Correspondence

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Androgens and Growth

SIR,—The author of the otherwise excellent review of androgens and anabolic steroids (19 April, p. 165) is too dogmatic in his remarks on growth disorders. He states that the simultaneous maturation of the bones induced by the hormone occurs more rapidly than the stimulation of growth, so that the epiphyses fuse prematurely and the ultimate height of the individual may, in fact, be less than if he had received no therapy. This oft-repeated fallacy is probably based on the paper by Sobel *et al.*,¹ who used methyl testosterone in doses up to 40 mg. daily.

I have treated some 200 undergrown boys with methyl testosterone when they were sexually backward and with methandienone (Dianabol) when their sexual development was normal, with doses never exceeding 5 mg. daily. In 1965, with Dr. L. S. Carstairs, my radiological colleague at the Royal Northern Hospital, I described in detail the results in 24 of these patients, selected as described in our paper.² All were male, had full skeletal supervision, had been observed for at least two years, and were not hypothyroid. Of these 16 increased in height age more than in chronological age; eight increased in skeletal age less than in chronological age; 11 increased in height age more than in skeletal

age. On an average the increase in chronological age, height age, and skeletal age was almost the same over an average period of three years.

Thus a fair proportion of patients appeared to benefit from treatment. As there is no sound way of predicting a boy's final height with accuracy, the treatment is well worth while. It can do no harm provided that the skeletal age is measured radiologically at intervals of six months and compared with the height age and chronological age. In the few cases in which the skeletal age increases too fast, treatment is stopped and thereafter its increase is, in my experience, normal. The rate of growth diminishes but is usually still above the normal.

Androgens are less powerful than oestrogens in producing fusion of the epiphyses. That is why a girl ceases to grow soon after puberty, whereas a boy often continues for several years.—I am, etc.,

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- ¹ Sobel, E. H., Raymond, C. S., Quinn, K. V., and Talbot, N. B., *Journal of Clinical Endocrinology and Metabolism*, 1956, **16**, 241.
- ² Carstairs, L. S., and Greene, R., *Excerpta Medica International Congress Series*, 1965, **105**, 548.

Causes of Enuresis

SIR,—From the *Ebers Papyrus* and on through the *Boke of Children* to our own times your leading article (12 April, p. 63) ranged to give a balanced account of traditional views. It omitted, however, what may prove to be the most constructive suggestion in recent years—if not in the long history of enuresis.

I refer to Dr. Ronald Mac Keith's view that primary enuresis is a disorder frequently due to interference with learning during a sensitive period in the child's development. Mac Keith points to the third year or so of

life as a sensitive period, during which the new skill of bladder control is usually acquired but may be delayed by a variety of stresses that provoke anxiety. If the anxiety impedes the learning of the skill at the appropriate time, enuresis may persist long after. The concept was first put forward in 1964¹ and again in 1968.² From various sources evidence in its support was summarized in *The Child and His Symptoms*.³

This is a concept which is one of the fruits of the modern developmental approach to paediatrics. It is all the more attractive

because it is a unifying concept, postulating a similar causation for both primary and onset enuresis. Unlike the notion of delayed "maturation of the nervous system," it is testable, and indeed it is being tested with encouraging results. It offers the exciting and practical possibility not only of a rational treatment for enuresis but, even better, of its prevention.—I am, etc.,

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- ¹ Mac Keith, R. C., *Developmental Medicine and Child Neurology*, 1964, **6**, 111.
- ² Mac Keith, R. C., *Developmental Medicine and Child Neurology*, 1968, **10**, 465.
- ³ Apley, J., and MacKeith, R. C., *The Child and his Symptoms*, 1968, 2nd ed. Oxford, Blackwell Scientific Publications.

SIR,—Referring to your leading article on enuresis (12 April, p. 63), I would like to draw attention to the paper of Mac Keith.¹ This author emphasizes the importance of the sensitive learning period for dryness (1½ to 4½ years), which is followed by a period in which learning to become dry is unlikely. With strong supporting evidence Mac Keith goes on to say that anxiety-provoking factors in the sensitive learning period are responsible for many cases of primary nocturnal enuresis.

Those of us concerned with the treatment of enuresis in schoolchildren are only too well aware of the difficulties in remedying the situation, and we know of the secondary stress which can result. By changing the period of treatment, whether by counselling or other means, to the preschool sensitive learning period there may well be an increased number of successful treatments, and it is possible that other benefits socially and educationally may result.

The importance of this approach is that it should be possible to obtain further evidence on preventive and treatment aspects. Such knowledge on the common problem of