229	68	185	68	145	67	138	63
55-64	478	171	378	165	309	149	284	146
65-69	237	310	174	293	205	315	176	268
		****		****		****		****
<u>Lung cancer</u>								
35-44	8	19	7	27	1	18	2	37
45-54	27	66	18	57	5	82	10	140
55-64	65	190	45	169	12	204	7	111
65-69	27	289	21	300	2	(108)	2	(93)
		****		****		**		N.S.
<u>Coronary heart disease</u>								
35-44	41	33	13	17	7	13	7	18
45-54	99	81	65	71	36	65	17	32
55-64	165	162	144	187	81	153	76	163
65-69	72	258	43	215	57	345	55	348
		****		****		****		****
<u>CNSLD</u>								
35-44	3	15	1	9	0	(0)	0	(0)
45-54	15	78	10	71	0	(0)	3	59
55-64	28	173	19	158	4	(171)	10	(222)
65-69	14	(313)	11	(347)	4	(558)	2	(132)
		****		****		****		***

TABLE 4 Age at entry (continued)

Numbers of deaths (D) and unstandardised mortality ratios (R)

Age at entry	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Stroke</u>								
35-44	6	19	4	17	5	17	0	0
45-54	5	16	13	46	16	53	21	59
55-64	53	210	33	138	40	139	46	147
65-69	30	433	32	521	37	412	37	353
		****		****		****		****
<u>Other causes</u>								
35-44	36	28	24	27	31	26	36	40
45-54	83	68	79	74	88	73	87	74
55-64	167	164	137	153	172	147	145	138
65-69	94	339	67	290	105	284	80	224
		****		****		****		****

* p < 0.1, ** p < 0.05, *** p < 0.01, **** p < 0.001

N.S. not significant (p > 0.1)

Bracketed mortality ratios based on expected numbers of deaths of <5

TABLE 5 Smoking group

Numbers at risk (N) and percentage distribution (%)

Smoking group	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
	Never smoked	520	10.9	347	10.5	2120	40.1	1694
Current cigarettes								
<10 only	316	6.6	192	5.8	430	8.1	342	7.9
10-19	1023	21.4	673	20.3	718	13.6	606	14.0
20	487	10.2	364	11.0	259	4.9	212	4.9
20+	338	7.1	266	8.0	59	1.1	90	2.1
Amount NK	32	0.7	16	0.5	19	0.4	14	0.3
Pipe/cigar NK	310	6.5	200	6.0	400	7.6	299	6.9
Pipe/cigar also	189	4.0	164	4.9	8	0.2	3	0.1
Total current cigs.	2695	56.5	1875	56.5	1893	35.7	1566	36.3
Pipe/cigar only	345	7.2	230	6.9	3	0.1	3	0.1
Ex cigarette	848	17.8	623	18.8	310	5.9	289	6.7
Ex pipe/cigar only	57	1.2	46	1.4	13	0.2	9	0.2
Not known	305	6.4	198	6.0	954	18.0	753	17.5
Total others	1555	32.6	1097	33.1	1280	24.2	1054	24.4
Total	4770	100.0	3319	100.0	5293	100.0	4314	100.0

TABLE 6 Smoking group

Numbers (N) and percentages (%) who are aged 55 or over

Smoking group	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Never smoked	174	33.5	115	33.1	1038	49.0	877	51.8
Current cigarettes								
<10 only	126	39.9	71	37.0	119	27.7	98	28.7
10-19	367	35.9	259	38.5	161	22.4	153	25.2
20	149	30.6	129	35.4	69	26.6	51	24.1
20+	102	30.2	84	31.6	8	13.6	19	21.1
Amount NK	14	43.8	8	50.0	5	26.3	7	50.0
Pipe/cigar NK	131	42.3	81	40.5	115	28.8	93	31.1
Pipe/cigar also	86	45.5	74	45.1	1	12.5	0	0.0
Total current cigs.	975	36.2	706	37.7	478	25.3	421	26.9
Pipe/cigar only	152	44.1	112	48.7	2	66.7	2	66.7
Ex cigarette	358	42.2	295	47.4	104	33.5	103	35.6
Ex pipe/cigar only	17	29.8	23	50.0	6	46.2	5	55.6
Not known	131	43.0	97	49.0	520	54.5	424	56.3
Total others	658	42.3	527	48.0	632	49.4	534	50.7
Total	1807	37.9	1348	40.6	2148	40.6	1832	42.5

TABLE 7 Smoking groups

Numbers of deaths (D) and mortality ratios (R) standardised for age

Smoking group	<u>All causes</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Detailed group</u>								
Never smoked	75	69	49	61	294	91	274	96
Current cigarettes								
<10 only	71	98	42	102	44	97	44	105
10-19	245	123	175	120	75	114	80	120
20	118	128	91	120	33	136	29	128
20+	77	121	65	124	6	113	13	135
Amount NK	10	125	6	186	2	(86)	1	(43)
Pipe/cigar NK	85	126	62	142	60	143	51	144
Pipe/cigar also	48	103	49	112	0	(0)	0	(0)
Pipe/cigar only	76	85	59	88	0	(0)	0	(0)
Ex cigarette	160	79	137	84	34	89	34	87
Ex pipe/cigar only	5	40	7	53	2	(113)	0	(0)
Not known	68	94	44	75	153	100	117	85
		****		****		*		**
<u>Broad group 1</u>								
Never smoked	75	69	49	61	294	91	274	96
Current cigarettes	654	119	490	121	220	118	218	122
Others	309	82	247	82	189	97	151	84
		****		****		***		****
<u>Broad group 2</u>								
Not smoking currently	235	75	186	75	328	91	308	91
Currently smoking (anything)	735	112	556	112	222	118	218	116
		****		****		***		***

TABLE 7 Smoking groups (continued - 1)

Numbers of deaths (D) and mortality ratios (R) standardised for age

Lung cancer

Smoking group	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Detailed group</u>								
Never smoked	1	8	3	33	2	23	2	24
Current cigarettes								
<10 only	7	79	4	(33)	1	(75)	3	(178)
10-19	32	131	27	160	10	(486)	4	(144)
20	23	206	13	149	2	(243)	1	(98)
20+	19	243	11	184	0	(0)	2	(446)
Amount NK	0	(0)	1	(268)	0	(0)	0	(0)
Pipe/cigar NK	13	156	7	138	4	(311)	3	(216)
Pipe/cigar also	4	68	5	99	0	(0)	0	(0)
Pipe/cigar only	11	101	5	65	0	(0)	0	(0)
Ex cigarette	12	48	11	58	0	(0)	1	(75)
Ex pipe/cigar only	1	(67)	0	(0)	0	(0)	0	(0)
Not known	4	45	4	59	1	(23)	5	(130)
		****		***		****		N.S.
<u>Broad group 1</u>								
Never smoked	1	8	3	33	2	23	2	24
Current cigarettes	98	145	68	145	17	296	13	175
Others	28	60	20	57	1	19	6	114
		****		****		****		***
<u>Broad group 2</u>								
Not smoking currently	13	33	14	48	2	16	3	33
Currently smoking (anything)	110	132	78	126	17	249	13	188
		****		****		****		***

TABLE 7 Smoking groups (continued - 2)

Numbers of deaths (D) and mortality ratios (R) standardised for age

Coronary heart disease

Smoking group	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Detailed group</u>								
Never smoked	26	66	18	67	74	88	64	72
Current cigarettes								
<10 only	25	96	12	87	14	123	10	110
10-19	105	142	63	128	22	137	17	120
20	40	116	32	123	10	167	9	(199)
20+	31	130	27	148	2	(152)	3	(159)
Amount NK	2	(73)	2	(190)	1	(166)	0	(0)
Pipe/cigar NK	28	114	20	135	14	133	18	232
Pipe/cigar also	17	100	16	109	0	(0)	0	(0)
Pipe/cigar only	28	88	13	59	0	(0)	0	(0)
Ex cigarette	49	67	46	84	7	72	8	87
Ex pipe/cigar only	1	(22)	2	(46)	0	(0)	0	(0)
Not known	25	96	14	73	37	92	26	74
		****		**		N.S.		***
<u>Broad group 1</u>								
Never smoked	26	66	18	67	74	88	64	89
Current cigarettes	248	122	172	125	63	137	57	150
Others	103	76	75	75	44	87	34	75
		****		****		**		****
<u>Broad group 2</u>								
Not smoking currently	75	67	64	77	81	85	72	82
Currently smoking (anything)	277	116	187	112	63	129	57	137
		****		***		***		***

TABLE 7 Smoking groups (continued - 3)

Numbers of deaths (D) and mortality ratios (R) standardised for age

Smoking group	<u>CNSLD</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Detailed group</u>								
Never smoked	1	16	1	(24)	4		5	
Current cigarettes								
<10 only	6	(143)	4	(186)	1	Too few deaths for reliable estimation	2	Too few deaths for reliable estimation
10-19	12	105	10	133	0		2	
20	8	149	7	(181)	0		0	
20+	6	(164)	5	(189)	0		1	
Amount NK	0	(0)	0	(0)	0		0	
Pipe/cigar NK	3	(76)	4	(177)	0		2	
Pipe/cigar also	2	(73)	0	(0)	0		0	
Pipe/cigar only	3	57	1	(28)	0		0	
Ex cigarette	14	119	8	93	0		1	
Ex pipe/cigar only	0	(0)	0	(0)	0		0	
Not known	5	(119)	1	(32)	3	2		
		N.S.		*				
<u>Broad group 1</u>								
Never smoked	1	16	1	24	4	(99)	5	75
Current cigarettes	37	116	30	143	1	(65)	7	171
Others	22	100	10	63	3	(123)	3	71
		**		**		N.S.		N.S.
<u>Broad group 2</u>								
Not smoking currently	15	85	9	67	4	(110)	6	74
Currently smoking (anything)	40	107	31	116	1	(73)	7	145
		N.S.		N.S.		N.S.		N.S.

TABLE 7 Smoking groups (continued - 4)

Numbers of deaths (D) and mortality ratios (R) standardised for age

Smoking group	<u>Stroke</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Detailed group</u>								
Never smoked	12	122	7	84	50	108	47	98
Current cigarettes								
<10 only	6	89	3	(69)	3	49	6	94
10-19	24	137	20	137	9	107	11	115
20	10	131	7	97	2	(66)	6	(189)
20+	5	95	3	(64)	0	(0)	1	(73)
Amount NK	1	(123)	2	(573)	0	(0)	0	(0)
Pipe/cigar NK	7	111	6	(134)	6	109	8	154
Pipe/cigar also	3	(70)	3	(65)	0	(0)	0	(0)
Pipe/cigar only	5	59	10	130	0	(0)	0	(0)
Ex cigarette	15	78	13	74	7	132	2	33
Ex pipe/cigar only	1	(89)	2	(135)	0	(0)	0	(0)
Not known	5	73	6	89	21	95	23	97
		N.S.		N.S.		N.S.		N.S.
<u>Broad group 1</u>								
Never smoked	12	122	7	84	50	108	47	98
Current cigarettes	56	115	44	109	20	83	32	123
Others	26	73	31	93	28	101	25	83
		N.S.		N.S.		N.S.		N.S.
<u>Broad group 2</u>								
Not smoking currently	27	91	20	77	57	108	49	89
Currently smoking (anything)	62	105	56	112	20	82	32	122
		N.S.		N.S.		N.S.		N.S.

TABLE 7 Smoking groups (continued - 5)

Numbers of deaths (D) and mortality ratios (R) standardised for age

Smoking group	<u>Other causes</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Detailed group</u>								
Never smoked	35	87	20	63	164	91	156	104
Current cigarettes								
<10 only	27	101	19	117	25	95	23	96
10-19	72	99	55	97	34	88	46	118
20	37	110	32	108	19	133	13	97
20+	16	70	19	92	4	(127)	6	105
Amount NK	7	(232)	1	(79)	1	(77)	1	(81)
Pipe/cigar NK	34	138	25	147	26	148	20	99
Pipe/cigar also	22	130	25	147	0	(0)	0	(0)
Pipe/cigar only	29	87	30	116	0	(0)	0	(0)
Ex cigarette	70	93	59	94	20	93	22	102
Ex pipe/cigar only	2	(43)	3	59	2	(203)	0	(0)
Not known	29	108	19	83	91	107	61	86
		N.S.		N.S.		N.S.		N.S.
<u>Broad group 1</u>								
Never smoked	35	87	20	63	164	91	156	104
Current cigarettes	215	107	176	111	119	110	109	105
Others	130	93	111	95	113	105	83	88
		N.S.		N.S.		N.S.		N.S.
<u>Broad group 2</u>								
Not smoking currently	105	92	79	83	184	93	178	100
Currently smoking (anything)	246	104	209	109	121	113	109	100
		N.S.		**		*		N.S.

TABLE 3 Amount smoked

Numbers of deaths (D) and mortality ratios (R) standardised for age
(Current cigarette smokers only)

Number smoked	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
<10	71	82	42	86	44	88	44	88
10-19	245	103	175	101	75	102	80	102
20	118	107	91	102	33	119	29	110
20+	77	102	65	105	6	93	13	117
		N.S.		N.S.		N.S.		N.S.
<u>Lung cancer</u>								
<10	7	50	4	56	1	(25)	3	(100)
10-19	32	85	27	106	10	165	4	86
20	23	132	13	98	2	(83)	1	(61)
20+	19	162	11	121	0	0	2	(282)
		**		N.S.		N.S.		N.S.
<u>Coronary heart disease</u>								
<10	25	77	12	70	14	89	10	84
10-19	105	112	63	102	22	99	17	92
20	40	101	32	99	10	122	9	146
20+	31	91	27	120	2	106	3	120
		N.S.		N.S.		N.S.		N.S.
<u>CNSLD</u>								
<10	6	104	4	121	1	Too few deaths for reliable estimation	2	Too few deaths for reliable estimation
10-19	12	82	10	83	0		2	
20	8	113	7	111	0		0	
20+	6	(132)	5	115	0		1	
		N.S.		N.S.				

TABLE 8 Amount smoked (continued)

Numbers of deaths (D) and mortality ratios (R) standardised for age
(Current cigarette smokers only)

Number smoked	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Stroke</u>								
<10	6	71	3	64	3	(67)	6	79
10-19	24	114	20	127	9	138	11	98
20	10	107	7	91	2	(83)	6	165
20+	5	82	3	62	0	(0)	1	67
		N.S.		N.S.		N.S.		N.S.
<u>Other causes</u>								
<10	27	105	19	115	25	97	23	88
10-19	72	102	55	95	34	88	46	110
20	37	113	32	107	19	132	13	92
20+	16	70	19	91	4	(115)	6	99
		N.S.		N.S.		N.S.		N.S.

TABLE 9 Smoking groups by period of follow-up

Numbers of deaths (D) and mortality ratios (R) standardised for age

Smoking group	<u>All causes</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Follow-up period 1-5 years</u>								
Never smoked	23	72	14	71	91	99	68	89
Current cigarettes								
<10 only	19	84	14	123	8	62	11	95
10-19	85	131	54	132	21	112	25	131
20	37	129	24	116	11	156	9	137
20+	17	92	15	107	2	(143)	2	(75)
Amount NK	2	(75)	2	176	0	(0)	1	(169)
Pipe/cigar NK	27	123	21	168	17	141	13	130
Pipe/cigar also	9	66	7	61	0	(0)	0	(0)
Pipe/cigar only	26	94	12	70	0	(0)	0	(0)
Ex cigarette	54	86	37	86	7	74	10	95
Ex pipe/cigar only	2	(55)	2	63	1	(197)	0	(0)
Not known	21	91	8	54	41	94	35	97
		*		**		N.S.		N.S.
<u>Follow-up period 6 years to end of study</u>								
Never smoked	52	69	35	62	203	88	206	99
Current cigarettes								
<10 only	52	104	28	92	36	109	33	107
10-19	160	114	121	113	54	113	55	113
20	81	127	67	118	22	127	20	121
20+	60	134	50	128	4	(103)	11	154
Amount NK	8	(145)	4	(151)	2	(121)	0	(0)
Pipe/cigar NK	58	123	41	127	43	143	38	148
Pipe/cigar also	39	120	42	128	0	(0)	0	(0)
Pipe/cigar only	50	84	47	97	0	(0)	0	(0)
Ex cigarette	106	77	100	85	26	95	24	86
Ex pipe/cigar only	3	35	5	56	1	(82)	0	(0)
Not known	47	95	36	84	112	102	82	82
		****		****		N.S.		**

TABLE 10 Age of starting to smoke

Numbers at risk (N) and percentage distribution (%)
 (Current cigarette smokers only)

Age of starting	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<16	639	30.0	442	30.2	145	10.3	121	10.1
16-19	1115	52.4	730	49.8	568	40.2	467	38.9
20+	375	17.6	293	20.0	701	49.6	614	51.1
Total	2129	100.0	1465	100.0	1414	100.0	1202	100.0

TABLE 11 Age of starting to smoke

Numbers (N) and percentages (%) who are aged 55 or over and who smoke 20 or more cigarettes a day (Current cigarette smokers only)

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<u>Age of starting</u>								
<u>Aged 55 or over</u>								
<16	219	34.3	174	39.4	18	12.4	13	10.7
16-19	373	33.5	243	33.3	68	12.0	72	15.4
20+	142	37.9	113	38.6	259	36.9	231	37.6
<u>Smoke 20 or more cigarettes a day</u>								
<16	265	41.5	196	44.3	35	24.1	36	29.8
16-19	410	36.8	307	42.1	141	24.8	114	24.4
20+	131	34.9	106	36.2	128	18.3	136	22.1

TABLE 12 Age of starting to smoke

Numbers of deaths (D) and mortality ratios (R) standardised for age and number of cigarettes smoked.
(Current cigarette smokers only)

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
<16	150	101	109	95	14	123	10	82
16-19	273	104	189	110	53	116	45	87
20+	84	87	64	85	89	90	105	109
		N.S.		N.S.		N.S.		N.S.
<u>Lung Cancer</u>								
<16	29	118	21	118	2	(233)	0	(0)
16-19	39	96	20	82	6	(164)	3	(96)
20+	12	82	12	112	5	59	6	117
		N.S.		N.S.		*		N.S.
<u>Coronary heart disease</u>								
<16	57	100	37	91	4	117	1	(44)
16-19	109	108	70	113	13	98	9	86
20+	30	80	22	83	30	99	27	111
		N.S.		N.S.		N.S.		N.S.
<u>CNSLD</u>								
<16	7	81	9	109	0	Too few deaths	0	(0)
16-19	15	97	13	108	0		2	(124)
20+	8	135	4	70	1		3	(99)
		N.S.		N.S.				N.S.
<u>Stroke</u>								
<16	14	108	10	91	1	(115)	2	(135)
16-19	23	98	17	104	5	(120)	4	60
20+	8	94	6	107	8	89	17	114
		N.S.		N.S.		N.S.		N.S.
<u>Other causes</u>								
<16	43	96	32	86	7	112	7	94
16-19	87	106	69	120	29	118	27	90
20+	26	88	20	76	45	90	52	107

TABLE 13 Inhalation

Numbers at risk (N) and percentage distribution (%)
(Current cigarette smokers only)

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Inhalation								
Inhale	1840	85.7	1291	86.4	983	67.4	785	63.1
Do not inhale	307	14.3	204	13.6	476	32.6	459	36.9
Total	2147	100.0	1495	100.0	1459	100.0	1244	100.0

TABLE 14 Inhalation

Numbers (N) and percentages (%) who are aged 55 or over and
 who smoke 20 or more cigarettes a day
 (Current cigarette smokers only)

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Inhalation								
<u>Aged 55 or over</u>								
Inhale	585	31.8	442	34.2	152	15.5	139	17.7
Do not inhale	151	49.2	102	50.0	196	41.2	181	39.4
<u>Smoke 20 or more cigarettes a day</u>								
Inhale	733	39.8	550	42.6	249	25.3	224	28.5
Do not inhale	75	24.4	75	36.8	64	13.4	75	16.3

TABLE 15 Inhalation

Numbers of deaths (D) and mortality ratios (R) standardised for age
and number of cigarettes smoked
(Current cigarette smokers only)

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
Inhale	425	103	313	100	92	105	93	105
Do not inhale	78	87	60	101	62	94	71	94
		N.S.		N.S.		N.S.		N.S.
<u>Lung cancer</u>								
Inhale	61	93	48	104	9	129	5	88
Do not inhale	18	133	7	80	3	60	5	116
		N.S.		N.S.		N.S.		N.S.
<u>Coronary heart disease</u>								
Inhale	172	106	110	99	28	105	19	97
Do not inhale	24	72	22	103	20	94	19	103
		*		N.S.		N.S.		N.S.
<u>CNSLD</u>								
Inhale	26	102	24	114	0	Too few deaths	4	(147)
Do not inhale	5	91	2	(40)	0		1	(44)
		N.S.		N.S.				N.S.
<u>Stroke</u>								
Inhale	39	109	29	97	9	140	14	121
Do not inhale	6	65	6	(120)	3	54	9	79
		N.S.		N.S.		N.S.		N.S.
<u>Other causes</u>								
Inhale	127	102	102	97	46	97	51	104
Do not inhale	25	90	23	118	36	105	37	95
		N.S.		N.S.		N.S.		N.S.

TABLE 16 Type of cigarette

Numbers at risk (N) and percentage distribution (%)
(Current cigarette smokers only)

Type of cigarette	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Filter only	873	40.3	453	30.3	1016	69.1	757	60.3
Plain only	867	40.0	763	51.0	408	27.7	463	36.9
Hand Rolled only	303	14.0	193	12.9	16	1.1	10	0.8
Mixed	123	5.7	86	5.8	31	2.1	26	2.1
Total	2166	100.0	1495	100.0	1471	100.0	1256	100.0

TABLE 17 Type of cigarette

Numbers (N) and percentages (%) with various characteristics
(Current cigarette smokers only)

Type of cigarette	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
	<u>Aged 55 or over</u>							
Filter only	283	32.4	150	33.1	239	23.5	218	28.8
Plain only	309	35.6	296	38.8	100	24.5	97	21.0
Hand Rolled only	110	36.3	70	36.3	6	37.5	3	30.0
Mixed	38	30.9	28	32.6	11	35.5	6	23.1
<u>Smoke 20 or more cigarettes a day</u>								
Filter only	355	40.7	196	43.3	216	21.3	176	23.2
Plain only	406	46.8	381	49.9	97	23.8	121	26.1
Hand Rolled only	13	4.3	17	8.8	1	6.3	1	10.0
Mixed	39	31.7	29	33.7	4	12.9	4	15.4
<u>Inhale</u>								
Filter only	704	86.1	367	84.2	634	66.8	476	67.1
Plain only	734	88.2	627	86.8	268	71.1	349	81.0
<u>Started smoking at age <16</u>								
Filter only	194	23.7	82	18.8	88	9.3	58	8.2
Plain only	261	31.4	242	33.5	42	11.1	57	13.2

TABLE 18 Type of cigarette

Numbers of deaths (D) and mortality ratios (R) standardised for age and number of cigarettes smoked*
(Current cigarette smokers only)

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
Filter only	179	87	104	96	98	90	98	93
Plain only	223	104	199	100	54	124	63	112
Hand Rolled only	89	132	48	108	4	(191)	0	(0)
Mixed	24	84	22	105	3	(68)	5	(178)
		***		N.S.		N.S.		N.S.
Filter only*	166	89	101	99	91	92	91	95
Plain only	212	110	181	100	50	119	60	107
		**		N.S.		*		N.S.
<u>Lung cancer</u>								
Filter only	32	100	15	94	9	107	6	99
Plain only	28	78	29	94	4	(98)	4	(109)
Hand Rolled only	15	191	6	101	0	(0)	0	(0)
Mixed	5	(123)	6	(181)	0	(0)	0	(0)
		**		N.S.		N.S.		N.S.
Filter only*	32	109	14	102	8	95	5	(100)
Plain only	26	91	27	99	4	113	4	(99)
		N.S.		N.S.		N.S.		N.S.
<u>Coronary heart disease</u>								
Filter only	72	88	39	100	32	97	23	91
Plain only	92	111	69	98	13	100	14	110
Hand Rolled only	29	109	19	127	2	(278)	0	(0)
Mixed	8	79	5	68	1	(76)	2	(323)
		N.S.		N.S.		N.S.		N.S.
Filter only*	64	85	37	102	30	101	20	91
Plain only	90	115	62	99	12	98	14	116
		**		N.S.		N.S.		N.S.

* Mortality ratios for second comparison are standardised additionally for inhaling and age of starting to smoke

TABLE 18 Type of cigarette (continued)

Numbers of deaths (D) and mortality ratios (R) standardised for age and number of cigarettes smoked*
(Current cigarette smokers only)

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>CNSLD</u>								
Filter only	10	80	6	80	1		3	(94)
Plain only	12	95	14	98	0	Too few deaths	2	(121)
Hand Rolled only	8	(189)	6	(203)	0		0	(0)
Mixed	1	(60)	0	(0)	0		0	(0)
		N.S.		N.S.				N.S.
Filter only*	10	106	6	95	0		3	(96)
Plain only	11	95	14	102	0		2	(107)
		N.S.		N.S.				N.S.
<u>Stroke</u>								
Filter only	14	78	9	96	7	74	14	91
Plain only	24	125	20	106	7	(178)	10	125
Hand Rolled only	6	99	3	73	0	(0)	0	(0)
Mixed	2	(77)	3	118	0	(0)	0	(0)
		N.S.		N.S.		N.S.		N.S.
Filter only*	12	72	9	90	6	73	12	87
Plain only	23	126	17	106	6	(158)	10	123
		*		N.S.		N.S.		N.S.
<u>Other causes</u>								
Filter only	51	83	35	97	49	85	52	94
Plain only	67	107	67	103	30	135	33	110
Hand Rolled only	31	138	14	85	2	(183)	0	(0)
Mixed	8	78	8	124	2	(93)	3	(193)
		N.S.		N.S.		N.S.		N.S.
Filter only*	48	88	35	99	47	89	51	99
Plain only	62	112	61	100	28	126	30	101
		N.S.		N.S.		N.S.		N.S.

* Mortality ratios for second comparison are standardised additionally for inhaling and age of starting to smoke

TABLE 19 Type of cigarette

Comparison of mortality (standardised for age, number smoked, age of starting and inhalation) of filter only and plain only smokers
(Current cigarette smokers only)

<u>Cause of death</u>		<u>Observed Deaths</u>	<u>Expected Deaths</u>	<u>Relative Mortality</u>	<u>Significance</u>
All causes	Filter	449	481.91	0.87	**
	Plain	503	470.09	1	
Lung cancer	Filter	59	56.48	1.09	N.S.
	Plain	61	63.52	1	
Coronary heart disease	Filter	151	163.53	0.86	N.S.
	Plain	178	165.47	1	
CNSLD	Filter	19	18.89	1.01	N.S.
	Plain	27	27.11	1	
Stroke	Filter	39	48.85	0.66	**
	Plain	56	46.15	1	
Other causes	Filter	181	194.14	0.86	N.S.
	Plain	181	167.86	1	

TABLE 20 Social Class (on questionnaire)

Numbers at risk (N) and percentage distribution (%)

Social Class	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
I or II	604	14.1	425	13.6	670	15.1	401	13.5
III	2479	57.8	1917	61.2	2522	56.8	1474	49.6
IV or V	1206	28.1	791	25.2	1251	28.2	1096	36.9
Total classified	4289	100.0	3133	100.0	4443	100.0	2971	100.0

TABLE 21 Social Class (on questionnaire)

Numbers (N) and percentages (%) who are aged 55 or over and who are current cigarette smokers

Social Class	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
	<u>Aged 55 or over</u>							
I or II	220	36.4	179	42.1	254	37.9	183	45.6
III	888	35.8	772	40.3	883	35.0	487	33.0
IV or V	505	41.9	330	41.7	512	40.9	444	40.5
<u>Current cigarette smokers</u>								
I or II	259	42.9	199	46.8	217	32.4	155	38.7
III	1402	56.6	1078	56.2	938	37.2	571	38.7
IV or V	752	62.4	480	60.7	456	36.5	423	38.6

TABLE 22 Social Class (on questionnaire)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
I or II	125	104	90	87	74	89	43	76
III	493	96	438	98	299	100	174	98
IV or V	293	106	209	113	166	106	163	112
		N.S.		*		N.S.		*
<u>Lung Cancer</u>								
I or II	12	89	12	100	4	(144)	2	(122)
III	71	113	56	103	7	69	6	103
IV or V	28	80	21	92	7	136	4	(88)
		N.S.		N.S.		N.S.		N.S.
<u>Coronary heart disease</u>								
I or II	47	113	25	73	22	103	6	47
III	181	98	153	101	78	102	34	92
IV or V	95	98	72	113	38	94	41	131
		N.S.		N.S.		N.S.		**
<u>CNSLD</u>								
I or II	9	133	2	38	1	(80)	1	(69)
III	23	79	26	113	4	(93)	4	(98)
IV or V	19	125	10	103	3	(124)	4	(116)
		N.S.		N.S.		N.S.		N.S.
<u>Stroke</u>								
I or II	11	96	11	98	10	98	7	81
III	42	92	40	89	38	99	29	108
IV or V	30	116	24	127	20	102	22	98
		N.S.		N.S.		N.S.		N.S.
<u>Other causes</u>								
I or II	46	98	40	98	37	78	27	83
III	176	91	163	94	172	101	101	97
IV or V	121	118	82	116	98	109	92	111
		*		N.S.		N.S.		N.S.

TABLE 23 Urbanization

Numbers at risk (N) and percentage distribution (%)

	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
	<u>Urbanization</u>							
<u>Full data</u>								
Conurbations	1690	35.4	1277	38.5	1858	35.1	1730	40.1
Urban	2211	46.4	1498	45.2	2530	47.8	1930	44.8
Rural	868	18.2	540	16.3	903	17.1	651	15.1
Total classified	4769	100.0	3315	100.0	5291	100.0	4311	100.0
<u>England and Wales only</u>								
Conurbations	1244	37.8	911	37.9	1344	37.3	1199	39.6
Urban 100,000+	441	13.4	343	14.3	490	13.6	419	13.8
Urban 50-100,000	335	10.2	248	10.3	397	11.0	320	10.6
Urban <50,000	687	20.9	552	23.0	766	21.3	656	21.7
Rural	531	16.2	323	13.4	549	15.3	399	13.2
Truly Rural	49	1.5	28	1.2	54	1.5	34	1.1
Total	3287	100.0	2405	100.0	3600	100.0	3027	100.0

TABLE 24 Urbanization

Numbers (N) and percentages (%) who are aged 55 or over

	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
	<u>Urbanization</u>							
<u>Full data</u>								
Conurbations	647	38.3	529	41.4	750	40.4	744	43.0
Urban	827	37.4	599	40.0	1015	40.1	816	42.3
Rural	333	38.4	218	40.4	382	42.3	271	41.6
<u>England and Wales only</u>								
Conurbations	475	38.2	361	39.6	540	40.2	471	39.3
Urban 100,000+	155	35.1	117	34.1	190	38.8	141	33.7
Urban 50-100,000	118	35.2	100	40.3	153	38.5	105	32.8
Urban <50,000	267	38.9	213	38.6	321	41.9	278	42.4
Rural	206	38.8	114	35.3	240	43.7	146	36.6
Truly Rural	14	28.6	9	32.1	23	42.6	13	38.2

TABLE 25 Urbanization

Numbers (N) and percentages (%) who are current cigarette smokers

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<u>Urbanization</u>								
<u>Full data</u>								
Conurbations	998	59.1	740	57.9	744	40.0	647	37.4
Urban	1236	55.9	842	56.2	870	34.4	691	35.8
Rural	461	53.1	290	53.7	278	30.8	227	34.9
<u>England and Wales only</u>								
Conurbations	722	58.0	526	57.7	531	39.5	484	40.4
Urban 100,000+	252	57.1	197	57.4	159	32.4	160	38.2
Urban 50-100,000	168	50.1	147	59.3	128	32.2	132	31.5
Urban <50,000	370	53.9	299	54.2	262	34.2	231	35.2
Rural	281	52.9	177	54.8	164	29.9	152	38.1
Truly Rural	18	36.7	15	53.6	15	27.8	15	44.1

TABLE 26 Urbanization

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	<u>All Causes</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
Urbanization								
<u>Full data</u>								
Conurbations	390	107	298	95	249	101	272	105
Urban	482	100	363	105	331	98	278	96
Rural	166	87	125	98	123	102	93	99
		*		N.S.		N.S.		N.S.
<u>England and Wales only</u>								
Conurbations	296	109	209	97	171	97	169	103
Urban 100,000+	103	111	75	100	64	99	55	106
Urban 50-100,000	71	99	54	91	57	108	34	86
Urban <50,000	143	89	134	110	108	100	89	96
Rural	110	91	69	96	76	101	47	92
Truly Rural	5	51	8	147	9	125	9	(201)
		*		N.S.		N.S.		N.S.
Conurbations	296	102	209	99	171	99	169	98
Truly Rural	5	47	8	152	9	126	9	188
		*		N.S.		N.S.		**

TABLE 26 Urbanization (continued - 1)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	<u>Lung Cancer</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Urbanization</u>								
<u>Full data</u>								
Conurbations	63	139	33	91	6	77	8	93
Urban	48	81	49	123	13	140	12	126
Rural	16	71	9	62	1	(35)	1	(35)
		***		N.S.		N.S.		N.S.
<u>England and Wales only</u>								
Conurbations	50	136	23	85	5	92	4	65
Urban 100,000+	17	136	8	84	1	(55)	3	(154)
Urban 50-100,000	6	63	11	144	1	(75)	2	(125)
Urban <50,000	10	47	19	126	6	(236)	6	(178)
Rural	14	88	8	89	0	(0)	0	(0)
Truly Rural	0	(0)	0	(0)	0	(0)	0	(0)
		***		N.S.		N.S.		N.S.
Conurbations	50	103	23	102	5	(102)	4	(104)
Truly Rural	0	(0)	0	(0)	0	(0)	0	(0)
		N.S.		N.S.		N.S.		N.S.

TABLE 26 Urbanization (continued - 2)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Coronary Heart Disease

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Urbanization</u>								
<u>Full data</u>								
Conurbations	143	107	107	101	58	91	70	117
Urban	173	99	112	96	93	107	66	94
Rural	61	88	46	109	30	97	19	86
		N.S.		N.S.		N.S.		N.S.
<u>England and Wales only</u>								
Conurbations	106	110	75	113	38	91	48	127
Urban 100,000+	33	99	17	75	18	117	8	69
Urban 50-100,000	27	106	20	119	13	104	6	70
Urban <50,000	53	93	36	97	27	102	24	112
Rural	39	92	16	76	18	101	5	44
Truly Rural	0	(0)	3	(177)	2	(113)	1	(101)
		N.S.		N.S.		N.S.		N.S.
Conurbations	106	104	75	99	38	99	48	100
Truly Rural	0	(0)	3	(151)	2	(119)	1	86
		N.S.		N.S.		N.S.		N.S.

TABLE 26 Urbanization (continued - 3)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	<u>CNSLD</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Urbanization</u>								
<u>Full data</u>								
Conurbations	24	115	20	120	3	(113)	8	129
Urban	29	104	16	90	4	(102)	5	74
Rural	7	62	5	76	1	(70)	2	(99)
		N.S.		N.S.		N.S.		N.S.
<u>England and Wales only</u>								
Conurbations	18	105	14	131	2	(96)	5	(108)
Urban 100,000+	4	70	5	130	0	(0)	2	(147)
Urban 50-100,000	4	(88)	0	(0)	1	(159)	1	(91)
Urban <50,000	15	147	5	84	2	(135)	2	(78)
Rural	5	65	3	(88)	1	(112)	1	(81)
Truly Rural	0	(0)	0	(0)	0	(0)	0	(0)
		N.S.		N.S.		N.S.		N.S.
Conurbations	18	103	14	102	2	108	5	102
Truly Rural	0	(0)	0	(0)	0	(0)	0	(0)
		N.S.		N.S.		N.S.		N.S.

TABLE 26 Urbanization (continued - 4)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	<u>Stroke</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Urbanization</u>								
<u>Full data</u>								
Conurbations	26	80	26	80	33	98	38	91
Urban	49	112	39	110	50	106	51	109
Rural	19	108	17	119	15	88	15	99
		N.S.		N.S.		N.S.		N.S.
<u>England and Wales only</u>								
Conurbations	17	77	17	71	23	101	14	70
Urban 100,000+	5	69	8	96	7	86	5	83
Urban 50-100,000	6	101	6	89	6	83	6	129
Urban <50,000	16	120	17	124	19	128	15	131
Rural	13	123	12	137	9	91	6	96
Truly Rural	3	(416)	2	(348)	0	(0)	3	(557)
		*		N.S.		N.S.		**
Conurbations	17	88	17	91	23	104	14	84
Truly Rural	3	(414)	2	(449)	0	(0)	3	(731)
		***		***		N.S.		****

TABLE 26 Urbanization (continued - 5)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	<u>Other causes</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
Urbanization								
<u>Full data</u>								
Conurbations	134	102	112	92	149	108	148	106
Urban	183	103	147	109	171	90	144	92
Rural	63	89	48	95	76	112	56	108
		N.S.		N.S.		N.S.		N.S.
<u>England and Wales only</u>								
Conurbations	105	106	80	92	103	98	98	103
Urban 100,000+	44	131	37	120	38	99	37	119
Urban 50-100,000	28	108	17	71	36	116	19	81
Urban <50,000	49	82	57	114	54	86	42	79
Rural	39	87	30	102	48	108	35	115
Truly Rural	2	(51)	3	(129)	7	(168)	5	(189)
		N.S.		N.S.		N.S.		N.S.
Conurbations	105	102	80	99	103	97	98	98
Truly Rural	2	(53)	3	143	7	(161)	5	169
		N.S.		N.S.		N.S.		N.S.

TABLE 27 Obesity

Numbers at risk (N) and percentage distribution (%)

Obesity Index	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<23	1289	27.5	837	25.9	1986	39.1	1581	38.2
23-24	1245	26.6	880	27.2	1196	23.5	992	24.6
25-27	1428	30.5	1022	31.6	1090	21.4	886	21.4
28+	717	15.3	495	15.3	813	16.0	679	16.4
Total	4679	100.0	3234	100.0	5085	100.0	4138	100.0

TABLE 28 Obesity

Numbers (N) and percentages (%) who are aged 55 or over and who are current cigarette smokers

Obesity Index	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<u>Aged 55 or over</u>								
<23	547	42.4	361	43.1	682	34.3	547	34.6
23-24	471	37.8	337	38.3	479	40.1	376	37.9
25-27	491	39.3	396	38.7	467	42.8	437	49.3
28+	255	35.6	210	42.4	402	49.4	372	54.8
<u>Current cigarette smokers</u>								
<23	907	70.4	584	69.8	852	42.9	702	44.4
23-24	731	58.7	503	57.2	426	35.6	358	36.1
25-27	700	49.0	510	49.9	338	31.0	277	31.3
28+	307	42.8	230	46.5	213	26.2	188	27.7

TABLE 29 Obesity

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
<23	318	102	217	105	237	98	219	104
23-24	270	100	203	99	145	92	122	86
25-27	286	99	218	94	163	109	152	104
28+	140	98	122	104	124	104	119	105
		N.S.		N.S.		N.S.		N.S.
<u>Coronary heart disease</u>								
<23	90	81	51	73	58	93	40	81
23-24	109	110	76	111	30	74	24	75
25-27	118	112	85	109	43	112	47	130
28+	51	99	44	112	41	133	34	125
		*		*		*		**
<u>Other causes</u>								
<23	228	114	166	122	179	100	179	111
23-24	161	94	127	93	115	98	98	90
25-27	168	92	133	87	120	108	105	96
28+	89	97	78	99	83	93	85	98
		*		**		N.S.		N.S.

TABLE 30 Exercise

Numbers at risk (N) and percentage distribution (%)

Exercise	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
None	265	5.7	158	5.1	365	7.2	335	8.7
Slight	742	15.9	543	17.6	769	15.1	602	15.6
Moderate	2982	63.8	2011	65.0	3706	72.8	2735	70.8
Heavy	682	14.6	380	12.3	253	5.0	193	5.0
Total classified	4671	100.0	3092	100.0	5093	100.0	3865	100.0

TABLE 31 Exercise

Numbers (N) and percentages (%) who are aged 55 or over and who are current cigarette smokers

Exercise	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<u>Aged 55 or over</u>								
None	100	37.7	82	51.9	175	47.9	151	45.1
Slight	273	36.8	220	40.5	303	39.4	271	45.0
Moderate	1155	38.7	807	40.1	1473	39.7	1090	39.9
Heavy	220	32.3	120	31.6	69	27.3	53	27.5
<u>Current cigarette smokers</u>								
None	164	61.9	97	61.4	125	34.2	112	33.4
Slight	398	53.6	299	55.1	265	34.5	221	36.7
Moderate	1672	56.1	1121	55.7	1339	36.1	994	36.3
Heavy	409	60.0	219	57.6	109	43.1	89	46.1

TABLE 32 Exercise

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>All causes</u>								
None	82	144	52	139	86	162	73	153
Slight	189	129	129	105	116	118	110	122
Moderate	617	93	464	98	438	91	353	90
Heavy	113	85	68	86	20	73	19	80
		****		**		****		****
<u>Coronary heart disease</u>								
None	26	125	14	108	27	201	25	225
Slight	69	130	42	101	34	138	29	133
Moderate	230	95	164	102	100	83	75	81
Heavy	41	82	23	83	4	60	1	(21)
		**		N.S.		****		****
<u>Other causes</u>								
None	56	156	38	155	59	148	48	131
Slight	120	129	87	107	82	111	81	118
Moderate	387	91	300	96	338	94	278	92
Heavy	72	87	45	87	16	77	18	96
		****		**		****		*

TABLE 33 Cardiorespiratory symptoms

Numbers at risk (N) and percentage distribution (%)

Symptom	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<u>Persistent cough and phlegm</u>								
Positive	918	19.2	665	20.0	439	8.3	355	8.2
Negative	3852	80.4	2654	80.0	4854	91.7	3959	91.8
<u>Chronic bronchitis syndrome</u>								
Positive	286	6.0	165	5.0	191	3.6	117	2.7
Negative	4484	94.0	3154	95.0	5102	96.4	4197	97.3
<u>Angina</u>								
Positive	522	10.9	387	11.7	571	10.8	456	10.6
Negative	4248	89.1	2932	88.3	4722	89.2	3858	89.4
<u>Infarction</u>								
Positive	586	12.3	380	11.4	428	8.1	335	7.8
Negative	4184	87.7	2939	88.6	4865	91.9	3979	92.2
<u>One or more of above four symptoms</u>								
Positive	1468	30.8	1063	32.0	1124	21.2	881	20.4
Negative	3302	69.2	2256	68.0	4169	78.8	3433	79.6
<u>Claudication</u>								
Positive	95	2.0	65	2.0	79	1.5	61	1.4
Negative	4675	98.0	3254	98.0	5214	98.5	4253	98.6
Total	4770	100.0	3319	100.0	5293	100.0	4314	100.0

TABLE 34 Cardiorespiratory symptoms

Numbers (N) and percentages (%) who are aged 55 or over

Symptom	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<u>Persistent cough and phlegm</u>								
Positive	435	47.4	327	49.2	178	40.5	134	37.7
Negative	1372	35.6	1021	38.5	1970	40.6	1698	42.9
<u>Chronic bronchitis syndrome</u>								
Positive	184	64.3	119	72.1	83	43.5	52	44.4
Negative	1623	36.2	1229	39.0	2065	40.5	1780	42.4
<u>Angina</u>								
Positive	294	56.3	249	64.3	268	46.9	237	52.0
Negative	1513	35.6	1099	37.5	1880	39.8	1595	41.3
<u>Infarction</u>								
Positive	268	45.7	192	50.5	199	46.5	167	49.9
Negative	1539	36.8	1156	39.3	1949	40.1	1665	41.8
<u>One or more of above four symptoms</u>								
Positive	686	46.7	529	49.8	495	44.0	397	45.1
Negative	1121	33.9	819	36.3	1653	39.6	1435	41.8
<u>Claudication</u>								
Positive	63	66.3	45	69.2	33	41.8	26	42.6
Negative	1744	37.3	1303	40.0	2115	40.6	1806	42.5
Total	1807	37.9	1348	40.6	2148	40.6	1832	42.5

TABLE 35 Cardiorespiratory symptoms

Numbers (N) and percentages (%) who are current cigarette smokers

Symptom	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
<u>Persistent cough and phlegm</u>								
Positive	705	76.8	520	78.2	276	62.9	246	69.3
Negative	1990	51.7	1355	51.1	1617	33.3	1320	33.3
<u>Chronic bronchitis syndrome</u>								
Positive	196	68.5	120	72.7	107	56.0	74	63.2
Negative	2499	55.7	1755	55.6	1786	35.0	1492	35.5
<u>Angina</u>								
Positive	311	59.6	234	60.5	199	34.9	155	34.0
Negative	2384	56.1	1641	56.0	1694	35.9	1411	36.6
<u>Infarction</u>								
Positive	354	60.4	224	58.9	168	39.3	126	37.6
Negative	2341	56.0	1651	56.2	1725	35.5	1440	36.2
<u>One or more of above four symptoms</u>								
Positive	987	67.2	729	68.6	493	43.9	396	44.9
Negative	1708	51.7	1146	50.8	1400	33.6	1170	34.1
<u>Claudication</u>								
Positive	71	74.7	42	64.6	36	45.6	33	54.1
Negative	2624	56.1	1833	56.3	1857	35.6	1533	36.0
Total	2695	56.5	1875	56.5	1893	35.8	1566	36.3

TABLE 36 Cardiorespiratory symptoms

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Symptom	<u>All causes</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	309	133	210	115	74	121	65	129
Negative	729	90	576	95	629	98	578	98
		****		**		*		**
<u>Chronic bronchitis syndrome</u>								
Positive	155	198	81	153	41	152	25	145
Negative	883	92	705	96	662	98	618	99
		****		****		***		*
<u>Angina</u>								
Positive	225	174	178	162	106	126	114	159
Negative	813	89	608	90	597	96	529	93
		****		****		***		****
<u>Infarction</u>								
Positive	216	173	139	143	85	138	66	119
Negative	822	90	647	94	618	96	577	98
		****		****		***		N.S.
<u>One or more of above four symptoms</u>								
Positive	498	142	350	124	193	121	181	137
Negative	540	79	436	86	510	94	462	90
		****		****		****		****
<u>Claudication</u>								
Positive	50	195	30	147	16	148	11	110
Negative	988	98	756	99	687	99	632	100
		****		**		N.S.		N.S.

TABLE 36 Cardiorespiratory symptoms (continued - 1)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Symptom	<u>Lung Cancer</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	45	139	34	145	8	(263)	2	(86)
Negative	82	87	57	84	12	71	19	102
		***		***		***		N.S.
<u>Chronic bronchitis syndrome</u>								
Positive	14	130	11	164	5	(392)	1	(138)
Negative	113	97	80	95	15	80	20	99
		N.S.		*		****		N.S.
<u>Angina</u>								
Positive	14	85	20	152	3	(121)	2	(95)
Negative	113	102	71	91	17	97	19	101
		N.S.		**		N.S.		N.S.
<u>Infarction</u>								
Positive	24	151	13	112	4	(232)	2	(122)
Negative	103	93	78	98	16	88	19	98
		**		N.S.		*		N.S.
<u>One or more of above four symptoms</u>								
Positive	59	127	45	129	9	160	4	(86)
Negative	68	84	46	82	11	77	17	104
		**		**		*		N.S.
<u>Claudication</u>								
Positive	7	(190)	1	(40)	1	(221)	0	(0)
Negative	120	97	90	102	19	97	21	102
		*		N.S.		N.S.		N.S.

TABLE 36 Cardiorespiratory symptoms (continued - 2)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Coronary Heart Disease

Symptom	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	101	120	68	109	24	148	15	119
Negative	276	94	197	97	157	95	140	98
		**		N.S.		**		N.S.
<u>Chronic bronchitis syndrome</u>								
Positive	51	187	21	117	13	182	7	(162)
Negative	326	93	244	99	168	97	148	98
		****		N.S.		**		N.S.
<u>Angina</u>								
Positive	103	227	69	187	36	164	37	205
Negative	274	83	196	86	145	91	118	86
		****		****		***		****
<u>Infarction</u>								
Positive	98	216	56	173	32	199	20	141
Negative	279	84	209	90	149	90	135	96
		****		****		****		*
<u>One or more of above four symptoms</u>								
Positive	191	151	124	129	69	164	51	155
Negative	186	74	141	83	112	81	104	85
		****		****		****		****
<u>Claudication</u>								
Positive	22	237	13	197	2	70	2	(77)
Negative	355	97	252	98	179	100	153	100
		****		***		N.S.		N.S.

TABLE 36 Cardiorespiratory symptoms (continued - 3)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Symptom	<u>CNSLD</u>							
	Males Pop		Males Sib		Females Pop		Females Sib	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	46	339	27	253	5	(884)	4	(283)
Negative	14	30	14	46	3	40	11	81
		****		****		****		**
<u>Chronic bronchitis syndrome</u>								
Positive	38	(818)	15	(476)	4	(1574)	1	(211)
Negative	22	40	26	69	4	52	14	96
		****		****		****		N.S.
<u>Angina</u>								
Positive	20	264	12	196	2	(197)	6	(347)
Negative	40	76	29	83	6	86	9	68
		****		***		N.S.		****
<u>Infarction</u>								
Positive	23	313	5	92	2	(265)	1	(72)
Negative	37	70	36	101	6	83	14	103
		****		N.S.		N.S.		N.S.
<u>One or more of above four symptoms</u>								
Positive	52	254	28	176	6	(332)	8	(240)
Negative	8	20	13	52	2	32	7	60
		****		****		****		***
<u>Claudication</u>								
Positive	2	(142)	1	(83)	0	(0)	1	(461)
Negative	58	99	40	101	8	102	14	95
		N.S.		N.S.		N.S.		*

TABLE 36 Cardiorespiratory symptoms (continued - 4)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Symptoms	Males		Stroke		Females		Females	
	Pop		Sibs		Pop		Sibs	
	D	R	D	R	D	R	D	R
<u>Persistent cough and phlegm</u>								
Positive	19	89	24	130	5	67	6	79
Negative	75	103	58	91	93	103	98	102
		N.S.		N.S.		N.S.		N.S.
<u>Chronic bronchitis syndrome</u>								
Positive	7	87	11	190	1	(31)	4	(150)
Negative	87	101	71	93	97	102	100	99
		*		**		N.S.		N.S.
<u>Angina</u>								
Positive	19	150	22	178	18	148	16	135
Negative	75	92	60	86	80	93	88	95
		*		***		*		N.S.
<u>Infarction</u>								
Positive	16	142	14	131	12	138	13	144
Negative	78	94	68	95	86	96	91	96
		N.S.		N.S.		N.S.		N.S.
<u>One or more of above four symptoms</u>								
Positive	38	118	41	141	24	111	23	108
Negative	56	91	41	77	74	97	81	98
		N.S.		***		N.S.		N.S.
<u>Claudication</u>								
Positive	2	(81)	3	(120)	2	(147)	1	(60)
Negative	92	101	79	99	96	99	103	101
		N.S.		N.S.		N.S.		N.S.

TABLE 36 Cardiorespiratory symptoms (continued - 5)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Symptoms	Males		Other causes				Females	
	Pop		Males		Pop		Females	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	98	123	57	84	32	95	38	145
Negative	282	94	250	104	364	100	310	96
		**		N.S.		N.S.		**
<u>Chronic bronchitis syndrome</u>								
Positive	45	162	23	119	18	119	12	133
Negative	335	95	284	99	378	99	336	99
		****		N.S.		N.S.		N.S.
<u>Angina</u>								
Positive	69	146	55	132	47	101	53	139
Negative	311	93	252	95	349	100	295	95
		****		**		N.S.		N.S.
<u>Infarction</u>								
Positive	55	122	51	137	35	102	30	103
Negative	325	97	256	95	361	100	318	100
		N.S.		**		N.S.		N.S.
<u>One or more of above four symptoms</u>								
Positive	158	127	112	105	85	96	95	135
Negative	222	87	195	97	311	101	253	91
		****		N.S.		N.S.		****
<u>Claudication</u>								
Positive	17	194	12	159	11	183	7	137
Negative	263	98	295	99	385	99	341	99
		***		*		**		N.S.

TABLE 37 Cardiorespiratory symptoms and follow-up period

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

All causes: Follow-up period 1-5 years

Symptoms	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	96	126	68	131	19	112	16	113
Negative	226	92	142	90	181	99	158	99
		***		***		N.S.		N.S.
<u>Chronic bronchitis syndrome</u>								
Positive	58	201	30	184	10	129	7	(142)
Negative	264	90	180	93	190	99	167	99
		****		****		N.S.		N.S.
<u>Angina</u>								
Positive	96	209	61	184	34	142	34	168
Negative	226	82	149	84	166	94	140	91
		****		****		**		****
<u>Infarction</u>								
Positive	94	220	51	180	24	132	10	67
Negative	228	82	159	88	176	97	164	103
		****		****		N.S.		N.S.
<u>One or more of above four symptoms</u>								
Positive	175	151	112	139	58	128	50	37
Negative	147	71	98	76	142	92	124	137
		****		****		**		**
<u>Claudication</u>								
Positive	23	228	17	285	5	(164)	4	(140)
Negative	299	96	193	95	195	99	170	99
		****		****		N.S.		N.S.

TABLE 37 Cardiorespiratory symptoms and follow-up period (continued - 1)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

All causes: Follow-up period 6 years to end

Symptoms	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	213	137	142	109	55	125	49	136
Negative	503	90	434	97	448	98	420	97
		****		N.S.		*		**
<u>Chronic bronchitis syndrome</u>								
Positive	97	196	51	139	31	161	18	146
Negative	619	93	525	97	472	98	451	99
		****		***		***		*
<u>Angina</u>								
Positive	129	155	117	152	72	119	80	155
Negative	587	93	459	92	431	97	389	93
		****		****		*		****
<u>Infarction</u>								
Positive	122	148	88	128	61	141	56	139
Negative	594	94	488	96	442	96	413	96
		****		**		***		***
<u>One or more of above four symptoms</u>								
Positive	323	138	238	118	135	163	131	95
Negative	393	82	338	90	368	95	348	374
		****		****		***		****
<u>Claudication</u>								
Positive	27	174	13	90	11	142	7	98
Negative	689	98	563	100	492	99	462	100
		***		N.S.		N.S.		N.S.

TABLE 37 Cardiorespiratory symptoms and follow-up period (continued - 2)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Coronary heart disease: Follow-up period 1-5 years

Symptoms	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	31	112	24	124	6	(176)	2	(67)
Negative	86	96	51	92	32	93	34	103
		N.S.		N.S.		N.S.		N.S.
<u>Chronic bronchitis syndrome</u>								
Positive	19	186	8	133	3	(191)	1	(94)
Negative	98	92	67	97	35	96	35	100
		***		N.S.		N.S.		N.S.
<u>Angina</u>								
Positive	51	313	21	172	10	(219)	11	(241)
Negative	66	66	54	86	28	84	25	80
		****		***		***		***
<u>Infarction</u>								
Positive	49	319	19	187	10	(285)	2	(56)
Negative	68	67	56	86	28	81	34	105
		****		***		****		N.S.
<u>One or more of above four symptoms</u>								
Positive	73	174	38	129	20	225	12	148
Negative	44	59	37	81	18	62	24	86
		****		**		****		N.S.
<u>Claudication</u>								
Positive	10	271	8	364	1	(165)	1	(155)
Negative	107	94	67	92	37	99	35	99
		****		****		N.S.		N.S.

TABLE 37 Cardiorespiratory symptoms and follow-up period (continued - 3)

Numbers of deaths (D) and mortality ratios (R) standardised for age and smoking

Coronary heart disease: Follow-up period 6 years to end

Symptoms	Males Pop		Males Sibs		Females Pop		Females Sibs	
	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>	<u>D</u>	<u>R</u>
<u>Persistent cough and phlegm</u>								
Positive	70	124	44	102	18	140	13	135
Negative	190	93	146	99	125	96	106	97
		**		N.S.		N.S.		N.S.
<u>Chronic bronchitis syndrome</u>								
Positive	32	188	13	110	10	179	6	(184)
Negative	228	94	177	99	133	97	113	98
		****		N.S.		*		N.S.
<u>Angina</u>								
Positive	52	179	48	194	26	149	26	192
Negative	208	90	142	86	117	93	93	98
		****		****		**		****
<u>Infarction</u>								
Positive	49	163	37	167	22	175	18	170
Negative	211	92	153	91	121	93	101	93
		****		****		***		**
<u>One or more of above four symptoms</u>								
Positive	118	140	86	129	49	148	39	157
Negative	142	81	104	84	94	86	80	85
		****		***		***		***
<u>Claudication</u>								
Positive	12	215	5	(114)	1	(44)	1	(51)
Negative	248	97	185	100	142	101	118	101
		***		N.S.		N.S.		N.S.

TABLE 38 Cardiorespiratory symptoms and other factors

Numbers at risk (N) and percentage with symptoms (%)

Males - Population Sample

Factor	N	PCP %	CB %	Angina %	Infarction %	Claudication %
<u>Smoking</u>						
Never smoked	520	6.3	2.1	7.1	8.1	0.6
Current cigarettes	2695	26.2	7.3	11.5	13.1	2.6
Others	1555	11.6	5.1	11.2	12.2	1.4
<u>Social class</u>						
I or II	604	14.6	3.6	9.9	12.4	1.3
III	2479	18.6	5.3	10.3	11.7	2.1
IV or V	1206	22.6	8.0	12.6	13.6	2.2
<u>Exercise</u>						
None	265	29.4	15.1	13.2	17.7	0.8
Slight	742	21.6	8.9	13.3	15.4	2.6
Moderate	2982	17.8	5.0	11.0	12.7	2.2
Heavy	682	19.9	4.0	7.5	11.7	0.7
<u>Urbanization</u>						
Conurbations	1690	22.2	7.2	11.7	12.8	2.6
Urban	2211	18.4	5.6	10.9	12.6	1.7
Rural	868	15.7	4.7	9.6	10.5	1.7
Truly Rural (England and Wales only)	49	8.2	0.0 Not studied		

TABLE 38 Cardiorespiratory symptoms and other factors (continued - 1)

Numbers at risk (N) and percentage with symptoms (%)

Males - Siblings Sample

Factor	<u>N</u>	PCP		Angina	Infarction	Claudication
		<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
<u>Smoking</u>						
Never smoked	347	5.2	1.4	6.9	7.5	0.6
Current cigarettes	1875	27.7	6.4	12.5	11.9	2.2
Others	1097	11.6	3.6	11.8	11.9	1.9
<u>Social class</u>						
I or II	425	15.1	1.9	8.7	11.5	1.2
III	1917	21.0	4.8	12.0	11.8	2.2
IV or V	791	20.9	7.1	12.9	10.4	1.9
<u>Exercise</u>						
None	158	29.1	12.7	19.6	18.4	3.2
Slight	543	22.8	6.4	16.9	14.5	2.2
Moderate	2011	19.2	4.4	9.9	10.7	1.9
Heavy	380	16.3	1.8	8.7	7.6	1.3
<u>Urbanization</u>						
Conurbations	1277	22.8	5.3	13.0	12.7	2.1
Urban	1498	18.9	4.9	11.2	11.2	2.1
Rural	540	16.7	4.3	9.8	9.3	1.3
Truly Rural (England and Wales only)	28	14.3	3.6 Not studied		

TABLE 38 Cardiorespiratory symptoms and other factors (continued - 2)

Numbers at risk (N) and percentage with symptoms (%)

Females - Population Sample

Factor	N	PCP	CB	Angina	Infarction	Claudication
		%	%	%	%	%
<u>Smoking</u>						
Never smoked	2120	4.2	2.0	11.1	6.9	1.1
Current cigarettes	1893	14.6	5.7	10.5	8.9	1.9
Others	1280	5.7	3.2	10.6	8.8	1.6
<u>Social class</u>						
I or II	670	6.7	2.1	8.1	9.4	0.9
III	2522	7.5	3.1	10.1	7.1	1.6
IV or V	1251	10.4	5.0	14.6	9.0	1.9
<u>Exercise</u>						
None	365	9.9	5.8	9.9	8.5	3.0
Slight	769	11.1	5.1	13.4	10.3	1.3
Moderate	3706	7.2	3.0	10.6	7.4	1.3
Heavy	253	11.1	3.6	7.9	9.5	1.6
<u>Urbanization</u>						
Conurbations	1858	9.5	4.4	11.4	7.8	1.2
Urban	2530	7.9	3.2	10.8	8.4	1.7
Rural	903	7.0	3.1	9.7	7.9	1.6
Truly Rural (England and Wales only)	54	5.6	1.9 Not studied		

TABLE 38 Cardiorespiratory symptoms and other factors (continued - 3)

Numbers at risk (N) and percentage with symptoms (%)

<u>Females - Siblings Sample</u>						
<u>Factor</u>	<u>N</u>	<u>PCP</u> <u>%</u>	<u>CB</u> <u>%</u>	<u>Angina</u> <u>%</u>	<u>Infarction</u> <u>%</u>	<u>Claudication</u> <u>%</u>
<u>Smoking</u>						
Never smoked	1694	3.2	1.1	11.1	7.9	1.2
Current cigarettes	1566	15.7	4.7	9.9	8.0	2.1
Others	1054	5.1	2.4	10.7	7.2	0.8
<u>Social class</u>						
I or II	401	9.2	2.5	7.0	8.5	0.5
III	1474	8.3	2.6	10.4	8.3	1.9
IV or V	1096	8.7	3.0	10.8	7.8	1.6
<u>Exercise</u>						
None	335	9.9	3.0	14.9	9.0	1.8
Slight	602	9.5	4.2	12.8	7.8	2.0
Moderate	2735	7.9	2.4	9.8	7.4	1.3
Heavy	193	8.8	4.1	10.4	10.9	1.0
<u>Urbanization</u>						
Conurbations	1730	9.7	3.8	11.3	7.8	1.8
Urban	1930	7.3	2.2	10.6	8.0	1.3
Rural	651	7.2	1.4	8.6	7.1	0.8
Truly Rural (England and Wales only)	34	5.9	2.9 Not studied		

TABLE 39 Cardiorespiratory symptoms and other factors

Numbers of deaths of symptom positives (DS) and relative mortality ratios of symptom positives to symptom negatives (RM) standardised for age and smoking

All causes - chronic bronchitis syndrome

Subgroup of population	Males		Males		Females		Females	
	Pop	Sibs	Pop	Sibs	Pop	Sibs	Pop	Sibs
	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>
Social class I or II	15	2.20	4	(2.05)	3	(1.67)	1	(0.86)
Social class III	71	2.09	45	1.46	20	2.20	8	1.39
Social class IV or V	54	2.15	27	1.43	8	0.90	6	(1.40)
Exercise - none	22	1.84	12	1.61	6	(1.30)	3	(1.20)
Exercise - slight	45	1.91	19	1.87	10	1.57	4	(0.97)
Exercise - moderate	77	1.96	38	1.30	22	1.48	12	1.34
Exercise - heavy	9	1.43	3	(1.25)	1	(1.95)	1	(1.93)
Conurbation residence	71	2.19	37	1.82	17	1.42	15	1.35
Urban residence	65	1.88	36	1.41	17	1.56	8	1.37
Rural residence	19	1.72	8	1.12	7	(1.64)	2	(1.49)

TABLE 39 Cardiorespiratory symptoms and other factors (continued - 1)

Numbers of deaths of symptom positives (DS) and relative mortality ratios of symptom positives to symptom negatives (RM) standardised for age and smoking

Subgroup of population	<u>All causes - angina</u>							
	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>
Social class I or II	27	1.78	18	2.00	12	2.02	6	(1.57)
Social class III	104	1.92	101	1.58	43	1.37	33	(1.74)
Social class IV or V	64	1.66	51	1.85	28	1.24	32	2.08
Exercise - none	17	1.57	16	1.54	5	0.52	20	2.09
Exercise - slight	48	1.84	45	1.79	26	1.59	20	1.39
Exercise - moderate	139	1.87	90	1.70	68	1.42	56	1.53
Exercise - heavy	17	1.91	10	1.31	1	(0.49)	1	(0.48)
Conurbation residence	92	1.82	76	1.74	35	1.05	50	1.51
Urban residence	98	1.72	78	1.69	52	1.44	49	1.67
Rural residence	35	2.00	24	1.58	19	1.63	15	1.96

TABLE 39 Cardiorespiratory symptoms and other factors (continued - 2)

Numbers of deaths of symptom positives (DS) and relative mortality ratios of symptom positives to symptom negatives (RM) standardised for age and smoking

Coronary heart disease - chronic bronchitis syndrome

Subgroup of population	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>
Social class I or II	4	(1.76)	2	(2.94)	0	(0.00)	0	(0.00)
Social class III	21	1.67	10	0.88	6	(2.43)	1	(0.89)
Social class IV or V	19	2.46	9	1.47	3	(1.36)	0	(0.00)
Exercise - none	4	(1.01)	2	(1.10)	2	(1.61)	1	(1.41)
Exercise - slight	13	1.34	7	(1.86)	2	(1.00)	2	(2.24)
Exercise - moderate	32	2.32	8	0.75	8	(2.25)	3	(1.45)
Exercise - heavy	2	(0.97)	2	(2.56)	1	(6.47)	0	(0.00)
Conurbation residence	21	1.88	10	1.29	4	(1.35)	5	(1.91)
Urban residence	23	1.91	10	1.31	6	(1.91)	2	(1.40)
Rural residence	7	1.80	1	(0.36)	3	(2.94)	0	(0.00)

TABLE 39 Cardiorespiratory symptoms and other factors (continued - 3)

Numbers of deaths of symptom positives (DS) and relative mortality ratios of symptom positives to symptom negatives (RM) standardised for age and smoking

Coronary heart disease - angina

Subgroup of population	Males		Males		Females		Females	
	Pop		Sibs		Pop		Sibs	
	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>	<u>DS</u>	<u>RM</u>
Social class I or II	11	2.03	10	(5.28)	6	(3.61)	0	(0.00)
Social class III	44	2.37	35	1.59	17	2.20	6	(1.44)
Social class IV or V	29	2.75	21	2.25	6	1.18	9	(2.28)
Exercise - none	6	2.09	4	(1.48)	1	(0.31)	7	(1.84)
Exercise - slight	22	2.58	18	2.31	9	(1.95)	8	(2.30)
Exercise - moderate	64	2.51	39	2.20	23	2.32	17	2.28
Exercise - heavy	10	(3.54)	1	(0.31)	1	(3.41)	0	(0.00)
Conurbation residence	36	2.13	31	2.11	9	1.17	17	2.12
Urban residence	48	2.67	28	2.05	21	2.22	16	2.38
Rural residence	19	3.64	10	1.76	6	(2.24)	4	(2.76)

APPENDIX I

Variable names, brief variable definitions and
frequency distributions

Variable Name	Full Variable Name	Codes	Code Meaning	Male Counts			Female Counts		
				Pop.	Sib 35-69	Sib 35+	Pop.	Sib 35-69	Sib 35+
1 RECORD	Record Identification Number	5 to 7	digit code number	4770	3319	3574	5293	4314	4690
2 SEX	Sex as recorded on questionnaire	1 2	Male Female	4770 0	3319 0	3574 0	5293 0	4314 0	4690 0
3 COUNTRYQ	Current residence at time of questionnaire	1 2 3 4	England Scotland Wales Outside G.B.	3162 1482 125 1	2280 910 125 4	2415 1012 143 4	3456 1691 144 2	2871 1285 157 1	3088 1435 166 1
4 COUNTRYL	Longest residence at time of questionnaire	1 2 3 4 -1	England Scotland Wales Outside G.B. Not stated	3120 1475 150 4 21	2179 1007 130 0 3	2312 1111 148 0 3	3437 1663 162 3 28	2769 1372 162 0 11	2977 1526 174 0 13
5 COUNTRYB	Country of parents' residence at time of birth	1 2 3 4 5 6 7 8 9 0 10 -1	England Scotland Wales Europe (except Norway) United States Canada Australasia India Africa Norway Rest Not stated	2934 1408 185 152 6 9 1 16 7 0 35 17	2044 1056 164 36 3 3 0 2 6 0 0 5	2161 1164 182 46 4 3 0 2 6 0 1 5	3224 1606 208 166 7 10 1 19 3 1 27 21	2608 1427 208 43 7 9 1 4 1 0 2 4	2798 1584 221 51 11 9 1 5 1 0 2 7
6 FARMBORN	Whether parents lived on farm when child was born	1 2 -1	Yes No Not stated	407 4225 138	182 3072 65	197 3308 69	361 4670 262	204 3943 167	241 4255 194
7 MARITAL	Marital status	1 2 3 4 -1	Married Widowed Never married Other Not stated	4288 118 298 46 20	2946 117 206 39 11	3119 183 221 40 11	4086 634 472 86 15	3239 557 430 79 9	3364 768 466 82 10

Var. No. Variable Name Full Variable Name

8 WORK Work status

Var. No.	Variable Name	Full Variable Name	Codes	Code Meaning	Pop.	Male Counts			Female Counts		
						Sib 35-69	Sib 35+	Pop.	Sib 35-69	Sib 35+	Sib 35+
0		Working housewife	0		0	0	1758	1391	1406		
1		Non-working housewife	0		0	0	2777	2199	2450		
2		Working	3201		2482	2509	433	400	405		
4		Retired for other reasons	322		235	440	173	156	235		
5		Not working for other reasons	59		27	27	46	58	63		
6		Retired due to CV disease	37		27	33	15	14	16		
7		Retired due to resp. disease	35		23	27	7	13	13		
8		Retired due to CV and resp. disease	5		4	4	2	0	1		
9		Retired due to other specified diseases	53		39	48	44	56	70		
-1		Not possible to code	1058		482	486	38	27	31		
1	EXERCISE	None	265		158	186	365	335	390		
2		Slight	742		543	590	769	602	663		
3		Moderate	2982		2011	2145	3706	2735	2893		
4		Heavy	682		380	383	253	193	195		
-1		Not stated	99		227	270	200	449	549		
1	SMOKCIGS	Current cigarette smoking	2695		1875	1967	1893	1566	1597		
2		No	1957		1348	1500	3130	2519	2842		
3		Occasionally	90		88	98	234	186	192		
-1		Not stated	28		8	9	36	43	59		
1	INHLCIGS	Inhaling of current cigarette smokers	2263		1580	1650	1275	994	1003		
2		No	462		355	385	803	727	753		
-1		Not stated	88		36	39	85	74	92		
-2		Not applicable	1957		1348	1500	3131	2519	2842		
1	TYPECIGS	Kind of cigarettes currently smoked	1099		599	625	1459	1052	1078		
2		Plain	1089		964	1016	568	618	626		
3		Hand-rolled (HR)	365		244	257	23	14	14		
4		Filter and Plain	68		51	55	37	40	41		
5		Filter and HR	42		15	15	4	3	3		
6		Plain and HR	57		44	49	2	2	2		
7		Filter, Plain and HR	6		8	8	2	2	2		
-1		Not stated	87		46	49	67	64	64		
-2		Not applicable	1957		1348	1500	3131	2519	2842		

Var. No.	Variable Name	Full Variable Name	Codes	Code Meaning	Male Counts			Female Counts					
					Pop.	S1b 35-69	S1b 35+	Pop.	S1b 35-69	S1b 35+			
13	NOMCIGS	Number of manufactured cigarettes currently smoked	0	0	359	218	261	24	16	1			
			1-7	1-7	322	240	262	567	495	50			
			8-12	8-12	584	392	430	669	521	53			
			13-17	13-17	432	267	273	322	248	25			
			18-22	18-22	662	504	514	379	302	30			
			23-27	23-27	133	110	114	30	43	4			
			28-32	28-32	146	106	110	22	45	4			
			33-52	33-52	88	65	66	16	19	1			
			53+	53+	7	3	3	1	1	1			
			-1	Not stated	80	38	44	133	109	12			
			-2	Not applicable	1957	1346	1497	3130	2515	283			
			14	NOHRCIGS	Weight in grams per day of HR cigarettes currently smoked	0	0	2259	1620	1703	2063	1716	175
						1-7	1-7	17	10	11	2	4	1
8-12	8-12	46				26	33	9	1	1			
13-17	13-17	32				17	17	4	2	1			
18-22	18-22	119				73	77	7	5	1			
23-27	23-27	38				20	20	0	1	1			
28-32	28-32	119				84	87	4	3	1			
33-52	33-52	100				77	80	5	3	1			
53+	53+	18				9	9	0	1	1			
-1	Not stated	65				37	40	68	62	8			
-2	Not applicable	1957				1346	1497	3131	2516	283			
15	MAXCIGS	Maximum smoked for as long as a year, grams per day				0	0	2	2	2	3	6	1
						1-7	1-7	181	126	142	374	319	32
			8-12	8-12	509	363	388	582	437	44			
			13-17	13-17	457	335	349	290	210	21			
			18-22	18-22	807	506	582	359	317	32			
			23-27	23-27	210	178	186	43	41	4			
			28-32	28-32	208	135	137	32	54	5			
			33-52	33-52	132	106	107	18	16	1			
			53+	53+	17	9	10	2	2	1			
			-1	Not stated	290	153	174	451	396	42			
			-2	Not applicable	1957	1346	1497	3130	2516	283			
			16	YEARAGO	Grams per day, a year ago	0	0	43	35	36	65	42	4
						1-7	1-7	246	184	202	438	358	36
8-12	8-12	613				373	402	659	480	48			

Variable Name	Full Variable Name	Codes	Code Meaning	Male Counts			Female Counts		
				Pop.	Sib 35-69	Sib 35+	Pop.	Sib 35-69	Sib 35+
17	YEARAGO (contd.)		13-17	452	323	333	280	194	195
			18-22	764	529	542	345	279	282
			23-27	179	143	145	34	35	37
			28-32	182	100	103	22	41	42
			33-52	100	70	71	17	14	14
			53+	10	4	4	2	1	1
			Not stated	224	210	237	301	353	382
18	AGESTART		Not applicable	1957	1348	1499	3130	2517	2840
			<16	817	575	615	198	148	151
			16-19	1383	929	959	756	622	622
			20+	484	390	414	1030	866	894
			Not stated	127	75	84	169	149	171
			Not applicable	1959	1350	1502	3140	2529	2852
			Yes, regularly	1151	835	901	392	347	361
19	EXCIGS		No, never	589	382	444	2241	1730	2001
			Occasionally	136	103	119	271	256	264
			Not stated	107	36	45	262	229	275
			Not applicable	2787	1963	2065	2127	1752	1789
			1-7	90	49	56	150	129	138
			8-12	276	202	222	126	105	107
			13-17	156	96	101	46	37	39
20	MAXPAST		18-22	314	242	257	56	59	61
			23-27	89	58	61	8	10	10
			28-32	79	78	79	6	9	10
			33-52	112	91	95	8	9	9
			53+	10	16	20	2	1	1
			Not stated	138	53	69	281	262	304
			Not applicable	3506	2434	2614	4610	3693	4011
21	INHLPAST		Yes	851	605	638	235	219	223
			No	372	294	333	338	297	313
			Not stated	171	76	95	351	317	365
			Not applicable	3376	2344	2508	4369	3481	3789
22	EXSTART		<16	311	232	255	51	34	34
			16-19	628	468	497	239	244	244
			20+	253	187	209	279	220	239

Full Variable Name	Codes	Code Meaning	Male Counts			Female Counts		
			Pop.	Sib 35-69	Sib 35+	Pop.	Sib 35-39	Sib 35+
AGE WHEN SMOKING BEGAN FOR EX-SMOKERS (contd.)	-1	Not stated	199	86	103	353	332	381
	-2	Not applicable	3379	2346	2510	4371	3484	3792
EXSTOP Year when smoking given up for ex-smokers	1	1910-10	1	0	2	0	0	0
	2	1911-20	22	19	26	7	0	0
	3	1921-30	34	33	39	13	12	12
	4	1931-40	75	70	84	52	47	48
	5	1941-50	288	210	218	121	140	144
	6	1951-60	337	290	308	175	143	150
	7	1961-70	450	273	288	202	171	176
	-1	Not stated	185	75	96	355	316	367
	-2	Not applicable	3378	2349	2513	4368	3485	3793
WHYSTOP Reason for giving up smoking	1	Chest symptoms	152	196	208	62	61	64
	2	Other	239	84	92	76	43	44
	5	Pregnancy	1	0	0	31	29	29
	6	Publicity	150	126	131	54	59	61
	7	Financial	307	191	204	139	119	123
	8	Other	219	263	287	199	191	197
	9	Changed to pipe	98	0	1	1	0	0
	-1	Not stated	227	115	142	363	332	384
	-2	Not applicable	3377	2344	2509	4368	3480	3788
CIGARS Cigar smoking	1	No	3301	2217	2394	4326	3571	3852
	2	Used to but not now	262	213	238	22	21	23
	3	Now smoke occasionally	714	559	584	14	15	15
	4	Now smoke regularly	77	71	74	9	4	4
	-1	Not stated	416	259	284	922	703	796
NO CIGARS Number of cigars	0		1	2	2	0	1	1
	1-7		436	349	363	7	11	11
	8-12		22	26	27	1	1	1
	13-17		5	4	4	0	0	0
	18-22		12	11	11	0	1	1
	23-27		4	2	2	0	0	0
28-32		9	3	3	0	0	0	
32-52		11	8	8	0	1	1	
53+		5	3	3	1	0	0	
-1	Not stated	702	448	491	936	738	832	
-2	Not applicable	3563	2463	2660	4348	3561	3843	

Var. NO.	Variable Name	Full Variable Name	Codes	Code Meaning	Male Counts		Female Counts			
					Pop.	Sib 35-69	Sib 35+ Pop.	Sib 35-69	Sib 35+	
26	INHLCIGAR	Inhalation of cigars	1 2 -1 -2	Yes No Not stated Not applicable	235 469 503 3563	160 426 300 2433	164 446 930 4348	6 26 686 3596	6 27 776 3881	
27	PIPE	Pipe smoking	1 2 3 4 -1	No Used to but not now Now smoke occasionally Now smoke regularly Not stated	2846 934 128 538 324	1888 708 124 387 212	2011 753 130 450 230	3476 12 2 2 822	3752 14 2 2 920	
28	NOPIPE	Grams of pipe tobacco per day		0 1-7 8-12 13-17 18-22 23-27 28-32 33-52 53+	1 67 133 32 161 27 96 75 11	0 65 92 17 84 21 77 74 10	0 69 106 24 107 25 86 79 11	0 0 0 0 0 0 0 0 0	0 1 0 0 0 1 0 0 0	
29	INHPIPE	Inhalation of pipe smoke	-1 -2	Not stated Not applicable	388 3779	276 2603	299 2768	847 3465	948 3740	
30	PAALIVE	Father alive	1 2 -1 -2	Yes No Not stated Not applicable	131 501 359 3779	86 399 236 2598	93 457 257 2767	0 1 1102 4190	1 22 891 3776	
31	MAALIVE	Mother alive	1 2 -1	Yes No Not stated (or not applicable)	936 3778 56	511 2783 25	511 3034 29	991 4240 62	628 3664 22	628 4028 34
32	AGE	Actual age at questionnaire	1 2 -1	Yes No Not stated (or not applicable)	1634 3098 38	1070 2233 16	1073 2482 19	1697 3555 41	1318 2971 25	1323 3329 38
				35-44 45-54 55-64 65-69 70+	1479 1484 1369 438 0	866 1105 1037 311 0	866 1105 1037 311 255	1554 1591 1600 548 0	1058 1424 1342 490 0	1058 1424 1342 490 376

Var. No.	Variable Name	Full Variable Name	Codes	Code Meaning	Male Counts			Female Counts		
					Pop.	Sib 35-69	Sib 35+	Pop.	Sib 35-69	Sib 35+
33	CIGSDAY	Current cigarettes a day (manufactured and hand-rolled)	0	0	0	2	2	2	2	2
			1-7	276	182	201	419	360	370	
			8-12	775	509	553	675	524	533	
			13-17	519	334	343	327	249	252	
			18-22	670	521	531	378	304	310	
			23-27	148	120	123	31	44	46	
			28-32	150	112	116	20	45	45	
			33-52	98	69	71	15	19	19	
			53+	10	3	3	1	0	0	
			Not stated	48	25	26	25	19	20	
-2	Not applicable	2076	1444	1607	3400	2748	3093			
34	URBNOW	Urbanisation current	1	Conurbations	1690	1277	1373	1858	1730	1878
			2	Urban population of 100,000+	682	462	487	797	582	635
			3	Urban population of 50-100,000	412	274	295	482	356	371
			4	Urban population of <50,000	1117	762	824	1251	992	1097
			5	Rural population	819	512	561	849	617	671
			6	Truly rural (in England and Wales)	49	28	30	54	34	35
			-1	Not classifiable	1	4	4	2	3	3
			1	Conurbations	1760	1377	1486	1917	1794	1942
			2	Urban population of 100,000+	663	461	492	790	609	662
			3	Urban population of 50-100,000	343	249	261	412	292	306
35	URBLONG	Urbanisation longest	4	Urban population of <50,000	1082	671	724	1173	887	972
			5	Rural population	709	419	460	724	475	525
			-1	Not classifiable	213	142	151	277	257	283
			1	Conurbations	1604	1308	1404	1714	1701	1844
			2	Urban population of 100,000+	600	401	434	710	492	535
			3	Urban population of 50-100,000	275	210	221	317	228	244
			4	Urban population of <50,000	1008	692	735	1119	906	975
			1	Conurbations	1604	1308	1404	1714	1701	1844
			2	Urban population of 100,000+	600	401	434	710	492	535
			3	Urban population of 50-100,000	275	210	221	317	228	244
36	URRBIRTH	Urbanisation birth	1	Conurbations	1604	1308	1404	1714	1701	1844
			2	Urban population of 100,000+	600	401	434	710	492	535
			3	Urban population of 50-100,000	275	210	221	317	228	244
			4	Urban population of <50,000	1008	692	735	1119	906	975

Variable Name	Full Variable Name	Codes	Code Meaning	Male Counts			Female Counts		
				Pop.	Sib 35-69	Sib 35+	Pop.	Sib 35-69	Sib 35+
26	URBBIRTH (contd.)	5	Rural population	785	491	540	794	610	673
	(contd.)	-1	Not classifiable	498	217	240	639	377	419
37	CLASSQ	1	I	124	97	101	119	17	18
	Social class from questionnaire	2	II	480	328	345	551	384	412
		3	III	2479	1917	2057	2522	1474	1527
		4	IV	898	586	650	951	935	1003
		5	V	308	205	222	300	161	175
		-1	Not classifiable	481	186	199	850	1343	1555
38	DATED		Four digit number, first two month, last two year						
			1964	32	18	24		13	25
			1965	57	44	59	10	38	55
			1966	134	46	61	29	32	48
			1967-68	142	92	116	85	80	109
			1969-70	179	93	130	105	78	114
			1971-72	196	132	164	93	103	139
			1973-74	224	144	171	153	105	138
			1975-76	74	154	184	162	141	179
			1977	3732	63	72	66	53	72
		9901	Alive	3732	2533	2593	4590	3671	3811
39	COUNTRYD	1	England	699	501	602	466	377	513
		2	Scotland	303	238	319	212	237	330
		3	Wales (& Mon.)	35	47	60	25	27	34
		4	Other	1	0	0	0	0	0
		-2	Alive	3732	2533	2593	4590	3673	3813
40	CLASSD	1	I	42	21	23	15	9	14
	Social class from death certificate	2	II	161	134	160	104	108	150
		3	III	474	394	496	268	266	358
		4	IV	214	146	184	141	101	129
		5	V	101	59	75	58	43	57
		9	Not classified	46	32	43	117	116	171
		-2	Alive	3732	2533	2593	4590	3671	3811
41	OBESITY	<23	Obesity index in metric units	1289	837	918	1986	1581	1711
		23-24		1245	880	950	1196	992	1066
		25-27		1428	1022	1082	1090	886	954
		28+		717	495	532	813	679	741
		-1	Not known	91	85	92	208	176	218

Var. No.	Variable Name	Full Variable Name	Codes	Code Meaning	Pop.	Male Counts			Female Counts		
						S1b 35-69	S1b 35+	Pop.	S1b 35-69	S1b 35+	Pop.
42	PCP	Persistent cough and phlegm	1 0	Present Absent	918 3852	665 2654	722 2852	439 4854	355 3959	388 4302	
43	CBRONSYN	Chronic bronchitis syndrome	1 0	Present Absent	286 4484	165 3154	197 3377	191 5102	117 4197	133 4557	
44	ANGINA	Angina	1 0	Present Absent	522 4248	387 2932	447 3127	571 4722	456 3858	511 4179	
45	INFARCTN	Possible infarction	1 0	Present Absent	586 4184	380 2939	417 3127	428 4865	335 3979	369 4321	
46	INTCLAUD	Intermittent claudication	0 1 2 3 4 -1	Negative Grade 1 Grade 2 Doubtful Other Not stated	3984 14 30 51 565 126	2785 13 20 32 376 93	2966 15 26 38 424 105	4191 18 13 48 852 171	3474 16 11 34 577 202	3737 18 15 34 652 234	
47	SYMPLESS	Symptomless (None of variables 42-45 present)	2	One or more syndromes present	1468	1063	1165	1124	881	977	
48	MAINCOD	Underlying cause of death	1 2 3 4 5 0	None present Lung Cancer Coronary heart disease CNSLD Stroke Other causes Alive	3302 127 377 60 94 380 3732	2256 91 265 41 82 307 2533	2409 97 334 57 116 377 2593	4169 20 181 8 98 396 4590	3433 21 155 15 104 348 3671	3713 24 208 18 154 475 3811	
49	LCANCERM	Mention of lung cancer	1 2	Lung cancer mentioned Lung cancer not mentioned	132 906	96 690	104 877	21 682	22 621	25 854	
50	HEARTM	Mention of heart disease	0 1 2	Alive Heart disease mentioned Heart disease not mentioned	3732 418 620	2533 293 493	2593 381 600	4590 206 497	3671 184 459	3811 266 613	
51	CNSLDM	Mention of chronic non-specific lung disease	0 1 2 0	Alive CNSLD mentioned CNSLD not mentioned Alive	3732 109 929 3732	2533 77 709 2533	2593 103 878 2593	4590 22 681 4590	3671 27 616 3671	3811 34 845 3811	

Var. No.	Variable Name	Full Variable Name	Codes	Code Meaning	Male Counts			Female Counts		
					Pop.	Sib 35-69	Sib 35+	Pop.	Sib 35-69	Sib 35+
52	STROKEM	Mention of stroke	1	Stroke mentioned	116	102	144	123	130	190
			2	Stroke not mentioned	922	684	837	580	513	689
			0	Alive	3732	2533	2593	4590	3671	3811
53	SMOKCAT	Smoking category	0	Never anything	520	347	383	2120	1694	1924
			1	Current regular cigs only						
			1	<10 per day	316	192	216	430	342	346
			2	10-19 per day	1023	673	703	718	606	614
			3	20 per day	487	364	373	259	212	216
			4	20+ per day	338	266	271	59	90	92
			5	Amount not known	32	16	16	19	14	15
			6	Pipe/cigar not known	310	200	213	400	299	311
			7	Current regular smokers	189	164	175	8	3	3
			8	of cigs. and pipe/cigar						
			8	Current regular pipe/cigar only	345	230	275	3	3	3
			9	Ex. reg. cigs. and/or pipe/cigar	848	623	671	310	289	301
			10	Ex. reg. pipe/cigar only	57	46	54	13	9	10
			11	Not known	305	198	224	954	753	855

APPENDIX II

Detailed definitions of specific variables

Variable 2 SEX

The original LSHTM siblings data separately coded Servicemen = 3 and Servicewomen = 4. These groups have been combined into the simple male and female codes 1 and 2 respectively.

Variable 34 URBNO

Column 65 of Card 2 of the original LSHTM data contained information on whether people at the time of the questionnaire lived in conurbations (code 1), urban populations of 100,000+ (code 2), of 50-100,000 (code 3), of <50,000 (code 4) or in rural populations (code 5). This was based on the standard Registrar General 4 digit code for current residence held in columns 10-13 of Card 1. On conversion to our data file column 65 of Code 2 was copied into variable 34 except that those living in England and Wales in rural populations were coded as 6 instead of 5 if the code in columns 10-13 of Card 1 was that for truly rural populations i.e. it had one of the codes in the following list:

Rural District Codes

<u>Berkshire</u>		<u>Ely, Isle of</u>	
Farringdon	I693	North Witchford	0584
Hungerford	I694		
Wantage	I897	<u>Gloucestershire</u>	
		Northleach	5993
<u>Cheshire</u>		Tetbury	5996
Tarvin	0295	<u>Herefordshire</u>	
<u>Cornwall</u>		Bronyard	V49V
Launceston	V900	Dore and Bredwardine	V49I
Wadebridge	V997	Leominster and Wigmore	V407
		Ross and Whitchurch	V493
<u>Devon</u>		Yeobley	V499
Axminster	299V	<u>Huntingdonshire</u>	
Bideford	2990	Huntingdon	7594
Broadwoodrider	2991		
Holsworthy	2993	<u>Kent</u>	
Honiton	2994	Romney Marsh	7698
Kingsbridge	2995	Tenterden	6691
Okehampton	2997		
South Molton	199V	<u>Lincolnshire, parts of Eastereen</u>	
<u>Dorset</u>		East Eastereen	139C
Wimborne	K993		

Lincolnshire, parts of Lindsey

Gainsborough	039X
Spilsby	0395

Norfolk

Docking	6590
Wayland	5590

Northamptonshire

Brackley	539V
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Northumberland

Bellingham	5090
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Oxfordshire

Chipping Norton	5896
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Shropshire

Drayton	X491
Wem	X499

Somerset

Dulverton	8993
Langport	8995
Williton	799X

Southampton

Basingstoke	9890
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Suffolk, East

Blyth	859X
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Suffolk, West

Clane	9593
Cosford	9594

Warwickshire

Shipston on Stour	8493
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Wiltshire

Devizes	9992
Marlborough & Ramsbury	9995
Mere & Fisbury	9996

Worcestershire

Kenbury	9496
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Yorkshire, East Riding

Driffield	X195
Norton	X198
Pocklington	X199

Yorkshire, North Riding

Aysgarth	809V
Easingwold	8091
Helmsley	8093
Masham	909X
Pickering	9091
Reeth	9092
Startforth	9095
Thirsk	9097
Wath	9098

Yorkshire, West Riding

Rowland	719V
Selby	819V

Anglesey

Twrcelyn	VX9X
Valley	VX91

Brecknockshire

Builth	VV95
Hay	VV97

Cardiganshire

Aberaynon	0X93
Aberystwyth	0X94
Tregaron	0X97

Carmarthenshire

Newcastle Emly	1V99
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Denbighshire

Hiraethog	2X97
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Flintshire

Maelor	3X97
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Monmouthshire

Monmouth	6V97
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Merionethshire

Dolgellau	5X94
Penllyn	5X96

Montgomeryshire

Llanfyllin	7X95
Machynlleth	7X96
Newton & Llanidloes	7X97

Radnorshire

Knighton	9X92
Paniscastle	9X94
Rhayader	9X95

Pembrokeshire

Cemaes	8X95
Haverfordwest	8X96
Narberth	8X97
Pembroke	8X98

Variable 41 OBESITY

The original LSHTM file contained data on height in feet and inches and on weight in stones and pounds. From this obesity index in metric units was calculated by the formula

$$\text{OBESITY} = \frac{10,000 \times \text{weight in pounds} \times 0.4536}{(\text{height in inches} \times 2.54)^2}$$

Variables 42-47 Cardiorespiratory symptoms

The questions on respiratory symptoms were based on the MRC questionnaire (1966). Those on cardiovascular symptoms were based on the London School of Hygiene questionnaire (Rose and Blackburn, 1968) and on the questionnaire for self-administration (Rose et al., 1977).

Variable 48 MAINCOD

The causes of death were analysed in five categories based on the underlying cause of death, coded by the International Classification of Diseases (World Health Organisation, 1957): lung cancer (162.1 and 163); coronary heart disease (420 and 422); chronic non-specific lung disease (CNSLD: 502, 526 and 527.1); stroke (330 to 334); and other causes.

Variables 49-52 Other mentions of specific causes of death

These were based on whether or not the codes for the specific causes appeared either as underlying or contributory causes.

Variable 53 SMOKCAT

The smoking category variable SMOKCAT was based on the 5 other variables: 10 (Current cigarette smoking), 18 (Past cigarette smoking), 24 (Cigar smoking), 27 (Pipe smoking) and 33 (Number of cigarettes) as follows:

Firstly an intermediate variable PIPE/CIGAR was formed from variables 24 and 27 using the following matrix:

		<u>Cigar (24)</u>				
		No 1	Ex 2	Occasional 3	Regular 4	Other
<u>Pipe (27)</u>	No 1	0	2	1	4	-2
	Ex 2	2	2	3	4	-2
	Occ. 3	1	3	1	4	-2
	Reg. 4	4	4	4	4	4
	Other	-2	-2	-2	4	-2

Thus PIPE/CIGAR has the following meanings:

- 0 Never smoked either
- 1 Smokes one or both occasionally (but not regularly or an ex-smoker)
- 2 Used to smoke one or both but not now
- 3 Smoked one once and the other occasionally
- 4 Smokes one or both regularly
- 2 Others

From this a further matrix was used to define SMOKCAT:

<u>Code</u>	<u>Meaning</u>	<u>Var 10</u>	<u>Var 18</u>	<u>PIPE/ CIGAR</u>	<u>Var 33</u>
0	Never anything	2 or 3	2 or 3	0 or 1	-
	Current regular cigs only				
1	<10 per day	1	-	0,1,2 or 3	1 to 9
2	10-19 per day	1	-	0,1,2 or 3	10 to 19
3	20 per day	1	-	0,1,2 or 3	20
4	20+ per day	1	-	0,1,2 or 3	21 or more
5	Amount N.K.	1	-	0,1,2 or 3	Not given
6	Current regular smokers of cigs; pipe/cigar N.K.	1	-	-2	-
7	Current regular smokers of cigs and pipe/cigar	1	-	4	-
8	Current regular pipe/cigar only	2 or 3	1,2 or 3	4	-
9	Ex. reg. cigs and/or pipe/cigar	2 or 3	1	0,1,2 or 3	-
10	Ex. reg. pipe/cigar only	2 or 3	2 or 3	2 or 3	-
	Not known		Other combinations		

APPENDIX III

Definition of factors used for crosstabulations

Factor Number	Factor Name*	Number of Levels	Source of factor		Levels		
			Variable Number	Variable Name	Number	Name*	Value
1	SEX	2	2	SEX	1	MALE	1
					2	FEMALE	2
2	CAUSEDTH	6	48	MAINCOD	1	L CANCER	1
					2	CHD	2
					3	CNSLD	3
					4	STROKE	4
					5	OTHERS	5
					6	ALIVE	0
3	HEARTDTH	3	48	MAINCOD	1	CHD	2
					2	OTHERS	1,3,4 or 5
					3	ALIVE	0
4	LCANCERM	3	49	LCANCERM	1	YES	1
					2	NO	2
					3	ALIVE	0
5	HEARTM	3	50	HEARTM	1	YES	1
					2	NO	2
					3	ALIVE	0
6	CNSLDM	3	51	CNSLDM	1	YES	1
					2	NO	2
					3	ALIVE	0
7	STROKEM	3	52	STROKEM	1	YES	1
					2	NO	2
					3	ALIVE	0
8	TIMEDTH1	14 (sibs) 13 (pop)	38	DATED	1	YR 1	
					2	YR 2	
					11	YR11	
					12	(sibs) YR12	
					12	(pop) YR12+	
					13	(sibs) YR13	see note
					13	(pop) ALIVE	(a)
					14	(sibs) ALIVE	
9	TIMEDTH2	9 (sibs) 8 (pop)	38	DATED	1	YRS 1-2	
					2	YRS 3-4	
					3	YRS 5	
					4	YRS 6	
					5	YRS 7-8	see note
					6	YRS 9-10	(a)
					7	YRS11-12	
					(sibs)		
					7	YRS11+	
					(pop)		
					8	YRS13+	
					(sibs)		
					8	ALIVE	
					(pop)		
					9	ALIVE	
					(sibs)		
10	TIMEDTH3	5	38	DATED	1	YRS 1-2	
					2	YRS 3-5	
					3	YRS 6-10	see note
					4	YRS11+	(a)
					5	ALIVE	

* abbreviated name as appears on crosstabulations output

Factor Number	Factor Name*	Number of Levels	Source of factor		Levels		
			Variable Number	Variable Name	Number	Name*	Value
11	TIMEDTH4	4	38	DATED	1	YRS 1-5	
					2	YRS 6-10	see note
					3	YRS11+	(a)
					4	ALIVE	
12	AGE(GP1)	8 (sibs) 7 (pop)	32	AGE	1	35-39	
					2	40-44	
					3	45-49	
					4	50-54	As name
					5	55-59	implies
					6	60-64	
					7	65-69	
					8	70+	
				(sibs only)			
13	AGE(GP2)	5 (sibs) 4 (pop)	32	AGE	1	35-44	
					2	45-54	As name
					3	55-64	implies
					4	65-69	
					5	70+	
				(sibs only)			
14	SMOKCAT1	12	53	SMOKCAT	1	NEVER	0
					2	<10 ONLY	1
					3	10-19	2
					4	20	3
					5	20+	4
					6	AMT NK	5
					7	OTH NK	6
					8	CIGS+PC	7
					9	PC ONLY	8
					10	EX CIGS	9
					11	EX PC	10
					12	NK	11
15	SMOKCAT2	3	53	SMOKCAT	1	NEVER	0
					2	CURR CIGS	1-7
					3	OTHERS	8-11
16	SMOKCAT3	5	53	SMOKCAT	1	<10	1
					2	10-19	2
					3	20	3
					4	20+	4
					5	AMT NK	5
17	SMOKCAT4	4	53	SMOKCAT	1	<10	1
					2	10-19	2
					3	20	3
					4	20+	4
18	PCP	2	42	PCP	1	YES	1
					2	NO	0
19	CBRONSYN	2	43	CBRONSYN	1	YES	1
					2	NO	0
20	ANGINA	2	44	ANGINA	1	YES	1
					2	NO	0
21	INFARCT	2	45	INFARCTN	1	YES	1
					2	NO	0

* abbreviated name as appears on crosstabulations output

Factor Number	Factor Name*	Number of Levels	Source of factor		Levels		
			Variable Number	Variable Name	Number	Name*	Value
22	CLAUDCTN	2	46	INTCLAUD	1	YES	1,2 or 3
					2	NO	0,4 or -1
23	SYMPLESS	2	47	SYMPLESS	1	SYMPRES	2
					2	SYMPFREE	1
24	AGESTART	3	17	AGESTART	1	<16	As name implies
					2	16-19	
					3	20+	
25	INHALING	2	11	INHLICGS	1	YES	1
					2	NO	2
26	F/P/R	4	12	TYPECIGS	1	F ONLY	1
					2	P ONLY	2
					3	HR ONLY	3
					4	MIXED	4-7
27	CLASS	3	37	CLASSQ	1	I OR II	1 or 2
					2	III	3
					3	IV OR V	4 or 5
28	URBNOW	3	34	URBNOW	1	CONURBS	1
					2	URBAN	2-4
					3	RURAL	5 or 6
29	OBESITY	4	41	OBESITY	1	<23	As name implies
					2	23-24	
					3	25-27	
					4	28+	
30	EXERCISE	4	9	EXERCISE	1	NONE	1
					2	SLIGHT	2
					3	MODERATE	3
					4	HEAVY	4
31	F/P ONLY	2	12	TYPECIGS	1	F ONLY	1
					2	P ONLY	2
32	URBNOW2	6	34	URBNOW	1	CONURBS	1
					2	100,000+	2
					3	50-100TH	3
					4	<50,000	4
					5	RURAL	5
					6	TR RURAL	6
35	TIMEDTH5	3	38	DATED	1	YRS 1-5	see note (a)
					2	YRS 6+	
					3	ALIVE	

* Name is abbreviated name as appears on crosstabulations output

Note: a) For the sibling sample, deaths occurring in Mar 64 to Mar 65 (sic) were counted as year 1, Apr 65 to Mar 66 as year 2, Apr 66 to Mar 77 as year 3 etc.

For the population sample, deaths occurring in May 65 to Apr 66 were counted as year 1, May 66 to Apr 67 as year 2 etc.

APPENDIX IV

Index to crosstabulations produced

Introduction

The following pages give an index to the crosstabulations produced. "Table number" refers to the heading to the table which appears at the top of each page of the printout of the table. "Restriction" refers to the condition data must pass to be included in the table - the definition of each factor is given in Appendix III. "Table storage reference" refers, for tables stored on disc, to which tables file they are held on and which position on that file the table is held. 8 tables are used to store all the tables described here, they are:

- | | | |
|---|--------------|-----------|
| 1 | LSH TABLESM | (Batch 1) |
| 2 | LSH TABLESM | (Batch 2) |
| 3 | LSH TABLES F | (Batch 1) |
| 4 | LSH TABLES F | (Batch 2) |
| 5 | LSH TABLESM | (Batch 1) |
| 6 | LSH TABLESM | (Batch 2) |
| 7 | LSH TABLESF | (Batch 1) |
| 8 | LSH TABLESF | (Batch 2) |

Crosstabulations printed but not stored

<u>Table Number</u>	<u>Restriction</u>	<u>Factors</u>
A1	-	CAUSEDTH X TIMEDTH2 X AGE(GP1) X SEX
A2	-	CAUSEDTH X TIMEDTH2 X SMOKCAT1 X SEX
A3	-	CAUSEDTH X TIMEDTH2 X PCP X SEX
A4	-	CAUSEDTH X TIMEDTH2 X CBRONSYN X SEX
A5	-	CAUSEDTH X TIMEDTH2 X ANGINA X SEX
A6	-	CAUSEDTH X TIMEDTH2 X INFARCT X SEX
A7	-	CAUSEDTH X TIMEDTH2 X CLAUDCTN X SEX
A8	-	CAUSEDTH X TIMEDTH2 X SYMPLESS X SEX
A9	MALES	CAUSEDTH X TIMEDTH1 X AGE(GP2)
A10	FEMALES	CAUSEDTH X TIMEDTH1 X AGE(GP2)
A11	ENGLAND AND WALES MALES	URBNOW2 X PCP X CURONSYN X CLASS X SMOKCAT2 X AGE(GP2)
A12	ENGLAND AND WALES FEMALES	URBNOW2 X PCP X CURONSYN X CLASS X SMOKCAT2 X AGE(GP2)

Crosstabulations stored

Table Number	Restriction (apart from sex)	Table storage references				FACTORS
		M(pop)	F(pop)	M(sib)	F(sib)	
M1, F1	-	1-1	3-1	5-1	7-1	CAUSEDTH X TIMEDTH2 X SMOKCAT1 X AGE(GP2)
M2, F2	-	1-2	3-2	5-2	7-2	CAUSEDTH X TIMEDTH2 X PCP X SMOKCAT2 X AGE(GP2)
M3, F3	-	1-3	3-3	5-3	7-3	CAUSEDTH X TIMEDTH2 X CBRONSYN X SMOKCAT2 X AGE(GP2)
M4, F4	-	1-4	3-4	5-4	7-4	CAUSEDTH X TIMEDTH2 X ANGINA X SMOKCAT2 X AGE(GP2)
M5, F5	-	1-5	3-5	5-5	7-5	CAUSEDTH X TIMEDTH2 X INFARCT X SMOKCAT2 X AGE(GP2)
M6, F6	-	1-6	3-6	5-6	7-6	CAUSEDTH X TIMEDTH2 X SYMPLESS X SMOKCAT1 X AGE(GP2)
M7, F7	-	1-7	3-7	5-7	7-7	CAUSEDTH X TIMEDTH2 X URBNOW X SMOKCAT2 X AGE(GP2)
M8, F8	-	1-8	3-8	5-8	7-8	CAUSEDTH X TIMEDTH2 X CLAUDCTN X SMOKCAT2 X AGE(GP2)
M9, F9	-	1-9	3-9	5-9	7-9	CAUSEDTH X TIMEDTH2 X SYMPLESS X SMOKCAT2 X AGE(GP2)
M10, F10	-	1-10	3-10	5-10	7-10	HEARTDTH X TIMEDTH2 X OBESITY X SMOKCAT2 X AGE(GP2)
M11, F11	-	1-11	3-11	5-11	7-11	HEARTDTH X TIMEDTH2 X EXERCISE X SMOKCAT2 X AGE(GP2)
M12, F12	-	1-21	3-21	5-12	7-12	CAUSEDTH X TIMEDTH2 X SYMPLESS X CLASS X URBNOW
M13, F13	CURRENT CIG SMOKERS VARIABLE 53 = 1, 2, 3, 4 or 5	1-13	3-13	5-13	7-13	CAUSEDTH X TIMEDTH2 X AGESTART X SMOKCAT3 X AGE(GP2)
M14, F14		1-14	3-14	5-14	7-14	CAUSEDTH X TIMEDTH2 X INHALING X SMOKCAT3 X AGE(GP2)
M15, F15		1-15	3-15	5-15	7-15	CAUSEDTH X TIMEDTH2 X F/P/R X SMOKCAT3 X AGE(GP2)
M16, F16	CURRENT F/P CIG SMOKERS, VAR 53 = 1, 2, 3 or 4	1-16	3-16	5-16	7-16	CAUSEDTH X TIMEDTH4 X F/P ONLY X SMOKCAT4 X AGESTART X INHALING X AGE(GP2)
M17, F17	-	1-20	3-20	5-17	7-17	CAUSEDTH X TIMEDTH4 X CLASS X SMOKCAT2 X AGE(GP2)
M18, F18	ENGLAND AND WALES	1-18	3-18	6-16	8-16	CAUSEDTH X TIMEDTH4 X URBNOW2 X PCP X CBRONSYN X SMOKCAT2 X AGE(GP2)

Crosstabulations stored (continued)

<u>Table Number</u>	<u>M(pop)</u>	<u>F(pop)</u>	<u>M(sib)</u>	<u>F(sib)</u>	<u>Factors</u>
M19, F19	2-1	4-1	6-1	8-1	CAUSEDTH X TIMEEDTH5 X PCP X CLASS X SHOKCAT2 X AGE (GP2)
M20, F20	2-2	4-2	6-2	8-2	CAUSEDTH X TIMEEDTH5 X CBRONSYN X CLASS X SHOKCAT2 X AGE (GP2)
M21, F21	2-3	4-3	6-3	8-3	CAUSEDTH X TIMEEDTH5 X ANGINA X CLASS X SHOKCAT2 X AGE (GP2)
M22, F22	2-4	4-4	6-4	8-4	CAUSEDTH X TIMEEDTH5 X INFARCT X CLASS X SHOKCAT2 X AGE (GP2)
M23, F23	2-5	4-5	6-5	8-5	CAUSEDTH X TIMEEDTH5 X CLAUDCTN X CLASS X SHOKCAT2 X AGE (GP2)
M24 to M28	2-6 to	4-6 to	6-6 to	8-6 to	CAUSEDTH X TIMEEDTH5 X PCP X URNOW X SHOKCAT2 X AGE (GP2)
F24 to F28	2-10	4-10	6-10	8-10	CAUSEDTH X TIMEEDTH5 X CBRONSYN X URNOW X SHOKCAT2 X AGE (GP2)
M29 to M33	2-11 to	4-11 to	6-11 to	8-11 to	CAUSEDTH X TIMEEDTH5 X ANGINA X URNOW X SHOKCAT2 X AGE (GP2)
F29 to F33	2-15	4-15	6-15	8-15	CAUSEDTH X TIMEEDTH5 X INFARCT X URNOW X SHOKCAT2 X AGE (GP2)
					CAUSEDTH X TIMEEDTH5 X PCP X EXERCISE X SHOKCAT2 X AGE (GP2)
					CAUSEDTH X TIMEEDTH5 X CBRONSYN X EXERCISE X SHOKCAT2 X AGE (GP2)
					CAUSEDTH X TIMEEDTH5 X ANGINA X EXERCISE X SHOKCAT2 X AGE (GP2)
					CAUSEDTH X TIMEEDTH5 X INFARCT X EXERCISE X SHOKCAT2 X AGE (GP2)
					CAUSEDTH X TIMEEDTH5 X CLAUDCTN X EXERCISE X SHOKCAT2 X AGE (GP2)

