Heart rate response to standing in an elderly subject and a healthy young control.

response to standing was flattened. An example of such a flat response is shown in the figure and the pattern is similar to that found by Dr Ewing and his colleagues in diabetic patients with autonomic neuropathy. The 30:15 ratios in these elderly subjects were also low (mean 1.006, SD ± 0.031 ; young controls, mean 1.107, SD ± 0.161 ; $0.05 < P < 0.10$) and there was no evidence of sinus arrhythmia in 10 of the 11 old people. These findings are in agreement with those of Drs W J MacLennan and A E S Ritch (25 February, p 505), but in the absence of serious disease in the 11 subjects it seems likely that the flattened response can be attributed to aging in the autonomic nervous system. Physiological impairment of autonomic function has been reported in a high proportion of elderly people by Collins *et al*¹ in studies of thermoregulation in old age.¹

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¹ Collins, K J, *et al*, *British Medical Journal*, 1977, **1**, 353.

Safety in laboratories

SIR,—We consider, apropos your leading article on this subject (8 April, p 871), that while it is true that laboratory-acquired infections do not seem to be a serious hazard generally in pathology laboratories at present, it may be that with increasing work loads and increasing complexity of methods the situation may deteriorate unless codes of practice such as these mentioned in the article are produced for implementation where possible.

We take the point that processing of "all sputum and other material that may contain tubercle bacilli" in exhaust protective cabinets could cause problems in laboratories. Adequate exhaust cabinets such as are used in properly equipped laboratories should not produce the effect of concentrating an infective hazard. We think that codes of practice are produced to help and guide staff and those involved in laboratory management must be encouraged to employ such codes in a responsible way; in practice, application of these will need to be determined taking into account local circumstances.

Finally, in the last paragraph there is the naive implication that community physicians and environmental health officers are competent to inspect pathology laboratories. We have much pleasant and rewarding experience

in collaborating with such staff and respect their expertise but have no doubt that unless they have appropriate laboratory training and experience (uncommon to our knowledge) they cannot be considered competent to inspect such laboratories. Indeed, this paragraph of the article could be quite disastrously counter-productive since, although inappropriate, it could be considered quite seriously by people in some fields of health care, who might in their ignorance attempt to act in error on this advice.

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Antibiotic-associated colitis

SIR,—Mr T T Irvin's comments (22 April, p 1051) on our paper on pseudomembranous colitis (18 March, p 675) are pertinent although not entirely practical.

We have certainly considered the possibility that the high incidence of pseudomembranous colitis is related to the large number of prophylactic antibiotics prescribed. Indeed, we think this is a major factor. In other surgical units in the same hospital, where prophylactic antibiotics are also used routinely, pseudomembranous colitis appears to be a rare event. It is only on our unit, where we undertake many clinical trials of antibiotic therapy, that pseudomembranous colitis has become so common. Naturally, therefore, we are fully aware of the possible role of multiple antibiotic administration. Nevertheless, we do not accept the statement that abdominal wound infection is rarely a life-threatening problem. In patients undergoing major colorectal surgery not protected by any form of antibiotic prophylaxis the incidence of intra-abdominal infection is 10% and of septicaemia 12%¹; both are life-threatening and life-claiming complications that can be prevented by appropriate prophylaxis. Surely it is not the time to put the clock back and abandon prophylaxis but to learn about the causes of complications of prophylactic antibiotic therapy and how to prevent them.

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¹ Washington, J A, *et al*, *Annals of Surgery*, 1974, **180**, 567.

Management of severe acute asthma

SIR,—Your leading article (8 April, p 873) on treatment of severe acute asthma does not mention the use of subcutaneous terbutaline. The subcutaneous route of administration is a useful acquisition to the list of present treatments.

There are occasions in general practice, and even in peripheral hospitals that are short-staffed, when intravenous therapy is not convenient. In addition, older patients and those with associated cardiovascular problems may not tolerate intravenous infusions, with the added fluid load. The other large group of patients who would benefit from a subcutaneous injection are children, in whom it can often be extremely difficult to find a suitable vein.

As the subcutaneous route of terbutaline

has been shown to be effective¹⁻⁴ I think it should be added to any list of asthmatic management.

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¹ Arner, B, *et al*, *Acta Medica Scandinavica*, 1970, Suppl 512, p 25.

² Arner, B, *et al*, *Acta Medica Scandinavica*, 1970, Suppl 512, p 41.

³ Holton, K, *British Journal of Diseases of the Chest*, 1974, **68**, 111.

⁴ Freedman, B J, *British Medical Journal*, 1971, **1**, 633.

SIR,—I have delayed writing as I was sure that someone of greater authority would take up the cudgels for subcutaneous adrenaline, whose use you condemn in such a cavalier and un referenced fashion in your leading article (8 April, p 873). One presumes that you are writing as a physician treating adults in hospital, and no doubt the main place for this drug is in children at home, though I would hold (and am supported by authorities such as Hutchison¹ and Harris²) that it still remains an effective first-line drug for the hospital management of the young acute asthmatic. Its disadvantages, of poor absorption in the presence of peripheral collapse and cardiac stimulation, are widely known and its advantages, of reliability, safety, and ease of use in even a young child with inaccessible veins, are long tried and tested; the suggestion that alpha-receptors may be more stimulated by adrenaline than beta-receptors owing to beta-adrenergic blockade³ is unsubstantiated in practice. The only alternative subcutaneous bronchodilator, terbutaline, has never been compared with adrenaline and experience of its use is limited.

Sir, it ill becomes you to condemn long-established drugs without even the benefit of argument.

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¹ Hutchison, J H, *Practical Paediatric Problems*, 4th edn. London, Lloyd-Luke, 1975.

² Harris, F, *British Medical Journal*, 1975, **4**, 288.

³ Crosby, P, *British Medical Journal*, 1975, **4**, 406.

Contraceptive steroids and breast cancer

SIR,—Mr J D Spencer and others, discussing this relationship (22 April, p 1024), report that the recurrence rate in 44 stage 2 breast cancer patients who had taken contraceptive steroids during the year before mastectomy was significantly lower than in a matched control series. Although the numbers and length of follow-up were limited, the observations suggest that the growth of recurrence may have been temporarily inhibited in some cases as a result of the patient taking a combined pill of progestin and oestrogen.

It is a pity that the authors failed to mention evidence of this, which was reported over 10 years ago.¹ Soft-tissue manifestations of recurrent and advanced breast cancer in 42 women were treated with Lyndiol, an oral contraceptive containing a synthetic progestin of the 19-nor-steroid group associated with the oestrogen mestranol. After the contraceptive dose of one tablet daily for two months or longer almost complete regression of soft-tissue tumour was noted in 4 of 21 cases; with a dosage of 4-6 tablets daily it was noted in 5 of 21 other cases. The response rate and its mean duration were found to be almost identical with those noted in a series of 72