magnesaemia and hypocalcaemia,[1] and it is impossible to assess the true contribution to symptoms of either magnesium or calcium.

Minor deficiencies of magnesium may cause severe hypocalcaemia and hypokalaemia that are refractory to replacement treatment. Prompt replacement of magnesium may prevent prolonged tetany, cardiac arrhythmias, and heart failure.

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# SHORT REPORTS

## Smoking and state of health

Cigarette smoking is the largest single external factor contributing to mortality in the British Isles. The number of deaths attributed to smoking is about 100 000 a year.[1] The cost to the National Health Service of diseases to which smoking is a major contributory factor is estimated to be £170m a year.[2] Little research has been published on morbidity in general or the use of services by smokers and non-smokers. We explored these aspects using the General Household Survey for 1980.

### Methods and results

The General Household Survey, based on a sample of the population resident in private households in Great Britain, included information on age, sex, socioeconomic groups, history of smoking, and state of health. There were 23 956 subjects over the age of 16 available for analysis. The subjects' state of health was determined in an interview, which included questions about longstanding illness, disability, or infirmity—"chronic illness"; restriction of activity in the last two weeks due to illness or disability—"acute illness"; consultation with a doctor in the last two weeks; and attendance at the outpatient or casualty department of a hospital.[3] These events were, however, not validated with other sources of information. We classified subjects as never having smoked, ex-smokers who had stopped less than one year ago, ex-smokers who had stopped more than a year ago, mild smokers (1-9 cigarettes a day), moderate smokers (10-19 cigarettes a day), and heavy smokers (20 or more cigarettes a day). Multiple logistic regression analysis with GLIM[4] was used to estimate odds ratios and corresponding confidence limits for reporting "ill health" among these groups, controlling for age (16-44, 45-64, 65 and over), sex, and socioeconomic group.

The table summarises the findings. Chronic illness was more prevalent in smokers after adjustment for age, sex, and socioeconomic group. The odds ratio showed a gradient from mild to heavy smokers. Those who had stopped smoking recently had a relatively lower odds ratio (1·26) than those who had stopped smoking more than a year ago (1·43), although the respective confidence levels overlapped. Acute illness did not show similar gradients in smokers as chronic illness, though a weak dose response relation was observed. The odds ratio, though greater than unity, achieved significance only in heavy smokers. Acute illness was most prevalent in those who had stopped smoking recently.

Smokers also used outpatient services more, though there was no dose response relation. The ex-smokers showed a similar pattern for outpatient consultations as for chronic illness. The results all achieved significance at the 95% level except in the case of those who had recently stopped smoking. The number of consultations with a doctor was not significantly higher in mild, moderate, or heavy smokers. Ex-smokers, on the other hand, had significant odds ratios, the highest being for those who had stopped smoking recently.

*Odds ratios for variables of state of health in non-smokers, smokers, and ex-smokers. Values in brackets are 95% confidence limits*

| Variables | Non-smokers | Smokers | | | Ex-smokers | |
|---|---|---|---|---|---|---|
| | | 1-9 cigarettes a day | 10-19 cigarettes a day | ≥20 cigarettes a day | Stopped smoking ≥1 yr ago | Stopped smoking <1 yr ago |
| Chronic illness | 1 | 1·07 (0·87-1·31) | 1·31 (1·12-1·53) | 1·76 (1·54-2·02) | 1·43 (1·21-1·68) | 1·26 (0·95-1·67) |
| Acute illness | 1 | 1·03 (0·79-1·33) | 1·09 (0·89-1·33) | 1·29 (1·08-1·52) | 1·11 (0·90-1·38) | 1·48 (1·05-2·07) |
| Outpatient attendances | 1 | 1·46 (1·14-1·87) | 1·46 (1·20-1·79) | 1·43 (1·20-1·72) | 1·40 (1·29-1·72) | 1·25 (0·86-1·81) |
| Consultation with doctor | 1 | 1·12 (0·96-1·32) | 1·08 (0·94-1·23) | 1·09 (0·96-1·24) | 1·19 (1·05-1·35) | 1·47 (1·16-1·87) |

### Comment

In our study smokers suffered from chronic and acute illness more than non-smokers, and this increased with the number of cigarettes smoked. They also visited outpatient clinics significantly more than non-smokers, though this was not reflected in their consultations with a doctor.

Ex-smokers also showed greater risks for all variables, irrespective of how long ago they had stopped smoking. Subjects who had stopped smoking most recently consulted doctors most and also suffered most from acute illness, suggesting that they might have stopped smoking because of ill health. The higher ratios for consultations with a doctor might also be related to counselling associated with preventive strategies.

Our findings show that ill health is more prevalent in smokers and ex-smokers than in non-smokers. These findings emphasise the need to concentrate on primary prevention of ill health to reduce the load on the health services from use of tobacco.

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