² Drake DP. Acute abdominal pain in children. *J R Soc Med* 1980;73:641–5.

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Insufficient early weight gain in preterm babies and influence on weight at 12 months

Sir,

In an interesting though difficult paper Davies and Kennedy¹ report that there was no influence of insufficient early weight gain in preterm babies on weight at 12 months.

I would like to comment on their introductory remarks that anxieties about poor early weight gain were 'based largely and often uncritically on studies in laboratory animals', citing a (wrongly dated) 19 year old paper by Winick and Noble that has now lost its currency,² a classic paper of Widdowson and McCance, and an old one of our own.

It is true that paediatricians' extrapolations from other animals to man are often uncritical, to the point that they may be rejected altogether except where they seem to bolster emotional belief,³ and this example is no exception. At the same time such comparisons can be very useful and should not be dismissed until they have been properly made. At the very least they must take account of the different time scales of growth between species, the different timing of birth in relation to developmental stages, and, especially, comparable stages of growth must be compared before the self evident conclusion is pronounced that animals are 'of course' not always like man.

In the present case growth restriction between birth and three weeks of age in the rat clearly results in a permanent resetting of the growth trajectory downwards, with ultimate stunting in adulthood, and in certain permanent alterations of brain anatomy and function. The comparable period in man is much longer, from about the beginning of the first trimester of gestation until about the second birthday. Whether or not man has a similar vulnerable period to that in rats awaits a demonstration of the *long term* consequences of growth restriction lasting for a *major part at least of this very long period in humans*, such restriction being to a comparable degree, so that by the age of 2 the child is not much more than half its ordained size, the outcome being assessed not earlier than the late teens. Of course, it is much easier to produce these conditions in experimental animals, but that is the whole point of using them. Children do exist, especially in underprivileged communities, whose early growth experience comes reasonably close to the model suggested by Widdowson and McCance in the rat, and there is reason to believe that in them a *critical* extrapolation bears fruit, the people in such communities being generally stunted. That the reason for their smallness is by no means wholly genetic is evident from their children's response to the arrival of better

environmental conditions, when they are seen to outstrip the growth attainments of their parents, often dramatically.

I hope that the strictures of Davies and Kennedy about extrapolating from animals to man will be heeded, not least by themselves!

References

- ¹ Davies DP, Kennedy JD. Insufficient early weight gain in preterm babies and influence on weight at 12 months. *Arch Dis Child* 1985;60:718–21.
- ² Sands J, Dobbing J, Gratrix CA. Cell number and cell size: organ growth and development and the control of catch-up growth in rats. *Lancet* 1985;ii:503–5.
- ³ Dobbing J. Breast is best isn't it. In: Freed DLJ, ed. *Hazards of milk*. London: Bailliere Tindall, 1984:60–74.

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Professor Davies and Dr Kennedy comment:

We are grateful to Professor Dobbing for his comments. These serve to strengthen even further our already held conviction of the need to consider and analyse very carefully any extrapolations that might be made from animals to man in regard to effects of nutrition on early growth. We will be dutiful in applying these strictures to ourselves!

Impact of neonatal care—South West Thames region (less than 1000 grams)

Sir,

Thompson and Khot¹ have reported on the Brighton (South East Thames) experience on the reduction of mortality with the introduction of respiratory support. Not only does local mortality improve but so do expectations, and this is not just confined to the centres providing full neonatal intensive care with respiratory support. In the next door South West Thames region intensive care began probably with the opening of a new unit at St George's in 1980. In the five years 1980–84 inclusive there has been a steady improvement in mortality figures both at St George's and generally in the region. This has been accompanied by a regional increase in expectations. This is illustrated by the Table.

In 1980, 53 infants delivered with a birthweight less than 1000 g were resuscitated in the region, 13 (24%) at St George's Hospital. Since then there has been a steady increase, so that in 1984 there were 72 infants of this weight resuscitated, 28 (39%) at St George's. In 1980 only eight infants <1000 g in the region survived to go home, four (50%) from St George's—that is, only 15% of those resuscitated. This had increased to 39 infants in 1984, of whom 18 (46%) were delivered at St George's. Thus the overall regional survival for babies of this weight group has increased to 54%. Not only are more infants of this extremely low birthweight being resuscitated, but they are