Some asbestos has been used for centuries, and its commercial exploitation began in 1880, but it became a common material only in this century. Some mesotheliomas, however, were diagnosed before this time, suggesting that they were not caused by asbestos.[5] Other pointers in the same direction are that mesothelioma in unexposed people occurs at an earlier age than tumours related to asbestos[6] and that the parents of such patients have a high incidence of cancer.[7]

The interval between first exposure to asbestos and the development of a mesothelioma is long. In gas mask workers —with accurately defined exposure between 1939 and 1944 —the first tumour appeared in 1963.[8] The mean latent period to death in workers in an asbestos factory was 32 years, and in only two out of 188 was it less than 18 years (both 14 years).[4] In South Africa, where environmental pollution with crocidolite has been very heavy in the past, mesotheliomas did not develop until adult life,[9] and in the area of Turkey where mesotheliomas due to a non-asbestos mineral, erionite, are common, the tumours are not in persons under the age of 20, despite exposure to fibres in the soil and walls of buildings from early childhood.[10]

The clear conclusion is that most, if not all, mesotheliomas induced by fibre have a latent period of at least 12 years and usually much longer. Sporadic cases, however, occur in unexposed children below the age of 12.[11] Most probably these are not caused by environmental asbestos; so it is reasonable to postulate that some cases occurring in adults are also not caused by asbestos.

The latent period is of medicolegal importance. It should be taken into account when a mesothelioma develops soon after asbestos exposure, particularly light exposure. Timing also needs to be considered when there has been exposure in several employments and a judgment has to be made on which may have contributed to the development of the tumour.

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Research in general practice

The research division of the Royal College of General Practitioners is unhappy with the facilities available for established general practitioners and with the research content of vocational training programmes—see the article by Stott *et al* (p 1198). They looked only at what is available through the widely scattered academic departments of general practice and the offices and representatives of the Royal College of General Practitioners, ignoring the many other sources of help and advice which may be tapped, but it is reasonable to expect the college and universities to show a lead here. Whether the college as a whole is as concerned as its research division is debatable; the last two reference books for members[1,2] contain only one article discussing research methods,[3] and the 1984 *Medical Annual* contains none.[4]

Aspiring general practitioners are sometimes advised that a research interest may be a handicap when they are applying for jobs, and a recent article provides some evidence for that warning.[5] Yet the British general practitioner has almost unique opportunities for some forms of research. Since everyone is supposed to register with a general practitioner, and most people do so, many sorts of epidemiological study, management reviews of specific diseases, and audits of screening procedures may be performed in a way that would be impossible in, for example, the United States. By contrast, some other sorts of research are difficult in general practice: for example, assessment of the efficacy of different drugs or biochemical studies of tests tend to be unsatisfactory because of insufficient numbers and inadequate control groups. Multicentre general practitioner trials of drugs are rarely convincing. There are, of course, exceptions such as the oral contraceptive and hypertension studies, but these require a large multidisciplinary team, and the individual general practitioner usually acts as a recorder of data rather than testing his or her own hypotheses.

General practice research should, then, be different from that found in hospitals, and I question Stott's suggestion that all trainee general practitioners should be expected to participate in it; it is difficult to produce a good quality piece of research during one year as a trainee. If vocational training schemes were directed more towards the needs of the aspiring general practitioner and less towards providing junior staff for hospital specialties things might be different, in that time could be set aside to pursue research or other special interests over the whole of the three year course. Even then only a few enthusiasts would be likely to produce something worth while for themselves or others. Those with such enthusiasm must be encouraged, and all trainees should learn about research methods during their vocational training courses, with additional help and facilities being given to those who show an interest. Trainees need to acquire, however, many skills, and research ability is not the most important. Moreover, it would be foolish to allow achievement in research to become a dominant factor in selecting potential general practitioners or in estimating their worth to their patients or profession.

Nevertheless, established general practitioners who are interested in research could and should have better facilities. Many sources of advice are already available, but it may be both time consuming and difficult fully to exploit them, especially for a doctor who lives and works some distance from recognised centres. Academic departments are overstretched and underfunded, and the Royal College of General Practitioners' faculty secretaries and regional advisers are unlikely to have much time to help unless they have a research interest themselves. Postgraduate medical centres might perhaps do more. Each year more relevant textbooks, journals, and collections of articles should find a place in the library, together with files of information on sources of statistical advice, help with research methods, and funding available both locally and nationally. Postgraduate centres might also act as a forum for general practitioner research groups and for presenting and discussing results. Most already provide an admirable education programme for general practitioners, but the flow of information is usually

from hospital specialists to general practitioners, and the presence of a general practitioner research group might stimulate a healthy state of affairs in which the hospital disciplines might learn something from general practice.

Some form of ethical control is needed for research in general practice. Ethical considerations should be included in the research element of vocational training courses, and advice is available through the Royal College of General Practitioners, but again a local body would be helpful. Local medical committees might see this as within their scope, or again postgraduate centres might be a focus for an ethical committee. Membership of such committees might include representatives of patient groups such as community health councils as well as general practitioners and hospital doctors. At present the only arbiters of ethical and scientific quality seem to be the journals to which completed papers are submitted for publication. Unfortunately, by then the damage may have already been done, both to the future enthusiasm of the researchers, who (with the best intentions) may have produced an ill conceived and poorly executed piece of research, and to the patients on whom it was carried out.

Many improvements are, therefore, possible both in motivating general practitioners to do good research and in providing them with facilities. Nevertheless, we should remember that good general practice is primarily concerned with providing medical services, both technological and humanitarian, to the patient, and that, though research can and should improve the ways in which this is done, it must not become the tail that wags the dog.

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Regular Review

Coronary artery bypass grafting for the reduction of mortality: an analysis of the trials

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A coronary artery bypass graft is without doubt highly effective for the relief of angina and should be considered in almost any patient whose angina does not respond adequately to medical treatment. What constitutes "adequate" control of angina is a highly subjective judgment which depends on the patient's lifestyle and on his expectations—and on the expectations of his doctors and his relatives. If symptomatic relief is the only benefit from a bypass then the provision of facilities for the operation should compete for funds with provision of other symptomatic treatments such as hip replacement and the care of the aged or mentally ill. However, if bypass grafts prolong life then the provision of adequate surgical facilities becomes a priority. We need, therefore, to consider whether or not there is convincing evidence that bypass grafts increase longevity. We need either uncontrolled evidence that is so clear cut as to make a clinical trial both unnecessary and unethical or we must depend on the results of randomised trials.

This article reviews the mortality results of the three randomised trials so far published, those of the Veterans Administration,[1-4] of the European Coronary Surgery Group,[5-7] and of the Coronary Artery Surgery Study (CASS).[8,9] Results of small trials based on only about 100 patients have been reviewed elsewhere.[10]

The Veterans Administration study

This study shows the importance of carrying out an investigation of a new form of treatment while it is still at an early stage of development, before attitudes harden and studies begin to be thought "unethical." At the same time it shows how difficult it can be to conduct a study before the participating centres have become familiar with a new treatment.

Patients were recruited for the Veterans Administration study between 1970 and 1974 with 13 centres admitting 1015 patients. No details have been published about the population from which these patients were drawn.

The inclusion criteria for the study were a stenosis of at least half of the diameter of at least one coronary artery; provided the anatomical lesions were suitable for operation there were apparently few exclusion criteria other than the presence of a left ventricular aneurysm or of left ventricular failure. The patients' characteristics would be expected to put them at high risk: 92% had at least moderate angina (New York Heart Association class 2 or 3) and 61% had had a previous myocardial infarction. Thirteen per cent had disease of the left main coronary artery, and 53%, 33%, and 14% respectively had three, two, and single vessel disease. Eighty per cent either had radiographic evidence of left