PRACTICE OBSERVED

Practice Research

Randomised double blind controlled clinical trial of intranasal budesonide in treatment of hay fever

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Abstract

The effectiveness of budesonide, a new non-halogenated glucocorticoid administered by nasal inhaler, was evaluated in a double blind comparison with placebo in patients presenting with hay fever. Patients were supplied with antihistamine tablets and eye drops for use when they considered that their symptoms were inadequately controlled by their inhaler. Patients recorded the severity of their symptoms in a daily diary card and visited their general practitioner for assessment weekly for four weeks.

All nasal symptoms of hay fever were appreciably reduced in the group taking budesonide and, although their eye symptoms were more severe than in the group taking placebo, they did not use appreciably more eye drops than the latter. The placebo group used appreciably more antihistamine tablets than those in the budesonide group. No patients were withdrawn from the budesonide group because of treatment failure or unacceptable side effects. The results suggest that budesonide is an acceptable and effective treatment for the nasal symptoms of hay fever.

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Introduction

The clinical picture of hay fever is familiar to general practitioners, with its combination of eye and nasal symptoms that result in degrees of upset from mild inconvenience to severe, almost disabling distress. The results of the 1971 general practice morbidity survey showed an annual consultation rate of 11.0 per 1000 patients.¹ Over longer periods Fry observed a consultation rate of 20 per 1000 patients and Hodgkin 3.1 per 1000.^{2,3} The latter differences in frequency may reflect local factors.

Several preparations for hay fever are prescribed in general practice, including antihistamines, nasal vasoconstrictors, sodium cromoglycate, and corticosteroid and desensitising injections.⁴ The nasal inhalation of a topical steroid, such as budesonide dipropionate, has recently proved an acceptable treatment in many patients. Topical corticosteroids seem to be efficient and safe in both adults and children.^{5,6}

Budesonide is a new non-halogenated glucocorticoid that has been introduced for the treatment of asthma.⁷ In vasoconstrictor tests on the human skin to determine the topical anti-inflammatory potency of corticosteroids budesonide was roughly twice as potent as beclomethasone dipropionate.⁸ In a single blind comparison in patients with hay fever induced by grass pollen, sections of an ear, nose, and throat department in Sweden budesonide given intranasally twice daily gave better relief from symptoms than beclomethasone given four times daily, the total daily dosages being identical.⁹

The results of a double blind Danish study in which staff members of a Copenhagen hospital volunteered to participate showed the superiority of budesonide over placebo in relieving the nasal symptoms of hay fever induced by grass pollen.¹⁰ Appreciably better results for budesonide over placebo were found in another double blind Swedish study of patients attending an ear, nose, and throat department as outpatients.¹¹

When these patients are included in a further end point analysis, symptoms free day accounted for 1720 of the 2041 daily reports of nasal symptoms made by the patients taking budesonide. Thus 66% of all reports from patients regarding nasal symptoms in the budesonide group show that they were free of these symptoms. The figure for the patients taking placebo was 34%. The daily reports of moderate or severe nasal symptoms account for only 10% of the reports by patients taking budesonide, compared with 26% for patients taking placebo.

SIDE EFFECTS

No patients were withdrawn from either group because of unacceptable side effects. However, one patient in the placebo group was withdrawn because of a combination of lack of efficacy and headaches. Nine patients in the budesonide group and six in the placebo group reported headaches at some point in their diary cards. Nine patients in the budesonide group and 10 in the placebo group reported a sore throat or hoarseness, or both. Six patients in the budesonide group and five patients in the placebo group reported nosebleeds. Drowsiness was reported by 10 patients who had taken antihistamine tablets, but also by 18 taking placebo and 20 taking budesonide who had not taken antihistamine tablets at any time during the week when this symptom was reported.

Discussion

Although no data were available for the pollen counts experienced by individual patients, analysis of the pooled data using daily pollen counts from the one centre in Leeds suggests that variation in the pollen counts between the budesonide and placebo groups was unlikely so as to bias the results in favour of the budesonide group. The pollen count recorded at the centre in Leeds was in the range 0 to 40 counts/m³ of air for about 30% of the days in the study of each group. At this level a comparable percentage of symptom free days would be expected in the data used for analysis of the effectiveness of the treatments, and this would reduce the level of any differences in symptoms experienced by patients in the placebo and budesonide groups. None the less, there was an appreciable excess in the level of the four nasal symptoms—stinging, itching, nasal blockage, runny nose, and nasal itching—experienced by patients taking placebo despite the greater number of antihistamine tablets taken by this group.

Table II suggests that patients in the budesonide group used slightly more eye drops than those in the placebo group: 75% of patients in the budesonide group used 21 eye drops or fewer between days four and 28 inclusive and 70% of patients in the placebo group 18 drops or fewer. Patients in the budesonide group, however, used appreciably fewer tablets: 75% of patients using five tablets or fewer, and in the placebo group 24 tablets or fewer. Clearly, any difference in use of eye drops is slight compared with the difference in use of tablets.

The increased use of tablets attenuated the severity of eye symptoms in patients in the placebo group, but, interestingly, patients in the budesonide group do not seem to have compensated for this lack of attenuation of eye symptoms by an appreciably comparable increase in the use of eye drops. This finding may imply some lack of concern for the remaining eye symptoms given that the severity of their nasal symptoms was being reduced by the use of budesonide.

In considering the results, however, the analysis of those 60 patients who completed the full four weeks' study underestimates the actual effect of budesonide in controlling nasal

symptoms since it does not allow for the withdrawal of the eight patients who used the placebo inhaler and considered this ineffective. A final analysis including these patients showed that the mean percentage of symptom free reports for nasal symptoms were 66 and 34 for the budesonide and placebo groups respectively. Perhaps more strikingly, 51% of patients in the budesonide group were free of nasal symptoms for 75% of their reports compared with 9% in the placebo group. None of the patients in the budesonide group was withdrawn from the study because of possible side effects, and analysis of all reported events in the diary cards showed no evidence that patients taking budesonide experienced more problems associated with treatment than patients in the placebo group.

The results show that intranasal budesonide in a dose of 200 µg twice daily is appreciably superior to placebo in controlling the nasal symptoms of hay fever. There is also evidence that some hay fever patients who have their nasal symptoms well controlled may not feel the need to resort to further medication for their eye symptoms.

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There have been no studies in the community of budesonide. Our study was designed to investigate the efficacy and possible side effects of treatment with intranasal budesonide compared with placebo in patients who present to their general practitioners and have free access to antihistamine tablets and eye drops for their hay fever.

Methods

Patients between the ages of 16 and 40 who had hay fever symptoms between 1 April and 31 August in each of the two preceding years were admitted to the study between 1 April and 31 July 1983 if they presented to their general practitioner with at least three of the following six symptoms: bouts of sneezing, nasal blockage, runny nose, nasal itching, eye itching, and running eyes.

Patients who had received desensitising injections in either of the two previous years were excluded from the study as were patients using inhaled or oral steroids, bronchodilators, or sodium cromoglycate treatment, or any combination of these. Also excluded were patients who were pregnant or who had an intermittent respiratory tract infection.

The study was performed as a double blind controlled trial, patients being randomly allocated into one of two treatment groups after they had given written informed consent to their participation. One group was supplied with a nasal inhaler that administered 50 µg of budesonide per inhalation, while the control group received a placebo nasal inhaler. Both groups were asked to administer two puffs of the inhaler into each nostril twice a day. The budesonide group therefore received 200 µg twice daily.

Patients in both the budesonide group and the placebo group were supplied with chlorpheniramine tablets and atropine-phenylephrine eye drops to be used in appropriate dosage if their hay fever symptoms were not controlled sufficiently by the trial medication within three days. An information sheet was supplied to patients that reinforced the instructions that they were given by their general practitioner.

On admission to the study patients were asked to rate the six symptoms of hay fever as none, mild, moderate, or severe and were given a diary card to record, at the end of each day of the subsequent seven days, the level of their symptoms and the number of chlorpheniramine tablets and eye drops used. Patients were asked to record any side effects or other medication used and instructed to post the diary card directly to the division of general practice at the end of the seven day period. Patients were seen weekly for a further four weeks for review; a further diary card for seven days was issued at each of the first three follow-up visits. Patients in both the budesonide group and the placebo group were, therefore, expected to use their inhaler for four weeks.

Patients were withdrawn from the study if they considered that the medication was not helping their symptoms or if they had any unacceptable side effects. Daily pollen counts were recorded at a site in Leeds during the study. Subsequently, data from the patient diary card were related to the pollen count for the corresponding day.

Results

Eighty four patients were entered into the study. Of these, 16 patients did not complete the study for reasons other than to the lack of efficacy or possible side effects of medication. A further eight patients, all in the placebo group, were withdrawn at their request during the trial because of unacceptable levels of hay fever symptoms. No patients were withdrawn from the budesonide group because of treatment failure or side effects. Of the remaining 60 patients, 30 each had been randomly allocated to the placebo group or to the budesonide group. The following analysis relates to the 60 patients.

COMPARABILITY OF PLACEBO AND BUDESONIDE GROUPS

Pollen exposure during the study.—Comparison of the treatment groups in respect of severity of initial symptoms and exposure to pollen using a χ^2 test of independence showed no significant differences between the placebo and budesonide groups.

Symptom severity on entry into the study.—Data for all nasal symptoms were grouped together as were data for both eye symptoms since the frequencies were too small to make statistical comparisons of the

two treatment groups symptom by symptom. Subsequent analysis by the χ^2 test of independence showed no significant difference in severity of initial symptoms between the budesonide and placebo groups.

EFFECTIVENESS OF BUDESONIDE AND PLACEBO IN CONTROLLING SYMPTOMS

Use of antihistamine tablets and eye drops.—The median number of tablets used by the placebo and budesonide groups as recorded in the diary cards was 7.5 and 0 respectively. Table I shows the frequency distribution for tablet use. The result of the Wilcoxon

TABLE I—Frequency distribution of consumption of antihistamine

No. of patients receiving placebo (n = 30)	No. of antihistamine tablets taken					
	0	1-10	11-20	21-30	31-40	41-50
	4	12	3	2	3	5
No. of patients receiving budesonide (n = 30)	18	7	2		2	1

rank sum test showed that the placebo group took significantly more antihistamine tablets than the budesonide group ($p < 0.005$). Similar analysis was carried out for the use of eye drops, the median number of eye drops used by the placebo and budesonide groups being 8 and 0 respectively. There was no significant difference between the median number of eye drops used by the two groups (Wilcoxon rank sum test $p = 0.31$). Table II shows the frequency distribution for use of eye drops.

TABLE II—Frequency distribution of use of antihistamine eye drops

No. of patients receiving placebo (n = 30)	No. of eye drops used					
	0	1-20	21-40	41-60	61-80	81-100
	11	13	1	3	2	
No. of patients receiving budesonide (n = 30)	8	14	1	2	2	2

Level of symptoms recorded by patients.—The data on the diary cards for the six symptoms were analysed separately. Patients who had not had a particular symptom in the previous two years and who were not complaining of that symptom on entry into the trial were excluded from the analysis of that symptom. To ensure that the patient's response to treatment had achieved a steady state, data for days 1, 2, and 3 of each patient's diary card were excluded from the analysis. Statistical comparisons were made using the χ^2 test of independence, the null hypothesis being that the severity of symptoms was independent of the treatment group. Analysis showed that patients in the budesonide group experienced all four nasal symptoms less severely than those in the placebo group. In contrast patients in the placebo group suffered the two eye symptoms less severely than those in the budesonide group, possibly reflecting the greater use of antihistamine tablets in the placebo group. The difference for each of the six symptoms was statistically significant. Table III shows the frequency distribution of the level of severity of all four nasal symptoms combined, as reported by patients in the placebo and budesonide groups. The comparison excludes the eight patients who used the placebo inhaler and did not complete the 28 days of their study period because of ineffective control of symptoms.

TABLE III—Frequency distribution for severity of nasal symptoms

No. (%) of reports from 30 patients receiving placebo (n = 30)	Severity of symptoms			
	None	Mild	Moderate	Severe
	8 (26.7)	10 (33.3)	10 (33.3)	2 (6.7)
No. (%) of reports from 30 patients receiving budesonide (n = 30)	17 (56.7)	6 (20.0)	5 (16.7)	2 (6.7)

Life Changes

Leaving school

ALEXANDER L BROWN

The following accounts were written by two young men who had left school some time before.

Personal account

The decision what to do on leaving school seemed to come suddenly, though for years I knew that I had to face it. Sixteen years of school is enough for most people, and if you have got nowhere academically staying on is a waste of time. I decided to try college. The rules were the least of my worries. I had stopped running about after you. I stepped into a faster life and enjoyed it to the full, forgetting the future and living for the moment. But I got fed up with having no money and wasn't interested in the course so I left to get a job.

You take it for granted that getting a job will be quite easy but you find that there is hardly any work around. When you are first unemployed you are not really too concerned. But then being out of work affects you. You become lethargic and the less you do, the less you want to do. This creates tension in the family and everybody ends up rowing. Even though you are paid benefit, money is less important than actually working. From having something to do each day and feeling as though you are getting somewhere, a lot of days become the same and you get bored.

I personally regret not working harder at school, but it is no good dreaming about the past because that will not change it. When I left I didn't at first realise that I had responsibilities. I don't hold anyone but myself responsible now and know that I will sort things out.

Personal account

"Enjoy your school days—they are the best days of your life" was what I was told. Mine were happy and successful. I did well academically and at sport. Long hours of study to get the necessary grades for university entrance had, however, made me irritable at home. I felt that it was right for me to enter a new, more independent life. My only regret was that I would not see my girlfriend as much: she was going to a college 200 miles away from mine.

At first I lived in an all male hall of residence that housed 400 students, and felt lucky to be in a corridor of affable, friendly blobs. Superficially I mixed well, but did not seem to feel the excitement the other freshers exuded, nor become involved in their frenetic proceedings. I was disappointed at being treated like a schoolboy and felt that my fellows were rather immature. I drifted from one group of freshers to another but felt that mem-

bership of any group compromised any sense of independence. It was a Catch 22: if you didn't swing along you swung alone. My loneliness was especially acute when I found myself at "cattle market" parties and discos. The "grab a woman while you can still stand up or before they have all gone" philosophy made me feel out of place. I wondered if my girlfriend was similarly placed.

I felt that I was losing my identity because I did not know the people around me sufficiently well to be able to compare myself with them. When I met my girlfriend neither of us was happy. I tried to transfer to a university nearer to her college but this was not possible. I was shocked to find out, on returning home once, that my father had been seriously ill and I had not been told.

I began my second year well enough academically, but had begun to doubt myself and whether I could complete the course. I became depressed and was put on tablets for this by my general practitioner. My tutor agreed with me that I could not take further examinations while in this state. I decided to take a year out and worked as a nurse in a hospital for mentally handicapped children. I am now back at university and this time enjoying it: the place hasn't changed but I have.

Doctor's comment

The school days of everyone are similar in at least one respect. Order is imposed on daily life by external authority. Thus not only are lessons timetabled but private study is arranged to a schedule and exercise is taken in the form of prescribed games. Attitudes and beliefs are moulded by the ethos of the school. The security engendered by such regimentation is mentioned by both writers above. A decision about future career is usually taken with parents, but a young person is faced with some freedom of choice in an important matter, probably for the first time. A great deal of the future may be at stake so the decision is an important one. Even those, like the first writer, who find school tedious and experienced a sense of release on leaving, soon found that freedom carries with it accountability and the feeling of being responsible for oneself can be alarming.

Some of the problems encountered on leaving school by three groups of youngsters will now be considered.

Those who go straight to work seem to have fewest problems. Though many may continue living at home, a new status, that of a wage earner, has been achieved. Until marriage, when a young person has money to spend in pursuit of pleasure. Problems include tiredness at the end of a working day and boredom with repetitive work. Some may resent being exploited as "cheap labour." For the more ambitious continuing education is now possible—for example, evening classes and the Open University. The recently introduced Youth Training Scheme guarantees employment and training for a year, but many probably feel uncertain about the prospects of longer term employment.

Those who become unemployed.—Society faces a dilemma in regard to unemployment in school leavers. The traditional "work ethic" continues and is likely to lead to frustration and a sense of

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guilt in those who are unable to find employment. Not only do they miss out on the period of relative affluence of their young working contemporaries, but their lives on leaving school become unstructured. When no regular work has to be done the incentive to do other things decreases; work structures time. The social contacts at work and the participation in collective activity that work provides are missing.

Those who go to college—young people going to university usually have high expectations. Getting there is an achievement towards which they have striven for a long time. The realities on arriving may not measure up to the expectations. The majority who go to university have left home for the first time. Most settle in within a few weeks. The initial desire to travel home at weekends is soon replaced by new friends and social activities. The feelings of one who failed to identify with his surroundings, the sense of isolation and of being different, is described by the second writer. A positive rush to find new boyfriends or girlfriends occurs at university and a regular partner is almost "de rigueur." Overseas students are particularly vulnerable socially. Adaptation to a different language and culture, greater difficulty in making friends, in obtaining lodgings, and finding girlfriends of their own social standing all contribute to this. They also feel a burden of responsibility for achieving success to live up to the prestige and expectations created at home. In addition to making a social adjustment the student must adapt to different and more impersonal teaching.

The change from school to whatever follows is but one of the changes which necessitate adjustment at this time of life. Adolescence, the transition from childhood to adulthood, is characterised by physical and sexual development and has been underway for some years. Psychological adaptation during adolescence is often precarious. Periods of adult behaviour may be interspersed with regression to childishness, and a degree of uncertainty and insecurity is usual. How we feel about ourselves, our identity—up to now largely determined by what our parents think of us—is questioned. Intense preoccupation is felt concerning questions such as "Who am I?" "What sort of person do I wish to become?" "What is life about?" Answers to these questions may be found only by comparing self with others, and for this new social relationships need to be developed. The academically gifted may be at some disadvantage. The pressure to obtain adequate grades at O and A level may curtail social life and result in a certain naivety—the writer of the first personal account seems the more worldly wise.

How do general practitioners become aware of the difficulties faced by those in transition from school to adult life? Consultations may be about physical symptoms, sexual difficulties and contraception, psychological symptoms, and use of drugs.

PHYSICAL SYMPTOMS

Fear of being disadvantaged in a competitive adult world by physical abnormality causes preoccupation with body structure and function. Those with a genuine handicap may need encouragement in coming to terms with the future. Illnesses which may result in sudden loss of control, such as diabetes and epilepsy, may undermine self confidence and require informed discussion. Concern in excess of actual disfigurement may be felt by sufferers from acne and other skin disorders.

An underlying fear of inability to attract sexual partners may be impaired. Apparently trivial disfigurements should not be dismissed and considerable reassurance may be required. Concern about the state of the genital organs, including the female breast, may be voiced, and alarm felt on discovering what are, in fact, normal skin glands on the male scrotum and penis.

Frequent consultation about trivial medical problems may indicate underlying anxiety or depression. The young person may not at first feel safe enough to reveal the cause of the

distress. On the other hand, physical symptoms may precede awareness of tension or depression.

SEXUAL DIFFICULTIES AND CONTRACEPTION

Greater sexual freedom is now enjoyed but new problems have been created. Doubt about whether to have intercourse may conflict with the wish not to be left out. The break up of a relationship made more intense by physical consumption may cause considerable trauma. Conversations about contraception enable the general practitioner to become aware of such problems. In men feelings of sexual inadequacy may be based on unrealistic expectations gained from exaggerated accounts of athleticism by contemporaries or from novels. Awareness of homosexuality and other deviation may cause distress.

PSYCHOLOGICAL SYMPTOMS

Anxiety or depression may be found in any young person however their future is taking shape. The results of a recent study has shown that the scores in the General Health Questionnaire for school leavers were appreciably affected by unemployment and it was clear that the increase was the result of unemployment rather than the cause.¹

More favoured youngsters also have difficulties. The anxiety felt by new students probably springs from uncertainty of status in the transition from being a big fish in the school pond to being a small fish in the university sea. The initial transition has been described thus:

"In the early weeks reassurance and confirmation of identity may be sought by a number of means. Acceptance may be won from fellow students by sociability, by eccentricity, by the fluent expression of the general disillusionment, by the setting up or joining of illicit subcultures, for example around drugs, or more generally by the consolidation of in-groups and cliques. Approval may be won from tutors by the familiar means of achievement but this may be inhibited by fears or fantasies of their elevated intelligence and status. To be isolated or shy, neither fellow students nor tutors may be approachable and to these the reassurance offered by the family or by friends at home may provide the only safe refuge, so that social initiative within the university may be blunted."²

Difficulties in academic subjects often escape recognition until examination time. Sixth form classes are often small, and throughout school teaching is adapted to individual needs. Lectures are impersonal, and unless work during term is monitored the difficulty experienced by some students may be missed. Anxiety and depression may result from study problems.

USE OF DRUGS

Taking illegal drugs, briefly indulged in by many, becomes a habit in some. Drug abuse is common in the young. "Mind expanding" drugs such as marijuana and LSD may be particularly attractive to those searching for identity. Their effects include a feeling of enhanced consciousness and of being at one with nature and the universe. A sense of identity may also be given by membership of a subculture, with a language of its own, a unique sense of priority, and unceremonial acceptance by other members of the group. Advice may be sought after a "bad trip" or on the discovery of the drug by a parent.

How can the general practitioner help those who are in difficulty during the transition from school to adult life? The doctor's role as a source of information about normal anatomy and physiology has been mentioned and minor blemishes should be treated with an understanding of their meaning to the sufferer. Furthermore, the general practitioner has an important role as a "listening post." He or she must be able to recognise signs of distress and encourage discussion of problems

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Rethinking Established Dogma

Screening for health

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To screen or not to screen is still in general terms an open medical question, hence the title "Rethinking established dogma" of the series to which this article contributes. The huge number of publications on whether and how to screen people for physical and mental abnormality testifies to the duration and intensity of interest in the principles and practice of prevention, health maintenance, presymptomatic detection, reduction of risk—various terms have been coined to signify this departure from the traditional sequence in medical management of diagnosis and treatment, where the process is initiated by a patient (a person with a complaint) and the doctor responds. But over a long period the idea of the doctor initiating contact with uncomplaining people has become commonplace; children and their parents, workers in many occupations, men and women at special risk, and those seeking life insurance have come to expect to be examined in various ways, however well they think they are, and at least to accept, even though they do not fully understand, the rationale given to them. Some such examinations are compulsory, most are voluntary.

The protagonists would like to see a much wider range and uptake of screening services, even to the extent of regular "check ups" for all, as part of a national "better health" policy. Antagonists are troubled by what they see as attempts to coerce the population not only into submitting to procedures that may be of dubious value but also into accepting some vague national or international concept of fitness. Freedom of choice is a very dear to democrats, all the more so when freedoms are thought to be increasingly controlled. It therefore seems unlikely that there will be any substantial new move to expand compulsory screening.

I have a growing feeling that, despite the waxing and waning of medical enthusiasms of many kinds, both the number of practising screeners and public belief in their virtue are on the increase. Does this mean that the evidence for any proposed or given specific programme—child development, cervical smear, hypertension, diabetes, pregnancy as well as intrapregnancy care, breast cancer, obesity, and so on—has passed the distribution of these parameters and who would be willing to treat the treatable provided that the numbers were not excessive. But my guess is that most would be inhibited by their present workload from coping with an iceberg of unknown size. So might most general practitioners, but other inhibitors are at work in primary care; their self employed and more work sensitive contracts would probably require negotiation of specific fees for routine screening activities; practice sizes have grown so widely that what might be feasible and useful in one location would be out of the question in another—unless, of course, contracts were renegotiated.

Community physicians, successors to not only public health doctors but also to hospital superintendents, seem with a few exceptions to be so heavily loaded with administration that they have little time to promote let alone organise new screening facilities—or is another reason the prevailing uncertainty about what is worth while and can be afforded?

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some critical point on the cost-benefit curve? Or does it point to demand by a public that is not prepared to wait for professionals to agree on specific answers to the question: "How sure do we have to be before taking action?" My guess is that both are always at work, each reinforcing the other through the influence of controlled enthusiasm and leadership, and each subject to setbacks such as disputation among experts—for example, on the predictive value of screening for risk of ischaemic heart disease.

Public health

I regret the near disappearance of the term "public health," which for so long was associated with the development of social and personal responsibility for health care, including maternal and child welfare, control of infectious diseases, health education, safety at work and in the home, and other services, some of which pioneered what we now refer to as screening—for example, mass miniature radiography in the detection of pulmonary tuberculosis. I have never really understood why the designation disappeared with reorganisation—surely the old student image of drains died decades ago. Just suppose that we could revive the term and properly apply it to those preventive services that are currently offered or managed by health authorities in cooperation with clinicians in primary and secondary care. Such regional public health organisations might seek and deploy powers to evaluate, promote, and innovate various screening services by using modern information technology and management services from which might emerge far better data on the merits, costs, and public acceptability of preventive screening measures, matters on which our present knowledge is too fragmented and uncertain.

Professional attitudes

Assuming that public attitudes are slowly moving in favour of opportunities for voluntary screening in respect of several diseases and disorders and that bodies like the Health Education Council and the new College of Health will, guided by the enthusiasts, accelerate demand, what may be expected of the medical (and related) professions? Are there any signs of generalised spread from the localised screening "hot spots"? What happens when someone suggests that small or larger populations should be offered a standardised service?

There are few if any ready to hand, neat statistical answers. Given the resources to tackle a big enough one off population study of adiposity, blood pressure, urine tests, intracranial pressure, haemoglobin concentrations, skeletal or soft tissue imaging, blood chemistry, or any other feasible measurement,

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that may be revealed only reluctantly. His attitude must be sympathetic rather than judgmental. He should be aware of, and be prepared to cross, the generation barrier and barriers of education and social class. That coloured youngsters face additional difficulties should be appreciated.

Young people, though inwardly uncertain, may be outwardly aggressive. In other words, doubts about identity may be hidden by a mask of assertiveness. The doctor must see beneath the "punk" haircut, "rocker" leathers, and young men wearing earrings to the underlying difficulty. Body language, the aggressive posture, or downcast eyes often indicate the state of mind. Some problems will require continuing consultation. Adopting the counselling mode—allowing the young person to express his problem fully and formulate his own solutions—may be the most helpful approach. Maturity may be reached rapidly and sometimes little more than a "holding operation"—that is, giving support over a limited period only—is needed.

The general practitioner will often need to discuss problems with others in a patient's life, such as parents and boyfriends; their help should be sought in defining problems and giving help; college tutors should be consulted when students are in difficulty. The general practitioner may seek other professional help for some problems. Advice centres, detoxification centres, and drug addiction units exist in the major cities.

Problems of study may require the help of psychotherapist or psychologist. Ryle has divided these into the disorganised and the focal. In the former a function essential for study, memory/

concentration capacity for organisation, or motivation is adversely affected by general emotional disturbance. In the latter study itself is the focus of neurotic conflict, other aspects of life being unaffected. For this second group, said to be the larger, help from an expert familiar with the problem is desirable.

Can some of the problems at this stage of life be averted? Knowledge about sex is still largely acquired from friends. Sex education in schools is treated mainly as biology. This might be complemented by discussions in which general practitioners and health visitors take part. Career guidance is available at all schools yet many begin careers about which they have little knowledge. Ideally, aptitude and personality should match chosen occupation, yet assessment by psychological testing is largely ignored. Taking a "year out" between school and university results in greater maturity at entry and this, for some, outweighs the unsettling effect and difficulty in resuming studies. Leaving the "protected" environment of school for life in the adult world has many pitfalls. The general practitioner needs to be aware of these and to help those who get into difficulty with skill and understanding.

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ONE HUNDRED YEARS AGO Mr. Malcolm Morris, one of the ablest and most versatile of our brilliant young crop of dermatologists, has made a decided hit by his sparkling and amusing, but very sensible and useful, lecture, under this head, at the International Health Exhibition. The lecture was a pungent criticism of some of the morbid aspects of modern aesthetics. First, it was shown physiologically how much of a man's individuality lies in the skin. Remove an arm or a leg, or both arms and legs, there is yet left an individual man. But take away the skin, as the author of *Sartor Resartus* took away the garment, and individuality is gone. The colour of the complexion is due to the pigment-follicles, the red colour of the cheeks to the terminals of the blood-vessels, seen through the transparent skin. The colour of the skin is a test of health. But, within the last few years, we have experienced a remarkable artistic movement. The effects have been evident in the picture-galleries; they have displayed themselves in domestic life. Ladies there has sprung up a taste that can only be postulated as a taste for disease, decrepitude, and decay. In one school, we find a vogue of bone-women, ill, limp, and unwholesome. The men are not more attractive in a variety sense. They look like convalescents, ill-fed and out of condition. This school is not very wide in its range, but its influence is felt beyond the limits of its own lines. In the paintings of the older masters are

ruddy Madonna's, clear-skinned goddesses, and chubby angels. In the more recent pictures, an etherealised skin is unduly popular. Of course, this repudiation of warm tints suited unhealthy people. One cannot blame them for the master stroke of so advertising this fashion of pale faces, that eminent painters should be willing to depict this pasty complexion in illustration of beauty. But what shall be said of art that tends itself to well deception? What society sets its seal upon small bonnets, with what obedience heads bend to reduce? This is harmless enough. So, though very ugly, and nothing more than a copy of the wasting in consumption, is the practice of darkening the soles to increase the apparent size of the eye. But when, in addition to these devices, a decree goes forth that powder is to be applied to the cheeks, to the utter destruction of complexion, it is time to speak out. Fashions change, and a time may come when it will be fashionable to be healthy, when normal hair will be popular, and natural skin the rage. When this sanitary millennium is reached, it is possible that the world will recognise that it is not attractive to deal the face with varnish and rouge and bismuth and paint after the manner of the heathen; that the bloom upon the peach cannot be beautified by whitewash; and that no chemical process can heighten the tinting of the heather-bell. (*British Medical Journal* 1884;1:1264.)

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there are certainly some hospital specialists who would like to know the distribution of these parameters and who would be willing to treat the treatable provided that the numbers were not excessive. But my guess is that most would be inhibited by their present workload from coping with an iceberg of unknown size. So might most general practitioners, but other inhibitors are at work in primary care; their self employed and more work sensitive contracts would probably require negotiation of specific fees for routine screening activities; practice sizes have grown so widely that what might be feasible and useful in one location would be out of the question in another—unless, of course, contracts were renegotiated.

Community physicians, successors to not only public health doctors but also to hospital superintendents, seem with a few exceptions to be so heavily loaded with administration that they have little time to promote let alone organise new screening facilities—or is another reason the prevailing uncertainty about what is worth while and can be afforded?

Cost

Health economists have taught us that cost is not to be reckoned only in terms of money. So how do we decide that early detection of vulnerability to ill health is worth while? Physicians and nurses have had for many years virtually universal screening of neonates; surely the reasons are that this serious condition may be reliably detected, that it is treatable, that the cost of case finding in terms of materials and professional time is small, and that genetic counselling on control of recurrence is important but an expensive because of the rarity of the disease. Examples of the other end of the cost spectrum are lung cancer and ischaemic heart disease; both are relatively common, difficult to detect reliably in their early stages, on the whole not amenable to successful treatment, and, in terms of the yield of positive cases, very expensive in equipment and skilled manpower. That most common and well established of screening activities, antenatal care, belongs to a third category; not only can it be justified (albeit on a simpler, less costly, and more humane regimen than hitherto) in medical terms but also on grounds of massive public demand. Cervical screening also came into widespread use through public demand before the medical evidence for its value was as strong as it is today. With cost limits likely to grow tighter the prognosis for expanded screening services must rest on the balance between two familiar arguments; screening for pre-disease risk and its correction is cheaper than the cost of treating established disease; screening will divert resources urgently needed to save life and limb. Because neither argument is easy to substantiate the ultimate compromise policy decision will depend on value judgments by the lay and medical members of policy making health authorities who are, of course, well placed to compare competing claims on their limited resources, but they too are faced with a complex question that still defies satisfactory answers.

Levels of health

If you ask a representative range of people to define their own meaning of health the answers show how health is related to the occupational and recreational activities of daily living. Thus many people with sedentary jobs, little interest in physical pursuits, and who enjoy smoking and drinking, have a concept of fitness far removed from those who believe that muscular activity, diet control, and adequate respiratory ventilation, and other temperance are essential to good functional health—in other words the question is: health for what? Perhaps in looking at the different answers to this question we may see the way forward.

Assuming that compulsory screening will remain restricted,

can voluntary participation in a screening service change attitudes to health or to how is change induced? I have long used this simple cycle:

To me, screening people for any disorder is an opportunity to explore beliefs about health, the attitudes that develop from these beliefs, and the overt behaviours that follow. Of course, some of these beliefs and attitudes may be ascertained by questionnaire, but the evidence is not so clear-cut as that, but must always be followed by an interpretive session with a health care professional. I have in fact seen this combination effectively and efficiently used in a private screening facility and in a research project but in both cases on non-random populations; nevertheless, I believe that a well designed screening facility, which in addition to computerised questions and a rotation of test stations, offers people the chance to discuss the results and what health tests mean to them, and will (a) enhance knowledge, (b) correct beliefs, and (c) modify attitudes and health behaviour.

I am therefore in favour of the promotion of screening services staffed by professionals who have the time, training, and tools to provide not only objective detection of risk but also the skills to help people to understand how, if they so wish, to improve their health. Many people who have had this experience of screening have testified to the benefits of accurate information, of opportunity to question knowledgeable professionals, and of reassurance, and I do not doubt the potential of such experience to alter beliefs and attitudes to health.

The future

So what is the most fruitful way forward for screening services? Looking back over 40 years, I can discern an encouraging progressive expansion in the range and scale of such services, a trend which I predict will slowly continue as a result of two forces—public demand and professional emphasis. Clinics of advance in genetic immunological, biochemical, pharmacological, nephrological, psychological, and sociological sciences will bring new proven techniques for detecting vulnerability and reducing it—if the resources to provide them are forthcoming. The year 2000 is a time when the health care all by the year 2000 may be very idealistic, but ideals are like stars, essential for navigation. If by a philosophy we mean some common end that is desirable for all men then screening is an increasingly important component of the philosophy of health.

ONE HUNDRED YEARS AGO Considerable difference of opinion prevails as to the form of legislative interference that should be undertaken by the State for the prevention of intemperance in our large cities and among the working classes. But we are sure that all will be agreed in approving the action of the directors of the Glasgow Abstinence Union, who hold the view that much good may be done in this way, by increasing in every possible manner the attractions and comforts of the homes of working men, especially in the cooking and preparation of the household meals. Accordingly, the directors instituted, three years ago, annual exhibitions and competitions in household cookery, in which substantial prizes were offered for the best prepared dishes in ordinary use in the families of working men, and we are glad to see that this year's competition has been very successful, and has brought out a large body of competitors from the very classes it was intended to benefit. (*British Medical Journal* 1884;1:871.)