sampling. Even where culture is possible its efficiency may be low. Estimates range from 40 to 90%.¹

We have recently applied the enzyme immunoassay (Elisa) technique to the detection of antibodies in gonorrhoea. The test we have developed uses an extract of outer membrane proteins from *Neisseria gonorrhoeae* as antigen and is sufficiently sensitive to allow the patient's serum to be tested routinely at a dilution of 1/1000. Details will be published elsewhere. The important finding from the point of view of screening is that appreciable antibody titres could be detected in 50% of patients within a few days of infection and in a similar proportion of asymptomatic carriers, both male and female. Moreover, antibody levels were not affected by a past history of gonorrhoea unless there had been an attack within the previous 12 weeks. In the control populations used 16% of men and 11% of women had antibody levels above the diagnostic threshold chosen, but the frequency distributions suggest that some of the 'false-positives' may have been real.

In patients with systemic gonococcal infection antibody levels were extremely high and the test could prove useful in the diagnosis of esoteric manifestations.

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- ¹ Brinton, C C, *New York Times*, 1977, 30 June, p 15.
² Handsfield, H H, et al, *New England Journal of Medicine*, 1974, **290**, 117.
³ McCormack, W M, et al, *Lancet*, 1977, **1**, 1182.
⁴ Norins, L C, *Journal of Infectious Diseases*, 1974, **130**, 677.

Diagnosing familial hypercholesterolaemia in childhood

SIR,—Following the report of Dr J V Leonard and others (18 June, p 1566) on the diagnosis of familial hypercholesterolaemia (FH) in childhood by the use of serum cholesterol estimations, we pointed out (9 July, p 127) some of our experience on the regulation of 3-hydroxy-3-methylglutaryl (HMG) CoA reductase activity in freshly isolated leucocytes of FH patients¹ and its possible application as a screening procedure. Further letters on the subject have been published that refer to our work and we would like to reply to points raised.

Dr J V Leonard and his colleagues (13 August, p 455) state that our data failed to support the hypothesis that the diagnosis of FH can be made by measurement of HMG CoA reductase activity in the system we used. Presumably they are not criticising our biochemical method; if they are they do not state any of their criteria. So far as we understand, their objections centre on the discordance between HMG CoA enzyme regulation and serum cholesterol estimations in members of the family studied. Central to their argument is subject II₄, sister of the index patient, who had a serum cholesterol of 8.58 mmol/l (331 mg/100 ml) but showed normal regulation of reductase activity. According to Leonard *et al*, this subject has a "high probability of being affected." As pointed out in the study, however, the member of the kindred was clinically well (and still is). We would be very surprised if a person (now aged 50) who has

no arcus senilis, xanthomata, or evidence of premature vascular disease and whose serum cholesterol has returned to normal on simple dietary advice is carrying the gene for FH.

With regard to the letter of Dr Postle and his colleagues (8 October, p 957), we do not think that their preliminary data on five patients with FH studied by a method that has been in use in our laboratory (and many others) for some years "may overcome some of the problems raised . . ." in our work. We have considerable experience in both the regulation of sterol synthesis and HMG CoA reductase activity in approximately a hundred subjects,¹ and if Postle *et al* have anything new to say on the subject of the biochemical basis or the diagnosis of FH that will throw light on "problems" with our work then they should state it clearly.

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- ¹ Betteridge, D J, Higgins, M J P, and Galton, D J, *British Medical Journal*, 1975, **4**, 500.
² Higgins, M J P, Galton, D J, and Betteridge, D J, *Clinical Science and Molecular Medicine*, 1975, **49**, 24.
³ Higgins, M J P, Lecomwasam, D S, and Galton, D J, *Lancet*, 1975, **ii**, 737.
⁴ Betteridge, D J, Higgins, M J P, and Galton, D J, *Proceedings of the Royal Society of Medicine*, 1976, **69**, Suppl. 2, 104.
⁵ Higgins, M J P, and Galton, D J, *European Journal of Clinical Investigation*, 1977, **7**, 301.
⁶ Higgins, M J P, Galton, D J, and Betteridge, D J, *Colloquium XXV on Protides in Biological Fluids*, 1977 (in press).

Net beds in general practice

SIR,—There have been recent references to the use of net suspension beds in neuro-surgical centres and dermatology units.^{1 2} Your readers might be interested to hear of the use of this device, in which the patient is suspended on a loose woven nylon net hung above a bed on two rollers, in general practice. A 76-year-old man had to have both his legs amputated above the knee for arteriosclerotic gangrene. At his own request he was sent out of hospital to an extended family of agricultural field workers. His stumps were well healed, but he had deep pressure sores over each greater trochanter of the femurs, over each ischial tuberosity, and a huge confluent sacral sore.

The family saw a net suspension bed being demonstrated on television and, as they were willing to provide the necessary hiring fee, I felt I had little to lose. The device arrived with a demonstrator and was fixed to a standard hospital bed obtained through the nursing service.

To my surprise the family rapidly adapted themselves to its handling, and at the time of his death four months later in uraemic coma all his bed sores were healed except for the sacral sore, which was reduced to under half its original size. He was a heavy ill man with painful bed sores, quite helpless, with poor circulation, and no legs, whom I would normally have expected to deteriorate further. As it was he had a reasonable quality of life for his last few months.

The lessons we learnt were that although the net suspension bed made for great ease of handling and turning, and appeared to be comfortable, and certainly spread the load on his pressure areas, it is no substitute for good general nursing care. This my district nurse and her colleagues provided in abundance. This also meant giving instruction in the handling of the bed to whichever member

of the family whose turn it was to look after "grandad." Continuous vigilance was necessary and we nearly had another pressure sore on one shoulder when he was kept on his side for a little too long. The equipment was hired for a period of three months and after that period there is the option to purchase at a reduced rate. It has a definite place in the handling of bed-ridden cases, but I must insist that it is ancillary to, and no substitute for, good general nursing care.

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- ¹ Gibbs, J R, *Lancet*, 1977, **1**, 174.
² Dahl, M G C, *Lancet*, 1977, **1**, 311.

Widespread atheromatous arterial disease

SIR,—While agreeing with all that Dr A Smith and Professor M D Rawlins says (6 August, p 378) about the use of beta-blockers in hypertension and coronary artery disease, I am surprised that the latter advocates their use in a patient with intermittent claudication and a smattering of absent lower limb pulses: surely beta-blockade aggravates peripheral vascular disease of this nature.

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* * * We sent a copy of Dr Malcomson's letter to Dr Smith and Professor Rawlins, who reply as follows—ED, *BMJ*.

SIR,—Patients receiving beta-blockers may develop symptoms of Raynaud's phenomenon involving both hands and feet, and there are reports of progression to frank gangrene of the extremities.^{1 2} However, while hand blood flow is largely controlled neurogenically, the dominant stimulus to increased muscle flow during ischaemia and exercise is locally mediated. Consequently, there is a sound basis for suggesting that beta-blockade might have a deleterious effect on skin blood flow in patients with intermittent claudication and careful supervision is essential. We cannot accept, however, that the use of beta-blockers is contraindicated.

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- ¹ Zacharias, F J, *Postgraduate Medical Journal*, 1971, **47**, Suppl. p 75.
² Marshall, A J, et al, *British Medical Journal*, 1976, **1**, 1498.

Dystonic reaction to high dose propranolol

SIR,—A 35-year-old married woman in this hospital has suffered from a schizoaffective disorder from the age of 16 which failed to show a convincing response to the various approaches now available for the treatment of this condition. Her illness and admissions to hospital were at first intermittent, but she has now been an inpatient here continuously for the past 10 years.