SIR,—Dr K R Sumner suggests that examination of the brain is not included in the coroner's necropsy in his area and that some deaths are therefore wrongly attributed to coronary artery disease.[1] I can assure him that this is not standard practice. In most places, including my own department, full examination of the brain is routinely performed in both coroners' and hospital necropsies. In some cases the brain may even be suspended in formalin and examined after fixation. Only in exceptional circumstances—for example, a hospital necropsy for which permission to open the head is refused—would this practice be altered.

Pathologists, more than anyone, recognise the limitations of a necropsy in establishing cause of death. Often it may be more appropriate simply to record the gross abnormalities present, accepting that the role of cardiac arrhythmias, metabolic disorders, etc, may be impossible to establish. This is particularly so if procedures such as full dissection and histological examination of the cardiac conducting system, not feasible as a routine in district general hospitals' pathology departments, are not performed. The coroner, however, will require the pathologist to give a cause of death at the end of the necropsy. Failure to do so usually results in an inquest, which may cause unnecessary distress to relatives as well as producing an unmanageable workload for the legal system. In this respect the cause of death given may represent a "best guess," with the coroner being reassured that death can be attributed to natural causes.

The mortality figures derived from coroners' necropsies are likely to be far more accurate than those derived from cases in which necropsy is not done. Most inaccuracies in national mortality statistics occur as a result of certification of death without necropsy. Studies have repeatedly shown that, even for deaths in hospital, there are major discrepancies between the causes of death recorded before and after necropsy in up to 29% of cases.[2] Where necropsy is performed the accuracy of the findings should be no less reliable in Britain than in the US or elsewhere.

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1 Sumner KR. Deaths certified as due to coronary artery disease. *BMJ* 1991;**302**:1402. (8 June.)
2 Harris MD, Blundell JW. The hospital autopsy in a British district general hospital. *J Clin Pathol* (in press).

Unrecognised HIV related deaths

SIR,—Dr Anna McCormick suggests that only 40% of deaths among HIV positive men are in men known to be HIV positive by the time they die, and she indicates that there are implications for those caring for these people and those who carry out postmortem examinations.[1]

Clear guidelines exist for the precautions that should be taken during a necropsy on a known or suspected case of HIV infection.[2] Clearly these cannot be adopted for all necropsies, and the question is: Are there any simple additional precautionary procedures that may be implemented for all necropsies?

We recently studied the protection afforded by wearing safety spectacles when carrying out necropsies.[3] Such spectacles are inexpensive, and the inconvenience caused by their use is minimal. We found splashes of blood in the area covered by the spectacles in 22% of cases. Although there are no reported cases of transmission of HIV infection via the conjunctiva, the possibility of this remains; because of this and the risk of acquiring other systemic or localised infections by this route we recommend that pathologists should consider wearing safety spectacles when carrying out all necropsies.

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1 McCormick A. Unrecognised HIV related deaths. *BMJ* 1991;**302**:1365-7. (8 June.)
2 Advisory Committee on Dangerous Pathogens. *HIV—the causative agent of AIDS and related conditions. Second revision of guidelines.* London: Department of Health, 1990.
3 Bull AD, Channer J, Cross SS, Start RD, Kennedy A. Should eye protection be worn when performing necropsies? *J Clin Pathol* (in press).

Golf related head injuries in children

SIR,—The staff in the department where I work were not at all surprised that Prince William sustained a depressed fracture of his skull when hit on the forehead by a golf club swung by his friend.

Dr R A Smith and colleagues report that in one year they saw 11 children with injuries associated with golf, of whom nine had skull fractures.[1] Over five months in 1990 we saw three boys, aged 7, 9, and 9, who presented with identical histories. Each had been hit on the forehead by a golf club swung by a friend of similar age. Each had sustained a compound frontal skull fracture and had to be referred to a neurosurgeon for elevation of his fracture.

We have now added "hit by golf club" to our criteria for skull *x* ray examination in the head injury protocol. Although junior doctors question this when they first come to our department, we remain convinced of our wisdom. We hope that the publicity about Prince William's accident will alert others to the dangers of this type of injury.

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1 Smith RA, Ling S, Alexander FW. Golf related head injuries in children. *BMJ* 1991;**302**:1505-6. (22 June.)

Prenatal screening for Down's syndrome

SIR,—The commercial launch in May of two prenatal screening tests for Down's syndrome has received much attention in the media, with most sources reporting that St James's Hospital's "triple" (£59) and "triple plus" (£88) blood tests can identify up to 90% of affected pregnancies.[1] Both tests are recommended for pregnant women of all ages, who can send directly for a test pack or further information, or both.

I received a blood sample kit (for use in general practice), a copy of a paper by Cuckle *et al* on urea resistant neutrophil alkaline phosphatase activity in pregnancies in which the fetus had and had not been diagnosed as having Down's syndrome,[2] and an explanatory leaflet. The leaflet states that adding measurement of neutrophil alkaline phosphatase activity to the triple test considerably enhances its power, reducing false negative results from 1 in 2000 to 1 in 5000. The false positive rate is reassuringly given as 49 out of 50. Several points are worth noting.

Firstly, Cuckle *et al*'s study, by virtue of its sampling characteristics and design, effectively compared neutrophil alkaline phosphatase activity in women at high and low risk in whose pregnancies the presence and absence, respectively, of fetal Down's syndrome had already been established. This is very different from identifying fetuses with Down's syndrome in a random sample of pregnant women. The average pregnant woman, lacking a scientific or medical background, may not appreciate this distinction or that the rates of detection quoted are statistical projections rather than established facts.

Secondly, data on neutrophil alkaline phosphatase activity were presented for only 15 women under 38 years old whose fetuses had Down's syndrome. For women of all ages to make an informed decision on the relevance and reliability of the more expensive test more extensive data are required. Cuckle *et al* themselves pointed out that the neutrophil alkaline phosphatase test was "not yet ready for routine use."[2]

Thirdly, a detection rate of 79% was obtained with cut offs of neutrophil alkaline phosphatase activity score of 100-120 at the recommended screening ages of 15-23 weeks; (expected) median scores in pregnancies in which the fetus did not have the syndrome were 75-85. A systematic absolute difference averaging 55 points between the two scorers of the blood samples was reported, this difference being added to the lower scorer's results in the analysis. The size of this difference indicates a need for considerable caution in interpreting scores at this stage in the test's development.

Discussions with women in the days after the extensive media coverage indicated that few appreciate that a blood test is only the first stage in diagnosis. In advising on the two new tests it is important that general practitioners ensure, firstly, that pregnant women understand that confirmation or exclusion of Down's syndrome will require amniocentesis and, secondly, that this will make it impossible to terminate the pregnancy until some time in the fifth month. General practitioners should also provide information on the relative reliability of the two tests and explain clearly what a positive or negative result would signify for the mother. In this respect simultaneously providing two tests with differing reliabilities does not seem helpful.

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1 Webb J. Promising Down's syndrome test . . . at a price. *New Scientist* 1991;**130**:12.
2 Cuckle HS, Wald NJ, Goodburn SF, Sneddon J, Amess JAL, Dunn SC. Measurement of activity of urea resistant neutrophil alkaline phosphatase as an antenatal screening test for Down's syndrome. *BMJ* 1990;**301**:1024-6.

SIR,—Mr Trevor A Sheldon and Dr John Simpson suggest that "programmes currently based only on maternal age should be replaced with screening by the triple test."[1] We believe that their analysis does not take several points into consideration.

Firstly, their financial estimates omit most of the cost. The figure of £10 per measurement of oestriol and human chorionic gonadotrophin concentrations refers only to the cost of the reagents. Taking other costs into account, such as those of laboratory space, hours worked, and hardware and software used, our local pathology service estimates (personal communication) that these costs would amount to £15-25 per test performed. The extra ultrasound examinations recommended[2,3] would increase this figure further. Our calculations conservatively assume a total cost of £25.

Mr Sheldon and Dr Simpson omit the costs of counselling women before they decide whether to have the triple test. The latest guidance on informed consent[4] "reflects the common law rights of patients" and states that "Patients are entitled to receive sufficient information in a way they can understand about the proposed treatments, the possible alternatives, and any substantial risks, so that they can make a balanced judgement." Marteau reviewed the adverse psychological consequences of screening and stated that many of these may be