field in an ovulatory mucus with a spinnbarkeit of more than 6 cm has been shown to have statistically significant correlation with a median sperm count of over 28 million/ml,³ and thus a positive test is of great value itself. However, lesser degrees of positivity and even negative postcoital tests are of value only when they have been repeatedly shown to be so at the time of presumptive ovulation and steps have been taken to confirm the validity of this timing. Only then are negative postcoital tests indicative of abnormality. Single and isolated tests without ancillary information are thus merely indications for further investigations of the infertile couple into the multifactorial factors which are potentially related to their inability to conceive.

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¹ Elstein, M, *Clinics in Obstetrics and Gynaecology*, 1974, 1, 345.

² Moghissi, K S, *Fertility and Sterility*, 1976, 27, 117.

³ Tredway, D R, Buchanan, G C, and Drake, T S, *American Journal of Obstetrics and Gynecology*, 1978, 130, 647.

⁴ Elstein, M, *British Medical Journal*, 1975, 2, 296.

SIR,—When Mr G T Kovacs and others ask, "What is normal?" they do not define what they are trying to measure (1 April, p 818).

I have often found motile sperm in good quality mucus with semen whose sperm density has been as low as a quarter of a million per ml. I have also recovered motile sperm five days after coitus when the semen was normal. Thus I agree that the number of sperm present is not an indication of male fertility, as seems to be implied in their question. If sperm are present and motile, one can deduce that the mucus is probably normal in the absence of pus cells. When sperm are absent in apparently good mucus and the husband is oligospermic the mucus should be tested for invasion against donor sperm—and this will decide whether it is a non-receptive mucus or a poor-quality sperm which is the infertility factor.

If it is realised that mucus reflects the quality of ovulation rather than that of the semen false conclusions as to the factor involved in the infertility will be avoided.

BERNARD SANDLER

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SIR,—In reply to the letter from Mr Haydn Didier (13 May, p 1279) I would like to state that each couple in our study group (1 April, p 818) were requested to abstain from intercourse for a period of 48 h before the test, which, as he rightly points out, should be the case.

G L HENSON

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If I had . . .

SIR,—I read Dr John Scott Price's article on chronic depressive illness (6 May, p 1200) with interest and was pleased to find the subject of leucotomy given a favourable airing.

Psychosurgery has progressed greatly from the radical operations of Freeman and Watts in the 'forties and 'fifties, and the work at Atkinson Morley's Hospital is a fine example.

Here carefully selected patients are considered for limbic leucotomy. This is a low-risk procedure from which very good results are obtained in the treatment of depression, anxiety, and obsessional-compulsive neuroses. I would therefore agree with Dr Price in proposing that, despite the finality of surgery, restricted psychosurgical techniques of this type should be considered in some carefully selected patients for whom no other treatment has been successful. While advocating a place for psychosurgery in the treatment of mental illness, however (at least until such time as more "acceptable" alternative therapy becomes available), I would stress the need for some control and standardisation of procedures. This might be achieved by the establishment of multidisciplinary panels (for example, psychiatrist, neurologist, neurosurgeon, and psychologist) who would be responsible for evaluating the present techniques and to whom prospective candidates for psychosurgery would be referred. This would, it may be hoped, avert the misuse of such procedures and hence quell many of the criticisms levelled against psychosurgery.

Finally, on the point of controlled trials may I draw Dr Price's attention to one such trial undertaken in 1953¹ in which four patients from a series of 24 underwent a control procedure only. The skin incision was made and the bone button removed, but no cerebral lesion was produced. All the patients were returned to the ward in a similar condition and the surgical notes were kept secret from the patients and staff. It was shown that improvement occurred preferentially in those patients who underwent cingulectomy, thus demonstrating an absence of placebo and differential nursing effects. The ethical problems encountered in such deception of patients and their subjection to an unnecessary and potentially hazardous procedure will probably prevent the repetition of such a trial. Thus, although this was a very limited study, its uniqueness may add to the interest in the results obtained.

JANET P DOWNS

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¹ Livingston, K E, *Research Publications, Association for Research in Nervous and Mental Disease*, 1953, 31, 374.

SIR,—Having bilateral small central cataracts, I found Mr Brian Harcourt's article (29 April, p 1121) of particular interest, although I had hoped he would mention the place of mydriatics in helping the patient to cope with life in the months or years before he is to benefit from surgery. My very skilful oculist assures me that I have good corrected vision of the order of 6/9, 6/9 and he is not considering me for surgery. But his tests are carried out in near pitch-dark conditions and bear no relation to the conditions in which I have to live and work—that is, daylight and even sunlight.

Apart from my opacities I have moderate presbyopia and astigmatism (both well corrected); I am 66 and in general practice. For the past two years I have had to conduct my surgery in dim religious light with all curtains drawn so that my colleagues think I am developing into a psychiatrist. I use a hand glass to read the maddening small print in the telephone book and even more maddeningly small print on injection ampoules. I have always to stand with my back to any window and go into a dark corner to read. Additionally, I complain of all the things that Mr Harcourt

finds plague his elderly patients. I fail to recognise my patients in the street and hail strangers with unreasonable familiarity. Once out in the street I pray that the sun will not come out or, if it does, that it will be vertically overhead. I can no longer tie on a fly at the water's edge and any small object I drop is lost for ever.

The great problem is driving. In all lights I have the sun visor fully down and wear dark glasses. Phenylephrine drops BP 10% give me 3½ hours of blessed relief. They take exactly 15 min to act. I ration myself to one instillation a day, or at the most two, and use them before setting out by car to visit or when I cycle over the moors for pleasure. For those 3½ hours my vision is practically normal. I am told my intraocular tension is normal and my eyes seem otherwise healthy. How often and for how long in months and years can I continue to use these mydriatics? They are so effective that I feel that there must be some snag somewhere; and can there be detrimental side effects? I wish to continue working in some capacity, but unless I can enjoy the better vision provided by phenylephrine I remain severely handicapped. There must be many of your readers who are similarly afflicted and many who have found ways of coping. An exchange of views could be very helpful.

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SIR,—In his comprehensive review of the treatment of Hodgkin's disease (20 May, p 1329) Dr R A Wood omits a clinical point of importance in diagnosis—namely, that the enlarged nodes may wax and wane in size over days or weeks. This is especially so in the nodular sclerosing variety and may lead the clinician to conclude that the patient does not have Hodgkin's disease, and the all-important biopsy necessary for diagnosis may be delayed. Even then this must be done by a surgeon who does not take the most accessible node (which may only show reactive hyperplasia) but digs deep and takes a larger node which has a greater chance of showing features that enable the pathologist to make the diagnosis with confidence.

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Prevention of neonatal hepatitis B infection

SIR,—In the interesting report by Dr A Derso and others on "Transmission of HBsAg from mother to infant in four ethnic groups," (15 April, p 949) it is concluded that "giving specific immunoglobulin to babies of [HBsAg-positive] Caucasian mothers is not justified." It ought to be pointed out, however, that this refers to otherwise "healthy" mothers, which was the only category studied.

In babies of Caucasian mothers as well as of other mothers with HBsAg-positive acute hepatitis at delivery and HBsAg-positive mothers on chronic renal dialysis the high risk of becoming a chronic carrier of HBsAg is well documented and justifies the use of hepatitis B prophylaxis. Probably repeated injections of high-dose immune globulin (HBIG) should be given, as illustrated by the following case.

A 20-year-old woman had an attack of HBsAg-positive acute hepatitis in March

1976. At about the same time she became pregnant and in December the same year she gave birth to a normal girl weighing 2.94 g. At the time of delivery the mother was still HBsAg-positive and had HBeAg as well as DNA-polymerase in her serum. The cord blood was HBsAg negative and negative also for HBeAg and DNA-polymerase. The newborn child was given 3 ml high-titred HBIG (Kabi) (anti-HBs about 1/300 000 by passive haemagglutination) immediately after delivery. The same dosage was repeated one, three, and six months after birth. A further prophylactic dose was planned at nine months after birth but at that time the mother turned HBsAg negative (18 months after onset of symptoms) so that no more injections were given.

Today, about 18 months after birth, the girl is still HBsAg-negative and she has no anti-HBs in her serum. Her liver function tests are, as previously, normal.

Our conclusion after previously having experienced three failures with single prophylactic injections of HBIG to three children of HBsAg-positive renal dialysis mothers is that repeated administration of HBIG in high dosage may be of value for babies of highly contagious mothers.

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Interaction of digoxin with antacid constituents

SIR,—The use of activated dimethicone as a constituent of proprietary antacid preparations has increased dramatically in recent years. Dimethicone has already caused drug absorption problems with the oral anticoagulant warfarin,¹ giving rise to decreased bioavailability of the drug. The absorption of digoxin has been shown to be dramatically affected by various antacid constituents.²⁻⁴ It was therefore thought important to determine the effects, if any, of dimethicone on the absorption of digoxin in relation to other antacid constituents. This work was carried out using an in-vitro experimental model of drug interaction in the gut.⁵ This model involves absorption across a physiological membrane and has been shown to correlate well with the in-vivo situation.⁵ The cumulative absorption of digoxin (0.25 mg) was followed alone and while in combination with therapeutic quantities of antacid constituents. Digoxin in all cases was measured using radioimmunoassay.

The results shown in the table indicate that activated dimethicone does not significantly affect the absorption of digoxin. This was subsequently confirmed by an in-vivo study in healthy volunteers in the department,

which indicated that the digoxin pharmacokinetic parameters did not vary in the presence of dimethicone. Other antacid constituents investigated, using the present in-vitro technique, indicated decreased percentage digoxin absorption values comparable to those reported in the literature.

In conclusion, although dimethicone did not affect the absorption of digoxin, it is clear from these results and from other reports²⁻⁴ that antacid constituents will affect digoxin's bioavailability. This is especially so in the case of magnesium trisilicate, which, in the present study, decreased the absorption of digoxin by 99.5%. We therefore suggest that patients stabilised on digoxin should be made fully aware of this interaction as many of the implicated antacid constituents are included in freely available "over the counter" antacid preparations.

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- ¹ Talbot, J M, and Meade, B W, *Lancet*, 1971, 1, 1292.
- ² Khalil, S A H, *Journal of Pharmacy and Pharmacology*, 1974, 26, 961.
- ³ Van der Vijgh, W J F, Fast, J H, and Lunde, J E, *Drug Intelligence and Clinical Pharmacy*, 1976, 10, 680.
- ⁴ Brown, D D, and Juhl, R P, *New England Journal of Medicine*, 1976, 295, 1034.
- ⁵ D'Arcy, P F, Muhyiddin, H A, and McElnay, J C, *Journal of Pharmacy and Pharmacology*, 1976, 28, 33P.

Misuse of pressurised nebulisers

SIR,—We have been concerned about the difficulties many of our patients appear to have in using pressurised aerosols containing bronchodilators or steroids and would like to report a small survey we have performed to evaluate the extent of this problem.

We investigated 53 consecutive outpatients using bronchodilators by pressurised aerosol and found that some 25% were using an undoubtedly incorrect technique. These patients were on average older (mean age 58 years) than those using their inhalers correctly (mean age 40 years). There were many different faults in usage, but these all seemed to result from a basic inability to synchronise the activation of the nebuliser with inspiration. In fact 15% of the patients found this completely impossible even while under supervision. It is also worth noting that three patients from the "incorrect" group and 10 from the "correct" group could not remember receiving instruction in the use of their inhaler.

The patients whose technique we managed to correct did show evidence of an improved therapeutic response in terms of forced expiratory volume in the first second (average increase of 0.5 l above the value obtained when incorrect technique was employed). There was, however, no dramatic fall in frequency of usage apart from one patient who virtually stopped using her bronchodilator nebuliser (we think this was probably explained by the coincidental correction in the use of her beclomethasone inhaler).

The figures we report are considerably worse than those of Patterson and Crompton,¹ who found 8% of their patients with an incorrect and 6% with a doubtful technique. We would suggest that incorrect use of pressurised nebulisers is probably much higher in many populations than is realised

and that even after instruction many older patients are incapable of using these devices correctly.

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- ¹ Patterson, I C, and Crompton, G K, *British Medical Journal*, 1976, 1, 76.

Sodium cromoglycate in intrinsic asthma

SIR,—The place of sodium cromoglycate (SCG) in the management of allergic and exercise asthma is now well established. SCG has been shown to stabilise mast cell membrane and prevent chemical mediator release in the type I allergic reaction. This effect may be mediated by SCG's ability to inhibit cyclic phosphodiesterase¹ and to interfere with Ca⁺⁺ ion transport across the mast cell membrane, which is essential for the activation of the reaction.²

The mechanism involved in the pathogenesis of intrinsic asthma is unknown and the evidence for any local or generalised immunological involvement as seen in extrinsic asthma is lacking. It is, therefore, not surprising to find SCG ineffective in the treatment of intrinsic asthma as reported by Dr K B Saunders and others (6 May, p 1184). Further, the questions their study set out to answer still remain unanswered and the improvement observed in three patients could well have been due to the placebo effect of SCG or the variability of the disease process itself. SCG does have a transient irritant effect in some patients³ but rarely requires the treatment to be discontinued. It would have been of interest if the authors had studied the patients who developed irritant bronchoconstriction by monitoring their peak expiratory flow rate over a period of time to determine the duration and the degree of irritant bronchospasm caused by SCG.

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Medical Act 1978: a new anxiety for overseas doctors?

SIR,—I represent the BMA's Hospital Junior Staffs Committee on the General Medical Council's working party which is studying the implementation of the new Medical Act. The HJSC discussed the Act at its meeting on 30 May. Members were worried about the proposals for limited registration as they foresee these creating the same anomalies that have beset temporary registration under the old regulations.

To begin with there will be a large pool of doctors who will have "unlimited limited registration" and, of course, newcomers will be worse off with a five-year limit on their registration. This will hinder most of the doctors who intend to make a career in this country. Admittedly, there will be an avenue for doctors to progress from limited to full registration, but the criteria for this progress

Effects of antacid constituents on digoxin absorption in vitro

Antacid constituent	Percentage decreased absorption of digoxin
Aqueous emulsion of activated dimethicone (35%)	3.4
Aluminium hydroxide gel, BP	11.4
Bismuth carbonate	15.2
Light magnesium carbonate	15.3
Magnesium trisilicate	99.5