

- All letters must be typed with double spacing and signed by all authors.
- No letter should be more than 400 words.
- For letters on scientific subjects we normally reserve our correspondence columns for those relating to issues discussed recently (within six weeks) in the *BMJ*.
- We do not routinely acknowledge letters. Please send a stamped addressed envelope if you would like an acknowledgment.
- Because we receive many more letters than we can publish we may shorten those we do print, particularly when we receive several on the same subject.

Funding research into alternative animal procedures

SIR,—As chairman of the research subcommittee of the Animal Procedures Committee I am pleased to announce that limited funds will be available from April for research in the United Kingdom into the reduction, refinement, or replacement of the use of living animals in scientific procedures.

The use of living animals in scientific procedures is an emotive issue that raises several ethical questions. There is considerable public awareness and concern about the purposes of many procedures and how they are carried out and this is often heightened by misleading reporting. The fact remains, however, that regrettably the use of animals continues to be needed in many areas of research work and safety testing. It is of course incumbent upon those working in biomedical research to ensure that they use animals only where no suitable alternative exists, that they use the minimum number of animals necessary, and that no avoidable suffering is caused. These principles are enshrined in the Animals (Scientific Procedures) Act 1986, which imposes strict controls on the use of living animals in scientific procedures.

Much work is already being done by charitable bodies and commercial concerns to find alternatives to the use of living animals. But it is important that those involved in research work and safety testing are seen to be seeking alternatives.

The Animal Procedures Committee will give preference to research proposals which have a good prospect of leading to the refinement or replacement of procedures that use large numbers of animals or that entail substantial suffering—for example, challenge tests and vaccine production. The committee also continues to be interested in the possibility of developing better measures of disease, discomfort, and stress in laboratory animals and in improvements in the husbandry of such animals. Grants will normally be awarded for periods up to three years.

Details of the research scheme and how to apply may be obtained from Mr Peter Edmundson, E Division, Room 971, Home Office, 50 Queen Anne's Gate, London SW1H 9AT (071 273 2029). Completed applications will be considered in the first half of April this year.

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Abuse of elderly people by their carers

SIR,—In the study by Drs Ann C Homer and C Gilleard an astonishing 45% of carers admitted to

abusing their elderly relatives.¹ The authors emphasised the willingness of these carers to discuss their behaviour, given the right circumstances. The paper did not, however, discuss a group of abusing carers, probably a minority, who abuse their elderly relatives for gain or gratification. Such carers may perpetrate quite horrific abuse of their relatives, who generally are unable to draw attention to their plight because of fear or mental or physical frailty. The following case history illustrates this form of abuse.

A widow in her 80s was referred to the accident and emergency department of a large general hospital because neighbours reported that she frequently cried during the night and they had noticed bruising. Abuse was suspected by the hospital and a social worker involved, who despite her best efforts was unable to assist directly, but she initiated referral to the old age psychiatry service.

The woman was found to be severely cognitively impaired as a consequence of dementia and so was unable to give a history, but she was obviously very distressed and frightened and bruising was apparent. On further investigation it transpired that she was being both physically and sexually abused by her alcoholic son. He also took her pension to buy alcohol. After informal discussion with the director of community care arrangements were made for this woman to move into residential care, where she settled well. Her son was initially reluctant to let her move and only his fear of being charged with offences against his mother led to him finally agreeing. If he had persisted in his refusal it is doubtful whether evidence of the offences could have been satisfactorily produced for a court, and certainly recourse to the courts would have delayed matters.

In these cases the abusing carer may be described as pathological as factors within the abuser are the sole determinants of violence. In the case described alcohol abuse was obviously relevant; other examples of such factors include sociopathic behaviour, mental retardation, and psychiatric disorders such as schizophrenia. In managing these cases an essential prerequisite is that professional staff are alert to this form of abuse. In addition, there is also a need for specific legislation. A statutory procedure similar to that used in child abuse cases would be a possible mechanism.² Essential components would include legal procedures both to gain access to the elderly victim and to remove him or her to a place of safety.

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1 Homer AC, Gilleard C. Abuse of elderly people by their carers. *BMJ* 1990;301:1359-62. (15 December.)

2 Department of Health. *Child abuse guide-lines*. Dublin: Stationery Office, 1987.

Tomography in deep vein thrombosis

SIR,—Dr J M Schindler and colleagues conclude that colour coded duplex ultrasonography has sensitivity and specificity of 100% in the diagnosis of acute deep vein thrombosis of the leg.¹ This concurs with the findings of other groups.^{2,3} Unfortunately, these figures apply only to the femoral and popliteal veins; indeed, the authors state that the calf veins were not investigated. Studies at necropsy⁴ and using phlebography⁵ and scintigraphy⁶ indicate that most deep vein thromboses occur or originate in the calf veins. Assessment of any diagnostic test for deep vein thrombosis must therefore address the problem of detecting thromboses in the calf veins.

Duplex studies that have included imaging of the calf veins indicate that the sensitivity of the investigation in this region is 73-84% and that the specificity is 86-92%.^{2,3} The excellent results of duplex scanning in detecting deep vein thrombosis above the knee cannot be extrapolated to the greater problem of detecting calf vein thrombosis.

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1 Schindler JM, Kaiser M, Gerber A, Vuillienet A, Popovic A, Bertel O. Colour coded duplex sonography in suspected deep vein thrombosis of the leg. *BMJ* 1990;301:1369-70. (15 December.)

2 Rose SC, Zwiebel WJ, Nelson BD, et al. Symptomatic lower extremity deep vein thrombosis: accuracy, limitations, and role of color duplex flow imaging in diagnosis. *Radiology* 1990;175:639-44.

3 Lee B, Thomas ML, Burnand KG, Browne NL. Comparative trial of ascending phlebography versus duplex ultrasonography in the diagnosis of deep venous thrombosis. *Br J Surg* 1990;77:A701.

4 Gibbs NM. Venous thrombosis in the lower limbs with particular reference of bedrest. *Br J Surg* 1957;45:209-36.

5 Nicolaides AN, Kakkar VV, Field ES, Renney JTG. The origin of deep vein thrombosis: a venographic study. *Br J Radiol* 1971;44:653-63.

6 Flanc C, Kakkar VV, Clarke MB. The detection of venous thrombosis of the legs using ¹²⁵I labelled fibrinogen. *Br J Surg* 1968;55:742-7.

SIR,—The omission of any assessment of the calf veins in the study of colour coded duplex sonography in the diagnosis of deep vein thrombosis by Dr J M Schindler and colleagues¹ weakens the case for using duplex sonography as the only diagnostic test for venous thrombosis. We prospectively studied 58 patients (60 limbs) with clinically suspected deep vein thrombosis using colour duplex sonography and ascending venography. Our results (table) would confirm the accuracy of duplex sonography in the diagnosis of