rates mirror the mortality rates, with a male excess and a sharp peak at age 65, with but one exception. In Rochester, Minnesota, the rate for those age 75+ is apparently higher than that for age 65-74.[7] The prevalence rates by age are also similar to our other indices: male excess and a pronounced maximum at age 65.[6] If amyotrophic lateral sclerosis has an incidence of 1·2 to 1·5 and a prevalence of four to six, then the calculated average duration is about three to four years—which is what is customarily taught.

Aside from age and sex, uniformly accepted risk factors for amyotrophic lateral sclerosis have not been defined. Race is uncertain; the deficit for blacks in United States mortality data has not been assessed in the appropriate morbidity surveys. Rates in the Orient are in accord with those in the Occident. No consistent variations have been reported in HLA patterns. Several case-control studies have been carried out in a search for risk factors. Space precludes their review in any detail. A recent work[8] suggesting a relation with heavy metals based on prior occupation has methodological flaws and seems unconfirmed in other works. Perhaps the most complete retrospective case-control survey is that of Kondo and Tsubaki.[9] They found a significant excess of mechanical injury in the five years before onset for both males and females. In a "prospective" comparison of data recorded in United States military records for patients later dying of amyotrophic lateral sclerosis and matched controls drawn from the military during the second world war there was found to be an excess of operations and injuries before service among the patients with amyotrophic lateral sclerosis. Admissions to hospital during service were in excess among patients with amyotrophic lateral sclerosis only for trauma and in particular for fractures—especially of the limbs.[10] Data from other retrospective series also show a trend to an excess of trauma, even though not usually of statistical significance.

It would seem to me, then, that trauma—and in particular major trauma to the limbs, is in fact a risk factor for amyotrophic lateral sclerosis. That might indeed explain the relative preponderance of males. What this means in pathogenesis, however, is conjectural; but it seems a lead worth pursuing in this otherwise hopeless disorder.

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Will breast self-examination save lives?

We have no way of predicting at which stage in the clinical course of primary breast cancer it will shed clonogenic cells into the circulation to become the seeds of destruction. Nevertheless, the experimental and clinical data do show that the disease is so heterogeneous that some cancers may be capable of metastasising almost from their inception while others remain locally progressive with little ability for dissemination.[1] Irrespective of these biological variables, chronological factors also determine the prognosis. Even cancers of low metastasising potential may lead to a woman's death if diagnosis and treatment are excessively delayed.

This kind of reasoning has encouraged researchers, clinicians, and government agencies to seek methods of "early" diagnosis which might ultimately lead to a reduction of the deaths from breast cancer, which currently stand at about 12 000 a year in Britain.[2] Two approaches are possible: firstly, to screen an asymptomatic "at-risk" population and, secondly, to educate women to examine themselves and promptly report abnormal findings. Both approaches have attracted professionals and politicians alike, so much so that many have accepted them as articles of faith. Yet these seductively simple approaches should be tested scientifically in the same way as any other clinical hypothesis.

So far as screening is concerned (outside the fee-paying sector), scientific evaluation is being attempted in several countries. In contrast, no publication has shown that educating women to practise breast self-examination has resulted in the detection of an excess of premetastatic breast cancers.

In theory, at least, breast self-examination might be a more fruitful exercise and a less costly endeavour than screening by mammography. The growth patterns of solid tumours can be described by a complex (Gompertzian) function.[3] Screening by mammography might detect cancers at a minimum diameter of, say, 0·25 cm—that is, two doublings before the smallest lump detectable by palpation alone. Breast self-examination might detect all lumps between 1 and 4 cm (that is, the next two doublings), which still remain at an "operable" stage. If the doubling time increases with the size of the primary tumour, as might be expected in the later components of a Gompertzian growth curve, then the time available for dissemination is in theory greater for the period covered by breast self-examination than that for mammographic screening.

In my own breast clinic one-quarter of the women with breast cancer have presented with inoperable tumours over the past two years. So perhaps before we invest huge resources into screening the whole female population to detect cancers less than 1 cm diameter we might turn our attention to persuading women to present themselves with tumours between 1 and 4 cm diameter. The DHSS has already accepted this approach and is currently funding a trial in

different regions of Britain to compare mortality rates for breast cancer among screened populations, populations intensively instructed in breast self-examination, and control areas left without the putative benefit of either strategy. It will be many years before any definitive data are available. Meanwhile, a recent report in *Cancer*[4] is encouraging. In this retrospective study of over 2000 women with breast cancer from the Georgia Cancer Management Network the practice of breast self-examination was compared with the stage of presentation at diagnosis. Sixty-seven per cent of the women reported that they practised breast self-examination, rising to 76% among those under 50. There were also the differences between social and educational subgroups. The anticipated proportion of cancers at a favourable stage was significantly higher for breast self-examination (84%) than for "self-accidental" discovery (74%). Furthermore, among the 1264 women practising breast self-examination whose axillary nodes were examined 57% did not contain tumour compared with 50% of nodes from 560 women who did not practise breast self-examination. These pathological differences might eventually be expected to result in different death rates. The authors sensibly conclude that the early discovery of lumps in the breast and breast self-examination may not be causally related: both variables could reflect the health consciousness of the patient. They also go on to say that it is logistically and financially impossible to perform a prospective randomised trial to test this hypothesis—plainly, they had not heard of the current DHSS study.

While accepting the enormous differences in cultural attitudes and health awareness between women in the United States and Britain I will use the Georgia experience to justify the practice of instructing women who attend my clinics in breast self-examination while awaiting the results of the DHSS study. I remain secure in my conviction that, apart from inducing occasional obsessional neurosis, breast self-examination is unlikely to do any harm. For other clinicians who agree I would recommend the leaflet produced by the Women's National Cancer Control Campaign, which provides good illustrations and clear instructions.[5]

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Cognitive therapy for depression

There are limits to what can be achieved by drugs in the treatment of depression. Though active drugs are more effective than placebos, many depressed patients do respond to a placebo and about one-third do not respond to either active drug or placebo.[1] Furthermore, of those who do respond to an antidepressant, about half can be expected to have further episodes of depression in the year after treatment.[2] "Among those 'cured' by any novel remedy," wrote Mapother,[3] "are those who never had the disease, those who still have it, those who have never had the treatment, and those who would have recovered equally well without it."

Any treatment that claims to be as effective as tricyclic drugs in the treatment of depression, to be free of cardiotoxic effects, and to be associated with a better outcome at follow-up after one year must be considered seriously. "Cognitive therapy" makes all three claims.[4] It is an active, time-limited, directive approach suitable for several minor psychiatric disorders. A patient with depression will be offered about 20 treatment sessions aimed at modifying the depressive thoughts that accompany the mood disorder. In the time between sessions he or she will be expected to keep a diary of "negative, automatic thoughts" and also the events or thoughts that led up to them and the emotion that accompanied them. These "automatic" thoughts will be discussed at the next session, when evidence for and against such ideas will be considered and the patient will be encouraged to substitute more realistic beliefs for the painful ones. The patient is encouraged to set up specific testable hypotheses about the painful beliefs and to collect evidence concerning these hypotheses before his next session. He is expected to plan his free time and to incorporate into it activities that give a sense of personal achievement ("mastery") or are pleasurable. The therapist does not rely merely on counter-argument during the sessions but uses a variety of therapeutic techniques in a highly structured form of treatment.

A major American study in 1977 compared cognitive therapy with imipramine treatment,[5] and found cognitive therapy superior both in the level of response obtained and in having fewer patients dropping out. At follow-up one year later patients who had completed cognitive therapy had fewer symptoms, and there was a trend (which fell short of statistical significance) for more of them to be in complete remission.[2] This research has now been partly replicated in Edinburgh by Blackburn and her colleagues,[6] who studied 40 depressed psychiatric outpatients and 24 depressives seen in a general-practice setting. Patients were randomly assigned to cognitive therapy, drug treatment, or a combination of both and were rated on several self-report and observer-rated scales every two to three weeks for up to 20 weeks. The investigators were not able to show significant treatment effects for four of the six self-rated symptom scales, but found a significant effect for depression as measured by the Hamilton scale for depression completed by a psychiatrist.

This repeat of the American findings is suggestive but not yet conclusive. Patients assigned to the combination treatment were significantly more depressed than those assigned to either treatment alone, and for this reason the investigators had to resort to a highly complex statistical treatment of their data: an analysis of covariance on percentage change scores, the covariates being duration of illness, socioeconomic state, and education. The decision to use three treatments and two settings meant that the number of patients in three of the six cells was fewer than 10 and the patients receiving cognitive therapy received much more professional time than those receiving drug treatment. The time spent with the drug therapists was not stated, but in the American study the patients were with their cognitive therapists for twenty 50-minute sessions and with drug therapists for twelve 20-minute sessions.