

INTERVIEW STUDY OF HUSBAND/WIFE PAIRS

REPORT A

INCOMPATIBILITY BETWEEN HUSBANDS AND WIVES

AS A PREDICTOR OF ADVERSE HEALTH

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EXECUTIVE SUMMARY

In a representative survey conducted in Britain in 1997, 397 married couples were interviewed at home, with information collected separately from the wife and husband on demographic factors, smoking habits, lifestyle and personality characteristics and health status.*

A major objective of the study, considered in this report, was to determine whether health status is associated with incompatibility between husband and wife in respect of a variety of risk factors, in order to gain insight into whether reported incidences of various conditions in non-smokers married to smokers might at least partly be due to an effect of incompatibility, rather than to an effect of passive smoke exposure (or to various biases such as confounding or misclassification of smoking status).

The main analyses described in this report relate incidence in the subject of over 50 health endpoints to presence of 25 risk factors in the subject and spouse. The health endpoints included cardiorespiratory symptoms, ailments or conditions ever suffered from, problems suffered from in the last month and general health assessment variables. The risk factors included cigarette smoking, alcohol consumption, employment status, education, being married before, physical inactivity, overweight, neuroticism, extroversion, timing and regularity of meals, and a range of dietary variables. Combined risk factor scores and indices of apartness, criticism and overall incompatibility between husband and wife were also studied.

Analyses were carried out to determine significant age-adjusted relationships of three types:

- | | | |
|---------------------------|---|---|
| <i>“Direct effects”</i> | - | associations between the subject’s health and own risk factor status, |
| <i>“Indirect effects”</i> | - | associations between the subject’s health and the spouse’s risk factor status (after adjusting for the subject’s own risk factor status), and |

* The subjects also provided information on their own ETS exposure, and on smoking habits, ETS exposure and risk factor prevalence in their spouse, which will be considered in a future report.

“Incompatibility” - associations between the subject’s health and differences between the subject’s and spouse’s risk factor status (again after adjusting for the subject’s own risk factor status).

It should be noted that indirect effects and effects of incompatibility produce identical responses in subjects unexposed to the risk factor but opposing responses in exposed subjects.

In view of the large number of associations studied, most attention in interpretation was given to associations which were significant at least at $p < 0.01$ and/or were evident in both sexes separately.

Unsurprisingly, the strongest relationships seen tended to be for direct effects. Risk factors showing clear associations with a wide variety of health endpoints included cigarette smoking, physical inactivity, overweight, neuroticism, not being in paid employment, leaving school early and having the first meal of the day late.

Spousal cigarette smoking (after adjustment for age and cigarette smoking by the subject) was associated with a number of health effects. These fell into 3 groups:

- (i) those where it was associated with an increased risk in both smokers and nonsmokers, consistent with an indirect (passive smoking) effect,
- (ii) those where it was associated with an increased risk in nonsmokers, but with no effect in smokers, where an indirect effect and an effect of incompatibility cannot clearly be distinguished, and
- (iii) those where the association was in the opposite direction for smokers and nonsmokers, consistent with an effect of incompatibility.

The strongest evidence of an effect of incompatibility was for hay fever in women where incidence was much lower if only the husband or the wife smoked than if neither or both did. There was also some evidence, in men, that incompatibility in cigarette smoking was also associated with an increased incidence of painful joints, rheumatic trouble/arthritis and indigestion/stomach trouble/digestive disorders and with a decreased incidence of breathlessness.

Apart from cigarette smoking, indirect effects were only reasonably clearly seen for time

to first meal of day (women whose husbands take their first meal of the day late having an increased incidence of various respiratory symptoms and conditions and back trouble) and extroversion (women with extrovert husbands having a significantly reduced incidence of various conditions).

For all the risk factors taken together, there were 133 cases where incompatibility between husband and wife on a risk factor was associated with a significantly increased incidence of a health endpoint and only 24 where it was associated with a significantly decreased incidence. For many of the risk factors an effect of incompatibility could not be demonstrated, either because few associations with health endpoints were seen or because associations were not consistently seen in those less and more exposed to the risk factor, making their interpretation as a simple effect of incompatibility more difficult.

However, there were four risk factors where the data seemed reasonably consistent with an effect of incompatibility, most clearly for vegetable consumption and body mass index, where an increased incidence of quite a large number of symptoms and conditions was associated with incompatibility and also with alcohol drinking and salad consumption, where the list of symptoms and conditions showing a significant association was rather shorter.

The fact that evidence of an effect of incompatibility is sparse or non-existent for a number of the risk factors studied suggests that one should be wary of over-generalizing. However, the considerable overall excess of positive over negative relationships, and the specific results for certain risk factors, suggests that some aspects of incompatibility between husband and wife may have a true adverse effect on health. This adds plausibility to the possibility that increased risk of some diseases observed in never smokers married to smokers may to some extent arise because of an effect on health of incompatibility between husbands and wives on smoking habits.

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1. Introduction and objectives

The classic method of studying health effects of ETS is to compare:

| | | | |
|---|-----------|---|----------------------------------|
| A | Exposed | = | nonsmokers married to smokers |
| B | Unexposed | = | nonsmokers married to nonsmokers |

Considerable work has been conducted investigating the possible magnitude of bias to this comparison resulting from either:

misclassification of smoking status: i.e. more of group A than group B actually being true smokers, or

confounding: i.e. group A being more likely than group B to have other risk factors, such as decreased fruit and vegetable consumption, increased dietary fat consumption, increased alcohol consumption, or lower social class.

There is a third theoretical possibility that has not, as far as we are aware, been previously investigated. This is that bias might arise because illness might be associated with husband/wife “incompatibility”. It is often considered that marriages are happier if spouses have a lot of things in common and that, in a marriage, unhappiness might lead to adverse health. Group A, by definition, consists of subjects whose spouse has different smoking habits from them, whereas group B consists of subjects whose spouse has the same smoking habits. In theory, at least, elevated health risks in group A might arise because of their lesser compatibility.

This possibility was investigated in a study, conducted in May and June 1997 in the UK, in which some 400 married couples were interviewed at home, with information collected separately from each of the husband and the wife on demographic factors, smoking habits, ETS exposure, “risk factors” (i.e. factors commonly considered as potential confounders in studies relating ETS to health) and health status (respiratory and cardiovascular symptoms, history of various diseases and perception of overall health). Data on smoking habits, ETS exposure and “risk factors” were also collected from both husband and wife relevant to their spouse, for the purpose of investigating the

validity of surrogate responses. These data are considered in a later report, Report B, and are not considered here.

This report limits attention only to statements made by the husband and wife about themselves and has the objective of determining whether health status is linked to incompatibility of husband and wife in respect of a variety of risk factors.

2. The survey

The survey was conducted by the market research company Research Services Ltd (RSL). The study aimed to interview a sample of 400 married couples throughout Great Britain, representative in terms of region and social grade, with at least one of the couple aged between 45 and 74 years. Their interviewers made an appointment when both the husband and wife would be present. Each respondent was asked to complete a self-completion questionnaire without reference to their spouse. The interviewer ensured that there was no collaboration between the spouses and rejected any interviews where this was not complied with. The interviewer was able to assist with the understanding of any specific questions if asked. The questionnaires actually used are attached as Annex A (husband) and Annex B (wife).

Of 1354 couples approached who were (apparently) eligible on the age/marital status criteria, 595 (44%) refused, 142 (10%) agreed but were unavailable during the fieldwork period and 197 (15%) were outside the interviewer's social class quota. For 15 (1%) couples, the interviews were terminated or rejected, resulting in 405 (30%) completed couple-interviews. On analysis, some of these proved to be outside the specified age range. After excluding 8 subjects where at least one of the couple was more than 5 years outside the target age range and there was no evidence the other member was within 5 years of it, analysis was restricted to 397 married couples.

Table 1 shows the joint age distribution of the couples. The mean (standard error) age of the husbands included was 57.3 (0.5) and of the wives included was 53.9 (0.5). A small proportion of subjects, 3% of husbands and 3% of wives, did not report their age.

The distribution of the couples analysed was close to the quotas set for region (Table 2A).

Social class was determined by RSL based on questions about the chief income earner in the household (See Annex A and B questions A6-A8). This was determined separately for the husband and wife. Only 269 (68%) of couples agreed who was the chief income earner, with 85 (21%) disagreeing and 43 (11%) where at least one did not

answer or claimed equality. None nominated any household member other than self/spouse. However, for those couples where social class could be determined, there was a high level of correlation between the husband's and wife's determinations ($r = 0.95$, $p < 0.001$ based on 5 levels A, B, C1, C2, D) and only 12 (6%) couples differing when the 3 categories (AB, C, D) used for the quota allocations are considered. However, contrary to our initial expectations, social class was only determined when the chief income earner was working, and hence (1) social class was not determined for the 175 (44%- wife report) or 177 (45% - husband report) couples where the chief income earner was retired, and (2) no couples were determined as being in social class E. Table 2B shows the distribution of the couples analysed by social class, and Table 2C shows the joint distribution by region and social class for couples with social class determined. Although it is difficult to judge from the available information, it appears that the quotas were adequately fulfilled.

3. Symptoms studied

The symptoms fall into four groups. In the first two, subjects indicated from a list all those they had suffered from, either in the last month, or ever (see Annex A and B questions B5 and B6). All 397 respondents were considered at risk for these symptoms. The third group were cardiorespiratory symptoms derived from the standard MRC/Rose questionnaires (see Annex C). Incomplete answers led to some subjects being unclassifiable. Finally, two assessments of the subject's general health were studied (see Annex A and B, questions B1 and B4). Table 3 shows the frequency of the various symptoms studied, separately for the husband and the wife.

The most commonly reported ailment or condition ever suffered from was back trouble, reported in 293 cases, almost twice as common as the next most frequently reported ones, stomach or other digestive disorders (167), rheumatic disorder or arthritis (157), high blood pressure (144), migraine (141) and piles or haemorrhoids (140). The most frequently reported problems suffered from in the last month were headaches (238), painful joints (200), difficulty sleeping (199), and a bad back (195). Cardiorespiratory symptoms were generally not as frequently reported, with breathlessness on walking, reported in 158 cases, the most common. A quarter of subjects (194) considered their health fair or poor (rather than excellent or good), and a fifth of subjects (152) considered that a longstanding illness, disability or infirmity limited their activities.

4. Risk factors studied

Risk factors were considered suitable for study on two criteria:

- 1) They should be relevant to the majority of subjects. Analyses of incompatibility can only be based on couples where *both* subjects have data, so analyses based on a subset of the data would be unlikely to be powerful enough to detect any effect. Thus, for instance, we studied *Smoked cigarettes regularly in last 10 years* vs *Never smoked regularly or gave up more than 10 years ago* in all couples, rather than attempting to study *Years since gave up* among couples both of whom are ex-smokers.
- 2) There should be a reasonably even distribution of answers. Risk factors such as employment in specific industries, which were reported only by small numbers of subjects, are unlikely to yield many couples (if any at all) where both husband and wife have the risk factor, making it impossible to distinguish between any indirect effect and incompatibility.

The factors studied cover a range of generally recognised risk factors. Two other factors specifically related to marriage or to the lifestyle of the couple combined (e.g. shiftwork/unsocial hours; whether married before) have also been included.

The dietary questions were reduced to 5 scores for fruit, vegetables, salads, sweet foods and fatty foods, as in previous work (Thornton, Lee and Fry, 1994) and the personality questions were reduced to 2 scores for extroversion and neuroticism (Eysenck and Eysenck, 1964).

Note that presence (or increasing level of a factor is generally defined so that it is in the direction usually associated with a less healthy lifestyle. Thus, we associate presence of symptoms and conditions with, for example, not being in paid employment, eating meals at irregular times, having no educational qualifications and having low consumption of fruit, vegetables and salads, so that most of the significant relative risks we would expect to see would be increased (see Table 4 for definitions).

Table 4 presents summary results on the distribution of the lifestyle and

personality risk factors studied and on the association between level in husbands and level in wives. The lifestyle factors fall into 3 types:

- (a) 0/1 risk factors: For these 10 risk factors, where the condition was defined merely as present or absent, the table shows the number of couples with relevant data, the number and percentage with the variable present for the husband, for the wife, and for both partners, and the concordance ratio (with its 95% confidence limits). The concordance ratio (CR) is a measure of association between husbands' and wives' habits, estimated by:

$$CR = \frac{\text{Couples with both having risk factor} \times \text{Couples with neither having risk factor}}{\text{Couples with only husband having risk factor} \times \text{Couples with only wife having risk factor}}$$

In the absence of an association, CR should be close to 1.0. In practice, CR significantly exceeded 1.0 for all 10 risk factors, with a very strong association in respect of smoking (particularly current smoking), current employment, educational qualifications, regular meal eating and previous marriage.

- (b) Graded risk factors: 6 risk factors were measured using between 4 and 7 graded levels (see [Annex D](#) for details). Here Table 4 shows numbers and percentages, for husband, wife and both partners above a specific cut point and also the Spearman rank correlation between the levels of the husband and of the wife. As seen in Table 4, there was highly significant concordance between husband and wife as regards age left school, physical activity, alcohol consumption, tea and coffee consumption and time to the first meal of the day, with correlation coefficients ranging from 0.27 to 0.50.
- (c) Continuous and semi-continuous risk factors: Other risk factors were measured on a continuous or semi-continuous scale (see [Annex D](#) for details). Results are presented in Table 4 similarly to the results for graded risk factors. The results showed, as expected, a very strong correlation between the ages of husbands and wives. There was also a highly significant ($p < 0.001$) correlation between

husbands' and wives' scores for the five dietary scores; fruit, vegetables, salads, sweet foods and fatty foods with all 5 correlations in the range 0.35 to 0.47. In contrast, there was only a marginally significant ($p < 0.05$) correlation for neuroticism and no significant correlation for extroversion or body mass index.

5. Testing for the relationship of the symptoms to the risk factors and to husband/wife incompatibility on the factors - Factor is a 0/1 variable

5.1 Statistical methods

Consider the relationship between occurrence of a symptom in subjects of a specific sex and presence of a risk factor in the subjects and their spouses. The relevant data for analysis may be laid out in a 2x4 table as follows:

| <u>Risk factor</u> | <u>Symptom</u> | |
|--|----------------|----------------|
| | <u>Absent</u> | <u>Present</u> |
| 1. Present in neither subject nor spouse | N_{10} | N_{11} |
| 2. Present in subject only | N_{20} | N_{21} |
| 3. Present in spouse only | N_{30} | N_{31} |
| 4. Present in both subject and spouse | N_{40} | N_{41} |

Based on these data we may carry out various statistical tests.

5.1.1 *Direct effect of presence of risk factor in subject*

In most situations, if there is an association, it will be a direct one between the symptom and the subject's own risk factor status. Here the relevant analysis ignores whether the spouse has the risk factor, and the 2x2 table to be considered is:

| <u>Risk factor</u> | <u>Symptom</u> | |
|----------------------------|-------------------|-------------------|
| | <u>Absent</u> | <u>Present</u> |
| 1+3 Not present in subject | $N_{10} + N_{30}$ | $N_{11} + N_{31}$ |
| 2+4 Present in subject | $N_{20} + N_{40}$ | $N_{21} + N_{41}$ |

Using standard statistical procedures, e.g. as described in Breslow and Day (1980), one can express the association in terms of a relative risk with 95% confidence limits and can estimate the p value using a corrected chisquared statistic.

5.1.2 *Indirect effect of presence of risk factor in spouse*

The usual approach here is to estimate the association between symptom presence in the subject and risk factor presence in the spouse, after adjustment for presence of the risk factor in the subject. Here one considers two 2x2 tables:

| <u>Stratum</u> | <u>Risk factor</u> | <u>Symptom</u> | |
|------------------------------------|-----------------------|----------------|----------------|
| | | <u>Absent</u> | <u>Present</u> |
| Risk factor not present in subject | Not present in spouse | N_{10} | N_{11} |
| | Present in spouse | N_{30} | N_{31} |
| Risk factor present in subject | Not present in spouse | N_{20} | N_{21} |
| | Present in spouse | N_{40} | N_{41} |

Here one can estimate a combined relative risk for the two 2x2 tables and an overall p value using standard theory for stratified contingency tables.

5.1.3 *Effect of incompatibility on risk factor between subject and spouse*

Again it seems appropriate to estimate the association between incompatibility after adjustment for presence of the risk factor in the subject. Here the two 2x2 tables considered are:

| <u>Stratum</u> | <u>Risk factor</u> | <u>Symptom</u> | |
|------------------------------------|-------------------------------|----------------|----------------|
| | | <u>Absent</u> | <u>Present</u> |
| Risk factor not present in subject | Same in subject and spouse | N_{10} | N_{11} |
| | Differs in subject and spouse | N_{30} | N_{31} |
| Risk factor present in subject | Same in subject and spouse | N_{40} | N_{41} |
| | Differs in subject and spouse | N_{20} | N_{21} |

Again one can estimate a combined relative risk for incompatibility from the two 2x2 tables using stratified contingency table analysis.

It is important to note that the test for the effect of incompatibility between

husband and wife is not independent from the test for the indirect effect of presence of the risk factor in the spouse. To understand this it is convenient to consider the situation where smoking is the risk factor. The indirect effect is calculated by averaging together two relative risks, that related to the effect of passive smoking in nonsmokers ($R_1 = N_{10}N_{31}/N_{30}N_{11}$) and that related to the effect of passive smoking in smokers ($R_2 = N_{20}N_{41}/N_{40}N_{21}$). The effect of incompatibility is tested by averaging R_1 and $1/R_2$. A large value of R_1 coupled with a value of R_2 close to 1 can lead to a significant overall estimate of both indirect effect and incompatibility.

5.1.4 *Symptom present at different levels*

In the great majority of the symptoms listed in Table 3, subjects are simply classified as not present or present. In the case of (i) the combined incidence of any ailments or conditions ever suffered from, (ii) the combined incidence of any problems suffered from in the last month, and (iii) the combined score for wheezing and night-time shortness of breath, the symptom variable had more than one positive level. In these cases relative risks were calculated taking presence as having scores greater than specific defined values (respectively 3, 3 and 0), but p values were calculated taking the full symptom level distribution into account using the Fry-Lee test (Fry and Lee, 1988), a stratified version of Kruskal-Wallis non-parametric analysis of variance by ranks.

5.1.5 *Age adjustment*

In view of the likely dependence on age of both risk factor and symptom prevalence, it was decided to estimate all relative risks and p values after adjustment for four levels of the subject's age (<45, 45-54, 55-64, 65+).

5.2 Results

Analyses to estimate the three age-adjusted relative risks and their p-values were carried out for all the symptoms listed in Table 3 and the 10 0/1 risk factors listed in Table 4. In order to avoid presentation of extensive output, results, summarized in Table 5, are only shown for symptom/factor combinations where at least one of the three relationships investigated was significant at the 95% confidence level. In the table the relative risks are shown with p values expressed in coded form as follows:

| | |
|-------------|--------------|
| +++ , - - - | $p < 0.001$ |
| ++ , - - | $p < 0.01$ |
| + , - | $p < 0.05$ |
| (+), (-) | $p < 0.1$ |
| N.S. | $p \geq 0.1$ |

Here plus signs indicate significant increases in symptoms and minus signs significant decreases.

In interpreting the results in Table 5, it is important to remember that they represent a summary of over 1000 analyses representing each combination of the two sexes, 10 0/1 factors investigated and over 50 symptoms and conditions. It is clear that by chance alone one would expect to see quite a number of associations that are of moderate statistical significance. Relationships marked as + or - ($p < 0.05$) and even some marked as ++ or -- ($p < 0.01$) should not necessarily be taken to indicate true treatment effects, especially when the association seen is evident in one sex and not the other. Taking this caution concerning multiple testing into account, it is nevertheless possible to draw some conclusions from the results in Table 5.

5.2.1 *Direct effects of the risk factors studied*

Cigarette smoking Results for four different indices of cigarette smoking are summarized in Table 5; - current regular cigarette smokers, ever smoked cigarettes regularly, every regularly smoked 20+ cigarettes and smoked cigarettes regularly in last 10 years. The strongest relationships with cigarette smoking, particularly with current regular smoking, were with the respiratory symptoms cough, phlegm and wheezing/shortness of breath. Some of the cigarette smoking indices also showed weaker associations with the cardiovascular symptoms angina and possible infarction in both sexes. A consistent association was also noted in both sexes and for all four indices of cigarette smoking with poorer self-reported general health. Two of the cigarette smoking indices were also associated, in males, with limited activity. There was also a tendency for cigarette smokers to report more problems in the last month and, to a lesser extent, more ailments or conditions ever suffered from, though these were never

consistently significant for all the cigarette smoking indices and rarely significant in both sexes. Only two significant negative relationships were seen. Both of these, migraine in women and hay fever in men, were only seen in one sex and for one index of cigarette smoking (smoked regularly in the last 10 years).

Not in paid employment There was a general tendency, more clearly seen in men, for those who were not in paid employment to report symptoms, conditions, poorer general health and more limited activity much more frequently, manifesting the “healthy worker effect”. Only in respect of migraine in women was a significantly higher incidence seen in those in paid employment

Other factors For the other 0/1 factors studied (shift work/unsocial hours since marriage, no educational qualifications, eats meals at irregular times, sugar in tea or coffee and married before), significant associations were seen much less frequently and then usually only in one sex and of only moderate significance. The strongest associations seen were the increased incidence of phlegm in women who ate meals at irregular times and the reduced incidence of diabetes in men who took sugar in tea or coffee. The latter association is no doubt due to diabetics not being allowed sugar.

5.2.2 *Indirect effects of the risk factors studied*

Cigarette smoking 17 significant associations were seen, all positive and all but one in women. Cigarette smoking by the husband (standardized for cigarette smoking by the wife, and for age) was associated mainly with an increased incidence of self-reported problems in the last month (including nerves, indigestion/stomach trouble, bad back, always feeling tired, colds and flu, difficulty concentrating, worry and difficulty sleeping), though it was also associated with an increased incidence of asthma and shortness of breath/wheezing and with poorer general health. Which associations were significant depended on the particular index of cigarette smoking considered.

Other factors For the other six 0/1 risk factors considered, 21 significant associations were seen, mainly only at $p < 0.05$, with 15 positive and 6 negative and none significant in both sexes. The most significant associations seen ($p < 0.01$) were:

- (i) women whose husbands were not in paid employment had a higher frequency of colds and flu in the last month (adjusted for age and own employment status),
- (ii) women whose husbands did shift work/unsocial hours had an increased frequency of breathlessness on walking (adjusted for age and own shift work/unsocial hours status),
- (iii) men whose wives had no educational qualifications had a higher frequency of angina (adjusted for age and own educational status).

While there is some indication that smoking by the spouse is associated with increased reporting of some health conditions, there is little clear evidence of a true indirect relationship for the other 0/1 factors studied.

5.2.3 *Incompatibility between husbands and wives on the risk factors studied*

In Table 5 there were 29 associations between husband and wife incompatibility in the 0/1 factors studied and the symptoms or conditions which were statistically significant at least at the 95% confidence level. These associations are summarized in Table 6 which also gives the relative risk and p value for the corresponding association in the opposite sex.

In attempting to interpret from these results whether they provide any evidence that incompatibility between husband and wife actually affects incidence of the symptoms or conditions studied, a number of points have to be taken into account:

- (i) Given there were 1000 or more associations studied, the number actually observed as significant at $p < 0.05$ is clearly not particularly large (though it is far from straightforward to estimate precisely what it should have been by chance given that some of the associations studied concern low incidences and the fact that the associations are clearly not independent). Indeed only three were significant at < 0.01 , and none were significant at $p < 0.001$.
- (ii) There were no associations where statistically significant relative risks were seen in both sexes, and for a number of associations the relative risks for the sex where

they were not significant were close to 1.00 or even in the opposite direction.

- (iii) Of the 29 significant associations seen, 22 were positive (i.e. incompatibility being related to increased incidence of symptoms or conditions) and only seven were negative, a difference which is statistically significant ($p < 0.01$). Although the two previous points suggest that a number of the 29 associations may be chance findings, the excess of positive associations suggests that some of them may reflect true relationships.
- (iv) As discussed in section 5.1, the tests for incompatibility and for indirect effect are non-independent, and interpretation is assisted by studying the separate values of the two relative risks being combined (R_1 and R_2 for indirect effect and R_1 and $1/R_2$ for incompatibility) to judge whether significant overall relative risks for incompatibility could plausibly be explained by indirect effects of the factor.

There were in fact ten of the 29 associations where the significant association seen in Table 6 appeared to arise essentially from an increased value of R_1 with no corresponding increase in $1/R_2$, so that the association could equally well be explained by an indirect effect of presence of the factor in the spouse in those without the factor themselves (e.g. passive smoking in nonsmokers) as by an incompatibility effect in those without the factors themselves. These associations were as follows:

| <u>Factor</u> | <u>Symptom or condition/Sex</u> | <u>R_1 (p)</u> | <u>$1/R_2$ (p)</u> | <u>Incompatibility R (p)</u> |
|--------------------------------------|---------------------------------|-----------------------------|-------------------------------|---|
| Ever regularly smoked 20+ cigarettes | Bad back/F | 2.35 ++ | 0.98 NS | 1.78 + |
| | Colds and flu/F | 3.67 ++ | 0.94 NS | 2.34 ++ |
| | N problems (>3)/F | 1.72 + | 1.22 NS | 1.57 + |
| No educational qualifications | Difficulty concentrating/F | ∞ ++ | 0.74 NS | 4.49 + |
| | Migraine/M | 5.04 NS | 1.78 NS | 2.22 + |

| | | | | |
|-------------------------------|------------------------------|---------|---------|--------|
| Eats meals at irregular times | Headaches/M | 2.55 ++ | 1.21 NS | 2.01 + |
| | Faints/dizziness/M | 9.56 ++ | 1.33 NS | 4.18 + |
| | Stomach/digestive disorder/M | 2.87 + | 1.01 NS | 2.06 + |
| Sugar in tea or coffee | Diabetes/M | 4.01 + | 0.76 NS | 2.66 + |
| Married before | N diseases (>3)/M | 4.12 + | 0.97 | 2.58 + |

The associations with smoking, if not due to chance, could be due to smoking by the husband having an effect on nonsmoking wives but not on smoking wives. The associations with regularity of meal eating, with increased symptoms in men who eat at regular times when their wives do not may reflect a situation where the wife leaves her husband to feed himself which he may do inadequately with consequent detriment to health. Why the uneducated should find that having an educated spouse makes it difficult to concentrate or more likely to get a migraine is not apparent at first glance. The higher diabetes rate in non sugar takers married to sugar takers is also not straightforward to understand. Nor is the tendency for disease rates to be higher in those not previously married if their spouse has been.

There were also two significant incompatibility associations which arose mainly because $1/R_2$ was increased with no real apparent increase in R . These were as follows:

| <u>Factor</u> | <u>Symptom or condition/Sex</u> | <u>R_1 (p)</u> | <u>$1/R_2$ (p)</u> | <u>Incompatibility R (p)</u> |
|----------------|---------------------------------|-----------------------------|-------------------------------|---|
| Married before | Diabetes/M | 2.20 NS | ∞ + | 4.79 + |
| | Cough/M | 1.89 NS | 5.38 (+) | 3.20 + |

These two associations, reflecting a higher rate of diabetes and cough in those previously married when their spouse has not been, are not easy to interpret.

For the remaining 17 associations in Table 6, the values of R_1 and $1/R_2$ were reasonably consistent, and fitted in better with a direct effect of incompatibility. The most striking of these associations was between smoking cigarettes regularly in the last 10 years and hay fever, where women whose spouses were incompatible on smoking

were almost 10 times less likely to get hay fever, regardless of whether they themselves smoked ($R_1=0.12$, $1/R_2=0.10$, $R=0.11$). Unadjusted frequency of hay fever was 19/184 (10.3%) if neither spouse smoked and 15/81 (18.5%) if both spouses smoked, but only 1/49 (2.0%) if the husband only smoked and 1/50 (2.%) if the wife only smoked. A negative association with incompatibility was also seen in men, though not significant ($R=0.49$).

In a number of other cases incompatibility was associated with a relatively large reduction in risk. Thus one notes the relative risks of 0.16 for current regular cigarette smoking and breathlessness in men, 0.17 for sugar in tea or coffee and faints or dizziness in women, 0.18 for educational qualifications and hay fever in men, 0.31 for sugar in tea or coffee and chronic bronchitis in women, 0.35 for paid employment and trouble with ears in men and 0.35 for sugar in tea or coffee and asthma in men. In the majority of these cases, however, such an effect was not really seen at all in the opposite sex.

In the other 10 associations seen in Table 6, incompatibility was associated with an increased risk of the symptom or condition studied. The largest relative risk was 5.73 for smoked cigarettes regularly in the last 10 years and diabetes in women, but the effect was not seen at all in men. Other relative risks were of order 2 to 3, but in most cases there was again no evidence of an association with incompatibility in the other sex. The only case where the results in the other sex also showed a markedly increase relative risk were for paid employment and sinus trouble or catarrh where incompatibility was associated with a relative risk of 2.43 in men ($p<0.05$) and of 1.94 in women ($0.05<p<0.1$).

All in all the results considered in this section provide little real evidence that incompatibility on lifestyle factors is associated with an increased risk of the symptoms or conditions studied.

6. Testing for the relationship of the symptoms to the risk factors and to husband/wife incompatibility on the factors - Factor is a graded, semi-continuous or continuous variable

6.1 Statistical methods

As for when the risk factor was a 0/1 variable, tests were also carried out, when the factor was a graded, semi-continuous or continuous variable, to estimate the direct effect of the factor in the subject, the indirect effect of the factor in the spouse and the effect of incompatibility between subject and spouse. For these analyses, the semi-continuous and continuous risk factors were reduced to graded risk factors with 8 levels (see Annex D for details). The tests used were as follows:

6.1.1 *Direct effect of presence of risk factor in subject*

Relative risks were estimated by collapsing the risk factor level for the subject into a two-level variable as defined in Table 4. Presence of the so defined variable could represent high values of factors normally associated with adverse health (e.g. fatty food scores greater than 7) or low values of factors normally associated with good health (e.g. physical activity average or low). Significance was estimated, however, by a trend test in which symptom prevalence was compared in subjects with progressively “worsening” levels of the factor (i.e. more associated with adverse health).

6.1.2 *Indirect effect of presence of risk factor in spouse*

Relative risks were estimated by collapsing the risk factor level for the spouse into a two-level variable as defined in Table 4, with adjustment for the collapsed two-level variable for the subject. Significance, similarly adjusted, was again estimated by a trend test.

6.1.3 *Effect of incompatibility on risk factor between subject and spouse*

Husband and wife were defined as compatible or incompatible based on a criterion such as risk factor levels the same to within ± 1 . Table 7 shows the criteria used and gives some information on the joint distribution for husband and wife of the risk factors considered. Relative risks for incompatible/compatible were estimated adjusted

for the collapsed two-level risk factor variable for the subject. Significance, similarly adjusted, was estimated by a trend test based on degrees of incompatibility (same, differ by 1 level, differ by 2 levels, etc., etc.)

6.1.4 *Age adjustment and symptoms present at different levels*

As was the case for 0/1 factors, all analyses were age adjusted, and used the Fry-Lee stratified rank test rather than stratified chisquared tests to estimate significance when there were multiple levels of the symptom variable.

6.2 Results

The results of the analyses, shown in Table 8, are summarized in a style similar to that used in Table 5. They concern a total of 15 risk factors and are discussed below.

6.2.1 *Direct effects of the risk factors studied*

Age left school Although no significant associations were seen for wives, husbands who left school early had a significantly increased incidence of a wide range of cardiorespiratory symptoms and other conditions (predominantly those occurring in the last month), as well as being of poorer general health and more likely to have limited activity.

Physical activity In both sexes those of low or average activity had an increased incidence of a very large number of symptoms and conditions, with many significant positive associations seen in each sex. Many of these associations may have occurred because presence of disease limited physical activity rather than as a direct effect of inadequate exercise and indeed very strong and highly significant associations were noted in each sex between physical activity and having a longstanding condition limiting their activity. The only significant relationship in the reverse direction was for migraine in women.

Alcohol Comparisons were made based on calculated units drunk and based on reported drinking habits. Heavier drinking was associated with a significantly increased incidence of only three conditions, varicose veins in women, and cough and phlegm in men, but was associated with a significantly decreased incidence of a longer list of conditions, particularly in men. In women, drinking was highly significantly ($p < 0.001$) negatively related to poorer general health and having limited activity. This to some extent may reflect the fact that the ill and less mobile are less likely to go out drinking.

Time to first meal of the day Those who have their first meal of the day more than half an hour after getting up have a significantly increased incidence of a range of conditions, mainly respiratory symptoms. A longer time to first meal of the day is known to be extremely strongly associated with smoking. It may also be a direct consequence of adverse health slowing one down.

Tea drinking There was some evidence that tea drinking was associated with frequency of problems in the last month, including having a bad back, an association seen in both sexes which may be due to those who are less mobile spending more time drinking tea as they are less able to do other things. Tea drinking was also associated with some respiratory symptoms, with poorer general health and with having activity limited by illness.

Coffee drinking Only one significant association was seen in women, with reduced indigestion/stomach trouble. In men, coffee drinking was associated with a reduced incidence of a variety of respiratory symptoms, worry, faints/dizziness and rheumatic trouble/arthritis, and of poorer general health.

Fruit, vegetable and salad consumption The associations shown in Table 8 are with low consumption, believed to be a risk factor for many diseases. In fact, though there were some endpoints where low consumption was associated with a significantly increased risk (four for fruit, two for vegetables and three for salads), there were slightly more where it was associated with a significantly decreased risk (two for fruit, six for vegetables, and two for salads). Most of these associations were only of marginal

significance ($0.01 < p < 0.05$) and could well be chance findings.

Sweet foods High sweet food content was associated with relatively few conditions. The only association significant at $p < 0.01$ was the negative one with diabetes, due to diabetics avoiding sweet foods.

Fatty food High fatty food consumption was associated with a significantly increased incidence of a few conditions, colds and flu, difficulty sleeping and cough being the most significant ($p < 0.01$), and with a reduced incidence of only one, migraine.

Neuroticism Neuroticism was associated with an increased incidence of a huge range of conditions in both sexes, with poorer general health and with having limited activity. Many of these associations were very highly significant ($p < 0.001$). This is unsurprising and is more likely due to overstatement of problems than of any causal effect.

Extroversion Extroversion was associated with a significantly reduced incidence of a few conditions, though the four for women and the five for men showed no overlap.

Body mass index In women, a high body mass index was associated unsurprisingly with an increased risk of a range of conditions, including angina, diabetes and high blood pressure, various respiratory symptoms and rheumatic trouble/arthritis and painful joints, and with poorer general health. In men, a high body mass index was only significantly associated with angina, high blood pressure and breathlessness on walking.

6.2.2 *Indirect effects of the risk factors studied*

Age left school Very few significant associations were noted. The only one significant at $p < 0.01$ was for the wife leaving school early being associated with poorer general health in the husband. There was a significant tendency in both sexes for those whose spouses left school early to report having a bad back in the last month.

Physical activity 11 significant associations were noted, with nine positive. None was consistently observed in both sexes. The most significant ($p < 0.01$) were for low activity in the husband to be associated with difficulty sleeping by the wife and for low activity in the wife to be associated with higher incidence of cough, phlegm and chest illness in the husband.

Alcohol Where significant associations were seen they were, with one exception, for alcohol drinking by the spouse to be associated with a reduced incidence of symptoms and conditions in the index subject. However, none of the associations seen were significant at $p < 0.01$ or evident in both sexes.

Time to first meal of the day Women whose husbands took their first meal of the day more than half an hour after getting up had a significantly increased incidence of a variety of respiratory symptoms and conditions and of back trouble, with many of the associations shown in Table 8 significant at $p < 0.01$ or $p < 0.001$. This may reflect the fact that women with such conditions tend to get going more slowly than average in the morning and therefore prepare their husband's breakfast later. There was little evidence in men that the time their wives took their first meal of the day affected incidence of the symptoms or conditions studied.

Tea drinking In women tea consumption by their husbands was associated with a significantly reduced incidence of six conditions and symptoms. Only for one of these, sinus trouble/catarrh, was the association significant at $p < 0.01$. No such relationships were evident in men.

Coffee drinking Relatively few significant associations were seen, with only one - coffee consumption in husbands associated with chronic bronchitis in wives - significant at $p < 0.01$. It should be noted that a significant ($p < 0.05$) negative association between coffee consumption by the spouse and trouble with feet in the index subject was noted in both sexes.

Fruit, vegetable and salad consumption In men, low fruit consumption by their wives

was associated with a reduced incidence of migraine ($p<0.01$) and headaches ($p<0.05$). There was also weak evidence that low fruit consumption by the spouse was associated with an increased incidence of cough and phlegm.

In women, low vegetable eating by the husband was also associated with a significantly increased incidence of a variety of respiratory symptoms and conditions and of poorer general health. In men, however, low vegetable eating by the wife was associated with a significantly reduced incidence of respiratory symptoms and also with a reduced incidence of possible infarction, varicose veins and always feeling tired, the last two associations being significant at $p<0.001$.

Few significant associations were seen with low salad consumption by the spouse, the only one significant at $p<0.01$ being for wheezing/night-time shortness of breath in the husband.

Sweet food consumption Only three significant associations were seen with high sweet food consumption by the spouse, one negative and two positive. The two positive associations, with limited activity in women and with piles/haemorrhoids in men, were significant at $p<0.01$.

Fatty food score Again, few significant associations were seen, the only one significant at $p<0.01$ being between high fatty food consumption in wives and reduced sinus trouble/catarrh in their husbands.

Neuroticism Far less significant associations were seen than was the case for the direct effect of neuroticism. However it was notable that all of the six associations significant at $p<0.05$ and also the 11 associations shown in Table 8 that were almost significant ($0.05<p<0.1$) were positive. Having a neurotic spouse may increase the reported incidences of conditions in index subjects.

Extroversion Having an extrovert husband was associated with a significantly reduced incidence of various conditions, significant at $p<0.01$ for painful joints, rheumatic

trouble/arthritis, cough and general health. In contrast it was associated with a significantly increased incidence of only one, hay fever ($p < 0.01$). Having an extrovert wife was only significantly associated with one condition and then only at $p < 0.05$.

Body mass index A high body mass index in the husband was only significantly associated with a few conditions in the wife, and none significant at $p < 0.01$. A high body mass index in the wife was significantly associated with rather more conditions, all the associations being positive, and that with severe depression/nervous illness being significant at $p < 0.01$.

6.2.3 *Incompatibility between husbands and wives on the factors studied*

For the analyses of indirect effects shown in Table 8 the number of significant positive associations (57) did not very markedly outweigh the number of significant negative associations (43). However, the same was not true for the incompatibility analyses. Here there were 111 significant positive associations as against only 17 significant negative associations. This is illustrated further in Table 9, which shows the number of analyses of indirect effects and of incompatibility which were significant at $p < 0.001$, $p < 0.01$ and $p < 0.05$, separately for the 15 graded risk factors for which results are summarized in Table 8, for the four 0/1 smoking risk factors for which results are summarized in Table 5 and for the six other 0/1 risk factors for which results are also summarized in Table 5. Overall the number of analyses which show that incompatibility between husband and wife is associated with a significantly increased risk of the symptoms or conditions studied (133) substantially exceeds the number where it is associated with a significantly decreased risk (24).

Table 10 gives further details of the significance of incompatibility analyses for the 15 graded risk factors. It can be seen that for a number of the graded risk factors (e.g. time to first meal, tea and coffee consumption and fatty food score), significant associations are quite rare and not predominantly positive, thus providing no real evidence of an incompatibility effect. However, there are a number of graded risk factors (physical activity, total alcohol units, vegetable score, salad score, body mass index, and perhaps neuroticism) where a relatively large number of significant positive associations

are seen, some significant at $p < 0.01$ or even $p < 0.001$, and a substantially lower number of significantly negative associations, none significant at $p < 0.01$ or $p < 0.001$.

These six graded risk factors are examined further in [Table 11](#) which gives additional information for associations significant at least at $p < 0.01$, or where an association significant at least at $p < 0.05$ was seen in both sexes. In interpreting these findings we also took into account the magnitude and significance of the two relative risks, R_1 and $1/R_2$, contributing to the combined incompatibility relative risk, R , shown in [Table 11](#).

Physical activity For the five significant associations seen in men, R_1 was always close to 1, but $1/R_2$ was substantially elevated and clearly significant ($p < 0.01$ or < 0.001). In other words, husbands who were of average/low physical activity showed a higher incidence of the conditions or symptoms concerned (trouble with eyes, faints/dizziness, heart trouble, breathlessness (grade 2) and limited activity) if the wife was of high physical activity than if she also was of average/low physical activity. However, for husbands who were of high physical activity, incidence of these conditions was unrelated to the wife's physical activity. This may reflect the tendency for couples to take energetic leisure pursuits together, so if one is disabled the other imposes a self-limit. For the only significant association seen in women, for stomach/digestive disorder ever, R_1 and $1/R_2$ were both significantly elevated.

Total alcohol units In women, incompatibility in units of alcohol consumed was associated with a markedly increased incidence of hay fever, possible infarction, bronchitis (WHO) and bronchitis (Dean). R_1 and $1/R_2$ were both elevated, consistent with a true incompatibility effect. However corresponding associations were not evident in men. A weaker association between incompatibility in alcohol units and breathlessness on walking was evident in both sexes.

Vegetable score Incompatibility in vegetable score showed a significant ($p < 0.05$) positive association with a relatively large number of symptoms and conditions (see [Table 10](#)). The strongest association ($p < 0.001$) was with always feeling tired in men,

where R_1 and $1/R_2$ were both significantly elevated (at $p<0.05$ and $p<0.01$ respectively) and a significant association was also seen in women. The other associations significant at $p<0.01$, all in men, were with possible infarction, general health and limited activity, where again R_1 and $1/R_2$ were both elevated. However, here no corresponding association was seen in women. Two conditions, kidney/bladder trouble and persistent cough and phlegm, showed a significant ($p<0.05$) association with incompatibility in vegetable score in both sexes separately.

Salad score In men, incompatibility in salad score was associated with an increased incidence of three conditions which was significant at least at $p<0.01$ - always feeling tired, painful joints and rheumatic trouble, arthritis. For all three of these associations, R_1 and $1/R_2$ were both elevated, and an association of almost the same magnitude, though not as significant, was seen in women.

Body mass index Incompatibility in body mass index showed a significant ($p<0.05$) positive association with quite a large number of conditions (see Table 10). The clearest association was with always feeling tired in the last month, highly significant ($p<0.001$) in men, and quite highly significant ($p<0.01$) in women. Significant associations, at least of $p<0.05$, were also evident in both sexes for number of problems in the last month, asthma, breathlessness on walking, and fair or poor general health. For colds and flu in the last month, constipation in the last month and severe depression/nervous illness ever, significant ($p<0.01$) associations were seen in one sex, with no evidence of any corresponding association in the other. For the associations summarized in Table 11, both R_1 and $1/R_2$ were generally elevated. In men, but not in women, however, R_1 tended to be more elevated than $1/R_2$, i.e. the associations with incompatibility in men were more clearly seen when the husband was of lower body mass index.

Neuroticism For two conditions, worry and difficulty sleeping in the last month, incidence in women was quite highly significantly ($p<0.001$ and $p<0.01$ respectively) associated with incompatibility in neuroticism. Both significant associations arose purely because of an increase in $1/R_2$ (i.e. in women who had high neuroticism scores incidence of worry was higher if the husband had low neuroticism than if he also had high neuroticism, but in women with low neuroticism scores incidence of worry was not higher if the husband had high neuroticism). Both significant associations were also not evident in men. The other condition showing a highly significant ($p<0.001$) association with incompatibility in neuroticism was chronic bronchitis in men. Here, however, R_1 was highly elevated ($R_1=7.92$, $p<0.001$) but $1/R_2$ was not ($R_2=1.39$, NS). The corresponding association was weaker in women and not significant. Finally, wheezing/night-time shortness of breath showed a positive association with incompatibility in neuroticism, significant ($p<0.05$) in both sexes individually.

Generally, the results considered in this section provide more evidence of a possible role of incompatibility as a predictor of disease than do the results considered in section 5.2.3 for 0/1 risk factors.

7. Combined risk factor and incompatibility scores

7.1 Methods

A combined risk factor score was calculated for each subject based on the presence of the 25 risk factors considered in sections 5 and 6. This was expressed as the percentage of risk factors present, and subjects with missing data for some risk factors were not omitted. [Table 12](#) shows the joint distribution of the risk factors for husband and wife and that the rank correlation between the two was highly significant ($p < 0.001$).

For each risk factor, husbands or wives were defined as being compatible or incompatible depending on whether they differed, for the 10 0/1 risk factors, or on the criteria in [Table 7](#), for the 15 graded risk factors. A combined incompatibility score for the couple was then calculated as the percentage of the 25 risk factors with non-missing data for which the husband and wife were incompatible. [Table 13](#) shows the distribution of the combined incompatibility score.

The direct and indirect effects of the combined risk factors on the various symptoms and conditions studied were then calculated using the combined risk factor score and methodology comparable to that used in section 6 and [Table 8](#) for graded risk factors.

The effect of incompatibility on the combined risk factors on the various symptoms and conditions studied was then calculated using the combined incompatibility score, again using methodology comparable to that used in section 6 and [Table 8](#).

7.2 Results

The results of these analyses are shown in [Table 14](#), which again restricts attention to those symptoms and conditions showing direct effects, indirect effects or effects of incompatibility significant at $p < 0.05$.

7.2.1 *Direct effects*

In both sexes, the combined risk factor score showed significant ($p < 0.05$) associations with a wide range of the symptoms and conditions studied, with many of the associations significant in both sexes, notably respiratory symptoms and conditions and general health, but also always feeling tired in last month, total number of problems in last month, angina and limited activity.

7.2.2 *Indirect effects*

Having a spouse have a high combined risk factor score was not associated with an increased or decreased incidence of any condition that was significant at $p < 0.01$. However, there were a number of symptoms and conditions where an association significant at $p < 0.05$ was seen. Of these 11 symptoms or conditions, 10 were positive, though none were significant in both sexes individually.

7.2.3 *Incompatibility*

The combined incompatibility score was significantly associated with an increased incidence of 13 symptoms/conditions at least at $p < 0.05$ but with a decreased incidence of none of them. The most significant ($p < 0.01$) associations were with indigestion/stomach trouble, headaches, number of problems in last month and number of diseases ever in women. None of the associations were significant in each sex individually.

8. Apartness and criticism scores

8.1 Methods

Two other scores were calculated as described fully in Annex E:

- (i) Apartness - time spent apart from the spouse, and
- (ii) Criticism - critical assessment of spouse's lifestyle.

Table 15 gives the distribution of these two scores. (Note that each score was derived based on answers to four questions, or less in the case of missing data. For those with full data, only scores of 0, 25, 50, 75, . . . 200 are achievable, while for those with answers to only three questions only scores of 0, 33, 67, 100, . . are. This explains the gaps in the distributions shown).

Relative risk and significance were estimated as for the continuous factors, with adjustment for the combined risk factor score.

8.2 Results

The results of these analyses are shown in Table 16, which again restricts attention to those symptoms and conditions showing associations with apartness scores or with criticism scores that were significant at least at $p < 0.05$.

Few significant relationships were seen. Apartness was associated with a significantly increased incidence of indigestion/stomach trouble in women but a decreased incidence in men. In women, apartness was associated with a significantly increased incidence of some respiratory symptoms and a decreased incidence of limited activity, but no corresponding significant associations were seen in men. Conversely, apartness was associated with a decreased incidence of number of problems in the last month and of number of diseases ever in men, but not in women.

Even fewer significant associations were seen with criticism, with none replicated in both sexes. The only association significant at $p < 0.01$ was with headaches in the last month in women.

9. Discussion and summary

The analyses described in this report concern the relationship of some 25 lifestyle risk factors in the subject and the spouse to incidence of over 50 conditions - cardiorespiratory symptoms, problems suffered from in the last month and ailments or conditions ever suffered from.

Not surprisingly, the strongest relationships seen (after adjusting for age) tended to be with presence of risk factors in the subjects themselves (“direct effects” of the risk factor). Many of the associations seen are expected and well documented in the literature. These include:

- (i) the increased incidence of respiratory symptoms and, to a lesser extent, cardiovascular symptoms and other conditions in cigarette smokers,
- (ii) the tendency for those in paid employment to have a reduced incidence of a wide range of symptoms and conditions (the “healthy worker effect”),
- (iii) the wide range of symptoms and conditions that are increased in the less physically active,
- (iv) the even wider range of symptoms and conditions that are markedly increased in the neurotic,
- (v) the increased incidence of angina, diabetes, high blood pressure, respiratory symptoms and other conditions in those with a higher body mass index,
- (vi) the higher incidence of cardiorespiratory symptoms and other conditions in those who left school young, and
- (vii) the increased incidence of respiratory symptoms and other conditions in those who have their first meal of the day late.

While some of these associations reflect direct effects of the risk factor in question on incidence of the symptom or condition studied, some clearly do not, the association deriving because presence of disease affects lifestyle. It should also be borne in mind that presence of symptoms and conditions is based on self-report and therefore, to some extent, subjective. Clearly the association between neuroticism and self-reported incidence of disease may to some extent reflect the greater tendency of the neurotic to

report disease presence.

Although results related to the direct effect of the risk factors studied are presented in detail in this report, they are not of primary interest, and we do not discuss or investigate further whether the significant associations reported are likely or not to indicate causal relationships, reverse-causal relationships (i.e. disease affects risk factor) or effects of confounding by other risk factors.

The risk factors were generally defined so as to be predictors of adverse health (e.g. low rather than high physical activity). It was notable, however, that little or no evidence of any true association with the symptoms and conditions studied was seen for a number of the risk factors, including low fruit and salad consumption, high sweet food consumption, shift work, being married before, lack of educational qualifications and taking sugar in tea or coffee. Furthermore, some risk factors turned out to be predictors of better, not worse, health. Such risk factors included alcohol and coffee drinking, low vegetable consumption and extroversion.

The main concern of this study is whether, after adjusting for age and presence of risk factor in the subject, there is evidence that presence of symptoms and conditions in the subject is related to presence of risk factor in the spouse, and whether such associations, if evident, reflect “indirect effect” of the risk factor in the spouse or “incompatibility” between husband and wife in the risk factor. Where the risk factor is a simple 0/1 variable, the two alternative hypotheses are indistinguishable in those not exposed to the risk factor, but predict opposite relationships in those who are exposed to the risk factor. Where the risk factor is a continuous, semi-continuous or graded variable the two hypotheses can be distinguished more easily, with the analyses relating risk to the extent of the risk factor in the spouse or to the degree of incompatibility between husband and wife.

As already noted, interpretation of the results depends on the level of statistical significance observed (marginally significant associations could occur quite often by

chance, given the large number of relationships investigated) and on the consistency of findings in the two sexes. It also depends on whether the overall indirect effect or incompatibility association seen is consistently evident in those not exposed to the risk factor and in those exposed to the risk factor.

Bearing these considerations in mind, the evidence relating to cigarette smoking (based on four risk factors studied - see Table 5) is not particularly clear. Many of the significant associations seen were evident in only one sex and of only marginal significance ($0.01 < p < 0.05$), and the associations seen fall into three groups:

- (A) those for which spousal smoking is associated with an increased risk in both nonsmokers and smokers,
- (B) those for which spousal smoking is associated with an increased risk in nonsmokers and a decreased risk in smokers, and
- (C) those for which spousal smoking is associated with an increased risk in nonsmokers but with no effect seen in smokers.

Results in group A are consistent with an indirect (passive smoking) effect, results in group B with an incompatibility effect, while results in group C do not clearly distinguish the two hypotheses. The strongest statistical evidence of an incompatibility effect was in women for hay fever and smoking cigarettes regularly in the last 10 years, where prevalence was 10% or more if either, neither or both spouses smoked, but much lower, about 2%, if only one did, regardless of whether it was subject or spouse. However, incompatibility in cigarette smoking was also associated, in men, with an increased incidence of painful joints, rheumatic trouble/arthritis and indigestion/stomach trouble/digestive disorders and with a decreased incidence of breathlessness.

For other 0/1 risk factors studied there was little evidence of either an indirect effect or an incompatibility effect, i.e. health of the subject was not clearly related to whether the spouse was in paid employment, worked shifts or unsocial hours, had any

educational qualifications, ate meals at regular times, took sugar in tea or coffee or was married before. Some possible exceptions are referred to in sections 5.2.2 and 5.2.3.

There was also little evidence of either an indirect effect or an incompatibility effect for a number of the continuous, semi-continuous or graded risk factors considered, including age left school, tea and coffee consumption, fruit score, sweet food score and fatty food score. However, for other such risk factors there was some evidence of a relationship with spousal risk factor status. Generally, such evidence was stronger for incompatibility effects than for indirect effects. Thus, we only detected two risk factors where the data seemed reasonably clearly consistent with an indirect effect:

- (i) time to first meal of the day; women whose husbands take their first meal of the day late have an increased incidence of various respiratory symptoms and conditions and back trouble (possibly due to less mobile women taking more time to get their husband's breakfast), and
- (ii) extroversion; women with extrovert husbands have a significantly reduced incidence of various conditions.

However, we detected rather more risk factors where the data seemed reasonably consistent with an incompatibility effect, most clearly for vegetable score and body mass index, where an increased incidence of quite a large number of symptoms and conditions was associated with incompatibility, and also with alcohol consumption and salad score, where the list of symptoms and conditions showing a significant association was rather shorter. For all four of these risk factors, R_1 and $1/R_2$ were generally elevated, i.e. an incompatibility effect was evident both in those less and more exposed to the risk factor.

Significant associations with incompatibility were also seen for a number of symptoms and conditions for physical activity and for neuroticism. Here, however, associations were not consistently seen in those less and more exposed to the risk factor, making their interpretation as a simple effect of incompatibility more difficult.

It was notable that, for all the risk factors taken together, 133 significant associations with incompatibility were positive and only 24 were negative. The considerable excess of positive over negative relationships suggests that incompatibility between husband and wife may indeed have a true adverse effect on health. However, the fact that the evidence of an effect of incompatibility is sparse or non-existent for a number of the risk factors studied suggests that one should be wary of over-generalizing. Nevertheless the findings add some plausibility to the possibility that increased risks of some diseases observed in never smokers married to smokers may to some extent arise because of an effect on health of incompatibility between husbands and wives on smoking habits.

10. References

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TABLE 1Married Couples SurveyJoint distribution of age of married couples included
in the analysis

| | | <u>Wife's age</u> | | | | | | |
|----------------------|----------------------|-------------------|--------------|--------------|--------------|--------------|------------|--------------|
| | <u>Not given</u> | <u><40</u> | <u>40-44</u> | <u>45-54</u> | <u>55-64</u> | <u>65-74</u> | <u>75+</u> | <u>Total</u> |
| <u>Husband's age</u> | | | | | | | | |
| Not given | 1 | 0 | 1 | 2 | 5 | 2 | 0 | 11 |
| <40 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| 40-44 | 1 | 6 | 6 | 8 | 0 | 0 | 0 | 21 |
| 45-54 | 1 | 13 | 43 | 98 | 3 | 1 | 0 | 159 |
| 55-64 | 5 | 0 | 0 | 33 | 53 | 4 | 0 | 95 |
| 65-74 | 4 | 0 | 1 | 7 | 31 | 54 | 1 | 98 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 11 |
| Total | 12 | 19 | 52 | 148 | 93 | 71 | 2 | 397 |

TABLE 2

Married Couples SurveyDistribution of couples included in analysis by region
and social class, compared to quotasA. Region

| <u>Region</u> | <u>Actual</u> | | <u>Quota</u> | |
|-----------------------|---------------|----------|--------------|----------|
| | <u>N</u> | <u>%</u> | <u>N</u> | <u>%</u> |
| London/SE/East Anglia | 140 | 35.3 | 136 | 34.0 |
| South West/Wales | 56 | 14.1 | 56 | 14.0 |
| Midlands | 66 | 16.6 | 68 | 17.0 |
| North West | 32 | 8.1 | 44 | 11.0 |
| North | 73 | 18.4 | 60 | 15.0 |
| Scotland | 30 | 7.6 | 36 | 9.0 |
| Total | 397 | 100.0 | 400 | 100.0 |

B. Social Class

| <u>Social Class</u> | <u>Wife¹</u> | | | <u>Husband²</u> | | | <u>Quota</u> | |
|-----------------------|-------------------------|-------------------|-----------------|----------------------------|-------------------|-----------------|------------------|----------|
| | <u>N</u> | <u>% of total</u> | <u>% of A-D</u> | <u>N</u> | <u>% of total</u> | <u>% of A-D</u> | <u>N</u> | <u>%</u> |
| AB | 37 | 9.3 | 16.9 | 42 | 10.6 | 19.4 | 68 | 17.0 |
| C1/C2 | 130 | 32.7 | 59.4 | 126 | 31.7 | 58.1 | 196 | 49.0 |
| D | 52 | 13.1 | 23.7 | 49 | 12.3 | 22.6 | 136 ³ | 34.0 |
| A-D | 219 | 55.2 | 100.0 | 217 | 54.7 | 100.0 | 400 ³ | 100.0 |
| Working but no answer | 3 | 0.1 | | 3 | 0.1 | | | |
| Retired | 175 | 44.1 | | 177 | 44.6 | | | |
| Total | 397 | 100.0 | | 397 | 100.0 | | | |

TABLE 2 (continued)

C. Region and Social Class^{2,4}

| | | <u>Social Class</u> | | | | | |
|---------------------------|--------|---------------------|-----------|--------------|------------|-----------|--------------------|
| | | <u>AB</u> | | <u>C1/C2</u> | | <u>D</u> | |
| | | Actual | Quota | Actual | Quota | Actual | Quota ³ |
| <u>Region</u> | | | | | | | |
| London/SE/ East Anglia | N % | 23 10.6 | 32 8.0 | 46 21.2 | 68 17.0 | 14 6.5 | 36 9.0 |
| Midlands | N % | 4 1.8 | 8 2.0 | 15 6.9 | 36 9.0 | 11 5.1 | 20 6.0 |
| North West | N % | 4 1.8 | 8 2.0 | 9 4.1 | 20 5.0 | 6 2.8 | 16 4.0 |
| North | N % | 1 0.5 | 8 2.0 | 22 10.1 | 28 7.0 | 4 1.8 | 24 6.0 |
| Scotland | N % | 6 2.8 | 4 1.0 | 17 7.8 | 16 4.0 | 2 0.9 | 16 4.0 |

¹ As determined by the wife's report ² As determined by the husband's report ³ Includes social class E⁴ With social class determined

TABLE 3Married Couples SurveyFrequency of symptoms studied

| | <u>Number with symptom (%)</u> | |
|--|--------------------------------|----------------|
| | <u>Wife</u> | <u>Husband</u> |
| <u>Ailments or conditions ever suffered from</u> | | |
| Asthma | 39 (9.8) | 35 (8.8) |
| Chronic bronchitis | 29 (7.3) | 25 (6.3) |
| Other chest trouble | 34 (8.6) | 47 (11.8) |
| Diabetes | 14 (3.5) | 25 (6.3) |
| Stomach or other digestive disorder | 80 (20.2) | 87 (21.9) |
| Piles or haemorrhoids | 60 (15.1) | 80 (20.2) |
| Liver trouble | 3 (0.8) | 6 (1.5) |
| Rheumatic trouble or arthritis | 103 (25.9) | 54 (13.6) |
| Heart trouble | 24 (6.0) | 45 (1.3) |
| Cancer | 12 (3.0) | 17 (4.3) |
| Severe depression or other nervous illness | 30 (7.6) | 32 (8.1) |
| Varicose veins | 70 (17.6) | 22 (5.5) |
| High blood pressure | 72 (18.1) | 72 (18.1) |
| Stroke | 5 (1.3) | 13 (3.3) |
| Migraine | 96 (24.2) | 45 (11.3) |
| Back trouble | 141 (35.5) | 152 (38.3) |
| Epilepsy/fits | 4 (1.0) | 3 (0.8) |
| Any of these conditions | 320 (80.6) | 313 (78.8) |
| More than 3 of these conditions | 79 (19.9) | 70 (17.6) |
| More than 6 of these conditions | 6 (1.5) | 7 (1.8) |

TABLE 3 (continued 1)

| | <u>Number with symptom (%)</u> | |
|---|--------------------------------|----------------|
| | <u>Wife</u> | <u>Husband</u> |
| <u>Problems suffered from in last month</u> | | |
| Headaches | 150 (37.8) | 88 (22.2) |
| Hay fever | 45 (11.3) | 32 (8.1) |
| Difficulty sleeping | 125 (31.5) | 74 (18.6) |
| Constipation | 35 (8.8) | 20 (5.0) |
| Trouble with eyes | 50 (12.6) | 57 (14.4) |
| A bad back | 107 (27.0) | 88 (22.2) |
| Nerves | 34 (8.6) | 15 (3.8) |
| Cold and flu | 58 (14.6) | 65 (16.4) |
| Trouble with feet(corns, bunions, athlete's foot,etc) | 72 (18.1) | 45 (11.3) |
| Always feeling tired | 80 (20.2) | 51 (12.8) |
| Kidney or bladder trouble | 14 (3.5) | 20 (5.0) |
| Painful joints | 114 (28.7) | 86 (21.7) |
| Difficulty concentrating | 21 (5.3) | 25 (6.3) |
| Palpitations or breathlessness | 44 (11.1) | 32 (8.1) |
| Trouble with ears | 34 (8.6) | 48 (12.1) |
| Worrying over every little thing | 62 (15.6) | 28 (7.1) |
| Indigestion or other stomach trouble | 58 (14.6) | 64 (16.1) |
| Sinus trouble or catarrh | 55 (13.9) | 48 (12.1) |
| Persistent cough | 20 (5.0) | 24 (6.0) |
| Faints or dizziness | 20 (5.0) | 16 (4.0) |
| Any of these problems | 348 (87.7) | 316 (78.1) |
| More than 3 of these problems | 138 (34.8) | 78 (19.6) |
| More than 6 of these problems | 39 (9.8) | 32 (8.1) |

TABLE 3 (continued 2)

| | <u>Number with symptom (%)</u> | |
|---|--------------------------------|----------------|
| | <u>Wife</u> | <u>Husband</u> |
| <u>Cardiorespiratory symptoms</u> | | |
| Angina | 26 (6.7) | 34 (8.7) |
| Possible infarction | 19 (4.8) | 36 (9.2) |
| Cough | 37 (9.9) | 46 (12.1) |
| Phlegm | 27 (7.4) | 57 (13.3) |
| Persistent cough and phlegm | 23 (5.9) | 36 (9.3) |
| Cough, phlegm and chest illness | 10 (2.6) | 22 (5.6) |
| Bronchitis syndrome 1 (WHO) | 10 (2.6) | 12 (3.1) |
| Bronchitis syndrome 2 (Dean) | 7 (1.8) | 11 (2.8) |
| Breathlessness on walking | 86 (23.9) | 72 (19.8) |
| Breathlessness (grade 2) | 32 (8.9) | 35 (9.6) |
| Combined score for wheezing and night-time shortness of breath 1 to 3 | 82 (21.5) | 88 (22.6) |
| <u>General health assessment</u> | | |
| General health fair or poor | 97 (24.3) | 97 (24.3) |
| Limited activities due to longstanding illness, disability or infirmity | 68 (17.1) | 84 (21.2) |

TABLE 4

Married Couples SurveyFrequency of risk factors studied and association between the risk factors in husbands and wives

| | <u>N</u> | <u>Husband n (%)</u> | <u>Wife n (%)</u> | <u>Both n (%)</u> | <u>Concordance ratio (95% CI)</u> |
|--|----------|--------------------------|-----------------------|-----------------------|---------------------------------------|
| <u>0/1 risk factors</u> | | | | | |
| Current regular cigarette smoker | 388 | 93 (24) | 98 (25) | 58 (15) | 10.6 (6.18-18.1) |
| Ever regular cigarette smoker | 388 | 279 (72) | 209 (54) | 174 (45) | 3.50 (2.19-5.60) |
| Ever regular smoker 20+/day | 358 | 186 (52) | 109 (30) | 77 (22) | 3.09 (1.91-5.01) |
| Smoked regularly in last 10 years | 364 | 130 (36) | 131 (36) | 81 (22) | 6.08 (3.79-9.76) |
| Not in paid employment | 391 | 191 (49) | 204 (51) | 151 (39) | 10.5 (6.55-16.7) |
| Shift work/unsocial hours (since marriage) | 329 | 197 (60) | 91 (28) | 68 (21) | 2.50 (1.46-4.27) |
| No educational qualifications | 355 | 111 (31) | 135 (38) | 74 (21) | 6.00 (3.68-9.79) |
| Eats meals at irregular times | 389 | 64 (16) | 57 (15) | 24 (6) | 5.31 (2.85-9.88) |
| Sugar in tea or coffee | 389 | 188 (48) | 123 (32) | 81 (21) | 2.87 (1.83-4.48) |
| Married before | 393 | 76 (19) | 83 (21) | 47 (12) | 30.5 (15.4-60.4) |
| <u>Graded risk factors</u> | | | | | <u>Spearman correlation (p)</u> |
| Age left school (≤ 15) | 392 | 209 (53) | 204 (52) | 148 (38) | 0.50 (p<0.001) |
| Physical activity (average or low) | 395 | 250 (63) | 277 (70) | 198 (50) | 0.28 (p<0.001) |
| Light, moderate or heavy drinker | 395 | 270 (68) | 181 (46) | 154 (39) | 0.34 (p<0.001) |
| Time to first meal ($> \frac{1}{2}$ -hr) | 392 | 178 (45) | 162 (41) | 97 (25) | 0.27 (p<0.001) |
| Tea consumption (3+ cups daily) | 392 | 210 (54) | 227 (58) | 155 (40) | 0.36 (p<0.001) |
| Coffee consumption (3+ cups daily) | 394 | 161 (41) | 131 (33) | 84 (21) | 0.32 (p<0.001) |
| <u>Continuous and semi-continuous risk factors</u> | | | | | |
| Total alcohol units (> 5) | 393 | 241 (61) | 106 (27) | 95 (24) | 0.39 (p<0.001) |
| Fruit score (≤ 9) | 312 | 217 (70) | 155 (50) | 128 (41) | 0.42 (p<0.001) |
| Vegetable score (≤ 9) | 334 | 170 (51) | 159 (48) | 105 (31) | 0.35 (p<0.001) |
| Salad score (≤ 4) | 321 | 203 (63) | 138 (43) | 109 (34) | 0.35 (p<0.001) |
| Sweet foods score (> 9) | 274 | 136 (50) | 138 (50) | 85 (31) | 0.37 (p<0.001) |
| Fatty foods score (> 7) | 316 | 122 (39) | 79 (25) | 49 (16) | 0.47 (p<0.001) |
| Neuroticism score (> 9) | 329 | 117 (36) | 194 (60) | 78 (24) | 0.14 (p<0.05) |
| Extroversion score (> 12) | 306 | 121 (40) | 126 (41) | 57 (19) | 0.05 (N.S.) |
| Body mass index (> 25) | 386 | 233 (60) | 196 (51) | 117 (30) | 0.07 (N.S.) |
| Age (55+) | 375 | 204 (54) | 166 (44) | 154 (41) | 0.88 (p<0.001) |

TABLE 5

Married Couples SurveyRelationship of symptoms to presence of 0/1 risk factors
in subjects and spouses

| | | Relative risk (coded p value) | | | |
|---|----------------------------------|-------------------------------|-----------------|-----------------|--|
| Factor/Sex | Symptom/Condition ¹ | Direct effect | Indirect effect | Incompatibility | |
| <u>Current regular cigarette smoker</u> | | | | | |
| Wife | M: Nerves | 1.71 NS | 3.39 ++ | 1.65 NS | |
| | M: Colds and flu | 2.48 ++ | 1.87 NS | 0.92 NS | |
| | M: Indigestion/stomach trouble | 0.91 NS | 2.92 ++ | 1.24 NS | |
| | M: Number of problems (>3) | 1.50 (+) | 1.66 + | 0.70 NS | |
| | E : Asthma | 1.30 NS | 2.67 + | 1.00 NS | |
| | S : Cough | 6.56 +++ | 0.98 NS | 1.19 NS | |
| | S : Phlegm | 4.74 +++ | 1.66 NS | 0.91 NS | |
| | S : Persistent cough and phlegm | 7.58 +++ | 1.88 NS | 0.97 NS | |
| | S : Cough, phlegm, chest illness | 5.17 + | 4.82 (+) | 1.01 NS | |
| | S : Breathlessness on walking | 1.83 + | 1.94 (+) | 0.83 NS | |
| | S : Wheezing/night-time SOB | 2.71 +++ | 1.79 + | 0.87 NS | |
| | G : General health fair or poor | 1.98 + | 2.06 + | 0.88 NS | |
| Husband | M: Bad back | 1.96 + | 0.75 NS | 0.73 NS | |
| | M: Always feeling tired | 2.53 ++ | 1.08 NS | 0.39 (-) | |
| | M: Faints/dizziness | 5.69 ++ | 0.76 NS | 1.30 NS | |
| | S : Cough | 4.33 +++ | 1.02 NS | 0.91 NS | |
| | S : Phlegm | 4.80 +++ | 1.22 NS | 0.81 NS | |
| | S : Persistent cough and phlegm | 3.99 +++ | 1.65 NS | 0.72 NS | |
| | S : Breathlessness (grade 2) | 1.37 NS | 0.47 NS | 0.16 - | |
| | S : Wheezing/night-time SOB | 2.19 ++ | 0.90 NS | 1.10 NS | |
| | G : General health fair or poor | 2.33 ++ | 0.88 NS | 1.04 NS | |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

TABLE 5 (continued 1)

| | | Relative risk (coded p value) | | |
|----------------------------------|----------------------------------|-------------------------------|-----------------|-----------------|
| Factor/Sex | Symptom/Condition ¹ | Direct effect | Indirect effect | Incompatibility |
| Ever smoked cigarettes regularly | | | | |
| Wife | M: Trouble with eyes | 2.10 + | 1.35 NS | 2.04 NS |
| | M: Always feeling tired | 1.87 + | 1.95 (+) | 1.15 NS |
| | M: Number of problems (>3) | 1.65 ++ | 1.42 NS | 1.43 NS |
| | S : Possible infarction | 4.55 + | 1.87 NS | 0.61 NS |
| | S : Cough | 2.92 ++ | 0.61 NS | 1.06 NS |
| | S : Phlegm | 2.63 + | 1.33 NS | 1.88 NS |
| | S : Persistent cough and phlegm | 3.33 + | 1.00 NS | 1.88 NS |
| | S : Wheezing/night-time SOB | 2.58 ++ | 1.22 NS | 1.02 NS |
| | G : General health fair or poor | 2.49 +++ | 1.46 NS | 1.48 NS |
| Husband | M: Bad back | 1.92 + | 1.53 NS | 0.72 NS |
| | M: Indigestion/stomach trouble | 4.30 +++ | 1.39 NS | 1.02 NS |
| | M: Headaches | 1.93 + | 1.66 (+) | 0.81 NS |
| | M: Faints/dizziness | ∞ + | 0.95 NS | 1.05 NS |
| | M: Number of problems (>3) | 2.23 +++ | 1.63 NS | 1.08 NS |
| | E : Stomach/digestive disorder | 2.07 + | 1.63 (+) | 0.80 NS |
| | E : Heart trouble | 3.73 + | 0.92 NS | 0.80 NS |
| | E : Back trouble | 1.57 (+) | 1.84 ++ | 0.79 NS |
| | E : Number of diseases (>3) | 1.75 +++ | 0.97 NS | 1.15 NS |
| | S : Angina | 5.96 + | 1.23 NS | 0.67 NS |
| | S : Possible infarction | 3.36 + | 1.21 NS | 0.76 NS |
| | S : Phlegm | 5.38 +++ | 1.87 (+) | 0.63 NS |
| | S : Persistent cough and phlegm | 4.33 + | 2.33 (+) | 0.60 NS |
| | S : Cough, phlegm, chest illness | 7.59 + | 1.91 NS | 0.46 NS |
| | S : Breathlessness on walking | 2.71 ++ | 1.83 (+) | 0.53 (-) |
| | S : Wheezing/night-time SOB | 2.83 ++ | 1.06 NS | 1.24 NS |
| | G : General health fair or poor | 2.63 ++ | 1.35 NS | 0.87 NS |
| | G : Limited activity | 2.60 ++ | 1.19 NS | 0.74 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

TABLE 5 (continued 2)

| | | Relative risk (coded p value) | | |
|--------------------------------------|---------------------------------------|-------------------------------|-----------------|-----------------|
| Factor/Sex | Symptom/Condition ¹ | Direct effect | Indirect effect | Incompatibility |
| Ever regularly smoked 20+ cigarettes | | | | |
| Wife | M: Trouble with eyes | 2.10 + | 1.26 NS | 1.40 NS |
| | M: Bad back | 1.55 NS | 1.79 + | 1.78 + |
| | M: Colds and flu | 1.38 NS | 2.44 ++ | 2.34 + |
| | M: Difficulty concentrating | 0.77 NS | 3.92 ++ | 2.70 (+) |
| | M: Painful joints | 1.80 + | 1.36 NS | 1.05 NS |
| | M: Number of problems (>3) | 1.71 (+) | 1.41 + | 1.57 + |
| | E : Asthma | 1.31 NS | 2.68 + | 1.50 NS |
| | E : Chronic bronchitis | 2.37 + | 2.07 NS | 1.93 NS |
| | E : Rheumatic trouble/arthritis | 1.94 + | 1.18 NS | 1.00 NS |
| | E : Severe depression/nervous illness | 2.71 + | 1.12 NS | 2.22 (+) |
| | E : Number of diseases (>3) | 2.34 + | 1.31 NS | 1.01 NS |
| | S : Angina | 3.48 + | 1.32 NS | 1.78 NS |
| | S : Cough | 3.21 ++ | 0.70 NS | 1.47 NS |
| | S : Bronchitis (WHO) | 5.22 + | 5.15 NS | 0.49 NS |
| | S : Breathlessness on walking | 2.11 + | 1.81 (+) | 1.02 NS |
| | S : Wheezing/night-time SOB | 2.03 + | 1.49 NS | 1.50 NS |
| | G : General health fair or poor | 1.89 + | 1.37 NS | 1.30 NS |
| Husband | M: Indigestion/stomach trouble | 2.30 + | 1.20 NS | 1.24 NS |
| | M: Painful joints | 1.25 NS | 0.90 NS | 1.86 + |
| | M: Number of problems (>3) | 1.47 + | 1.63 NS | 0.74 NS |
| | E : Rheumatic trouble/arthritis | 1.00 NS | 1.10 NS | 2.15 + |
| | E : Number of diseases (>3) | 1.24 ++ | 1.19 NS | 1.30 NS |
| | S : Angina | 3.22 + | 1.32 NS | 1.04 NS |
| | S : Breathlessness on walking | 2.27 + | 0.76 NS | 1.21 NS |
| | S : Wheezing/night-time SOB | 2.89 +++ | 0.87 NS | 1.22 NS |
| | G : General health fair or poor | 2.43 +++ | 1.44 NS | 0.83 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

TABLE 5 (continued 3)

| Factor/Sex | Symptom/Condition ¹ | Relative risk (coded p value) | | |
|---|----------------------------------|-------------------------------|-----------------|-----------------|
| | | Direct effect | Indirect effect | Incompatibility |
| <u>Smoked cigarettes regularly in last 10 years</u> | | | | |
| Wife | M: Colds and flu | 1.95 + | 1.57 NS | 1.13 NS |
| | M: Worry | 0.85 NS | 2.38 + | 0.92 NS |
| | M: Indigestion/stomach trouble | 1.62 NS | 2.04 + | 1.40 NS |
| | M: Hay fever | 1.08 NS | 0.88 NS | 0.11 -- |
| | M: Difficulty sleeping | 1.16 NS | 1.98 + | 0.76 NS |
| | M: Always feeling tired | 1.38 NS | 2.83 +++ | 1.00 NS |
| | M: Number of problems (>3) | 1.48 (+) | 1.72 + | 0.89 NS |
| | E : Diabetes | 0.50 NS | 2.68 NS | 5.73 + |
| | E : Stomach/digestive disorder | 1.99 + | 0.83 NS | 1.34 NS |
| | E : Cancer | 5.72 + | 0.63 NS | 0.79 NS |
| | E : Migraine | 0.55 - | 0.97 NS | 1.03 NS |
| | S : Angina | 2.59 + | 1.08 NS | 1.37 NS |
| | S : Cough | 5.18 +++ | 0.67 NS | 0.99 NS |
| | S : Phlegm | 4.19 ++ | 1.42 NS | 0.75 NS |
| | S : Persistent cough or phlegm | 5.84 +++ | 1.25 NS | 0.67 NS |
| | S : Cough, phlegm, chest illness | 5.06 + | 3.88 NS | 0.41 NS |
| | S : Bronchitis (WHO) | 5.63 + | 1.98 NS | 0.79 NS |
| | S : Breathlessness on walking | 2.12 ++ | 0.91 NS | 0.64 NS |
| | S : Breathlessness (grade 2) | 2.41 + | 1.39 NS | 0.53 NS |
| | S : Wheezing/night-time SOB | 2.29 ++ | 1.43 NS | 0.62 (-) |
| | G : General health fair or poor | 2.54 +++ | 1.80 (+) | 0.91 NS |
| Husband | M: Indigestion/stomach trouble | 1.98 + | 1.20 NS | 2.25 ++ |
| | M: Hay fever | 0.30 - | 0.64 NS | 0.49 NS |
| | M: Always feeling tired | 2.75 ++ | 1.49 NS | 0.79 NS |
| | E : Stomach/digestive disorder | 1.21 NS | 1.11 NS | 1.81 + |
| | S : Angina | 2.34 + | 1.65 NS | 1.05 NS |
| | S : Cough | 3.03 ++ | 0.79 NS | 0.86 NS |
| | S : Phlegm | 3.30 +++ | 1.23 NS | 0.89 NS |
| | S : Persistent cough or phlegm | 3.59 +++ | 1.14 NS | 0.83 NS |
| | S : Bronchitis (WHO) | 5.31 + | 1.55 NS | 0.69 NS |
| | S : Bronchitis (Dean) | 4.83 + | 0.96 NS | 1.12 NS |
| | S : Breathlessness on walking | 2.04 + | 1.19 NS | 0.63 NS |
| | S : Breathlessness (grade 2) | 2.35 + | 1.00 NS | 0.65 NS |
| | S : Wheezing/night-time SOB | 2.86 +++ | 0.83 NS | 1.29 NS |
| | G : General health fair or poor | 2.42 +++ | 1.09 NS | 1.23 NS |
| | G : Limited activity | 2.02 + | 1.07 NS | 1.09 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

TABLE 5 (continued 4)

| <u>Factor/Sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|-------------------------------|---------------------------------------|--------------------------------------|------------------------|------------------------|
| | | <u>Direct effect</u> | <u>Indirect effect</u> | <u>Incompatibility</u> |
| <u>Not in paid employment</u> | | | | |
| Wife | M: Colds and flu | 1.62 NS | 3.13 ++ | 0.77 NS |
| | M: Difficulty sleeping | 2.35 ++ | 1.16 NS | 1.05 NS |
| | M: Number of problems (>3) | 1.79 + | 1.44 NS | 1.17 NS |
| | E : Migraine | 0.45 -- | 0.69 NS | 0.84 NS |
| | S : Bronchitis (WHO) | 13.1 + | 0.75 NS | 1.15 NS |
| | S : Breathlessness (grade 2) | 3.49 + | 1.00 NS | 1.25 NS |
| | G: General health fair or poor | 2.33 ++ | 1.65 NS | 1.40 NS |
| | G: Limited activity | 4.80 +++ | 1.03 NS | 1.06 NS |
| Husband | M: Bad back | 3.33 +++ | 0.68 NS | 1.59 NS |
| | M: Nerves | 10.8 +++ | 6.64 (+) | 0.21 NS |
| | M: Palpitations/breathlessness | 9.7 +++ | 2.87 NS | 0.75 NS |
| | M: Trouble with ears | 1.97 NS | 0.87 NS | 0.35 - |
| | M: Worry | 4.88 ++ | 2.26 NS | 0.81 NS |
| | M: Sinus trouble or catarrh | 1.33 NS | 0.95 NS | 2.43 + |
| | M: Difficulty sleeping | 2.05 + | 1.71 NS | 1.01 NS |
| | M: Always feeling tired | 2.72 ++ | 1.27 NS | 0.92 NS |
| | M: Painful joints | 2.60 ++ | 0.66 NS | 1.33 NS |
| | M: Faints or dizziness | 34.3 +++ | 0.67 NS | 1.25 NS |
| | M: Number of problems (>3) | 3.47 +++ | 1.21 NS | 1.28 NS |
| | E : Stomach/digestive disorder | 1.27 NS | 0.92 NS | 1.92 + |
| | E : Rheumatic trouble/arthritis | 3.90 +++ | 0.85 NS | 1.04 NS |
| | E : Severe depression/nervous illness | 7.41 +++ | 0.90 NS | 0.90 NS |
| | E : Number of diseases (>3) | 3.04 + | 1.02 NS | 1.42 NS |
| | S : Angina | 5.47 ++ | 1.85 NS | 0.76 NS |
| | S : Phlegm | 2.69 ++ | 1.80 NS | 1.07 NS |
| | S : Persistent cough and phlegm | 2.86 + | 1.29 NS | 1.42 NS |
| | S : Cough, phlegm and chest illness | 4.48 + | 1.47 NS | 1.66 NS |
| | S : Breathlessness on walking | 2.63 + | 1.18 NS | 0.80 NS |
| | S : Breathlessness (grade 2) | 5.54 ++ | 1.03 NS | 1.43 NS |
| | G: General health fair or poor | 5.57 +++ | 0.88 NS | 1.04 NS |
| | G: Limited activity | 10.5 +++ | 0.84 NS | 1.27 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

TABLE 5 (continued 5)

| | | Relative risk (coded p value) | | |
|---|---------------------------------|-------------------------------|-----------------|-----------------|
| Factor/Sex | Symptom/Condition ¹ | Direct effect | Indirect effect | Incompatibility |
| <u>Shift work/unsocial hours (since marriage)</u> | | | | |
| Wife | M: Trouble with eyes | 2.53 + | 1.17 NS | 1.04 NS |
| | M: Indigestion/stomach trouble | 0.35 - | 1.29 NS | 0.95 NS |
| | S : Angina | 0.51 NS | 5.05 + | 2.61 NS |
| | S : Breathlessness on walking | 1.46 NS | 2.36 ++ | 1.12 NS |
| Husband | M: Difficulty sleeping | 0.84 NS | 1.93 + | 1.01 NS |
| | M: Always feeling tired | 2.03 (+) | 2.29 + | 0.93 NS |
| | E : Chronic bronchitis | 4.17 + | 1.92 NS | 0.64 NS |
| | E : Back trouble | 0.99 NS | 0.84 NS | 2.09 ++ |
| | S : Angina | 1.37 NS | 1.91 NS | 0.22 NS |
| | S : Cough | 2.53 + | 1.91 NS | 0.87 NS |
| <u>No educational qualifications</u> | | | | |
| Wife | M: Colds and flu | 1.38 NS | 2.23 + | 1.40 NS |
| | M: Difficulty concentrating | 1.48 NS | 0.16 - | 4.49 + |
| | M: Indigestion/stomach trouble | 0.79 NS | 0.38 - | 1.12 NS |
| | M: Sinus trouble/catarrh | 0.46 - | 0.58 NS | 1.17 NS |
| | M: Faints/dizziness | 0.97 NS | 0.16 - | 2.38 NS |
| | E : Rheumatic trouble/arthritis | 1.85 + | 1.62 NS | 1.30 NS |
| | E : Heart trouble | 3.24 + | 1.10 NS | 0.76 NS |
| | G : General health fair or poor | 2.37 ++ | 1.08 NS | 0.86 NS |
| Husband | M: Bad back | 1.83 + | 1.84 + | 1.73 (+) |
| | M: Palpitations/breathlessness | 1.80 NS | 4.11 + | 1.19 NS |
| | M: Hay fever | 0.28 - | 0.46 NS | 0.18 - |
| | E : Migraine | 0.52 NS | 1.09 NS | 2.22 + |
| | S : Angina | 1.31 NS | 4.00 ++ | 1.49 NS |
| | S : Possible infarction | 1.17 NS | 1.54 NS | 2.89 + |
| | S : Breathlessness on walking | 2.36 ++ | 1.08 NS | 0.99 NS |
| | G : Limited activity | 2.22 ++ | 1.45 NS | 1.72 (+) |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

TABLE 5 (continued 6)

| Factor/Sex | Symptom/Condition ¹ | Relative risk (coded p value) | | |
|--------------------------------------|---------------------------------|-------------------------------|-----------------|-----------------|
| | | Direct effect | Indirect effect | Incompatibility |
| <u>Eats meals at irregular times</u> | | | | |
| Wife | M: Trouble with eyes | 1.60 NS | 2.54 + | 1.56 NS |
| | M: Worry | 2.41 + | 1.11 NS | 0.99 NS |
| | E : Asthma | 2.64 + | 1.15 NS | 0.73 NS |
| | S : Cough | 2.91 + | 1.69 NS | 1.24 NS |
| | S : Phlegm | 4.83 +++ | 1.41 NS | 0.91 NS |
| | S : Persistent cough or phlegm | 5.43 +++ | 1.26 NS | 1.17 NS |
| | S : Bronchitis (Dean) | 6.00 + | 1.07 NS | 2.24 NS |
| | S : Wheezing/night-time SOB | 2.23 + | 1.12 NS | 1.19 NS |
| | G : General health fair or poor | 2.47 + | 1.49 NS | 1.17 NS |
| | G : Limited activity | 1.17 NS | 2.40 + | 1.44 NS |
| Husband | M: Headaches | 0.83 NS | 1.77 NS | 2.01 + |
| | M: Faints/dizziness | 1.83 NS | 3.25 (+) | 4.18 + |
| | E : Stomach/digestive disorder | 1.31 NS | 2.05 + | 2.06 + |
| | E : Migraine | 0.71 NS | 1.84 NS | 2.85 + |
| <u>Sugar in tea or coffee</u> | | | | |
| Wife | M: Cold and flu | 2.11 + | 1.08 NS | 0.73 NS |
| | M: Difficulty sleeping | 1.90 ++ | 1.19 NS | 0.69 NS |
| | M: Faints or dizziness | 1.50 NS | 0.57 NS | 0.17 - |
| | E : Chronic bronchitis | 1.12 NS | 0.84 NS | 0.31 - |
| | E : Stomach/digestive disorder | 0.64 NS | 0.56 - | 0.62 NS |
| Husband | M: Trouble with ears | 1.11 NS | 0.41 - | 1.16 NS |
| | E : Asthma | 1.24 NS | 1.68 NS | 0.35 - |
| | E : Chronic bronchitis | 0.93 NS | 0.25 - | 0.87 NS |
| | E : Other chest trouble | 2.04 + | 0.49 (-) | 1.03 NS |
| | E : Diabetes | 0.15 --- | 3.06 + | 2.66 + |
| | S : Phlegm | 2.04 + | 1.16 NS | 0.52 (-) |
| <u>Married before</u> | | | | |
| Wife | M: Trouble with feet | 1.25 NS | 2.78 + | 1.52 NS |
| | E : Asthma | 2.57 + | 1.43 NS | 1.43 NS |
| | E : Piles/haemorrhoids | 1.04 NS | 2.98 + | 2.06 NS |
| | E : Number of diseases (>3) | 2.30 + | 2.64 (+) | 2.58 + |
| Husband | M: Trouble with ears | 0.26 - | 0.33 NS | 1.25 NS |
| | E : Diabetes | 0.59 NS | 0.61 NS | 4.79 + |
| | S : Cough | 1.20 NS | 0.59 NS | 3.20 + |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

TABLE 6
Married Couples Survey
Significant associations of 0/1 risk factors with incompatibility

| <u>Risk factor</u> | <u>Symptom/Condition¹</u> | <u>Incompatibility relative risk</u> <u>(coded p value)</u> | |
|--|--------------------------------------|--|----------------|
| | | <u>Wife</u> | <u>Husband</u> |
| Current regular cigarette smoker | S: Breathlessness (grade 2) | 0.41 NS | 0.16 - |
| Ever regularly smoked 20+ cigarettes | M: Bad back | 1.78 + | 1.33 NS |
| | M: Colds and flu | 2.34 + | 1.45 NS |
| | M: Number of problems (>3) | 1.57 + | 0.74 NS |
| | M: Painful joints | 1.05 NS | 1.86 + |
| | M: Rheumatic trouble/arthritis | 1.00 NS | 2.15 + |
| Smoked cigarettes regularly in last 10 years | M: Hay fever | 0.11 -- | 0.49 NS |
| | M: Indigestion/stomach trouble | 1.40 NS | 2.25 ++ |
| | E: Diabetes | 5.73 + | 0.93 NS |
| | E: Stomach/digestive disorder | 1.34 NS | 1.81 + |
| Not in paid employment | M: Trouble with ears | 0.89 NS | 0.35 - |
| | M: Sinus trouble or catarrh | 1.94 (+) | 2.43 + |
| | E: Stomach/digestive disorder | 0.81 NS | 1.92 + |
| Shift work/unsocial hours (since marriage) | E: Back trouble | 1.56 NS | 2.09 ++ |
| No educational qualifications | M: Difficulty concentrating | 4.49 + | 0.76 NS |
| | M: Hay fever | 1.35 NS | 0.18 - |
| | E: Migraine | 1.21 NS | 2.22 + |
| | S: Possible infarction | 1.05 NS | 2.89 + |
| Eats meals at irregular times | M: Headaches | 1.26 NS | 2.01 + |
| | M: Faints/dizziness | 0.57 NS | 4.18 + |
| | E: Stomach/digestive disorder | 0.94 NS | 2.06 + |
| | E: Migraine | 1.34 NS | 2.85 + |
| Sugar in tea or coffee | M: Faints or dizziness | 0.17 - | 1.78 NS |
| | E: Chronic bronchitis | 0.31 - | 0.87 NS |
| | E: Asthma | 0.69 NS | 0.35 - |
| | E: Diabetes | 1.52 NS | 2.66 + |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom

| <u>Risk factor</u> | <u>Symptom/Condition¹</u> | <u>Incompatibility relative risk</u> <u>(coded p value)</u> | |
|--------------------|--------------------------------------|--|----------------|
| | | <u>Wife</u> | <u>Husband</u> |
| Married before | E: Number of diseases (>3) | 2.58 + | 0.71 NS |
| | E: Diabetes | 1.62 NS | 4.79 + |
| | E: Cough | 0.81 NS | 3.20 + |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom

TABLE 7

Married Couples SurveyDistribution of differences between husband and wife - graded risk factors¹

| <u>Risk factor</u> | <u>Number of subjects</u> | <u>Frequency of differences between husband and wife</u> | | | | | <u>Compatibility criterion</u> | <u>% compatible</u> |
|---------------------|---------------------------|--|-----|----|----|-------------------|--------------------------------|---------------------|
| | | 0 | 1 | 2 | 3 | 4+ | | |
| Age left school | 392 | 162 | 142 | 59 | 21 | 8 | +/- 1 | 78 |
| Physical activity | 395 | 167 | 152 | 60 | 12 | 4 | +/- 1 | 81 |
| Drinker | 395 | 178 | 135 | 66 | 16 | 0 | equality | 45 |
| Time to first meal | 392 | 212 | 94 | 41 | 45 | N.A. ² | equality | 54 |
| Tea consumption | 392 | 173 | 123 | 28 | 27 | 41 | +/- 1 | 75 |
| Coffee consumption | 394 | 159 | 101 | 53 | 39 | 42 | +/- 1 | 66 |
| Total alcohol units | 393 | 126 | 82 | 73 | 56 | 56 | +/- 1 | 53 |
| Fruit score | 312 | 83 | 106 | 60 | 44 | 19 | +/- 1 | 61 |
| Vegetable score | 334 | 102 | 132 | 59 | 25 | 16 | +/- 1 | 70 |
| Salad score | 311 | 89 | 92 | 53 | 39 | 48 | +/- 1 | 56 |
| Sweet foods score | 274 | 83 | 113 | 54 | 13 | 11 | +/- 1 | 72 |
| Fatty foods score | 316 | 105 | 155 | 41 | 9 | 6 | +/- 1 | 82 |
| Neuroticism score | 329 | 64 | 95 | 83 | 41 | 46 | +/- 1 | 48 |
| Extroversion score | 306 | 62 | 110 | 79 | 29 | 26 | +/- 1 | 56 |
| Body mass index | 386 | 76 | 132 | 90 | 65 | 23 | +/- 1 | 54 |

¹ See Annex D for details of reduction from semi-continuous or continuous risk factors to graded risk factors.

² N.A. = Not applicable. Risk factor has only 4 levels.

TABLE 8

Married Couples SurveyRelationship of symptoms to level of graded risk factors
in subjects and spouses

| <u>Factor/Sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|--------------------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Age left school (early)</u> | | | | |
| Wife | M: Bad back | 0.81 NS | 1.37 + | 0.87 NS |
| | M: Nerves | 1.56 (+) | 0.74 NS | 2.54 + |
| | M: Trouble with ears | 0.78 NS | 0.90 NS | 0.46 - |
| | M: Indigestion/stomach trouble | 1.00 NS | 0.65 NS | 1.76 + |
| | M: Sinus trouble/catarrh | 0.83 NS | 0.54 NS | 1.48 + |
| | E : Number of diseases (>3) | 1.04 NS | 0.88 NS | 1.26 + |
| | S : Angina | 1.47 NS | 3.02 + | 0.98 NS |
| Husband | M: Trouble with eyes | 1.53 + | 1.20 NS | 0.77 NS |
| | M: Bad back | 2.16 ++ | 1.79 + | 0.93 NS |
| | M: Nerves | 0.97 NS | 0.75 NS | 3.04 + |
| | M: Palpitations/breathlessness | 3.87 + | 1.04 NS | 0.81 NS |
| | M: Headaches | 1.27 + | 1.08 NS | 0.68 NS |
| | M: Always feeling tired | 2.63 +++ | 0.94 NS | 0.99 NS |
| | M: Number of problems (>3) | 1.60 ++ | 1.28 NS | 0.55 (-) |
| | E : Back trouble | 1.64 + | 0.96 NS | 1.10 NS |
| | S : Angina | 2.15 + | 1.25 NS | 0.40 NS |
| | S : Possible infarction | 1.94 + | 1.39 NS | 0.42 NS |
| | S : Cough | 3.18 ++ | 1.00 NS | 1.52 NS |
| | S : Phlegm | 2.02 ++ | 1.32 (+) | 1.08 NS |
| | S : Persistent cough and phlegm | 2.47 + | 1.22 NS | 1.73 NS |
| | S : Cough, phlegm, chest illness | 2.16 + | 1.35 NS | 1.38 NS |
| | S : Breathlessness on walking | 1.88 ++ | 1.01 NS | 0.78 NS |
| | S : Breathlessness (grade 2) | 1.50 + | 0.98 NS | 1.31 NS |
| | G : General health fair or poor | 2.18 + | 1.91 ++ | 0.81 NS |
| | G : Limited activity | 2.20 ++ | 1.72 NS | 0.91 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for age left school up to 15 vs >15³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 1)

| Factor/Sex | Symptom/Condition ¹ | Relative risk (coded p value) | | |
|--------------------------------|----------------------------------|-------------------------------|------------------------------|------------------------------|
| | | Direct effect ² | Indirect effect ² | Incompatibility ³ |
| <u>Physical activity (low)</u> | | | | |
| Wife | M: Bad back | 1.26 NS | 0.87 NS | 1.66 + |
| | M: Nerves | 1.41 + | 1.39 (+) | 0.90 NS |
| | M: Trouble with feet | 1.67 + | 1.46 NS | 1.13 NS |
| | M: Difficulty concentrating | 1.83 + | 0.84 NS | 0.99 NS |
| | M: Palpitations/breathlessness | 1.12 + | 1.46 (+) | 1.95 NS |
| | M: Difficulty sleeping | 1.70 +++ | 1.71 ++ | 1.12 NS |
| | M: Always feeling tired | 2.48 +++ | 1.22 NS | 1.28 NS |
| | M: Kidney/bladder trouble | 5.88 +++ | 1.89 + | 1.80 NS |
| | M: Faints/dizziness | 1.73 + | 1.68 NS | 0.75 NS |
| | M: Number of problems (>3) | 2.00 +++ | 1.35 + | 1.25 + |
| | E : Chronic bronchitis | 1.36 + | 1.11 NS | 1.59 NS |
| | E : Other chest trouble | 1.26 + | 0.51 NS | 1.29 NS |
| | E : Stomach/digestive disorder | 1.30 NS | 0.81 NS | 1.66 ++ |
| | E : Piles/haemorrhoids | 1.10 NS | 1.59 NS | 0.58 - |
| | E : Rheumatic trouble/arthritis | 1.76 +++ | 1.05 NS | 1.08 NS |
| | E : Heart trouble | 4.17 +++ | 0.83 NS | 2.71 (+) |
| | E : Migraine | 0.52 -- | 1.18 NS | 0.62 NS |
| | E : Number of diseases (>3) | 2.21 ++ | 0.91 NS | 1.57 NS |
| | S : Possible infarction | 2.95 ++ | 0.58 NS | 3.17 + |
| | S : Cough | 1.63 ++ | 0.79 NS | 1.32 NS |
| | S : Phlegm | 2.55 ++ | 0.56 NS | 1.94 NS |
| | S : Persistent cough and phlegm | 2.13 ++ | 0.65 NS | 2.27 NS |
| | S : Cough, phlegm, chest illness | ∞ +++ | 0.68 NS | 6.01 + |
| | S : Bronchitis (Dean) | ∞ ++ | 1.01 NS | 3.37 NS |
| | S : Breathlessness on walking | 1.29 ++ | 1.07 NS | 1.40 (+) |
| | S : Breathlessness (grade 2) | 3.17 +++ | 1.04 NS | 1.85 (+) |
| | S : Wheezing/night-time SOB | 1.46 ++ | 1.22 + | 1.48 (+) |
| | G : General health fair or poor | 5.63 +++ | 1.10 NS | 1.13 NS |
| | G : Limited activity | 4.47 +++ | 0.75 NS | 1.93 + |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

² Relative risks are for average/low activity vs high activity

³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 2)

| <u>Factor/Sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|--------------------------------|---------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Physical activity (low)</u> | | | | |
| Husband | M: Constipation | 2.37 ++ | 1.39 NS | 0.81 NS |
| | M: Trouble with eyes | 1.45 ++ | 0.52 NS | 2.27 ++ |
| | M: Bad back | 1.92 +++ | 1.98 NS | 1.55 NS |
| | M: Difficulty concentrating | 1.54 + | 1.60 + | 0.90 NS |
| | M: Palpitations/breathlessness | 2.35 ++ | 1.41 NS | 0.94 NS |
| | M: Worry | 2.28 +++ | 0.87 NS | 1.33 NS |
| | M: Persistent cough | 3.08 +++ | 1.80 + | 1.24 NS |
| | M: Difficulty sleeping | 1.29 + | 0.88 NS | 1.23 NS |
| | M: Always feeling tired | 2.30 +++ | 1.28 NS | 1.71 (+) |
| | M: Kidney/bladder trouble | 1.92 +++ | 0.77 NS | 1.30 NS |
| | M: Painful joints | 1.41 ++ | 0.69 NS | 1.46 (+) |
| | M: Faints/dizziness | 2.61 +++ | 1.35 NS | 2.88 ++ |
| | M: Problems (>3) | 1.73 +++ | 1.58 NS | 1.05 (+) |
| | E : Asthma | 2.18 + | 1.39 NS | 1.23 NS |
| | E : Chronic bronchitis | 3.34 + | 1.13 (+) | 1.46 NS |
| | E : Other chest trouble | 1.62 + | 1.38 NS | 1.04 NS |
| | E : Diabetes | 1.33 NS | 0.47 - | 0.90 NS |
| | E : Stomach/digestive disorder | 1.39 +++ | 0.93 NS | 1.34 (+) |
| | E : Rheumatic trouble/arthritis | 1.39 +++ | 0.82 NS | 1.75 (+) |
| | E : Heart trouble | 3.56 +++ | 0.37 - | 3.32 ++ |
| | E : Severe depression/nervous illness | 1.33 +++ | 1.29 NS | 1.63 NS |
| | E : Back trouble | 1.17 + | 1.65 (+) | 1.08 NS |
| | E : Number of diseases (>3) | 1.97 +++ | 1.00 NS | 1.42 + |
| | S : Angina | 3.24 +++ | 1.66 NS | 2.50 (+) |
| | S : Possible infarction | 7.27 +++ | 1.16 NS | 1.24 NS |
| | S : Cough | 1.41 + | 1.07 NS | 1.19 NS |
| | S : Phlegm | 1.56 + | 1.38 + | 1.78 + |
| | S : Persistent cough and phlegm | 1.82 ++ | 1.21 NS | 1.53 NS |
| | S : Cough, phlegm, chest illness | 1.31 + | 1.64 ++ | 1.98 (+) |
| | S : Bronchitis (WHO) | 3.01 + | 3.55 + | 1.45 NS |
| | S : Breathlessness on walking | 3.05 +++ | 0.85 NS | 1.53 + |
| | S : Breathlessness (grade 2) | 8.40 +++ | 0.88 NS | 2.54 ++ |
| | S : Wheezing/night-time SOB | 1.85 +++ | 0.90 NS | 1.30 + |
| | G: General health fair or poor | 5.07 +++ | 0.98 NS | 1.50 + |
| | G : Limited activity | 4.80 +++ | 0.98 NS | 2.03 +++ |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for average/low activity vs high activity³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 3)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|----------------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Total alcohol units</u> | | | | |
| Wife | M: Palpitations/breathlessness | 1.20 NS | 0.53 - | 0.59 NS |
| | M: Trouble with ears | 1.25 NS | 0.43 - | 0.38 - |
| | M: Hay fever | 0.88 NS | 1.43 NS | 2.62 ++ |
| | E : Piles/haemorrhoids | 1.23 NS | 0.38 - | 0.71 NS |
| | E : Varicose veins | 1.46 + | 1.34 NS | 1.77 + |
| | S : Possible infarction | 0.34 NS | 2.00 NS | 2.11 ++ |
| | S : Cough, phlegm, chest illness | 0.57 NS | 1.23 NS | 1.65 + |
| | S : Bronchitis (WHO) | 0.24 NS | 1.33 NS | 3.60 ++ |
| | S : Bronchitis (Dean) | 0.87 NS | 2.75 NS | 10.0 +++ |
| | S : Breathlessness on walking | 0.73 NS | 0.92 NS | 1.30 + |
| | S : Breathlessness (grade 2) | 0.49 NS | 1.46 NS | 1.58 + |
| | S : Wheezing/night-time SOB | 0.75 NS | 0.73 NS | 1.16 + |
| | G : General health fair or poor | 0.56 -- | 0.80 NS | 0.99 NS |
| Husband | M: Bad back | 0.58 - | 1.22 NS | 0.84 NS |
| | M: Difficulty concentrating | 0.47 - | 0.40 NS | 0.84 NS |
| | M: Trouble with ears | 1.36 NS | 0.50 NS | 2.04 + |
| | M: Worry | 0.51 - | 0.93 NS | 0.86 NS |
| | M: Headaches | 0.53 - | 0.76 NS | 1.66 (+) |
| | M: Always feeling tired | 0.45 - | 0.44 - | 1.92 NS |
| | M: Painful joints | 0.57 - | 0.78 NS | 1.15 NS |
| | E : Migraine | 0.39 - | 0.62 NS | 1.60 NS |
| | S : Possible infarction | 0.43 - | 0.95 NS | 0.68 NS |
| | S : Phlegm | 1.67 + | 0.86 NS | 2.13 (+) |
| | S : Persistent cough and phlegm | 1.65 + | 1.23 NS | 1.19 NS |
| | S : Breathlessness on walking | 0.85 NS | 0.53 (-) | 1.39 + |
| | G : Limited activity | 0.59 - | 0.89 NS | 0.79 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for 6+ units vs 1-5 units³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 4)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|-------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Drinker</u> | | | | |
| Wife | M: Palpitations/breathlessness | 0.69 NS | 0.53 - | 0.68 - |
| | E : Migraine | 0.68 (-) | 0.59 - | 0.88 NS |
| | S : Possible infarction | 0.57 NS | 2.14 NS | 4.06 + |
| | S : Cough | 0.49 - | 0.73 NS | 1.15 NS |
| | S : Bronchitis (WHO) | 0.23 -- | 0.39 NS | 1.66 NS |
| | S : Wheezing/night-time SOB | 0.68 - | 0.78 NS | 1.08 NS |
| | G : General health fair or poor | 0.42 --- | 0.77 NS | 0.89 NS |
| | G : Limited activity | 0.25 --- | 1.27 NS | 1.44 NS |
| Husband | M: Trouble with eyes | 0.49 - | 0.95 NS | 1.53 NS |
| | M: Colds and flu | 0.77 NS | 1.09 NS | 1.98 + |
| | M: Headaches | 0.60 - | 1.15 NS | 1.11 NS |
| | M: Hay fever | 0.84 NS | 1.65 + | 1.15 NS |
| | M: Always feeling tired | 0.39 -- | 1.17 NS | 1.56 NS |
| | M: Kidney/bladder trouble | 0.66 NS | 0.38 - | 3.74 NS |
| | E : Stomach/digestive disorder | 0.63 - | 0.95 NS | 0.87 NS |
| | E : Migraine | 0.48 - | 1.37 NS | 0.98 NS |
| | E : Back trouble | 0.59 - | 1.11 NS | 1.08 NS |
| | S : Angina | 0.74 NS | 0.64 NS | 1.86 + |
| | S : Possible infarction | 0.38 - | 0.40 NS | 1.04 NS |
| | G: Limited activity | 0.48 - | 0.76 NS | 1.09 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for light/moderate/heavy drinker vs abstainer/very occasional drinker³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 5)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|----------------------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Time to first meal (late)</u> | | | | |
| Wife | M: Bad back | 1.01 NS | 2.54 ++ | 1.11 NS |
| | M: Kidney/bladder trouble | 1.65 NS | 2.55 NS | 0.21 -- |
| | M: Faints/dizziness | 1.45 NS | 1.39 NS | 0.37 - |
| | E : Chronic bronchitis | 1.93 + | 1.57 NS | 2.04 NS |
| | E : Other chest trouble | 1.00 NS | 2.78 ++ | 1.16 NS |
| | E : Cancer | 1.93 ++ | 1.47 NS | 1.13 NS |
| | E : Back trouble | 0.94 NS | 1.94 + | 0.99 NS |
| | E : Number of diseases (>3) | 1.06 NS | 1.79 ++ | 1.25 NS |
| | S : Cough | 1.56 + | 2.49 +++ | 1.08 NS |
| | S : Phlegm | 1.74 (+) | 4.09 ++ | 1.81 NS |
| | S : Persistent cough and phlegm | 2.13 + | 3.88 +++ | 1.76 NS |
| | S : Cough, phlegm, chest illness | 3.55 + | 3.48 + | 1.65 NS |
| | S : Bronchitis (WHO) | 0.65 NS | 17.1 +++ | 2.68 NS |
| | S : Bronchitis (Dean) | 1.94 NS | ∞ +++ | 2.19 (+) |
| | S : Breathlessness on walking | 0.87 NS | 1.51 ++ | 1.16 NS |
| | S : Breathlessness (grade 2) | 1.11 NS | 1.90 + | 1.13 NS |
| | S : Wheezing/night-time SOB | 1.76 + | 1.35 + | 1.24 NS |
| | G : Limited activity | 1.50 + | 1.58 + | 1.13 NS |
| Husband | M: Difficulty concentrating | 1.13 NS | 2.22 + | 0.90 NS |
| | M: Palpitations/breathlessness | 3.11 + | 0.74 NS | 0.84 NS |
| | M: Hay fever | 1.90 NS | 0.45 - | 0.81 NS |
| | M: Always feeling tired | 1.79 ++ | 1.12 NS | 1.02 NS |
| | E : Chronic bronchitis | 1.96 + | 1.09 NS | 0.63 NS |
| | E : Diabetes | 0.46 - | 0.90 NS | 1.58 NS |
| | S : Cough | 2.32 +++ | 0.95 NS | 1.48 NS |
| | S : Phlegm | 1.96 ++ | 0.94 NS | 0.86 NS |
| | S : Persistent cough and phlegm | 2.10 + | 1.30 NS | 1.46 NS |
| | S : Cough, phlegm, chest illness | 1.88 + | 0.91 NS | 1.14 NS |
| | S : Breathlessness on walking | 1.59 + | 0.81 NS | 0.79 NS |
| | S : Wheezing/night-time SOB | 1.47 + | 1.00 NS | 1.67 (+) |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for time to first meal > half an hour before getting up vs within half an hour³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 6)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|------------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Tea consumption</u> | | | | |
| Wife | M: Bad back | 1.74 ++ | 1.02 NS | 0.73 NS |
| | M: Sinus trouble/catarrh | 1.04 NS | 1.07 -- | 1.24 NS |
| | M: Persistent cough | 2.08 NS | 0.42 - | 0.95 NS |
| | M: Number of problems (>3) | 1.13 + | 1.17 NS | 0.98 NS |
| | E : Chronic bronchitis | 2.49 (+) | 0.60 - | 1.51 NS |
| | E : Diabetes | 0.58 NS | 0.19 - | 0.66 NS |
| | S : Phlegm | 0.81 NS | 0.56 - | 0.90 NS |
| | S : Persistent cough and phlegm | 1.06 NS | 0.68 - | 1.17 NS |
| | S : Wheezing/night-time SOB | 1.68 + | 0.69 NS | 1.25 NS |
| G: Limited activity | 1.99 + | 1.25 NS | 0.66 NS | |
| Husband | M: Bad back | 1.83 + | 0.99 NS | 1.09 NS |
| | M: Colds and flu | 1.11 NS | 0.85 NS | 1.67 + |
| | M: Worry | 1.98 + | 1.26 NS | 0.45 NS |
| | M: Number of problems (>3) | 1.64 + | 1.01 NS | 0.85 NS |
| | E : Other chest trouble | 1.08 NS | 1.54 NS | 0.34 - |
| | S : Cough, phlegm, chest illness | 2.98 + | 0.76 NS | 0.66 NS |
| | G: General health fair or poor | 1.53 + | 1.58 NS | 0.85 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for 3+ cups per day vs <3 cups per day³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 7)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|---------------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Coffee consumption</u> | | | | |
| Wife | M: Nerves | 0.51 (-) | 1.86 NS | 2.09 + |
| | M: Trouble with feet | 0.67 NS | 0.63 - | 1.65 NS |
| | M: Indigestion/stomach trouble | 0.74 - | 0.73 - | 1.25 NS |
| | E : Chronic bronchitis | 0.77 NS | 2.32 ++ | 1.58 NS |
| | S : Cough | 1.21 NS | 1.73 NS | 1.68 + |
| Husband | M: Trouble with feet | 1.00 NS | 0.71 - | 1.39 NS |
| | M: Worry | 0.43 -- | 0.85 NS | 1.09 NS |
| | M: Persistent cough | 0.25 -- | 1.33 NS | 0.46 NS |
| | M: Faints/dizziness | 0.30 -- | 1.32 NS | 0.95 NS |
| | E : Rheumatic trouble/arthritis | 0.91 - | 0.39 (-) | 1.06 NS |
| | S : Cough | 0.45 -- | 1.17 NS | 0.64 NS |
| | S : Phlegm | 0.46 - | 0.80 NS | 0.90 NS |
| | S : Persistent cough and phlegm | 0.41 -- | 1.20 NS | 0.68 NS |
| | S : Cough, phlegm, chest illness | 0.24 -- | 1.06 NS | 0.93 NS |
| | S : Wheezing/night-time SOB | 0.73 - | 1.05 NS | 1.12 NS |
| | G : General health | 0.66 -- | 0.84 NS | 0.98 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

² Relative risks are for 3+ cups per day vs <3 cups per day

³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 8)

| <u>Factor/ sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|--------------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Fruit score (low)</u> | | | | |
| Wife | M: Nerves | 2.61 NS | 1.12 NS | 2.46 + |
| | M: Colds and flu | 1.50 + | 1.71 NS | 0.66 NS |
| | M: Indigestion/stomach trouble | 1.93 + | 1.94 (+) | 2.32 + |
| | E : Other chest trouble | 0.39 - | 0.48 NS | 0.88 NS |
| | S : Cough | 1.03 NS | 1.66 + | 0.94 NS |
| Husband | M: Headaches | 0.68 NS | 0.41 - | 1.17 NS |
| | M: Difficulty sleeping | 0.43 - | 1.49 NS | 1.05 NS |
| | M: Painful joints | 0.56 NS | 1.11 NS | 1.88 + |
| | E : Migraine | 0.57 NS | 0.31 -- | 2.22 + |
| | S : Phlegm | 1.43 + | 2.09 + | 1.10 NS |
| | G: General health fair or poor | 1.45 + | 1.32 NS | 1.00 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

² Relative risks are for score 0-9 vs score 10+

³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 9)

| Factor/sex | Symptom/Condition ¹ | Relative risk (coded p value) | | |
|------------------------------|----------------------------------|-------------------------------|------------------------------|------------------------------|
| | | Direct effect ² | Indirect effect ² | Incompatibility ³ |
| <u>Vegetable score (low)</u> | | | | |
| Wife | M: Colds and flu | 0.86 NS | 1.12 NS | 0.55 - |
| | M: Trouble with feet | 1.33 NS | 1.11 NS | 1.64 + |
| | M: Palpitations/breathlessness | 0.64 - | 1.30 NS | 1.17 NS |
| | M: Sinus trouble/catarrh | 0.44 -- | 1.82 ++ | 1.86 NS |
| | M: Headaches | 1.04 NS | 1.47 NS | 1.30 + |
| | M: Always feeling tired | 1.06 NS | 0.92 NS | 1.62 + |
| | M: Kidney/bladder trouble | 0.44 -- | 2.33 (+) | 1.53 + |
| | E : Asthma | 1.02 NS | 1.43 NS | 1.66 + |
| | E : Other chest trouble | 1.47 NS | 0.74 NS | 1.49 + |
| | E : Stomach/digestive disorder | 0.79 (-) | 0.96 NS | 1.82 + |
| | E : Rheumatic trouble/arthritis | 1.37 NS | 2.07 NS | 1.37 + |
| | E : Number of diseases (>3) | 1.14 NS | 1.52 NS | 0.91 + |
| | S : Possible infarction | 0.42 + | 1.20 NS | 1.13 NS |
| | S : Cough | 1.45 NS | 1.93 + | 1.30 NS |
| | S : Phlegm | 1.15 NS | 2.72 + | 1.91 + |
| | S : Persistent cough and phlegm | 1.56 NS | 3.62 + | 1.48 + |
| | S : Cough, phlegm, chest illness | 1.74 NS | 9.10 ++ | 1.93 + |
| | S : Breathlessness (grade 2) | 0.66 NS | 2.09 + | 1.21 NS |
| | S : Wheezing/night-time SOB | 1.12 NS | 1.53 NS | 1.05 + |
| | G: General health fair or poor | 0.99 NS | 1.83 + | 0.90 NS |
| Husband | M: Palpitations/breathlessness | 0.55 - | 0.61 NS | 1.76 NS |
| | M: Worry | 0.64 - | 0.86 NS | 1.33 NS |
| | M: Always feeling tired | 1.45 NS | 0.49 --- | 3.34 +++ |
| | M: Kidney/bladder trouble | 0.76 NS | 0.97 NS | 1.83 + |
| | M: Faints/dizziness | 3.10 + | 1.72 NS | 1.35 NS |
| | E : Cancer | 0.67 - | 1.25 NS | 1.04 NS |
| | E : Varicose veins | 1.06 NS | 0.24 --- | 1.01 NS |
| | S : Possible infarction | 1.28 NS | 0.49 -- | 2.47 ++ |
| | S : Cough | 1.07 NS | 0.78 NS | 1.53 + |
| | S : Persistent cough and phlegm | 1.15 NS | 0.67 (-) | 1.70 + |
| | S : Cough, phlegm, chest illness | 1.27 NS | 0.46 -- | 1.67 (+) |
| | S : Bronchitis (WHO) | 2.73 NS | 0.67 (-) | 3.15 + |
| | S : Bronchitis (Dean) | 2.72 NS | 0.67 - | 3.16 + |
| | G : General health fair or poor | 1.56 NS | 0.99 NS | 1.53 ++ |
| | G : Limited activity | 1.20 NS | 0.79 (+) | 1.53 ++ |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for scores 0-9 vs score 10+³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 10)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|--------------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Salad score (low)</u> | | | | |
| Wife | M: Constipation | 1.83 + | 0.77 NS | 1.20 NS |
| | M: Colds and flu | 0.55 - | 1.21 NS | 1.12 NS |
| | E : Diabetes | 1.05 NS | 0.23 - | 0.56 NS |
| | S : Breathlessness (grade 2) | 0.26 - | 0.87 NS | 1.23 NS |
| Husband | M: Trouble with feet | 2.49 NS | 0.52 - | 2.00 + |
| | M: Persistent cough | 2.00 + | 1.41 NS | 0.75 NS |
| | M: Always feeling tired | 2.62 (+) | 0.51 (-) | 2.86 +++ |
| | M: Painful joints | 1.04 NS | 0.66 NS | 2.16 ++ |
| | M: Number of problems (>3) | 1.41 NS | 0.54 NS | 1.25 + |
| | E : Rheumatic trouble/arthritis | 1.33 NS | 0.81 NS | 1.87 ++ |
| | E: Severe depression/nervous illness | 0.83 NS | 0.59 NS | 1.57 + |
| | E : Varicose veins | 1.70 NS | 0.12 - | 2.06 (+) |
| | S : Persistent cough and phlegm | 1.00 NS | 0.84 NS | 1.52 + |
| | S : Cough, phlegm, chest illness | 2.07 NS | 0.79 NS | 1.63 + |
| | S : Breathlessness on walking | 2.61 + | 1.52 NS | 1.34 NS |
| | S : Wheezing/night-time SOB | 1.48 NS | 2.34 ++ | 0.93 NS |
| <u>Sweet food score</u> | | | | |
| Wife | M: Trouble with eyes | 0.79 NS | 0.45 NS | 0.58 - |
| | M: Indigestion/stomach trouble | 1.50 NS | 0.53 (-) | 1.79 + |
| | E : Migraine | 0.94 NS | 1.28 NS | 0.59 - |
| | S : Angina | 1.42 NS | 0.79 NS | 2.88 + |
| | S : Possible infarction | 0.44 - | 1.26 NS | 0.79 NS |
| | G: Limited activity | 0.95 NS | 1.86 ++ | 1.10 NS |
| Husband | M: Nerves | 0.36 NS | 0.19 - | 0.98 NS |
| | M: Headaches | 1.81 + | 1.07 NS | 0.67 NS |
| | E : Diabetes | 0.30 -- | 0.39 NS | 0.54 NS |
| | E : Piles/haemorrhoids | 1.85 + | 2.06 ++ | 1.05 NS |
| | E : Heart trouble | 0.56 - | 0.64 NS | 0.85 NS |
| | E : Cancer | 1.14 NS | 1.32 NS | 0.00 - |
| | S : Persistent cough and phlegm | 0.39 - | 0.94 NS | 2.92 + |
| | S : Cough, phlegm, chest illness | 0.46 NS | 0.98 (+) | 2.26 + |
| | G: General health fair or poor | 0.60 - | 0.90 NS | 1.16 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for score 0-4 vs score >4 (salad score) and for score 10+ vs score 0-9 (sweet food score)³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 11)

| <u>Factor/sex</u> | <u>Symptom/Condition</u> ¹ | <u>Relative risk (coded p value)</u> | | |
|-------------------------|---------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|
| | | <u>Direct effect</u> ² | <u>Indirect effect</u> ² | <u>Incompatibility</u> ³ |
| <u>Fatty food score</u> | | | | |
| Wife | M: Colds and flu | 2.66 ++ | 0.57 NS | 0.88 NS |
| | M: Indigestion/stomach trouble | 0.51 (-) | 0.79 NS | 1.64 + |
| | M: Difficulty sleeping | 2.47 ++ | 1.46 NS | 1.37 NS |
| | M: Kidney/bladder trouble | 1.43 + | 0.66 NS | 1.19 NS |
| | E : Migraine | 0.47 - | 0.93 NS | 1.06 NS |
| | S : Cough | 2.54 ++ | 1.10 NS | 1.03 NS |
| | S : Phlegm | 2.98 + | 1.01 NS | 1.53 NS |
| Husband | M: Trouble with eyes | 1.90 + | 0.92 NS | 1.77 NS |
| | M: Palpitations/breathlessness | 1.84 NS | 1.77 NS | 0.37 - |
| | M: Sinus trouble/catarrh | 1.07 NS | 0.19 -- | 2.25 NS |
| | M: Always feeling tired | 1.24 NS | 1.83 + | 1.51 NS |
| | E : High blood pressure | 0.67 NS | 0.98 NS | 0.34 - |
| | E : Migraine | 0.75 NS | 0.30 - | 1.47 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom² Relative risks are for score 8+ vs score 0-7³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 12)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|--------------------|---------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Neuroticism</u> | | | | |
| Wife | M: Constipation | 3.62 ++ | 1.70 + | 0.83 NS |
| | M: Bad back | 2.83 +++ | 0.95 NS | 1.21 NS |
| | M: Nerves | ∞ +++ | 1.59 NS | 1.56 (+) |
| | M: Trouble with feet | 2.83 +++ | 0.78 NS | 0.96 NS |
| | M: Difficulty concentrating | ∞ +++ | 1.21 NS | 0.94 (+) |
| | M: Palpitations | 4.04 +++ | 1.17 NS | 0.91 NS |
| | M: Worry | 22.9 +++ | 1.34 NS | 1.87 +++ |
| | M: Indigestion/stomach trouble | 1.98 + | 1.16 NS | 1.57 NS |
| | M: Headaches | 2.45 +++ | 1.04 NS | 1.76 (+) |
| | M: Difficulty sleeping | 3.50 +++ | 0.75 NS | 1.71 ++ |
| | M: Always feeling tired | 4.97 +++ | 0.81 NS | 1.10 NS |
| | M: Kidney/bladder trouble | 3.21 + | 2.75 NS | 0.82 NS |
| | M: Painful joints | 2.32 ++ | 1.15 NS | 1.40 NS |
| | M: Faints/dizziness | 15.1 ++ | 1.38 NS | 1.90 NS |
| | M: Number of problems (>3) | 5.37 +++ | 1.25 (+) | 1.35 + |
| | E : Asthma | 2.43 + | 0.95 NS | 1.26 NS |
| | E : Other chest trouble | 2.11 + | 1.08 NS | 1.55 + |
| | E : Stomach/digestive disorder | 1.60 ++ | 1.40 NS | 1.05 NS |
| | E : Rheumatic trouble/arthritis | 1.69 + | 1.10 NS | 0.89 NS |
| | E : Heart trouble | 5.66 + | 1.29 NS | 0.98 NS |
| | E : Severe depression/nervous illness | 9.38 +++ | 0.88 NS | 0.98 NS |
| | E : Varicose veins | 1.63 + | 1.42 (+) | 1.06 NS |
| | E : Migraine | 1.40 + | 1.39 (+) | 0.98 NS |
| | E : Back trouble | 1.97 +++ | 0.89 NS | 1.19 NS |
| | E : Number of diseases (>3) | 3.55 +++ | 1.17 NS | 1.15 NS |
| | S : Angina | 7.57 + | 0.71 NS | 0.91 NS |
| | S : Phlegm | 3.16 + | 0.52 NS | 2.43 NS |
| | S : Persistent cough and phlegm | 2.35 + | 0.53 NS | 1.89 NS |
| | S : Cough, phlegm, chest illness | 5.38 ++ | 0.42 NS | 2.35 (+) |
| | S : Bronchitis (WHO) | 5.27 + | 0.48 NS | 1.00 NS |
| | S : Bronchitis (Dean) | ∞ + | 0.73 NS | 2.33 + |
| | S : Breathlessness on walking | 2.51 +++ | 1.49 (+) | 1.34 (+) |
| | S : Breathlessness (grade 2) | 3.17 + | 1.08 NS | 0.94 NS |
| | S : Wheezing/night-time SOB | 1.41 + | 0.88 NS | 1.88 + |
| | G: General health fair or poor | 2.66 +++ | 1.11 NS | 1.15 NS |
| | G: Limited activity | 3.85 +++ | 0.97 NS | 0.98 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for score 10+ vs score 0-9³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 13)

| Factor/sex | Symptom/Condition ¹ | Relative risk (coded p value) | | |
|--------------------|---------------------------------------|-------------------------------|------------------------------|------------------------------|
| | | Direct effect ² | Indirect effect ² | Incompatibility ³ |
| <u>Neuroticism</u> | | | | |
| Husband | M: Constipation | 3.39 +++ | 1.05 NS | 0.67 NS |
| | M: Trouble with eyes | 1.92 ++ | 0.69 NS | 1.21 NS |
| | M: Bad back | 1.98 ++ | 0.86 NS | 0.82 NS |
| | M: Nerves | 13.9 +++ | 1.37 (+) | 0.43 NS |
| | M: Difficulty concentrating | 2.55 + | 2.76 (+) | 0.91 NS |
| | M: Palpitations/breathlessness | 3.69 +++ | 0.73 NS | 0.63 - |
| | M: Trouble with ears | 2.13 +++ | 1.86 (+) | 1.72 NS |
| | M: Worry | 9.11 +++ | 0.75 NS | 0.87 NS |
| | M: Indigestion/stomach trouble | 1.68 ++ | 2.27 (+) | 1.13 NS |
| | M: Persistent cough | 2.80 ++ | 1.33 NS | 2.48 NS |
| | M: Headaches | 2.13 +++ | 1.12 NS | 0.74 NS |
| | M: Difficulty sleeping | 3.61 +++ | 1.35 NS | 0.66 NS |
| | M: Always feeling tired | 5.65 +++ | 1.77 (+) | 1.44 NS |
| | M: Kidney/bladder trouble | 2.32 ++ | 1.97 NS | 1.08 NS |
| | M: Painful joints | 3.06 +++ | 0.73 NS | 1.18 NS |
| | M: Faints/dizziness | 11.6 +++ | 6.46 + | 0.44 NS |
| | M: Number of problems (>3) | 3.04 +++ | 0.98 + | 0.85 NS |
| | E : Asthma | 3.34 + | 1.64 NS | 0.92 NS |
| | E : Chronic bronchitis | 1.83 NS | 3.51 ++ | 2.90 +++ |
| | E : Other chest trouble | 2.11 +++ | 0.81 NS | 1.18 NS |
| | E : Stomach/digestive disorder | 1.52 ++ | 1.53 + | 1.04 NS |
| | E : Piles/haemorrhoids | 1.47 + | 0.93 NS | 1.22 NS |
| | E : Rheumatic trouble/arthritis | 2.78 +++ | 1.15 NS | 1.35 NS |
| | E : Heart trouble | 1.97 + | 0.77 NS | 0.34 - |
| | E : Severe depression/nervous illness | 9.76 +++ | 1.26 NS | 1.05 NS |
| | E : Varicose veins | 3.60 ++ | 0.84 NS | 1.04 NS |
| | E : Migraine | 3.60 ++ | 0.64 NS | 0.58 NS |
| | E : Number of diseases (>3) | 4.92 +++ | 0.87 NS | 0.70 NS |
| | S : Angina | 3.60 ++ | 2.96 (+) | 0.38 - |
| | S : Possible infarction | 3.07 ++ | 1.16 NS | 0.62 NS |
| | S : Cough | 1.95 ++ | 1.61 NS | 1.22 NS |
| | S : Phlegm | 2.24 +++ | 1.74 + | 1.28 NS |
| | S : Persistent cough and phlegm | 2.46 ++ | 1.68 NS | 1.68 NS |
| | S : Cough, phlegm, chest illness | 3.34 ++ | 0.99 NS | 2.54 NS |
| | S : Bronchitis (WHO) | 3.77 + | 1.24 NS | 3.96 NS |
| | S : Breathlessness on walking | 3.22 +++ | 1.76 NS | 1.01 NS |
| | S : Breathlessness (grade 2) | 3.92 +++ | 2.39 NS | 1.45 NS |
| | S : Wheezing/night-time SOB | 3.75 +++ | 1.21 (+) | 2.23 + |
| | G: General health fair or poor | 2.74 +++ | 1.27 NS | 1.35 NS |
| | G: Limited activity | 2.46 +++ | 1.54 (+) | 1.17 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for score 10+ vs score 0-9³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 14)

| <u>Factor/sex</u> | <u>Symptom/Condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|---------------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| <u>Extroversion</u> | | | | |
| Wife | M: Colds and flu | 0.80 NS | 1.10 NS | 0.50 - |
| | M: Difficulty concentrating | 1.26 NS | 0.51 - | 2.31 NS |
| | M: Indigestion/stomach trouble | 0.52 NS | 0.44 - | 1.54 + |
| | M: Sinus trouble/catarrh | 0.48 - | 1.09 NS | 0.74 NS |
| | M: Persistent cough | 0.42 - | 0.30 (-) | 2.29 NS |
| | M: Hay fever | 0.72 NS | 3.07 ++ | 1.32 NS |
| | M: Painful joints | 1.07 NS | 0.33 -- | 0.98 NS |
| | E : Other chest trouble | 0.38 - | 1.14 NS | 0.97 NS |
| | E : Rheumatic trouble/arthritis | 1.11 NS | 0.39 -- | 1.41 NS |
| | E : Number of diseases (>3) | 0.49 NS | 0.59 - | 1.63 NS |
| | S : Cough | 0.88 NS | 0.37 -- | 1.35 NS |
| | S : Breathlessness on walking | 1.15 NS | 0.78 NS | 1.86 + |
| | G: General health fair or poor | 0.45 -- | 0.64 -- | 1.22 NS |
| | G: Limited activity | 0.43 (-) | 0.65 - | 0.83 NS |
| Husband | M: Trouble with eyes | 0.68 NS | 1.13 NS | 0.97 NS |
| | M: Difficulty concentrating | 0.32 - | 1.30 NS | 0.43 NS |
| | M: Trouble with ears | 0.36 - | 1.31 NS | 1.02 NS |
| | M: Worry | 0.36 - | 1.72 NS | 1.35 + |
| | E : Other chest trouble | 1.01 NS | 0.36 - | 0.91 NS |
| | E : Piles/haemorrhoids | 0.61 - | 1.17 NS | 1.35 NS |
| | E : Migraine | 1.08 NS | 0.85 NS | 3.40 ++ |
| | E : Number of diseases (>3) | 0.71 -- | 0.56 NS | 1.04 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for score 13+ vs score 0-12³ Relative risks for incompatibility as defined in Table 6

TABLE 8 (continued 15)

| Factor/sex | Symptom/Condition ¹ | Relative risk (coded p value) | | |
|------------------------|---------------------------------------|-------------------------------|------------------------------|------------------------------|
| | | Direct effect ² | Indirect effect ² | Incompatibility ³ |
| <u>Body mass index</u> | | | | |
| Wife | M: Colds and flu | 1.51 NS | 0.91 NS | 2.50 ++ |
| | M: Trouble with feet | 1.56 ++ | 0.61 (-) | 1.37 NS |
| | M: Trouble with ears | 1.05 NS | 0.33 - | 1.18 (+) |
| | M: Headaches | 0.56 -- | 0.92 NS | 1.42 (+) |
| | M: Always feeling tired | 2.05 ++ | 0.76 NS | 1.60 ++ |
| | M: Painful joints | 1.94 ++ | 0.92 NS | 1.10 NS |
| | M: Number of problems (>3) | 1.86 + | 0.93 NS | 1.40 + |
| | E : Asthma | 1.51 NS | 1.14 NS | 1.92 ++ |
| | E : Chronic bronchitis | 2.03 + | 1.44 NS | 1.99 (+) |
| | E : Diabetes | 5.20 + | 1.24 NS | 0.83 NS |
| | E : Piles/haemorrhoids | 1.20 NS | 0.89 NS | 1.36 + |
| | E : Rheumatic trouble/arthritis | 1.70 + | 1.42 NS | 1.10 NS |
| | E : High blood pressure | 1.99 + | 0.98 NS | 0.76 NS |
| | E : Number of diseases (>3) | 1.58 ++ | 1.39 NS | 1.27 NS |
| | S : Angina | 4.70 +++ | 0.48 - | 1.79 NS |
| | S : Possible infarction | 3.62 + | 1.09 NS | 1.67 NS |
| | S : Bronchitis (WHO) | 4.24 ++ | 0.61 NS | 3.13 + |
| | S : Breathlessness on walking | 2.62 +++ | 1.18 NS | 1.94 ++ |
| | S : Breathlessness (grade 2) | 2.23 ++ | 1.21 NS | 1.25 NS |
| | S : Wheezing/night-time SOB | 1.68 + | 1.76 + | 1.21 NS |
| | G: General health fair or poor | 2.29 ++ | 0.92 NS | 1.24 ++ |
| Husband | M: Constipation | 0.96 NS | 1.04 NS | 3.57 ++ |
| | M: Trouble with feet | 1.20 NS | 1.58 (+) | 1.65 NS |
| | M: Difficulty concentrating | 0.49 NS | 4.64 + | 2.25 + |
| | M: Worry | 0.45 NS | 4.93 + | 2.20 + |
| | M: Headaches | 0.56 (-) | 0.91 NS | 1.26 + |
| | M: Always feeling tired | 1.50 NS | 0.99 NS | 3.49 +++ |
| | M: Painful joints | 1.01 NS | 1.82 + | 1.18 NS |
| | M: Faints/dizziness | 0.58 NS | 2.45 + | 4.28 ++ |
| | M: Number of problems (>3) | 1.21 NS | 1.23 NS | 1.72 + |
| | E : Asthma | 1.33 NS | 1.76 NS | 1.61 + |
| | E : Severe depression/nervous illness | 0.87 NS | 2.86 ++ | 2.62 ++ |
| | E : High blood pressure | 2.84 +++ | 1.38 + | 1.23 NS |
| | E : Migraine | 0.71 NS | 1.37 NS | 1.60 + |
| | E : Number of diseases (>3) | 1.81 NS | 1.28 NS | 1.90 + |
| | S : Angina | 2.44 + | 1.22 NS | 1.38 NS |
| | S : Breathlessness on walking | 2.10 ++ | 1.08 NS | 2.11 + |
| | S : Wheezing/night-time SOB | 1.09 NS | 1.22 NS | 1.69 + |
| | G: General health fair or poor | 0.94 NS | 1.52 (+) | 1.53 + |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for body mass index >2500 vs ≤2500³ Relative risks for incompatibility as defined in Table 6

TABLE 9

Married Couples Survey

Number of significant ($p < 0.05$) sex-specific associations
for indirect effects and for incompatibility

| | <u>Significant Positive associations</u> | | | | <u>Significant Negative associations</u> | | | |
|---|--|-----------------------------------|-----------------------------------|--------------|--|-----------------------------------|-----------------------------------|--------------|
| | <u>$p < 0.001$</u> | <u>$p < 0.01^1$</u> | <u>$p < 0.05^2$</u> | <u>Total</u> | <u>$p < 0.001$</u> | <u>$p < 0.01^1$</u> | <u>$p < 0.05^2$</u> | <u>Total</u> |
| <u>Indirect effects</u> | | | | | | | | |
| 15 graded risk factors ³ | 4 | 17 | 36 | 57 | 2 | 9 | 32 | 43 |
| 4 0/1 smoking risk factors ⁴ | 1 | 5 | 11 | 17 | 0 | 0 | 0 | 0 |
| 6 other 0/1 risk factors ⁴ | 0 | 3 | 12 | 15 | 0 | 0 | 6 | 6 |
| All risk factors | 5 | 25 | 59 | 89 | 2 | 9 | 38 | 49 |
| <u>Incompatibility</u> | | | | | | | | |
| 15 graded risk factors ³ | 7 | 23 | 81 | 111 | 0 | 1 | 16 | 17 |
| 4 0/1 smoking risk factors ⁴ | 0 | 1 | 7 | 8 | 0 | 1 | 1 | 2 |
| 6 other 0/1 risk factors ⁴ | 0 | 1 | 13 | 14 | 0 | 0 | 5 | 5 |
| All risk factors | 7 | 25 | 101 | 133 | 0 | 2 | 22 | 24 |

¹ $p < 0.01$ and $p \geq 0.001$ ² $p < 0.05$ and $p \geq 0.01$ ³ Based on results summarized in Table 8⁴ Based on results summarized in Table 5

TABLE 10

Married Couples Survey

Number of significant ($p < 0.05$) sex-specific associations with incompatibility
for the 15 graded risk factors

| <u>Graded risk factor</u> | <u>Significant Positive associations</u> | | | | <u>Significant Negative associations</u> | | | |
|---------------------------|--|-----------------------------------|-----------------------------------|--------------|--|-----------------------------------|-----------------------------------|--------------|
| | <u>$p < 0.001$</u> | <u>$p < 0.01^1$</u> | <u>$p < 0.05^2$</u> | <u>Total</u> | <u>$p < 0.001$</u> | <u>$p < 0.01^1$</u> | <u>$p < 0.05^2$</u> | <u>Total</u> |
| Age left school | 0 | 0 | 5 | 5 | 0 | 0 | 1 | 1 |
| Physical activity | 1 | 5 | 10 | 16 | 0 | 0 | 1 | 1 |
| Total alcohol units | 1 | 3 | 7 | 11 | 0 | 0 | 1 | 1 |
| Drinker | 0 | 0 | 3 | 3 | 0 | 0 | 1 | 1 |
| Time to first meal | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| Tea consumption | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| Coffee consumption | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| Fruit score | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 |
| Vegetable score | 1 | 3 | 18 | 22 | 0 | 0 | 1 | 1 |
| Salad score | 1 | 2 | 5 | 8 | 0 | 0 | 0 | 0 |
| Sweet food score | 0 | 0 | 4 | 4 | 0 | 0 | 3 | 3 |
| Fatty food score | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 |
| Neuroticism | 2 | 1 | 5 | 8 | 0 | 0 | 3 | 3 |
| Extroversion | 0 | 1 | 3 | 4 | 0 | 0 | 1 | 1 |
| Body mass index | 1 | 8 | 13 | 22 | 0 | 0 | 0 | 0 |
| Total | 7 | 23 | 81 | 111 | 0 | 1 | 16 | 17 |

¹ $p < 0.01$ and $p \geq 0.001$ ² $p < 0.05$ and $p \geq 0.01$

TABLE 11

Married Couples SurveySelected¹ significant associations of graded risk factors with incompatibility

| <u>Factor</u> | <u>Symptom/Condition²</u> | <u>Incompatibility relative risk (coded p value)</u> | |
|---------------------|--------------------------------------|--|----------------|
| | | <u>Wife</u> | <u>Husband</u> |
| Age left school | M: Nerves | 2.54 + | 3.04 + |
| Physical activity | M: Trouble with eyes | 1.78 (+) | 2.27 ++ |
| | M: Faints/dizziness | 0.75 NS | 2.88 ++ |
| | E: Stomach/digestive disorder | 1.66 ++ | 1.34 (+) |
| | E: Heart trouble | 2.71 (+) | 3.32 ++ |
| | S: Breathlessness (grade 2) | 1.85 (+) | 2.54 ++ |
| | G: Limited activity | 1.93 + | 2.03 +++ |
| Total alcohol units | M: Hay fever | 2.62 ++ | 0.66 (-) |
| | S: Possible infarction | 2.11 ++ | 0.68 NS |
| | S: Bronchitis (WHO) | 3.60 ++ | 1.00 NS |
| | S: Bronchitis (Dean) | 10.0 +++ | 0.83 NS |
| | S: Breathlessness on walking | 1.30 + | 1.39 + |
| Vegetable score | M: Always feeling tired | 1.62 + | 3.34 +++ |
| | M: Kidney/bladder trouble | 1.53 + | 1.83 + |
| | S: Possible infarction | 1.13 NS | 2.47 ++ |
| | S: Persistent cough and phlegm | 1.48 + | 1.70 + |
| | G: General health fair or poor | 0.90 NS | 1.53 ++ |
| | G: Limited activity | 1.42 (+) | 1.53 ++ |
| Salad score | M: Always feeling tired | 1.92 + | 2.86 +++ |
| | M: Painful joints | 1.70 (+) | 2.16 ++ |
| | E: Rheumatic trouble/arthritis | 1.67 NS | 1.87 ++ |
| Body mass index | M: Colds and flu | 2.50 ++ | 0.94 NS |
| | M: Constipation | 1.20 NS | 3.57 ++ |
| | M: Always feeling tired | 1.60 ++ | 3.49 +++ |
| | M: Faints/dizziness | 0.45 NS | 4.28 ++ |
| | M: Number of problems (>3) | 1.40 + | 1.72 + |
| | M: Asthma | 1.92 ++ | 1.61 + |
| | E: Severe depression/nervous illness | 0.83 NS | 2.62 ++ |
| | S: Breathlessness on walking | 1.94 ++ | 2.11 + |
| | G: General health fair or poor | 1.24 ++ | 1.53 + |
| Neuroticism | M: Worry | 1.87 +++ | 0.87 NS |
| | M: Difficulty sleeping | 1.71 ++ | 0.66 NS |
| | E: Chronic bronchitis | 1.40 NS | 2.90 +++ |
| | S: Wheezing/night-time SOB | 1.88 + | 2.23 + |

¹ Associations for 6 factors named significant at least at p<0.01 in one sex and or least at p<0.05 in both sexes² M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General healthTable 12

Married Couples SurveyDistribution of combined risk factor scores

| <u>Combined risk factor %</u> | <u>Combined risk factor % for wives</u> | | | | | | | | |
|-------------------------------|---|--------------|--------------|--------------|--------------|--------------|--------------|------------|--------------|
| <u>for husbands</u> | <u>0-9</u> | <u>10-19</u> | <u>20-29</u> | <u>30-39</u> | <u>40-49</u> | <u>50-59</u> | <u>60-69</u> | <u>70+</u> | <u>Total</u> |
| 0-9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 10-19 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 |
| 20-29 | 0 | 7 | 14 | 8 | 6 | 3 | 1 | 0 | 39 |
| 30-39 | 1 | 4 | 13 | 24 | 17 | 5 | 0 | 1 | 65 |
| 40-49 | 1 | 6 | 13 | 24 | 28 | 18 | 6 | 1 | 97 |
| 50-59 | 0 | 2 | 16 | 20 | 34 | 17 | 8 | 2 | 99 |
| 60-69 | 0 | 2 | 7 | 6 | 17 | 16 | 14 | 3 | 65 |
| 70+ | 0 | 0 | 2 | 3 | 5 | 9 | 6 | 4 | 29 |
| Total | 2 | 21 | 67 | 85 | 108 | 68 | 35 | 11 | 397 |
| | | | | | | | | | |
| Husband score | $\geq 50\%$ | | | | | 193 | (49%) | | |
| Wife score | $\geq 50\%$ | | | | | 114 | (29%) | | |
| Both score | $\geq 50\%$ | | | | | 79 | (20%) | | |
| Spearman rank correlation | | | | | | 0.42 | (p<0.001) | | |

TABLE 13Married Couples SurveyDistribution of incompatibility scores

| <u>Incompatibility score (%)</u> | <u>Number of couples</u> |
|----------------------------------|--------------------------|
| 0-9 | 11 |
| 10-19 | 41 |
| 20-29 | 118 |
| 30-39 | 115 |
| 40-49 | 68 |
| 50-59 | 35 |
| 60-69 | 8 |
| 70+ | 1 |
| ≥50% | 44 (11%) |

TABLE 14

Married Couples SurveyRelationship of symptoms to combined risk factor score
and combined incompatibility score

| <u>Sex</u> | <u>Symptom/condition¹</u> | <u>Relative risk (coded p value)</u> | | |
|------------|--------------------------------------|--------------------------------------|------------------------------------|------------------------------------|
| | | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
| Wife | M: Trouble with eyes | 1.76 + | 1.44 NS | 0.66 NS |
| | M: Bad back | 1.07 NS | 1.72 + | 1.07 + |
| | M: Nerves | 2.75 ++ | 0.95 NS | 1.43 (+) |
| | M: Colds and flu | 2.11 ++ | 1.41 NS | 0.94 NS |
| | M: Difficulty concentrating | 2.28 + | 0.96 NS | 0.81 NS |
| | M: Worry | 1.96 + | 0.87 NS | 1.47 (+) |
| | M: Indigestion/stomach trouble | 1.25 NS | 1.37 NS | 2.81 ++ |
| | M: Headaches | 1.16 NS | 0.96 NS | 1.73 ++ |
| | M: Difficulty sleeping | 2.11 ++ | 1.45 + | 0.80 NS |
| | M: Always feeling tired | 1.52 + | 1.53 NS | 0.70 (+) |
| | M: Painful joints | 1.78 ++ | 0.95 NS | 1.15 NS |
| | M: Number of problems (>3) | 1.64 +++ | 1.37 NS | 1.11 ++ |
| | E: Asthma | 2.97 ++ | 1.59 NS | 1.20 + |
| | E: Chronic bronchitis | 2.48 ++ | 1.38 NS | 0.85 NS |
| | E: Rheumatic trouble/arthritis | 1.93 +++ | 0.97 NS | 0.71 NS |
| | E: Severe depression/nervous illness | 1.88 + | 0.89 NS | 0.87 (+) |
| | E: Migraine | 0.47 - | 0.60 NS | 1.33 NS |
| | E: Back trouble | 0.99 NS | 1.09 NS | 1.44 + |
| | E: Number of diseases (>3) | 1.57 ++ | 1.30 NS | 0.87 ++ |
| | S: Angina | 1.93 ++ | 1.57 NS | 0.71 NS |
| | S: Possible infarction | 1.12 NS | 2.96 + | 0.47 (+) |
| | S: Cough | 3.08 +++ | 1.20 NS | 0.97 NS |
| | S: Phlegm | 4.21 +++ | 1.39 NS | 1.01 NS |
| | S: Persistent cough and phlegm | 4.69 +++ | 1.60 NS | 1.23 NS |
| | S: Cough, phlegm, chest illness | 5.60 + | ∞ + | 1.91 NS |
| | S: Bronchitis (WHO) | 4.78 + | 1.00 NS | 0.81 NS |
| | S: Bronchitis (Dean) | 4.81 + | 6.06 NS | 1.21 (+) |
| | S: Breathlessness on walking | 1.55 ++ | 1.81 + | 1.06 + |
| | S: Breathlessness (grade 2) | 1.65 + | 1.74 NS | 0.24 NS |
| | S: Wheezing/night-time SOB | 2.57 +++ | 1.34 (+) | 1.28 NS |
| | G: General health fair or poor | 2.92 +++ | 1.77 NS | 0.58 NS |
| | G: Limited activity | 1.67 + | 1.73 NS | 0.77 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health² Relative risks are for combined risk factor score $\geq 50\%$ vs score $< 50\%$ ³ Relative risk is for incompatibility score $\geq 50\%$ vs score $< 50\%$

TABLE 14 (continued 1)

Relative risk (coded p value)

| <u>Sex</u> | <u>Symptom/condition¹</u> | <u>Direct effect²</u> | <u>Indirect effect²</u> | <u>Incompatibility³</u> |
|------------|--------------------------------------|----------------------------------|------------------------------------|------------------------------------|
| Husband | M: Bad back | 2.21 +++ | 1.17 NS | 0.68 NS |
| | M: Colds and flu | 1.47 NS | 1.51 + | 1.50 NS |
| | M: Palpitations/breathlessness | 3.51 ++ | 1.31 NS | 0.37 (-) |
| | M: Indigestion/stomach trouble | 1.43 (+) | 0.93 NS | 2.38 + |
| | M: Headaches | 1.30 NS | 1.05 + | 0.45 NS |
| | M: Hay fever | 0.54 - | 0.95 NS | 0.49 NS |
| | M: Always feeling tired | 3.62 +++ | 1.16 NS | 2.02 (+) |
| | M: Painful joints | 0.95 NS | 0.85 NS | 1.43 + |
| | M: Faints/dizziness | 2.33 + | 2.09 NS | 2.39 NS |
| | M: Number of problems (>3) | 1.91 ++ | 0.80 NS | 1.28 NS |
| | E: Stomach/digestive disorder | 0.98 NS | 0.99 (+) | 1.47 + |
| | E: Rheumatic trouble/arthritis | 1.07 NS | 1.21 NS | 1.22 + |
| | E: Varicose veins | 2.41 + | 0.59 - | 2.09 + |
| | S: Angina | 4.07 +++ | 1.50 + | 0.55 NS |
| | S: Cough | 3.88 +++ | 1.81 NS | 2.50 NS |
| | S: Phlegm | 4.52 +++ | 2.04 + | 1.10 NS |
| | S: Persistent cough and phlegm | 4.17 ++ | 2.28 + | 2.26 NS |
| | S: Cough, phlegm, chest illness | 5.15 + | 1.29 NS | 1.84 NS |
| | S: Bronchitis (WHO) | 12.75 + | 1.66 NS | 0.41 NS |
| | S: Bronchitis (Dean) | 11.36 + | 0.92 NS | 1.10 NS |
| | S: Breathlessness on walking | 3.10 +++ | 0.84 NS | 0.84 NS |
| | S: Breathlessness (grade 2) | 3.26 ++ | 0.59 NS | 0.74 NS |
| | S: Wheezing/night-time (SOB) | 2.75 +++ | 1.22 NS | 1.87 NS |
| | G: General health fair or poor | 2.92 +++ | 1.40 NS | 0.94 NS |
| | G: Limited activity | 2.04 ++ | 1.33 (+) | 0.71 NS |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

² Relative risks are for combined risk factor score $\geq 50\%$ vs score $< 50\%$

³ Relative risk is for incompatibility score $\geq 50\%$ vs score $< 50\%$

TABLE 15

Married Couples SurveyDistribution of apartness and criticism scores

| <u>Apartness score</u> | <u>Number of couples</u> |
|----------------------------|--------------------------|
| 0-9 | 327 |
| 10-19 | 0 |
| 20-29 | 30 |
| 30-39 | 2 |
| 40-49 | 0 |
| 50-59 | 23 |
| 60-69 | 1 |
| 70+ | 7 |
| >0 | 63 (16%) |
| <u>Criticism score</u> | |
| 0-9 | 151 |
| 10-19 | 0 |
| 20-29 | 144 |
| 30-39 | 10 |
| 40-49 | 0 |
| 50-59 | 59 |
| 60-69 | 6 |
| 70+ | 27 |
| ≥50 | 92 (23%) |

Note: possible range for both scores is 0-200

TABLE 16

Married Couples Survey

Relationship of symptoms to apartness and criticism scores,
adjusted for combined risk factor score

| <u>Sex</u> | <u>Symptom/condition¹</u> | <u>Relative risk (coded p value)</u> <u>for apartness²</u> |
|------------|--------------------------------------|--|
| Wife | M: Indigestion/stomach trouble | 2.34 + |
| | S: Cough | 1.59 + |
| | S: Phlegm | 1.95 + |
| | S: Persistent cough and phlegm | 2.49 ++ |
| | G: Limited activity | 0.35 - |
| Husband | M: Indigestion/stomach trouble | 0.37 - |
| | M: Number of problems (>3) | 0.60 - |
| | E: Number of diseases (>3) | 0.60 - |
| | | <u>Relative risk (coded p value)</u> <u>for criticism³</u> |
| Wife | M: Headaches | 1.77 ++ |
| | S: Cough | 0.36 - |
| | S: Breathlessness on walking | 1.85 + |
| | G: General health fair or poor | 0.51 - |
| Husband | M: Trouble with feet | 2.01 + |
| | M: Painful joints | 0.53 - |

¹ M = In last Month, E = Ever, S = Cardiorespiratory Symptom, G = General health

² Relative risks are for apartness score > 0 vs score = 0

³ Relative risks are for criticism score ≥ 50 vs score <50

J7592/IGC

May 1997

**MARRIED COUPLES SURVEY
(SELF COMPLETION QUESTIONNAIRE)
HUSBAND**

Thank you for agreeing to take part in this survey, you can be assured that all the information you provide will be treated in the strictest confidence.

This questionnaire has been designed to collect information concerning both yourself and your wife and covers a range of issues related to your health and lifestyle.

The format of the questionnaire is hopefully quite easy to follow and has been designed for you to complete all of the relevant questions by simply ticking boxes or circling the appropriate answer codes.

Your wife will be completing a similar questionnaire but we ask you not to discuss your answers with each other until after you have finished and have given the questionnaire back to our interviewer.

If you have any problems with completing this questionnaire our interviewer will be pleased to help you.

| |
|---------------|
| BN (1-3) |
| Husband (4) 2 |
| SN (5-9) |
| CC01 (10-11) |

SECTION A - PERSONAL DETAILS

Q.A1 Date of birth ____/____/19____ (12-17)

Q.A2 Apart from yourself and your wife, how many other adults (aged 16 years or over) live in this household? (Please write number in the box) (18-19)

Q.A3 How many children aged 15 yrs or under live in this household (20-21)

Q.A4 In which year did you and your wife get married? 19 (22-23)

Q.A5 Had you been married before? Yes..... ☐ 1 (24)
(Tick '✓' box) No ☐ 2

Q.A6 Who is the Chief Income Earner?
Self ☐ 1 Husband ☐ 2 Other (specify) _____ ☐ 9 (25)

What is the employment status of the Chief Income Earner:

Q.A7 Working full time (30+ hours per week)..... ☐ 1 (26)
Working part-time (8 - 29 hours per week) ☐ 2
Working part-time (less than 8 hours per week) ☐ 3
Retired ☐ 4
Other not working..... ☐ 9

Q.A8 What is the occupation (if employed) of the Chief Income Earner? (Please write in below)

Occupation _____

Industry _____

Qualifications/Apprenticeship _____

No. of people responsible for _____

No. of people in establishment _____ (27)

Q.A9 Please indicate (Tick '✓' box) which of these income ranges comes closest to the net annual income of the Chief Income Earner, including earnings, benefits, pensions, interest and other regular payments - that is after deducting tax, national insurance and pension schemes

| | | | | | |
|-------------------|---------------------------------------|-------------------|---------------------------------------|-------------------|--|
| Under £2,500 | <input type="checkbox"/> ₁ | £2,500 - £4,499 | <input type="checkbox"/> ₂ | £4,500 - £6,499 | <input type="checkbox"/> ₃ |
| £6,500 - £7,499 | <input type="checkbox"/> ₄ | £7,500 - £9,499 | <input type="checkbox"/> ₅ | £9,500 - £11,499 | <input type="checkbox"/> ₆ |
| £11,500 - £13,499 | <input type="checkbox"/> ₇ | £13,500 - £15,499 | <input type="checkbox"/> ₈ | £15,500 - £17,499 | <input type="checkbox"/> ₉ |
| £17,500 - £24,499 | <input type="checkbox"/> ₀ | £24,500 - £34,999 | <input type="checkbox"/> _x | £35,000+ | <input type="checkbox"/> _y (28) |

Q.A10 During your free time, that is when neither you nor your wife are at work, how much of your time do you generally spend with your wife? (Tick '✓' box which most closely applies)

(29)

- (a) More than three-quarters of the time ☐₁
- (b) More than half, up to three-quarters of the time ☐₂
- (c) About half of the time ☐₃
- (d) More than a quarter, but less than half ☐₄
- (e) Less than a quarter of the time ☐₅

Q.A11 In the last ten years (or since your marriage if that was more recent), have you taken holidays:
(Tick '✓' box which most closely applies)

(30)

- (a) Always with your wife ☐₁
- (b) Mostly with your wife ☐₂
- (c) Roughly equally with and without your wife ☐₃
- (d) Mostly without your wife ☐₄
- (e) Always without your wife ☐₅
- (f) No holidays taken ☐₆

Q.A12 How many meals a day do you and your wife usually have together?

a) On weekdays _____ meals/day

(31)

b) At week-ends _____ meals/day

(32)

SECTION B - YOUR PERSONAL HEALTH
GENERAL HEALTH

Q.B1 Would you say that for someone of your age your own health in general is.....

(33)

Excellent ... ☐ 1Good ☐ 2Fair ☐ 3Poor..... ☐ 4

Q.B2 Do you have any long-standing illness, disability or infirmity?

(34)

No ☐ 1

Please go to QB5

Yes ☐ 2

Please go to QB3

Q.B3 If yes, what is the nature of your illness, disability or infirmity?

(35) M

(36) M

(37) M

Q.B4 Does it limit your activities in any way compared with people of
your own age?

(38)

Yes ☐ 1No ☐ 2

Q. B5 ALL:

Please tick all of the listed ailments or conditions which you have
ever suffered from:

- | | | | |
|---|--------------------------|---|-------|
| Asthma | <input type="checkbox"/> | 1 | (39)M |
| Chronic bronchitis | <input type="checkbox"/> | 2 | |
| Other chest trouble | <input type="checkbox"/> | 3 | |
| Diabetes..... | <input type="checkbox"/> | 4 | |
| Stomach or other digestive disorder | <input type="checkbox"/> | 5 | |
| Piles or haemorrhoids | <input type="checkbox"/> | 6 | |
| Liver trouble | <input type="checkbox"/> | 7 | |
| Rheumatic disorder or arthritis | <input type="checkbox"/> | 9 | |
| Heart trouble | <input type="checkbox"/> | 0 | |
| Lung cancer | <input type="checkbox"/> | 1 | (40)M |
| Other cancer | <input type="checkbox"/> | 2 | |
| Severe depression or other nervous illness... | <input type="checkbox"/> | 3 | |
| Varicose veins | <input type="checkbox"/> | 4 | |
| High blood pressure..... | <input type="checkbox"/> | 5 | |
| Stroke | <input type="checkbox"/> | 6 | |
| Migraine..... | <input type="checkbox"/> | 7 | |
| Back trouble..... | <input type="checkbox"/> | 8 | |
| Epilepsy/fits | <input type="checkbox"/> | 9 | |

Q.B6 Within the last month have you suffered from any problems with:
(Tick '✓' boxes for all suffered in last month)

(41)M

Headaches..... ☐ 1
Hay fever ☐ 2
Difficulty sleeping..... ☐ 3
Constipation..... ☐ 4
Trouble with eyes..... ☐ 5

A bad back..... ☐ 6
Nerves ☐ 7
Colds and flu..... ☐ 8

Trouble with feet (Corns,
bunions, athlete's foot, etc)..... ☐ 9
Always feeling tired ☐ 0

Kidney or bladder trouble..... ☐ 1
Painful joints ☐ 2
Difficulty concentrating ☐ 3
Palpitations or breathlessness..... ☐ 4
Trouble with ears ☐ 5

(42)M

Worrying over every little thing ☐ 6
Indigestion or other stomach trouble .. ☐ 7
Sinus trouble or catarrh ☐ 8
Persistent cough..... ☐ 9
Faints or dizziness..... ☐ 0

Q.B7 OMITTED

(43) Blank

Q.B8 Have you ever had any pain or discomfort in your chest? (44)

1 ☐ Yes..... →Q.B9

2 ☐ No..... →Q.B16

Q.B9 Do you get this pain or discomfort when you walk uphill or hurry? (45)

1 ☐ Yes..... →Q.B10

2 ☐ No..... →Q.B15

Q.B10 Do you get it when you walk at an ordinary pace on the level? (46)

Yes ☐ 1

No ☐ 2

Q.B11 When you get any pain or discomfort in your chest what do you do? (47)

Stop..... ☐ 1

Slow down.. ☐ 2

Continue at the same pace..... ☐ 3

Q.B12 Does it go away when you stand still? (48)

1. ☐ Yes..... →Q.B13

2. ☐ No..... →Q.B14

Q.B13 How soon after you stand still? (49)

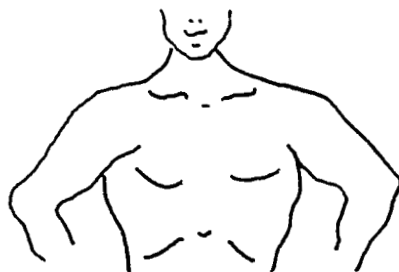
10 mins or less ☐ 1

More than 10 minutes ☐ 2

Q.B14 Where do you get this pain or discomfort?
Mark the place(s) with X on the diagram. (50)M

Right

Left



(51)

Q.B15 Have you ever had a severe pain across the front of your chest lasting for half an hour or more?

Yes..... ☐ 1 (52)

No ☐ 2

ALL ANSWER:

Q.B16 Do you usually cough first thing in the morning in the winter?

Yes..... ☐ 1 (53)

No ☐ 2

Q.B17 Do you usually cough during the day, or at night, in the winter?

Yes..... ☐ 1 (54)

No ☐ 2

IF 'Yes' for either Q.B16 or Q.B17:

Q.B18 Do you cough like this on most days for as much as three months each year?

Yes..... ☐ 1 (55)

No ☐ 2

ALL

Q.B19 Do you usually bring up any phlegm from your chest first thing in the morning in the winter?

Yes..... ☐ 1 (56)

No ☐ 2

Q.B20 Do you usually bring up any phlegm from your chest during the day, or at night, in the winter?

Yes..... ☐ 1 (57)

No ☐ 2

IF 'Yes' at either Q.B19 or Q.B20:

Q.B21 Do you bring up phlegm like this on most days for as much as three months in the winter each year?

Yes..... ☐ 1 (58)

No ☐ 2

ALL ANSWER:

Q.B22 In the past three years have you had a period of increased cough and phlegm lasting for three weeks or more?

(59)

Yes - 1 period ☐ 1

Yes - 2 or more periods ☐ 2

No ☐ 0

Q.B23 Are you disabled from walking, apart from by heart/lung disease?

(60)

1 ☐ Yes..... →Q.B27

2 ☐ No..... →Q.B24

Q.B24 Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill? (61)

1. ☐ Yes →Q.B25
2. ☐ No..... →Q.B27

Q.B25 Do you get short of breath walking with other people of your own age on level ground? (62)

1. ☐ Yes →Q.B26
2. ☐ No..... →Q.B27

Q.B26 Do you have to stop for breath when walking at your own pace on level ground? (63)

- Yes..... ☐ 1
No ☐ 2

ALL:

Q.B27 Have you had attacks of wheezing or whistling in your chest at any time in the last 12 months? (64)

- Yes..... ☐ 1
No..... ☐ 2

Q.B28 Have you ever had attacks of shortness of breath with wheezing? (65)

- 1 ☐ Yes →Q.B29
2 ☐ No →Q.B30

Q.B29 Is/was your breathing absolutely normal between attacks? (66)

- Yes ☐ 1
No ☐ 2

ALL :

Q.B30 Have you at any time in the last 12 months been woken at night by an attack of shortness of breath? (67)

- Yes ☐ 1
No ☐ 2

Q.B31 During the past three years have you had any chest illness which has kept you from your usual activities for as much as a week? (68)

1. ☐ Yes →Q.B32
2. ☐ No →Q.C1
-

Q.B32 Did you bring up more phlegm than usual in any of these illnesses?

(69)

1. ☐ Yes →Q.B33

2. ☐ No →Q.C1

Q.B33 Have you had more than one illness like this in the past three years?

(70)

Yes..... ☐ 1

No..... ☐ 2

(71-76) spare

(77-80) 7592

SECTION C - YOUR HEIGHT & WEIGHT

FOR THE FOLLOWING QUESTIONS PLEASE RECORD DETAILS FOR YOURSELF AND YOUR WIFE

(1-9) Dup (10-11) CC02

Please answer the following questions for both yourself and your wife

Q.C1 How tall are you/is your wife?

Self
 (12-14)
 ft in

Wife
 (15-17)
 ft in

Q.C2 How much do you/your wife weigh?

Self
 (18-21)
 Stones Lbs

Wife
 (22-25)
 Stones Lbs

Q.C3 Would you say that for your height, you/your wife are
 (Please tick '✓' appropriate box for each of you)

| | Self (26) | Wife (27) |
|------------------------------|----------------------------|----------------------------|
| About the right weight | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Too heavy | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Or... Too light | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |

SECTION D - FOOD

TO BE COMPLETED FOR YOURSELF AND YOUR WIFE

CC02

Q.D1 On most days, how soon do you/your wife have something to eat after getting up? (Please tick '✓' appropriate box for each of you)

| | Self (28) | Wife (29) |
|---------------------------|----------------------------|----------------------------|
| Within half an hour | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Half - 1 hour | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 1 - 2 hours | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| More than two hours | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.D2 How would you describe your/your wife's eating habits,

| | Self (30) | Wife (31) |
|---|----------------------------|----------------------------|
| You have meals at roughly the same time each day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| or You do not have a regular pattern of meal times..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.D3 What sort of bread or rolls do you/your wife eat most frequently?

| | Self (32) | Wife (33) |
|--|----------------------------|----------------------------|
| Normal white bread | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Brown wholemeal or rye bread | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Crispbread or other 'diet' bread | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Continental style bread (eg. croissants, soda bread, ciabhatta etc.) | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Don't eat bread at all | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |

Answer Q.D4 - Q.D5 if either of you eat any bread; if neither of you eat bread skip to Q.D6)

Q.D4 Please estimate the quantity of bread usually eaten per day

| | Self (34-35) | Wife (36-37) |
|-------------------------------------|----------------------|----------------------|
| No. of slices /pieces/rolls per day | <input type="text"/> | <input type="text"/> |

Q.D5 How often do you/your wife use each of these spreads on your bread?

| | Self (38) | Wife (39) |
|----------------------------|----------------------------|----------------------------|
| a) Butter/hard margarine | | |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| b) Soft margarine | (40) | (41) |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| c) Reduced/low fat spread | (42) | (43) |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| d) Jam/honey/marmalade | (44) | (45) |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

To be answered for both yourself and your wife:

Q.D6 How often do you/your wife drink coffee?

| | Self (46) | Wife (47) |
|---------------------------------|----------------------------|----------------------------|
| More than five times daily..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 3 - 5 times daily | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 1 - 2 times daily | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Several times a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less often..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D7 How much sugar do you/your wife usually have in coffee?

| | Self (48) | Wife (49) |
|---|----------------------------|----------------------------|
| No sugar | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Up to 1 spoonful..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| More than one, up to 2 spoonfuls | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| More than two spoonfuls..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Don't drink coffee..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.D8 How often do you/your wife drink tea?

| | Self (50) | Wife (51) |
|---------------------------------|----------------------------|----------------------------|
| More than five times daily..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 3 - 5 times daily | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 1 - 2 times daily | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Several times a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less often..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D9 How much sugar do you/your wife usually have in tea?

| | Self (52) | Wife (53) |
|---|----------------------------|----------------------------|
| No sugar | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Up to 1 spoonful..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| More than one, up to 2 spoonfuls | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| More than two spoonfuls..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Don't drink tea | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.D10 How much milk (including any in hot drinks, on cereals and in custard/puddings) do you/your wife usually have a day?

| | Self (54) | Wife (55) |
|-----------------------------------|----------------------------|----------------------------|
| Less than a third of a pint | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| A third to one pint | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| More than one pint..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Don't drink milk..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D11 What type of milk do you/your wife usually use?
(Please tick '✓' appropriate box for each of you; if you don't know the type please record as 'silver top')

| | Self (56) | Wife (58) |
|---|----------------------------|----------------------------|
| Normal full fat/silver top milk (including sterilised, UHT)..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Gold top..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Skimmed /semi-skimmed/stripy top | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Evaporated milk | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Powdered milk (specify) _____ | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Other milk (specify) _____ | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Don't drink milk | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (57) | (59). |

(60-80) Blank

Answer Q.D12 for yourself, then similarly Q.D13 for your wife.

Q.D12 Please record (by circling the appropriate number) the frequency with which you usually eat each of the listed foods.

| | More than once a day | Once a day | Most days | Once or twice a week | Less than once a week | Never | |
|---|-------------------------------|------------------|--------------|----------------------------|--------------------------------|-------|------|
| Fresh fruit in summer | 5 | 4 | 3 | 2 | 1 | 0 | (12) |
| Fresh fruit in winter | 5 | 4 | 3 | 2 | 1 | 0 | (13) |
| Salads or raw vegetables in summer | 5 | 4 | 3 | 2 | 1 | 0 | (14) |
| Salads or raw vegetables in winter | 5 | 4 | 3 | 2 | 1 | 0 | (15) |
| Tinned fruit | 5 | 4 | 3 | 2 | 1 | 0 | (16) |
| Chips | 5 | 4 | 3 | 2 | 1 | 0 | (17) |
| Potatoes (not chips) | 5 | 4 | 3 | 2 | 1 | 0 | (18) |
| Root vegetables like carrots, turnips and parsnips | 5 | 4 | 3 | 2 | 1 | 0 | (19) |
| Peas and beans (all kinds; including baked beans, lentils) | 5 | 4 | 3 | 2 | 1 | 0 | (20) |
| Green vegetables | 5 | 4 | 3 | 2 | 1 | 0 | (21) |
| Other cooked vegetables, including onions and mushrooms | 5 | 4 | 3 | 2 | 1 | 0 | (22) |
| Nuts | 5 | 4 | 3 | 2 | 1 | 0 | (23) |
| Potato crisps or similar snacks | 5 | 4 | 3 | 2 | 1 | 0 | (24) |
| Sweets, chocolates | 5 | 4 | 3 | 2 | 1 | 0 | (25) |
| Pasta or rice | 5 | 4 | 3 | 2 | 1 | 0 | (26) |
| Breakfast cereal (including porridge) | 5 | 4 | 3 | 2 | 1 | 0 | (27) |
| Biscuits | 5 | 4 | 3 | 2 | 1 | 0 | (28) |
| Cakes of all kinds | 5 | 4 | 3 | 2 | 1 | 0 | (29) |
| Sweets or puddings, fruit pies and flans and tarts | 5 | 4 | 3 | 2 | 1 | 0 | (30) |
| Ice cream, mousse, yoghurt, milk puddings | 5 | 4 | 3 | 2 | 1 | 0 | (31) |
| Soft drinks like squash or colas | 5 | 4 | 3 | 2 | 1 | 0 | (32) |
| Pure fruit juice | 5 | 4 | 3 | 2 | 1 | 0 | (33) |
| Cheese | 5 | 4 | 3 | 2 | 1 | 0 | (34) |
| Eggs | 5 | 4 | 3 | 2 | 1 | 0 | (35) |
| Cream | 5 | 4 | 3 | 2 | 1 | 0 | (36) |
| Fish | 5 | 4 | 3 | 2 | 1 | 0 | (37) |
| Poultry | 5 | 4 | 3 | 2 | 1 | 0 | (38) |
| Sausages/tinned meat/paté/ meat pies/pasties, etc. | 5 | 4 | 3 | 2 | 1 | 0 | (39) |
| Beef/lamb/pork/ham/bacon | 5 | 4 | 3 | 2 | 1 | 0 | (40) |

Can you think of any other sorts of food which you eat regularly? (Specify)

| | | | | | | | | |
|----------|------|---|---|---|---|---|---|------|
| 1. _____ | (41) | 5 | 4 | 3 | 2 | 1 | 0 | (42) |
| 2. _____ | (43) | 5 | 4 | 3 | 2 | 1 | 0 | (44) |
| 3. _____ | (45) | 5 | 4 | 3 | 2 | 1 | 0 | (46) |
| 4. _____ | (47) | 5 | 4 | 3 | 2 | 1 | 0 | (48) |

(49-80) Blank

And now for your wife:

Q.D13 Please now record (by circling the appropriate number) the frequency with which your wife usually eats each of the listed foods.

| | More than once a day | Once a day | Most days | Once or twice a week | Less than once a week | Never | |
|---|-------------------------------|------------------|--------------|----------------------------|--------------------------------|-------|------|
| Fresh fruit in summer | 5 | 4 | 3 | 2 | 1 | 0 | (12) |
| Fresh fruit in winter | 5 | 4 | 3 | 2 | 1 | 0 | (13) |
| Salads or raw vegetables in summer | 5 | 4 | 3 | 2 | 1 | 0 | (14) |
| Salads or raw vegetables in winter | 5 | 4 | 3 | 2 | 1 | 0 | (15) |
| Tinned fruit | 5 | 4 | 3 | 2 | 1 | 0 | (16) |
| Chips | 5 | 4 | 3 | 2 | 1 | 0 | (17) |
| Potatoes (not chips) | 5 | 4 | 3 | 2 | 1 | 0 | (18) |
| Root vegetables like carrots, turnips and parsnips | 5 | 4 | 3 | 2 | 1 | 0 | (19) |
| Peas and beans (all kinds; including baked beans, lentils) | 5 | 4 | 3 | 2 | 1 | 0 | (20) |
| Green vegetables | 5 | 4 | 3 | 2 | 1 | 0 | (21) |
| Other cooked vegetables, including onions and mushrooms | 5 | 4 | 3 | 2 | 1 | 0 | (22) |
| Nuts | 5 | 4 | 3 | 2 | 1 | 0 | (23) |
| Potato crisps or similar snacks | 5 | 4 | 3 | 2 | 1 | 0 | (24) |
| Sweets, chocolates | 5 | 4 | 3 | 2 | 1 | 0 | (25) |
| Pasta or rice | 5 | 4 | 3 | 2 | 1 | 0 | (26) |
| Breakfast cereal (including porridge) | 5 | 4 | 3 | 2 | 1 | 0 | (27) |
| Biscuits | 5 | 4 | 3 | 2 | 1 | 0 | (28) |
| Cakes of all kinds | 5 | 4 | 3 | 2 | 1 | 0 | (29) |
| Sweets or puddings, fruit pies and flans and tarts | 5 | 4 | 3 | 2 | 1 | 0 | (30) |
| Ice cream, mousse, yoghurt, milk puddings | 5 | 4 | 3 | 2 | 1 | 0 | (31) |
| Soft drinks like squash or colas | 5 | 4 | 3 | 2 | 1 | 0 | (32) |
| Pure fruit juice | 5 | 4 | 3 | 2 | 1 | 0 | (33) |
| Cheese | 5 | 4 | 3 | 2 | 1 | 0 | (34) |
| Eggs | 5 | 4 | 3 | 2 | 1 | 0 | (35) |
| Cream | 5 | 4 | 3 | 2 | 1 | 0 | (36) |
| Fish | 5 | 4 | 3 | 2 | 1 | 0 | (37) |
| Poultry | 5 | 4 | 3 | 2 | 1 | 0 | (38) |
| Sausages/tinned meat/paté/ meat pies/pasties, etc. | 5 | 4 | 3 | 2 | 1 | 0 | (39) |
| Beef/lamb/pork/ham/bacon | 5 | 4 | 3 | 2 | 1 | 0 | (40) |

Can you think of any other sorts of
food which she eats regularly? (Specify)

| | | | | | | | | |
|----------|------|---|---|---|---|---|---|------|
| 1. _____ | (41) | 5 | 4 | 3 | 2 | 1 | 0 | (42) |
| 2. _____ | (43) | 5 | 4 | 3 | 2 | 1 | 0 | (44) |
| 3. _____ | (45) | 5 | 4 | 3 | 2 | 1 | 0 | (46) |
| 4. _____ | (47) | 5 | 4 | 3 | 2 | 1 | 0 | (48) |

(49-80) Blank

Q. D14 Have you/your wife ever tried to cut down on fatty and fried food?

| | Self (45) | Wife (46) |
|------------------------------|----------------------------|----------------------------|
| Yes | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Never eaten fatty food | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D15 Taking everything into consideration, how healthy do you think your/your wife's diet is? Judged by the food consumed your/your wife's diet is

| | Self (47) | Wife (48) |
|----------------|----------------------------|----------------------------|
| Excellent..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Good..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Fair..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Poor | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |

SECTION E - SMOKING
TO BE COMPLETED FOR YOURSELF AND YOUR WIFE

CC05

Q.E1 Do you/your wife smoke cigarettes at all (either packeted or hand-rolled)?

| | Self (49) | Wife (50) |
|----------|----------------------------|----------------------------|
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.E2 Have you/your wife ever smoked cigarettes regularly, that is as much as one cigarette a day for as long as a year?

| | Self (51) | Wife (52) |
|---------------------------------------|----------------------------|----------------------------|
| No, never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Yes, and smoke at that rate now | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Yes, but not now | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Answer Q.E3 - Q.E7 if either of you has ever smoked cigarettes regularly;
Otherwise skip to QE8.

If one of you has never smoked cigarettes regularly, leave the answers
blank for that person

Q.E3 What age did you/your wife start to smoke regularly?
Record age in appropriate box.
[If don't know enter '0'.]

| Self (53-54) | Wife (55-56) |
|--------------------------|--------------------------|
| <input type="text"/> yrs | <input type="text"/> yrs |

Q.E4 What is the most cigarettes per day you/your wife have ever smoked regularly?
Record in appropriate box.
[If don't know enter '0'.]

| Self (57-59) | Wife (60-62) |
|------------------------------|------------------------------|
| <input type="text"/> per day | <input type="text"/> per day |

Q.E5 How many cigarettes per day do you/your wife smoke now?
[If ex smoker, or smoke less than one per day, enter 'X']

| Self (63-65) | Wife (66-68) |
|------------------------------|------------------------------|
| <input type="text"/> per day | <input type="text"/> per day |

Q.E6 Do you/your wife smoke mainly packeted or hand-rolled cigarettes?
[If ex smoker, answer for when last smoked]

| | Self (69) | Wife (70) |
|-------------------|----------------------------|----------------------------|
| Packeted..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Hand-rolled | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.E7 How many years is it since you/your wife last smoked cigarettes regularly?
[If current regular smoker, enter 'X']

| Self (71-72) | Wife (73-74) |
|--------------------------|--------------------------|
| <input type="text"/> yrs | <input type="text"/> yrs |

ALL :

Q.E8 Have you/your wife ever smoked a pipe regularly, that is a pipe a day for as long as a year?

| | Self (75) | Wife (76) |
|--------------------------------------|----------------------------|----------------------------|
| No, Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Yes, and smoke at that rate now..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Yes, but not now..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |

ALL :

Q.E9 Have you/your wife ever smoked Cigars regularly, that is a Cigar a week for as long as a year?

| | Self (77) | Wife (78) |
|--------------------------------------|----------------------------|----------------------------|
| No, Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Yes, and smoke at that rate now..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Yes, but not now..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Answer Q.E10 if you/your wife smoke any products regularly now;
otherwise skip to Q.F1.

Q.E10 Do you/your wife smoke indoors at home?

| | Self (79) | Wife (80) |
|----------|----------------------------|----------------------------|
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

SECTION F - THE FIRST PART OF THE SECTION REFERS TO YOU AND THE SECOND PART REFERS TO YOUR WIFE.

PLEASE COMPLETE BOTH PARTS AS BEST YOU CAN

PART I - YOURSELF

Q.F1 Did your father smoke regularly when you were a child (include adoptive /step father if you lived mostly with them)?
(Please tick '✓' appropriate box)

(12)

Yes ☐ 1
 No ☐ 2
 Didn't live with father ☐ 3
 Don't know ☐ 0

Q.F2 Did your mother smoke regularly when you were a child (include adoptive /step mother if you lived mostly with them)?

(13)

Yes ☐ 1
 No ☐ 2
 Didn't live with mother ☐ 3
 Don't know ☐ 0

Q.F3 Did any other member of your household smoke regularly at home when you were a child?

(14)

Yes ☐ 1
 No ☐ 2
 No-one else lived in household ☐ 3
 Don't know ☐ 0

Q.F4 Does anyone else (other than you or your wife) currently living in your household smoke regularly?

(15)

1. ☐ Yes..... →Q.F5
 2. ☐ No →Q.F6

Q.F5 Do any of them smoke indoors at home?

(16)

Yes ☐ 1
 No ☐ 2

ALL:

Q.F6 How often do you have visitors who smoke in your home?

- Most days..... ☐ 1 (17)
- Few times a week..... ☐ 2
- Few times a month..... ☐ 3
- Less often ☐ 4
- Never ☐ 5

Q.F7 How often are you exposed to other people's smoke at work?

- Most days..... ☐ 1 (18)
- Few times a week..... ☐ 2
- Few times a month..... ☐ 3
- Less often ☐ 4
- Never ☐ 5
- Don't work outside of home ... ☐ 0

Q.F8 Apart from at home and at work, how often are you in situations where other people are smoking?

- Most days..... ☐ 1 (19)
- Few times a week..... ☐ 2
- Few times a month..... ☐ 3
- Less often ☐ 4
- Never ☐ 5

Q.F9 Now combining all possible sources, for how long each day are you exposed to other people's smoke, on average? (20)

- More than 4 hours a day..... ☐ 1
- 1 - 4 hours a day..... ☐ 2
- 15 minutes - 1 hour a day ☐ 3
- Less than 15 minutes a day ☐ 4
- Hardly at all ☐ 5

PART II - ABOUT YOUR WIFE

CC06

Q.F10 Did your wife's father smoke regularly when she was a child
(include adoptive /step father if she lived mostly with them)?
(Please tick '✓' appropriate box)

(20)Spare
(21)

Yes ☐ 1
No..... ☐ 2
She didn't live with father..... ☐ 3
Don't know ☐ 0

(22)

Q.F11 Did your wife's mother smoke regularly when she was a child
(include adoptive /step mother if she lived mostly with them)?

Yes ☐ 1
No..... ☐ 2
She didn't live with mother..... ☐ 3
Don't know ☐ 0

(23)

Q.F12 Did any other member of your wife's household smoke regularly at
home when she was a child?

Yes ☐ 1
No..... ☐ 2
No-one else lived in household ☐ 3
Don't know ☐ 0

(24)

Q.F13 How often is your wife exposed to other people's smoke at her
place of work?

Most days..... ☐ 1
Few times a week..... ☐ 2
Few times a month ☐ 3
Less often ☐ 4
Never ☐ 5
Doesn't work outside of home ☐ 0

(25)

Q.F14 Apart from at home and at work, how often is your wife in situations where other people are smoking?

(26)

- Most days..... ☐ 1
Few times a week..... ☐ 2
Few times a month..... ☐ 3
Less often ☐ 4
Never ☐ 5

Q.F15 Now combining all possible sources, for how long each day is your wife exposed to other people's smoke, on average?

(27)

- More than 4 hours a day..... ☐ 1
1 - 4 hours a day..... ☐ 2
15 minutes - 1 hour a day ☐ 3
Less than 15 minutes a day ☐ 4
Hardly at all ☐ 5
-

SECTION G - EMPLOYMENT AND RELATED ISSUES

Please complete this section for both yourself and your wife even if certain questions appear to repeat earlier ones.

CC06

Q.G1 At the present time are you/your wife in paid employment (include work through a government scheme), looking for work, a full-time student or doing something else?
(Tick '✓' one box only for each of you)

| | Self (28) | Wife (30) |
|---|----------------------------|----------------------------|
| In work:- full-time (30 hrs +) | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Part-time (less than 30 hrs)..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Waiting to start a job already obtained | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Unemployed and looking for work..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Out of work as temporarily sick..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Permanently sick or disabled | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Wholly retired from work..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Full-time student..... | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Keeping house | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Other (specify) | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (29) | (31) |

Answer Q.G2 if either of you is not currently in paid employment;
otherwise skip to Q.G4.

Q.G2 Have you/your wife ever had a regular paid job?

| | Self (32) | Wife (33) |
|----------|----------------------------|----------------------------|
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |

↓

↓

Q.G3 How long is it since you/she
was last in paid employment?

| | Self (34) | Wife (35) |
|-------------------------|----------------------------|----------------------------|
| Under 1 year..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 1 year to 4 years | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 5 - 9 years..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| 10 - 19 years | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| 20 years or more..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Don't know | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Answer Q.G4 if either have, or ever had, a paid job; otherwise skip to Q.H1.

Q.G4 Have you/your wife worked on shift work or unsocial hours since your marriage?

| | Self (36) | Wife (37) |
|----------|----------------------------|----------------------------|
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| | ↓ | ↓ |

Q.G5 Did this regularly involve
(Tick '✓' all that apply)

| | Self (38)M | Wife (39)M |
|------------------------------|----------------------------|----------------------------|
| Changing shift patterns..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Early morning shifts | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Late evenings shifts..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Overnight shifts..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.G6 Have you/your wife ever worked in any of the jobs or industrial processes listed below. (Please tick '✓' all that apply)

| | Self (40)M | Wife (44)M |
|--|----------------------------|----------------------------|
| Production of arsenic based pesticides..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Application of arsenic based pesticides..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Production of any other type of pesticides..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Application of any other type of pesticides..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Roofer, asphaltworker..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| In a beryllium refining plant..... | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| In a coke plant..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Painter..... | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Asbestos production industry..... | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Welder..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (41)M | (45)M |
| Gas worker..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Construction industry..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Miner (specify type): | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Haulier or truck/ bus driver..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Service-station or garage..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Production of bischloromethylether/chloromethylether | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Printing industry..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Production of chromate pigments | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Rubber industry..... | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Leather industry..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (42)M | (46)M |
| Battery manufacturing..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Chromium plating..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Cadmium smelting process | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Copper smelting process..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Laundry or dry cleaning company..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Ferrochromium production | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Production of artificial Mineral fibres (specify)..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Iron and Steel foundry..... | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Production of aluminium..... | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Nickel refining..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (43)M | (47)M |
| Production of mustard gas..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Butcher..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Chimney sweep..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |

SECTION H - EDUCATION BACKGROUND (Please complete for yourself and your wife)

CC06

Q.H1 What age were you when you left school or sixth form college?

| | Self (48) | Wife (49) |
|-----------------|----------------------------|----------------------------|
| Under 14..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 14..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 15..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| 16..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| 17..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| 18..... | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| 19 or over..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |

Q.H2 What is the highest qualification you/your wife have obtained, either while at school or gained after you left school?
(Please tick '✓' one only. If two or more are equal, tick most recent of these. If still studying take highest to date.)

| | Self (50) | Wife (53) |
|--|----------------------------|----------------------------|
| No qualifications obtained..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| CSE Grades 2 - 5 | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| CSE Grade 1 | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| GCE 'O' level | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| School Certificate..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Scottish (SCE) Lower | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| City and Guilds Craft/Ordinary Level | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| GCE 'A' level/'S' level | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Higher Certificate | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Matriculation..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (51) | (54) |
| Scottish (SCE) Higher..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Overseas School leaving Exam/Certificate..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| ONC/OND/City & Guilds Advanced/Final level..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| HNC/HND/City & Guilds Full Technological Certificate.. | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| RSA/other clerical and commercial..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Teachers training qualification..... | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Nursing qualification..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Professional qualification (membership awarded by professional institute) | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Degree, including higher degree | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Other work-related qualification/certificates | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Other (please say what) | <input type="checkbox"/> x | <input type="checkbox"/> x |
| | (52) | (55) |

SECTION J - EXERCISE

Please complete for yourself and your wife

CC06

Q.J1 Overall do you think you/your wife get enough exercise?

| | Self (56) | Wife (57) |
|----------|----------------------------|----------------------------|
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.J2 In general, compared with other people of the same age, are you/your wife physically

(Tick '✓' appropriate box)

| | Self (58) | Wife (59) |
|----------------------------|----------------------------|----------------------------|
| A lot more active | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| A little more active | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| About average..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| A little less active | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| A lot less active..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |

(60-80) BLANK

SECTION K - CONSUMPTION OF ALCOHOLIC DRINKS

(1-9) Dup (10-11) CC07

Q.K1 Would you describe yourself/your wife nowadays as:
(Tick '✓' appropriate boxes)

| | Self (12) | Wife (13) |
|-------------------------------|----------------------------|----------------------------|
| Total abstainer..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Very occasional drinker | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Light drinker | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Moderate drinker | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Heavy drinker | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |

Answer Q.K2 if either of you drink any alcoholic drinks; otherwise skip to Q. K3.

Q.K2 For each of the specified types of drink please record the amount of each you/your wife would drink in a typical week.
(Write in amounts for each type of drink. If none drunk for any type please record as '0')

| | Self | | Wife | |
|---|---------------|---------|---------------|---------|
| Shandy | ____ pts | (14-15) | ____ pts | (30-31) |
| Normal beers/stout/lagers | ____ pts | (16-17) | ____ pts | (32-33) |
| Premium/export/strong beers/lagers | ____ pts | (18-19) | ____ pts | (34-35) |
| Sherry/vermouth/port | ____ glasses | (20-21) | ____ glasses | (36-37) |
| Wines (including Champagne) | ____ glasses | (22-23) | ____ glasses | (38-39) |
| Spirits (eg Whisky, Gin, Vodka) | ____ measures | (24-25) | ____ measures | (40-41) |
| Liqueurs (eg Brandy, Tia Maria) | ____ glasses | (26-27) | ____ glasses | (42-43) |
| Other (specify type as well as amount in as much detail as necessary): | _____ | (28-29) | _____ | (44-45) |

Q.K3 Have you/your wife drunk more heavily than this in the past?

| | Self (46) | Wife (47) |
|-----------|----------------------------|----------------------------|
| Yes | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.K4 Since your marriage, have you ever felt that you/she ought to cut down on drinking?

| | (48) | (49) |
|-----------|----------------------------|----------------------------|
| Yes | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

SECTION L - YOUR PERSONALITY

Complete for yourself only

(1-9) Dup (10-11) CC08

INSTRUCTIONS

Here are some questions regarding the way you behave, feel and act. After each question is a space for answering "YES" or "NO".

Try to decide whether "YES" or "NO" represents your usual way of acting or feeling. Then put a '✓' in the box under the column headed "YES" or "NO". Work quickly, and don't spend too much time over any question; we want your first reaction, not a long-drawn out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions.

Now turn the page over and go ahead. Work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.

CC08

| | | YES | NO | |
|----|--|----------------------------|----------------------------|------|
| 1 | Do you often long for excitement? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (12) |
| 2 | Do you often need understanding friends to cheer you up? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 | Are you usually carefree? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4 | Do you find it very hard to take no for an answer? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5 | Do you stop and think things over before doing anything? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (16) |
| 6 | If you say you will do something do you always keep your promise, no matter how inconvenient it might be to do so? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7 | Does your mood often go up and down? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 8 | Do you generally do and say things quickly without stopping to think? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 9 | Do you ever feel "just miserable" for no good reason? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 10 | Would you do almost anything for a dare? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (21) |
| | | YES | NO | |
| 11 | Do you suddenly feel shy when you want to talk to an attractive stranger? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (22) |
| 12 | Once in a while do you lose your temper and get angry? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 13 | Do you often do things on the spur of the moment? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 14 | Do you often worry about things you should not have done or said? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 15 | Generally, do you prefer reading to meeting people? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (26) |
| 16 | Are your feelings rather easily hurt? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 17 | Do you like going out a lot? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 18 | Do you occasionally have thoughts and ideas that you would not like other people to know about? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 19 | Are you sometimes bubbling over with energy and sometimes very sluggish? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 20 | Do you prefer to have few but special friends? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (31) |
| | | YES | NO | |
| 21 | Do you daydream a lot? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (32) |
| 22 | When people shout at you, do you shout back? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 23 | Are you often troubled about feelings of guilt? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 24 | Are all your habits good and desirable ones? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 25 | Can you usually let yourself go and enjoy yourself a lot at a lively party? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (36) |
| 26 | Would you call yourself tense or "highly-strung"? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 27 | Do other people think of you as being very lively? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 28 | After you have done something important, do you often come away feeling you could have done better? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 29 | Are you mostly quiet when you are with other people? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 30 | Do you sometimes gossip? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (41) |

CC08

- | | | YES | NO | |
|----|--|----------------------------|----------------------------|------|
| 31 | Do ideas run through your head so that you cannot sleep? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (42) |
| 32 | If there is something you want to know about, would you rather look it up in a book than talk to someone about it? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 33 | Do you get palpitations or thumping in your heart? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 34 | Do you like the kind of work that you need to pay close attention to? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 35 | Do you get attacks of shaking or trembling? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 36 | Would you always declare <i>everything</i> at the customs, even if you knew that you could never be found out? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (47) |
| | | YES | NO | |
| 37 | Do you hate being with a crowd who play jokes on one another? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (48) |
| 38 | Are you an irritable person? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 39 | Do you like doing things in which you have to act quickly? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 40 | Do you worry about awful things that might happen? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 41 | Are you slow and unhurried in the way you move? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 42 | Have you ever been late for an appointment or work? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 43 | Do you have many nightmares? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 44 | Do you like talking to people so much that you never miss a chance of talking to a stranger? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (55) |
| | | YES | NO | |
| 45 | Are you troubled by aches and pains? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (56) |
| 46 | Would you be very unhappy if you could not see lots of people most of the time? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 47 | Would you call yourself a nervous person? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 48 | Of all the people you know, are there some whom you definitely do not like? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 49 | Would you say that you were fairly self-confident? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 50 | Are you easily hurt when people find fault with you or your work? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (61) |
| | | YES | NO | |
| 51 | Do you find it hard to really enjoy yourself at a lively party? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (62) |
| 52 | Are you troubled with feelings of inferiority? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 53 | Can you easily get some life into a rather dull party? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 54 | Do you sometimes talk about things you know nothing about? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 55 | Do you worry about your health? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 56 | Do you like playing pranks on others? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 57 | Do you suffer from sleeplessness? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (68) |

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS AND COMPLETE THE DETAILS OVER THE PAGE IN CASE WE NEED TO CHECK ANY DETAILS WITH YOU AT A LATER DATE

CONTACT DETAILS

Your Name: _____

Your Address: _____

Town _____

County: _____

Post Code: _____

Tel Exchange: _____ Tel No. _____

Date of Interview: ____/____/97

7592/IGC

May 1997

MARRIED COUPLES SURVEY
(SELF COMPLETION QUESTIONNAIRE)
WIFE

Thank you for agreeing to take part in this survey, you can be assured that all the information you provide will be treated in the strictest confidence.

This questionnaire has been designed to collect information concerning both yourself and your husband and covers a range of issues related to your health and lifestyle.

The format of the questionnaire is hopefully quite easy to follow and has been designed for you to complete all of the relevant questions by simply ticking boxes or circling the appropriate answer codes.

Your husband will be completing a similar questionnaire but we ask you not to discuss your answers with each other until after you have finished and have given the questionnaire back to our interviewer.

If you have any problems with completing this questionnaire our interviewer will be pleased to help you.

| | |
|------|---------|
| BN | (1-3) |
| Wife | (4) 1 |
| SN | (5-9) |
| CC01 | (10-11) |

SECTION A - PERSONAL DETAILS

Q.A1 Date of birth ____/____/19____ (12-17)

Q.A2 Apart from yourself and your husband, how many other adults (aged 16 years or over) live in this household? (Please write number in the box) (18-19)

Q.A3 How many children aged 15 yrs or under live in this household (20-21)

Q.A4 In which year did you and your husband get married? 19 (22-23)

Q.A5 Had you been married before? Yes..... ☐ 1 (24)
(Tick '✓' box) No ☐ 2

Q.A6 Who is the Chief Income Earner?
Self ☐ 1 Husband ☐ 2 Other (specify) _____ ☐ 9 (25)

What is the employment status of the Chief Income Earner:

Q.A7 Working full time (30+ hours per week)..... ☐ 1 (26)
Working part-time (8 - 29 hours per week) ☐ 2
Working part-time (less than 8 hours per week) ☐ 3
Retired ☐ 4
Other not working..... ☐ 9

Q.A8 What is the occupation (if employed) of the Chief Income Earner? (Please write in below)

Occupation _____

Industry _____

Qualifications/Apprenticeship _____

No. of people responsible for _____

No. of people in establishment _____ (27)

Q.A9 Please indicate (Tick '✓' box) which of these income ranges comes closest to the **net annual income** of the Chief Income Earner, including earnings, benefits, pensions, interest and other regular payments - that is after deducting tax, national insurance and pension schemes

| | | | | | |
|-------------------|---------------------------------------|-------------------|---------------------------------------|-------------------|--|
| Under £2,500 | <input type="checkbox"/> ₁ | £2,500 - £4,499 | <input type="checkbox"/> ₂ | £4,500 - £6,499 | <input type="checkbox"/> ₃ |
| £6,500 - £7,499 | <input type="checkbox"/> ₄ | £7,500 - £9,499 | <input type="checkbox"/> ₅ | £9,500 - £11,499 | <input type="checkbox"/> ₆ |
| £11,500 - £13,499 | <input type="checkbox"/> ₇ | £13,500 - £15,499 | <input type="checkbox"/> ₈ | £15,500 - £17,499 | <input type="checkbox"/> ₉ |
| £17,500 - £24,499 | <input type="checkbox"/> ₀ | £24,500 - £34,999 | <input type="checkbox"/> _x | £35,000+ | <input type="checkbox"/> _y (28) |

Q.A10 During your free time, that is when neither you nor your husband are at work, how much of your time do you generally spend with your husband? (Tick '✓' box which most closely applies)

(29)

- (a) More than three-quarters of the time ☐₁
- (b) More than half, up to three-quarters of the time ☐₂
- (c) About half of the time ☐₃
- (d) More than a quarter, but less than half ☐₄
- (e) Less than a quarter of the time ☐₅

Q.A11 In the last ten years (or since your marriage if that was more recent), have you taken holidays:
(Tick '✓' box which most closely applies)

(30)

- (a) Always with your husband ☐₁
- (b) Mostly with your husband ☐₂
- (c) Roughly equally with and without your husband..... ☐₃
- (d) Mostly without your husband..... ☐₄
- (e) Always without your husband ☐₅
- (f) No holidays taken ☐₆

Q.A12 How many meals a day do you and your husband usually have together?

a) On weekdays _____ meals/day

(31)

b) At week-ends _____ meals/day

(32)

SECTION B - YOUR PERSONAL HEALTH
GENERAL HEALTH

Q.B1 Would you say that for someone of your age your own health in general is.....

Excellent ... ☐ 1

(33)

Good ☐ 2Fair ☐ 3Poor ☐ 4

Q.B2 Do you have any long-standing illness, disability or infirmity?

(34)

No ☐ 1

Please go to QB5

Yes ☐ 2

Please go to QB3

Q.B3 If yes, what is the nature of your illness, disability or infirmity?

(35) M

(36) M

(37) M

Q.B4 Does it limit your activities in any way compared with people of your own age?

Yes ☐ 1

(38)

No ☐ 2

Q. B5 ALL:

Please tick all of the listed ailments or conditions which you have
ever suffered from:

- Asthma ☐ 1
- Chronic bronchitis ☐ 2
- Other chest trouble ☐ 3
- Diabetes ☐ 4
- Stomach or other digestive disorder ☐ 5
- Piles or haemorrhoids ☐ 6
- Liver trouble ☐ 7
- Rheumatic disorder or arthritis ☐ 9
- Heart trouble ☐ 0
- Lung cancer ☐ 1
- Other cancer ☐ 2
- Severe depression or other nervous illness... ☐ 3
- Varicose veins ☐ 4
- High blood pressure ☐ 5
- Stroke ☐ 6
- Migraine ☐ 7
- Back trouble ☐ 8
- Epilepsy/fits ☐ 9

(39)M

(40)M

Q.B6 Within the last month have you suffered from any problems with:
(Tick '✓' boxes for all suffered in last month)

(41)M

Headaches..... ☐ 1Hay fever ☐ 2Difficulty sleeping..... ☐ 3Constipation..... ☐ 4Trouble with eyes ☐ 5A bad back..... ☐ 6Nerves ☐ 7Colds and flu..... ☐ 8Trouble with feet (Corns,
bunions, athlete's foot, etc) ☐ 9Always feeling tired ☐ 0Kidney or bladder trouble..... ☐ 1Painful joints ☐ 2Difficulty concentrating ☐ 3Palpitations or breathlessness..... ☐ 4Trouble with ears ☐ 5Worrying over every little thing ☐ 6Indigestion or other stomach trouble .. ☐ 7Sinus trouble or catarrh ☐ 8Persistent cough..... ☐ 9Faints or dizziness..... ☐ 0

(42)M

Q.B7 IF UNDER 60 YRS OF AGE:

Within the last month have you suffered from any trouble with
periods or menopause?

(43)

Yes ☐ 1No ☐ 2

Q.B8 Have you ever had any pain or discomfort in your chest? (44)

1 ☐ Yes..... →Q.B9

2 ☐ No..... →Q.B16

Q.B9 Do you get this pain or discomfort when you walk uphill or hurry? (45)

1 ☐ Yes..... →Q.B10

2 ☐ No..... →Q.B15

Q.B10 Do you get it when you walk at an ordinary pace on the level? (46)

Yes ☐ 1

No ☐ 2

Q.B11 When you get any pain or discomfort in your chest what do you do? (47)

Stop..... ☐ 1

Slow down.. ☐ 2

Continue at the same pace..... ☐ 3

Q.B12 Does it go away when you stand still? (48)

1. ☐ Yes..... →Q.B13

2. ☐ No →Q.B14

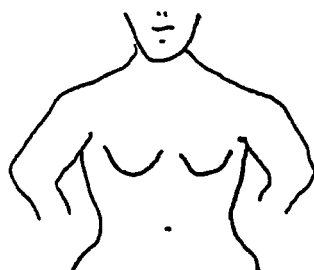
Q.B13 How soon after you stand still? (49)

10 mins or less ☐ 1

More than 10 minutes ☐ 2

Q.B14 Where do you get this pain or discomfort?
Mark the place(s) with X on the diagram. (50)M

Right



Left

(51)

Q.B15 Have you ever had a severe pain across the front of your chest lasting for half an hour or more?

Yes..... ☐ 1 (52)

No..... ☐ 2

ALL

Q.B16 Do you usually cough first thing in the morning in the winter?

Yes..... ☐ 1 (53)

No..... ☐ 2

Q.B17 Do you usually cough during the day, or at night, in the winter?

Yes..... ☐ 1 (54)

No..... ☐ 2

IF 'Yes' for either Q.B16 or Q.B17:

Q.B18 Do you cough like this on most days for as much as three months each year?

Yes..... ☐ 1 (55)

No..... ☐ 2

ALL

Q.B19 Do you usually bring up any phlegm from your chest first thing in the morning in the winter?

Yes..... ☐ 1 (56)

No..... ☐ 2

Q.B20 Do you usually bring up any phlegm from your chest during the day, or at night, in the winter?

Yes..... ☐ 1 (57)

No..... ☐ 2

IF 'Yes' at either Q.B19 or Q.B20:

Q.B21 Do you bring up phlegm like this on most days for as much as three months in the winter each year?

Yes..... ☐ 1 (58)

No..... ☐ 2

ALL

Q.B22 In the past three years have you had a period of increased cough and phlegm lasting for three weeks or more?

(59)

Yes - 1 period ☐ 1

Yes - 2 or more periods ☐ 2

No ☐ 0

Q.B23 Are you disabled from walking, apart from by heart/lung disease?

(60)

1 ☐ Yes..... →Q.B27

2 ☐ No..... →Q.B24

Q.B24 Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill? (61)

1. ☐ Yes →Q.B25
2. ☐ No..... →Q.B27

Q.B25 Do you get short of breath walking with other people of your own age on level ground? (62)

1. ☐ Yes →Q.B26
2. ☐ No..... →Q.B27

Q.B26 Do you have to stop for breath when walking at your own pace on level ground? (63)

- Yes..... ☐ 1
No ☐ 2

ALL:

Q.B27 Have you had attacks of wheezing or whistling in your chest at any time in the last 12 months? (64)

- Yes..... ☐ 1
No..... ☐ 2

Q.B28 Have you ever had attacks of shortness of breath with wheezing? (65)

- 1 ☐ Yes →Q.B29
2 ☐ No →Q.B30

Q.B29 Is/was your breathing absolutely normal between attacks? (66)

- Yes ☐ 1
No ☐ 2

ALL:

Q.B30 Have you at any time in the last 12 months been woken at night by an attack of shortness of breath? (67)

- Yes ☐ 1
No ☐ 2

Q.B31 During the past three years have you had any chest illness which has kept you from your usual activities for as much as a week? (68)

1. ☐ Yes →Q.B32
2. ☐ No →Q.C1
-

Q.B32 Did you bring up more phlegm than usual in any of these illnesses? (69)

1. ☐ Yes →Q.B33

2. ☐ No →Q.C1

Q.B33 Have you had more than one illness like this in the past three years? (70)

Yes..... ☐ 1

No..... ☐ 2

(71-76) spare

(77-80) 7592

SECTION C - YOUR HEIGHT & WEIGHT

FOR THE FOLLOWING QUESTIONS PLEASE RECORD DETAILS FOR YOURSELF AND YOUR HUSBAND

(1-9) Dup (10-11) CC02

Please answer the following questions for both yourself and your husband

Q.C1 How tall are you/is your husband?

| Self | | Husband | |
|----------------------|------------------------------|----------------------|------------------------------|
| <input type="text"/> | <input type="text"/> (12-14) | <input type="text"/> | <input type="text"/> (15-17) |
| ft | in | ft | in |

Q.C2 How much do you/your husband weigh?

| Self | | Husband | |
|----------------------|------------------------------|----------------------|------------------------------|
| <input type="text"/> | <input type="text"/> (18-21) | <input type="text"/> | <input type="text"/> (22-25) |
| Stones | Lbs | Stones | Lbs |

Q.C3 Would you say that for your height, you/your husband are
(Please tick '✓' appropriate box for each of you)

| | Self (26) | Husband (27) |
|------------------------------|----------------------------|----------------------------|
| About the right weight | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Too heavy..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Or... Too light | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |

SECTION D - FOOD

TO BE COMPLETED FOR YOURSELF AND YOUR HUSBAND

CC02

Q.D1 On most days, how soon do you/your husband have something to eat after getting up? (Please tick '✓' appropriate box for each of you)

| | Self (28) | Husband (29) |
|---------------------------|----------------------------|----------------------------|
| Within half an hour | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Half - 1 hour..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 1 - 2 hours | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| More than two hours | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.D2 How would you describe your/your husband's eating habits,

| | Self (30) | Husband (31) |
|---|----------------------------|----------------------------|
| You have meals at roughly the same time each day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| or You do not have a regular pattern of meal times..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.D3 What sort of bread or rolls do you/your husband eat most frequently?

| | Self (32) | Husband (33) |
|--|----------------------------|----------------------------|
| Normal white bread..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Brown wholemeal or rye bread..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Crispbread or other 'diet' bread | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Continental style bread (eg. croissants, soda bread, ciabhatta etc.) | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Don't eat bread at all | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |

Answer Q.D4 - Q.D5 if either of you eat any bread; if neither of you eat bread skip to Q.D6)

Q.D4 Please estimate the quantity of bread usually eaten per day

| | Self (34-35) | Husband (36-37) |
|-------------------------------------|----------------------|----------------------|
| No. of slices /pieces/rolls per day | <input type="text"/> | <input type="text"/> |

Q.D5 How often do you/your husband use each of these spreads on your bread?

| | Self (38) | Husband (39) |
|-----------------------------|----------------------------|----------------------------|
| a) Butter/hard margarines | | |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| b) Soft margarine | (40) | (41) |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| c) Reduced/low fat spread | (42) | (43) |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| d) Jam/honey/marmalade | (44) | (45) |
| More than once a day | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Once a day..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Most days | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Once or twice a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less than once a week | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

To be answered for both yourself and your husband:

Q.D6 How often do you/your husband drink coffee?

| | Self (46) | Husband (47) |
|---------------------------------|----------------------------|----------------------------|
| More than five times daily..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 3 - 5 times daily | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 1 - 2 times daily | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Several times a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less often..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D7 How much sugar do you/your husband usually have in coffee?

| | Self (48) | Husband (49) |
|--|----------------------------|----------------------------|
| No sugar | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Up to 1 spoonful..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| More than one, up to 2 spoonfuls..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| More than two spoonfuls..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Don't drink coffee..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.D8 How often do you/your husband drink tea?

| | Self (50) | Husband (51) |
|---------------------------------|----------------------------|----------------------------|
| More than five times daily..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 3 - 5 times daily | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 1 - 2 times daily | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Several times a week..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Less often..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D9 How much sugar do you/your husband usually have in tea?

| | Self (52) | Husband (53) |
|--|----------------------------|----------------------------|
| No sugar | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Up to 1 spoonful..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| More than one, up to 2 spoonfuls..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| More than two spoonfuls..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Don't drink tea | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.D10 How much milk (including any in hot drinks, on cereals and in custard/puddings) do you/your husband usually have a day?

| | Self (54) | Husband (55) |
|-----------------------------------|----------------------------|----------------------------|
| Less than a third of a pint | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| A third to one pint | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| More than one pint..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Don't drink milk..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D11 What type of milk do you/your husband usually use?
(Please tick '✓' appropriate box for each of you; if you don't know the type please record as 'silver top')

| | Self (56) | Husband (58) |
|--|----------------------------|----------------------------|
| Normal full fat/silver top milk (including sterilised, UHT) | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Gold top..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Skimmed /semi-skimmed/stripy top | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Evaporated milk | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Powdered milk (specify) _____ | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Other milk (specify) _____ | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Don't drink milk | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (57) | (59). |

(60-80) Blank

Answer Q.D12 for yourself, then similarly Q.D13 for your husband.

Q.D12 Please record (by circling the appropriate number) the frequency with which you usually eat each of the listed foods.

| | More than once a day | Once a day | Most days | Once or twice a week | Less than once a week | Never | |
|---|-------------------------------|------------------|--------------|----------------------------|--------------------------------|-------|------|
| Fresh fruit in summer | 5 | 4 | 3 | 2 | 1 | 0 | (12) |
| Fresh fruit in winter | 5 | 4 | 3 | 2 | 1 | 0 | (13) |
| Salads or raw vegetables in summer | 5 | 4 | 3 | 2 | 1 | 0 | (14) |
| Salads or raw vegetables in winter | 5 | 4 | 3 | 2 | 1 | 0 | (15) |
| Tinned fruit | 5 | 4 | 3 | 2 | 1 | 0 | (16) |
| Chips | 5 | 4 | 3 | 2 | 1 | 0 | (17) |
| Potatoes (not chips) | 5 | 4 | 3 | 2 | 1 | 0 | (18) |
| Root vegetables like carrots, turnips and parsnips | 5 | 4 | 3 | 2 | 1 | 0 | (19) |
| Peas and beans (all kinds; including baked beans, lentils) | 5 | 4 | 3 | 2 | 1 | 0 | (20) |
| Green vegetables | 5 | 4 | 3 | 2 | 1 | 0 | (21) |
| Other cooked vegetables, including onions and mushrooms | 5 | 4 | 3 | 2 | 1 | 0 | (22) |
| Nuts | 5 | 4 | 3 | 2 | 1 | 0 | (23) |
| Potato crisps or similar snacks | 5 | 4 | 3 | 2 | 1 | 0 | (24) |
| Sweets, chocolates | 5 | 4 | 3 | 2 | 1 | 0 | (25) |
| Pasta or rice | 5 | 4 | 3 | 2 | 1 | 0 | (26) |
| Breakfast cereal (including porridge) | 5 | 4 | 3 | 2 | 1 | 0 | (27) |
| Biscuits | 5 | 4 | 3 | 2 | 1 | 0 | (28) |
| Cakes of all kinds | 5 | 4 | 3 | 2 | 1 | 0 | (29) |
| Sweets or puddings, fruit pies and flans and tarts | 5 | 4 | 3 | 2 | 1 | 0 | (30) |
| Ice cream, mousse, yoghurt, milk puddings | 5 | 4 | 3 | 2 | 1 | 0 | (31) |
| Soft drinks like squash or colas | 5 | 4 | 3 | 2 | 1 | 0 | (32) |
| Pure fruit juice | 5 | 4 | 3 | 2 | 1 | 0 | (33) |
| Cheese | 5 | 4 | 3 | 2 | 1 | 0 | (34) |
| Eggs | 5 | 4 | 3 | 2 | 1 | 0 | (35) |
| Cream | 5 | 4 | 3 | 2 | 1 | 0 | (36) |
| Fish | 5 | 4 | 3 | 2 | 1 | 0 | (37) |
| Poultry | 5 | 4 | 3 | 2 | 1 | 0 | (38) |
| Sausages/tinned meat/paté/ meat pies/pasties, etc. | 5 | 4 | 3 | 2 | 1 | 0 | (39) |
| Beef/lamb/pork/ham/bacon | 5 | 4 | 3 | 2 | 1 | 0 | (40) |

Can you think of any other sorts of
food which you eat regularly? (Specify)

| | | | | | | | | |
|----------|------|---|---|---|---|---|---|------|
| 1. _____ | (41) | 5 | 4 | 3 | 2 | 1 | 0 | (42) |
| 2. _____ | (43) | 5 | 4 | 3 | 2 | 1 | 0 | (44) |
| 3. _____ | (45) | 5 | 4 | 3 | 2 | 1 | 0 | (46) |
| 4. _____ | (47) | 5 | 4 | 3 | 2 | 1 | 0 | (48) |

(49-80) Blank

And now for your husband:

Q.D13 Please now record (by circling the appropriate number) the frequency with which your husband usually eats each of the listed foods.

| | More than once a day | Once a day | Most days | Once or twice a week | Less than once a week | Never | |
|---|-------------------------------|------------------|--------------|----------------------------|--------------------------------|-------|------|
| Fresh fruit in summer | 5 | 4 | 3 | 2 | 1 | 0 | (12) |
| Fresh fruit in winter | 5 | 4 | 3 | 2 | 1 | 0 | (13) |
| Salads or raw vegetables in summer | 5 | 4 | 3 | 2 | 1 | 0 | (14) |
| Salads or raw vegetables in winter | 5 | 4 | 3 | 2 | 1 | 0 | (15) |
| Tinned fruit | 5 | 4 | 3 | 2 | 1 | 0 | (16) |
| Chips | 5 | 4 | 3 | 2 | 1 | 0 | (17) |
| Potatoes (not chips) | 5 | 4 | 3 | 2 | 1 | 0 | (18) |
| Root vegetables like carrots, turnips and parsnips | 5 | 4 | 3 | 2 | 1 | 0 | (19) |
| Peas and beans (all kinds; including baked beans, lentils) | 5 | 4 | 3 | 2 | 1 | 0 | (20) |
| Green vegetables | 5 | 4 | 3 | 2 | 1 | 0 | (21) |
| Other cooked vegetables, including onions and mushrooms | 5 | 4 | 3 | 2 | 1 | 0 | (22) |
| Nuts | 5 | 4 | 3 | 2 | 1 | 0 | (23) |
| Potato crisps or similar snacks | 5 | 4 | 3 | 2 | 1 | 0 | (24) |
| Sweets, chocolates | 5 | 4 | 3 | 2 | 1 | 0 | (25) |
| Pasta or rice | 5 | 4 | 3 | 2 | 1 | 0 | (26) |
| Breakfast cereal (including porridge) | 5 | 4 | 3 | 2 | 1 | 0 | (27) |
| Biscuits | 5 | 4 | 3 | 2 | 1 | 0 | (28) |
| Cakes of all kinds | 5 | 4 | 3 | 2 | 1 | 0 | (29) |
| Sweets or puddings, fruit pies and flans and tarts | 5 | 4 | 3 | 2 | 1 | 0 | (30) |
| Ice cream, mousse, yoghurt, milk puddings | 5 | 4 | 3 | 2 | 1 | 0 | (31) |
| Soft drinks like squash or colas | 5 | 4 | 3 | 2 | 1 | 0 | (32) |
| Pure fruit juice | 5 | 4 | 3 | 2 | 1 | 0 | (33) |
| Cheese | 5 | 4 | 3 | 2 | 1 | 0 | (34) |
| Eggs | 5 | 4 | 3 | 2 | 1 | 0 | (35) |
| Cream | 5 | 4 | 3 | 2 | 1 | 0 | (36) |
| Fish | 5 | 4 | 3 | 2 | 1 | 0 | (37) |
| Poultry | 5 | 4 | 3 | 2 | 1 | 0 | (38) |
| Sausages/tinned meat/paté/ meat pies/pasties, etc. | 5 | 4 | 3 | 2 | 1 | 0 | (39) |
| Beef/lamb/pork/ham/bacon | 5 | 4 | 3 | 2 | 1 | 0 | (40) |

Can you think of any other sorts of food which he eats regularly? (Specify)

1. _____ (41) 5 4 3 2 1 0 (42)
2. _____ (43) 5 4 3 2 1 0 (44)
3. _____ (45) 5 4 3 2 1 0 (46)
4. _____ (47) 5 4 3 2 1 0 (48)

(49-80) Blank

Q. D14 Have you/your husband ever tried to cut down on fatty and fried food?

| | Self (45) | Husband (46) |
|-----------------------------|----------------------------|----------------------------|
| Yes | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Never eaten fatty food..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Q.D15 Taking everything into consideration, how healthy do you think your/your husband's diet is? Judged by the food consumed your/your husband's diet is

| | Self (47) | Husband (48) |
|----------------|----------------------------|----------------------------|
| Excellent..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Good..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Fair..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Poor | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |

SECTION E - SMOKING
TO BE COMPLETED FOR YOURSELF AND YOUR HUSBAND

CC05

Q.E1 Do you/your husband smoke cigarettes at all (either packeted or hand-rolled)?

| | Self (49) | Husband (50) |
|----------|----------------------------|----------------------------|
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.E2 Have you/your husband ever smoked cigarettes regularly, that is as much as one cigarette a day for as long as a year?

| | Self (51) | Husband (52) |
|---------------------------------------|----------------------------|----------------------------|
| No, never..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Yes, and smoke at that rate now | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Yes, but not now | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Answer Q.E3 - Q.E7 if either of you has ever smoked cigarettes regularly;
 Otherwise skip to QE8.

If one of you has never smoked cigarettes regularly, leave the answers blank
 for that person

Q.E3 What age did you/your husband start to smoke regularly?
 Record age in appropriate box.
 [If don't know enter '0'.]

| Self (53-54) | Husband (55-56) |
|--------------------------|--------------------------|
| <input type="text"/> yrs | <input type="text"/> yrs |

Q.E4 What is the most cigarettes per day you/your husband have ever
 smoked regularly. Record in appropriate box.
 [If don't know enter '0'.]

| Self (57-59) | Husband (60-62) |
|------------------------------|------------------------------|
| <input type="text"/> per day | <input type="text"/> per day |

Q.E5 How many cigarettes per day do you/your husband smoke now?
 [If ex smoker, or smoke less than one per day, enter 'X']

| Self (63-65) | Husband (66-68) |
|------------------------------|------------------------------|
| <input type="text"/> per day | <input type="text"/> per day |

Q.E6 Do you/your husband smoke mainly packeted or hand-rolled cigarettes?
[If ex smoker, answer for when last smoked]

| | Self (69) | Husband (70) |
|-------------------|----------------------------|----------------------------|
| Packeted..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Hand-rolled | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.E7 How many years is it since you/your husband last smoked cigarettes regularly?
[If current regular smoker, enter 'X']

| Self (71-72) | Husband (73-74) |
|--------------------------|--------------------------|
| <input type="text"/> yrs | <input type="text"/> yrs |

ALL :
Q.E8 Have you/your husband ever smoked a pipe regularly, that is a
pipe a day for as long as a year?

| | Self (75) | Husband (76) |
|--------------------------------------|----------------------------|----------------------------|
| No, Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Yes, and smoke at that rate now..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Yes, but not now..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |

ALL :
Q.E9 Have you/your husband ever smoked Cigars regularly, that is a
Cigar a week for as long as a year?

| | Self (77) | Husband (78) |
|--------------------------------------|----------------------------|----------------------------|
| No, Never | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Yes, and smoke at that rate now..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Yes, but not now..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Answer Q.E10 if you/your husband smoke any products regularly now;
otherwise skip to Q.F1.

Q.E10 Do you/your husband smoke indoors at home?

| | Self (79) | Husband (80) |
|----------|----------------------------|----------------------------|
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

SECTION F - THE FIRST PART OF THE SECTION REFERS TO YOU AND THE SECOND PART REFERS TO YOUR HUSBAND.

PLEASE COMPLETE BOTH PARTS AS BEST YOU CAN

PART I - YOURSELF

Q.F1 Did your father smoke regularly when you were a child (include adoptive /step father if you lived mostly with them)?
(Please tick '✓' appropriate box)

(12)

Yes..... ☐ 1

No..... ☐ 2

Didn't live with father ☐ 3

Don't know ☐ 0

Q.F2 Did your mother smoke regularly when you were a child (include adoptive /step mother if you lived mostly with them)?

(13)

Yes..... ☐ 1

No..... ☐ 2

Didn't live with mother ☐ 3

Don't know ☐ 0

Q.F3 Did any other member of your household smoke regularly at home when you were a child?

(14)

Yes..... ☐ 1

No..... ☐ 2

No-one else lived in household ☐ 3

Don't know ☐ 0

Q.F4 Does anyone else (other than you or your husband) currently living in your household smoke regularly?

(15)

1. ☐ Yes →Q.F5

2. ☐ No..... →Q.F6

Q.F5 Do any of them smoke indoors at home?

(16)

Yes ☐ 1

No..... ☐ 2

ALL:

Q.F6 How often do you have visitors who smoke in your home?

- Most days..... ☐ 1 (17)
- Few times a week..... ☐ 2
- Few times a month..... ☐ 3
- Less often ☐ 4
- Never ☐ 5

Q.F7 How often are you exposed to other people's smoke at work?

- Most days..... ☐ 1 (18)
- Few times a week..... ☐ 2
- Few times a month..... ☐ 3
- Less often ☐ 4
- Never ☐ 5
- Don't work outside of home ... ☐ 0

Q.F8 Apart from at home and at work, how often are you in situations where other people are smoking?

- Most days..... ☐ 1 (19)
- Few times a week..... ☐ 2
- Few times a month..... ☐ 3
- Less often ☐ 4
- Never ☐ 5

Q.F9 Now combining all possible sources, for how long each day are you exposed to other people's smoke, on average? (20)

- More than 4 hours a day..... ☐ 1
- 1 - 4 hours a day ☐ 2
- 15 minutes - 1 hour a day ☐ 3
- Less than 15 minutes a day ☐ 4
- Hardly at all ☐ 5

PART II - ABOUT YOUR HUSBAND

CC06

Q.F10 Did your husband's father smoke regularly when he was a child
(include adoptive /step father if he lived mostly with them)?
(Please tick '✓' appropriate box)

(20)Spare
(21)

- Yes ☐ 1 (22)
- No..... ☐ 2
- He didn't live with father..... ☐ 3
- Don't know ☐ 0

Q.F11 Did your husband's mother smoke regularly when he was a child
(include adoptive /step mother if he lived mostly with them)?

- Yes ☐ 1 (23)
- No..... ☐ 2
- He didn't live with mother ☐ 3
- Don't know ☐ 0

Q.F12 Did any other member of your husband's household smoke
regularly at home when he was a child?

- Yes ☐ 1 (24)
- No..... ☐ 2
- No-one else lived in household ☐ 3
- Don't know ☐ 0

Q.F13 How often is your husband exposed to other people's smoke at his
place of work?

- Most days..... ☐ 1 (25)
- Few times a week..... ☐ 2
- Few times a month ☐ 3
- Less often ☐ 4
- Never ☐ 5
- Doesn't work outside of home..... ☐ 0

Q.F14 Apart from at home and at work, how often is your husband in situations where other people are smoking?

- Most days..... ☐ 1
Few times a week..... ☐ 2
Few times a month..... ☐ 3
Less often ☐ 4
Never ☐ 5

(26)

Q.F15 Now combining all possible sources, for how long each day is your husband exposed to other people's smoke, on average?

- More than 4 hours a day..... ☐ 1
1 - 4 hours a day..... ☐ 2
15 minutes - 1 hour a day ☐ 3
Less than 15 minutes a day ☐ 4
Hardly at all ☐ 5

(27)

SECTION G - EMPLOYMENT AND RELATED ISSUES

Please complete this section for both yourself and your husband even if certain questions appear to repeat earlier ones.

CC06

Q.G1 At the present time are you/your husband in paid employment (include work through a government scheme), looking for work, a full-time student or doing something else? (Tick '✓' one box only for each of you)

| | Self (28) | Husband (30) |
|---|----------------------------|----------------------------|
| In work:- full-time (30 hrs +) | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Part-time (less than 30 hrs)..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Waiting to start a job already obtained | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Unemployed and looking for work..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Out of work as temporarily sick | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Permanently sick or disabled | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Wholly retired from work..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Full-time student..... | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Keeping house | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Other (specify) | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (29) | (31) |

Answer Q.G2 if either of you is not currently in paid employment; otherwise skip to Q.G4.

Q.G2 Have you/your husband ever had a regular paid job?

| | Self (32) | Husband (33) |
|----------|----------------------------|----------------------------|
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |

↓

↓

Q.G3 How long is it since you/he was last in paid employment?

| | Self (34) | Husband (35) |
|-------------------------|----------------------------|----------------------------|
| Under 1 year | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 1 year to 4 years | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 5 - 9 years..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| 10 - 19 years | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| 20 years or more..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Don't know | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |

Answer Q.G4 if either have, or ever had, a paid job; otherwise skip to Q.H1.

Q.G4 Have you/your husband worked on shift work or unsocial hours since your marriage?

| | Self (36) | Husband (37) |
|----------|----------------------------|----------------------------|
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| | ↓ | ↓ |

Q.G5 Did this regularly involve
(Tick '✓' all that apply)

| | Self (38)M | Husband (39)M |
|------------------------------|----------------------------|----------------------------|
| Changing shift patterns..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Early morning shifts | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Late evenings shifts..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Overnight shifts..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |

Q.G6 Have you/your husband ever worked in any of the jobs or industrial processes listed below. (Please tick '✓' all that apply)

| | Self (40)M | Husband (44)M |
|---|----------------------------|----------------------------|
| Production of arsenic based pesticides..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Application of arsenic based pesticides..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Production of any other type of pesticides..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Application of any other type of pesticides..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Roofer, asphaltworker..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| In a beryllium refining plant..... | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| In a coke plant..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Painter..... | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Asbestos production industry..... | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Welder..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (41)M | (45)M |
| Gas worker..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Construction industry..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Miner (specify type):..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Haulier or truck/ bus driver..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Service-station or garage..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Production of bischloromethylether/chloromethylether..... | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Printing industry..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Production of chromate pigments..... | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Rubber industry..... | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Leather industry..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (42)M | (46)M |
| Battery manufacturing..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Chromium plating..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Cadmium smelting process..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Copper smelting process..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Laundry or dry cleaning company..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Ferrochromium production..... | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Production of artificial Mineral fibres (specify)..... | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Iron and Steel foundry..... | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Production of aluminium..... | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Nickel refining..... | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (43)M | (47)M |
| Production of mustard gas..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Butcher..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Chimney sweep..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |

SECTION H - EDUCATION BACKGROUND (Please complete for yourself and your husband)

CC06

Q.H1 What age were you when you left school or sixth form college?

| | Self (48) | Husband (49) |
|------------------|----------------------------|----------------------------|
| Under 14 | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| 14 | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| 15 | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| 16 | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| 17 | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| 18 | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| 19 or over | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |

Q.H2 What is the highest qualification you/your husband have obtained, either while at school or gained after you left school?
(Please tick '✓' one only. If two or more are equal, tick most recent of these. If still studying take highest to date.)

| | Self (50) | Husband (53) |
|--|----------------------------|----------------------------|
| No qualifications obtained | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| CSE Grades 2 - 5 | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| CSE Grade 1 | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| GCE 'O' level | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| School Certificate | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Scottish (SCE) Lower | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| City and Guilds Craft/Ordinary Level | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| GCE 'A' level/ 'S' level | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Higher Certificate | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Matriculation | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| | (51) | (54) |
| Scottish (SCE) Higher | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Overseas School leaving Exam/Certificate | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| ONC/OND/City & Guilds Advanced/Final level | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| HNC/HND/City & Guilds Full Technological Certificate | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| RSA/other clerical and commercial | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Teachers training qualification | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |
| Nursing qualification | <input type="checkbox"/> 7 | <input type="checkbox"/> 7 |
| Professional qualification (membership awarded by professional institute) | <input type="checkbox"/> 8 | <input type="checkbox"/> 8 |
| Degree, including higher degree | <input type="checkbox"/> 9 | <input type="checkbox"/> 9 |
| Other work-related qualification/certificates | <input type="checkbox"/> 0 | <input type="checkbox"/> 0 |
| Other (please say what) | <input type="checkbox"/> x | <input type="checkbox"/> x |

(52)

(55)

SECTION J - EXERCISE

Please complete for yourself and your husband

CC06

Q.J1 Overall do you think you/your husband get enough exercise?

| | Self (56) | Husband (57) |
|----------|----------------------------|----------------------------|
| Yes..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.J2 In general, compared with other people of the same age, are you/your husband physically

(Tick '✓' appropriate box)

| | Self (58) | Husband (59) |
|----------------------------|----------------------------|----------------------------|
| A lot more active | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| A little more active | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| About average..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| A little less active | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| A lot less active..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |

(60-80) BLANK

SECTION K - CONSUMPTION OF ALCOHOLIC DRINKS

(1-9) Dup (10-11) CC07

Q.K1 Would you describe yourself/your husband nowadays as:
(Tick '✓' appropriate boxes)

| | Self (12) | Husband (13) |
|------------------------------|----------------------------|----------------------------|
| Total abstainer..... | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| Very occasional drinker..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |
| Light drinker..... | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 |
| Moderate drinker..... | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Heavy drinker..... | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |

Answer Q.K2 if either of you drink any alcoholic drinks; otherwise skip to Q. K3.

Q.K2 For each of the specified types of drink please record the amount of each you/your husband would drink in a typical week.
(Write in amounts for each type of drink. If none drunk for any type please record as '0')

| | Self | | Husband | |
|---|---------------|---------|---------------|---------|
| Shandy | ____ pts | (14-15) | ____ pts | (30-31) |
| Normal beers/stout/lagers | ____ pts | (16-17) | ____ pts | (32-33) |
| Premium/export/strong beers/lagers | ____ pts | (18-19) | ____ pts | (34-35) |
| Sherry/vermouth/port | ____ glasses | (20-21) | ____ glasses | (36-37) |
| Wines (including Champagne) | ____ glasses | (22-23) | ____ glasses | (38-39) |
| Spirits (eg Whisky, Gin, Vodka) | ____ measures | (24-25) | ____ measures | (40-41) |
| Liqueurs (eg Brandy, Tia Maria) | ____ glasses | (26-27) | ____ glasses | (42-43) |
| Other (specify type as well as amount in as much detail as necessary): | _____ | (28-29) | _____ | (44-45) |

Q.K3 Have you/your husband drunk more heavily than this in the past?

| | Self (46) | Husband (47) |
|-----------|----------------------------|----------------------------|
| Yes | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

Q.K4 Since your marriage, have you ever felt that you/he ought to cut down on drinking?

| | (48) | (49) |
|-----------|----------------------------|----------------------------|
| Yes | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 |
| No..... | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 |

SECTION L - YOUR PERSONALITY
Complete for yourself only

(1-9) Dup (10-11) CC08

INSTRUCTIONS

Here are some questions regarding the way you behave, feel and act. After each question is a space for answering "YES" or "NO".

Try to decide whether "YES" or "NO" represents your usual way of acting or feeling. Then put a '✓' in the box under the column headed "YES" or "NO". Work quickly, and don't spend too much time over any question; we want your first reaction, not a long-drawn out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions.

Now turn the page over and go ahead. Work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.

CC08

- | | | YES | NO | |
|----|--|----------------------------|----------------------------|------|
| 1 | Do you often long for excitement? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (12) |
| 2 | Do you often need understanding friends to cheer you up? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 | Are you usually carefree? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4 | Do you find it very hard to take no for an answer? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5 | Do you stop and think things over before doing anything? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (16) |
| 6 | If you say you will do something do you always keep your promise, no matter how inconvenient it might be to do so? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7 | Does your mood often go up and down? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 8 | Do you generally do and say things quickly without stopping to think? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 9 | Do you ever feel "just miserable" for no good reason? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 10 | Would you do almost anything for a dare? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (21) |
| | | YES | NO | |
| 11 | Do you suddenly feel shy when you want to talk to an attractive stranger? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (22) |
| 12 | Once in a while do you lose your temper and get angry? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 13 | Do you often do things on the spur of the moment? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 14 | Do you often worry about things you should not have done or said? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 15 | Generally, do you prefer reading to meeting people? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (26) |
| 16 | Are your feelings rather easily hurt? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 17 | Do you like going out a lot? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 18 | Do you occasionally have thoughts and ideas that you would not like other people to know about? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 19 | Are you sometimes bubbling over with energy and sometimes very sluggish? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 20 | Do you prefer to have few but special friends? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (31) |
| | | YES | NO | |
| 21 | Do you daydream a lot? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (32) |
| 22 | When people shout at you, do you shout back? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 23 | Are you often troubled about feelings of guilt? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 24 | Are all your habits good and desirable ones? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 25 | Can you usually let yourself go and enjoy yourself a lot at a lively party? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (36) |
| 26 | Would you call yourself tense or "highly-strung"? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 27 | Do other people think of you as being very lively? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 28 | After you have done something important, do you often come away feeling you could have done better? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 29 | Are you mostly quiet when you are with other people? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 30 | Do you sometimes gossip? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (41) |

| | | CC08 | | |
|----|--|----------------------------|----------------------------|------|
| | | YES | NO | |
| 31 | Do ideas run through your head so that you cannot sleep? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (42) |
| 32 | If there is something you want to know about, would you rather look it up in a book than talk to someone about it? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 33 | Do you get palpitations or thumping in your heart? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 34 | Do you like the kind of work that you need to pay close attention to? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 35 | Do you get attacks of shaking or trembling? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 36 | Would you always declare <i>everything</i> at the customs, even if you knew that you could never be found out? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (47) |
| | | YES | NO | |
| 37 | Do you hate being with a crowd who play jokes on one another? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (48) |
| 38 | Are you an irritable person? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 39 | Do you like doing things in which you have to act quickly? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 40 | Do you worry about awful things that might happen? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 41 | Are you slow and unhurried in the way you move? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 42 | Have you ever been late for an appointment or work? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 43 | Do you have many nightmares? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 44 | Do you like talking to people so much that you never miss a chance of talking to a stranger? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (55) |
| | | YES | NO | |
| 45 | Are you troubled by aches and pains? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (56) |
| 46 | Would you be very unhappy if you could not see lots of people most of the time? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 47 | Would you call yourself a nervous person? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 48 | Of all the people you know, are there some whom you definitely do not like? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 49 | Would you say that you were fairly self-confident? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 50 | Are you easily hurt when people find fault with you or your work? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (61) |
| | | YES | NO | |
| 51 | Do you find it hard to really enjoy yourself at a lively party? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (62) |
| 52 | Are you troubled with feelings of inferiority? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 53 | Can you easily get some life into a rather dull party? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 54 | Do you sometimes talk about things you know nothing about? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 55 | Do you worry about your health? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 56 | Do you like playing pranks on others? | <input type="checkbox"/> | <input type="checkbox"/> | |
| 57 | Do you suffer from sleeplessness? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | (68) |

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS AND
COMPLETE THE DETAILS OVER THE PAGE IN CASE WE NEED TO CHECK ANY DETAILS
WITH YOU AT A LATER DATE

CONTACT DETAILS

Your Name: _____

Your Address: _____

Town _____

County: _____

Post Code: _____

Tel Exchange: _____ Tel No. _____

Date of Interview: ____/____/97

ANNEX CDerivation of Cardiorespiratory Symptoms

Note: See Annexes A and B for full details of the questions asked.

Angina

| | | |
|-----|---|--------------------------------|
| | Yes to Q.B8 | Ever pain in chest |
| and | Yes to Q.B9 | Pain when walk uphill or hurry |
| and | “Stop” or “Slow down” to Q.B11 | What do you do |
| and | Yes to Q.B12 | Goes away when stand still |
| and | “less than 10 minutes” to Q.B13 | How soon after stand still |
| and | Q.B14 includes sternum, left anterior chest or left arm | Chest diagram |

Possible infarction

| | |
|--------------|-------------------------------------|
| Yes to Q.B15 | Severe chest pain lasting half hour |
|--------------|-------------------------------------|

Cough

| | |
|----------------------|---|
| (Either Yes to Q.B16 | Usually cough in the morning in the winter |
| or Yes to Q.B17) | Usually cough during day or night in winter |
| and Yes to Q.B18 | Cough for 3 months each year |

Phlegm

| | |
|---------------------|---|
| (Either Yes to Q.19 | Usually bring up phlegm in the morning in winter |
| or Yes to Q.B20) | Usually bring up phlegm during day or night in winter |
| and Yes to Q.B21 | Phlegm for 3 months each year |

Persistent cough and phlegm

| | |
|------------------|-------------------------------|
| Yes to Q.B18 | Cough for 3 months each year |
| and Yes to Q.B21 | Phlegm for 3 months each year |

Cough, phlegm and chest illness

(Either “2 or more” to Q.B22

Period of increased cough and phlegm lasting 3 weeks in last 3 years

or Yes to Q.B33)

More than 1 chest illness (preventing normal activity for 1 week) in last 3 years

and Yes to Q.B18

Cough for 3 months each year

and Yes to Q.B21

Phlegm for 3 months each year

Bronchitis syndrome 1 (WHO)

Yes to Q.B19

Usually bring up phlegm in morning in winter

and Yes to Q.B22

Period of increased cough and phlegm in last 3 years

and Yes to Q.B25

Short of breath walking on level

Bronchitis syndrome 2 (Dean)

Yes to Q.B18

Cough for 3 months each year

and Yes to Q.B21

Phlegm for 3 months each year

and Yes to Q.B25

Short of breath walking on level

Breathlessness on walking

Grade 1: Yes to Q.B24

Short of breath hurrying or on a hill

Grade 2: Also Yes to Q.B25

Short of breath walking on level

Grade 3: Also Yes to Q.B26

Need to stop for breath when walking on level

Wheezing and night-time shortness of breath score

Number of positive answers to:

Q.B27

Attack of wheezing in last year

Q.B28

Ever had attack of shortness of breath with wheezing

Q.B30

Shortness of breath at night in last year

References

Rose G, McCartney P, Reid DD. Self-administration of a questionnaire on chest pain and intermittent claudication. *British Journal of Preventive and Social Medicine* 1977;**31**:42-8.

Holland WW. *Definitions of chronic bronchitis recommended for epidemiological studies*. Geneva: WHO (Unpublished); 1974.

Dean G, Lee PN, Todd GF, Wicken AJ, Sparks DN. Factors related to respiratory and cardiovascular symptoms in the United Kingdom. *J Epidemiol Community Health* 1978;**32**:86-96.

ANNEX DDefinitions and Derivations of Graded, Semi-continuous and Continuous Risk Factors1. Graded risk factors

| <u>Risk factors</u> | <u>Number of levels</u> | <u>Levels</u> |
|--|-----------------------------|--|
| Age left school | 7 | Under 14, 14, 15, 16, 17, 18, 19 or over |
| Physical activity (self defined, compared with other people of same age) | 5 | A lot more active, a little more active, about average, a little less active, a lot less active |
| Drinker status (self defined) | 5 | Total abstainer, very occasional, light, moderate, heavy |
| Time to first meal | 4 | Within half hour, half-1 hour, 1-2 hours, more than 2 hours |
| Tea consumption and coffee consumption | 6 | More than 5 times daily, 3-5 times daily, 1-2 times daily, several times a week, less often, never |

2. Semi-continuous and Continuous Risk Factors

| <u>Risk factor</u> | <u>Derivation</u> | <u>Possible range</u> | <u>Actual range</u> | <u>Reduced levels</u> |
|---------------------|--|-----------------------|---------------------|---|
| Total alcohol units | Sum of: Shandy 2 x beer 3 x premium beer sherry wine liquor 2 x other, glasses/measures per week | unlimited | 0-105 | 0-1, 2-3, 4-5, 6-10, 11-20, 21-40, 41-60, 60+ |
| Fruit score | Sum* of: Fresh fruit in summer Fresh fruit in winter Pure fruit juice | 0-15 | 0-15 | 0-1, 2-3, 4-5, 6-7, 8-9, 10-11, 12-13, 14-15 |
| Vegetable score | Sum* of: Root vegetables Peas and beans Green vegetables Other vegetables | 0-20 | 0-20 | 0-3, 4-5, 6-7, 8-9, 10-11, 12-13, 14-15, 16+ |
| Salad score | Sum* of: Salads or raw vegetables in summer Salads or raw vegetables in winter | 0-10 | 0-10 | 0-1, 2, 3, 4, 5, 6, 7-8, 9-10 |
| Sweet food score | Sum* of: Tinned fruit Sweets or chocolates Biscuits Cakes Puddings Ice cream, mousse, etc | 0-30 | 0-28 | 0-3, 4-6, 7-9, 10-12, 13-15, 16-18, 19-21, 22+ |
| Fatty food score | Sum* of: | 0-20 | 0-20 | 0-1, 2-3, 4-5, 6-7, 8-9, 10-11, 12-13, 14+ |

Chips

Crisps or similar snacks

Sausages, etc

Eggs

| | | | | |
|--------------------|--|-----------|-----------------|--|
| Neuroticism score | Number of: Positive responses to Personality questions (section L): 2, 4, 7, 9, 11, 14, 16, 19, 21, 23, 26, 28, 31, 33, 35, 38, 40, 43, 45, 47, 50, 52, 55, 57 | 0-24 | 0-23 | 0-3, 4-6, 7-9, 10-12, 13-15, 16-18, 19-21, 22+ |
| Extroversion score | Number of: Positive responses to Personality questions (section L): 1, 3, 8, 10, 13, 17, 22, 25, 27, 39, 44, 46, 49, 53, 56 and Negative responses to: 5, 15, 20, 29, 32, 34, 37, 41, 51 | 0-24 | 0-22 | 0-3, 4-6, 7-9, 10-12, 13-15, 16-18, 19-21, 22+ |
| Body mass index | Weight in kgs divided by (Height in metres) ² (rounded to 2 decimal places) | Unlimited | 16.15- 44.95 | <20.00 20.00-22.50 22.51-25.00 25.01-27.50 27.51-30.00 30.01-35.00 35.01-40.00 >40.00 |

- * Each component variable is graded as 0 = never, 1 = less than once a week,
2 = once or twice a week, 3 = most days, 4 = once a day, 5 = more than once a day.

ANNEX E

Derivation of apartness and criticism Scores

Apartness score

This score was based on answers to four questions:

- Q.A10 Less than half of free time spent with spouse
- Q.A11 Most or all holidays in last 10 years taken without spouse
- Q.A12a No meals taken with spouse on weekdays
- Q.A12b No meals taken with spouse at weekends.

For each subject, the number of positive answers were summed and expressed as a percentage of the total possible (4). The separate percentages for husband and wife were summed to give a score for the couple in the range 0-200.

Criticism score

This was based on answers to the four questions:

- Q.C3 Weight appropriate for height
- Q.D15 Healthiness of diet
- Q.J1 Sufficient exercise
- Q.K4 Ought to cut down on alcohol

For each subject, the number of questions where answers relating to the spouse were more critical than answers relating to the subject were summed and expressed as a percentage of the total possible (4). The separate percentages for husband and wife were summed to give a score for the couple in the range 0-200.

Note: Subjects with partial missing data were not omitted, but couples with no information on either subject were omitted.