Caffeine and babies

SIR,—Dr Michèle I Clement's personal view described the effects of caffeine on her breastfed babies.[1] In the north east young children are commonly given tea to drink each day; this is usually poured from the family pot, but the degree of dilution with milk varies greatly.

We identified 22 children under the age of 2 years who drank tea. From their history we ascertained the volume of tea given daily; we also requested a small sample of the actual drink given to the child and analysed its caffeine concentration. Our results indicate that children drinking tea ingest substantial amounts of caffeine (table). Although the caffeine concentration varied widely in the drinks analysed, an important reason for the high intakes was the volume of tea drunk each day. Four children with the highest daily intakes (15 mg/kg/day) drank between four and seven eight ounce (227 ml) bottles of tea daily with a mean caffeine concentration of 189 mg/l (range 165-226 mg/l).

We are uncertain of the effects of such high caffeine intakes in young children. Sleeplessness and irritability are frequent symptoms in normal children at this age. Neonatal apnoea is treated with doses of 2·5 mg caffeine/kg daily after a loading dose, and tachycardia and jitteriness are seen as a result of overdosage.[2] Adverse behaviour has been reported in boys given 5 mg of caffeine twice daily, and boys who commonly ingested a large amount of caffeine showed a high degree of anxiety and an "abstinence" period.[3] Young children in Sunderland may consume far more caffeine than American soft drink consumers at a similar age.[4] Further work is necessary on the effects of caffeine in young children.

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SIR,—Dr Michèle I Clement expressed her conviction that her own coffee consumption was related, through breast feeding, to her infant's sleeplessness.[1] Breast milk may not be the only source of a "caffeine fix" for some babies.

We discovered during the course of a study of the possible role of drug consumption in sudden infant death syndrome that 10 years ago substantial numbers of infants and babies aged under 2 years received tea and coffee to drink directly in their bottles.[2] We found this was not significantly associated with sudden infant death syndrome but were intrigued by the prevalence of consumption of these beverages in children who were mostly aged under 1 year: 36 of 361 children had been given tea and coffee in the 48 hours before they died from a variety of causes. These findings may be atypical, and feeding practice may have changed since these data were collected, but we would be interested to know of any other estimate of consumption of these pharmacologically potent compounds by young babies. One in ten seems to be worryingly high.

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SIR,—I support Dr Michèle I Clement's observations borne out by my own experiences with our firstborn breast fed premature twin sons.

Being aware of the potent effects of caffeine, I restricted myself to drinking decaffeinated coffee throughout my pregnancy; after the boys were born my consumption increased to six or seven mugs (1·7-2·0 litres) per 24 hours. I do not recall the babies being particularly bad sleepers, but they were considered to be quite irritable, and this was put down to their prematurity (they were born at 30 weeks' gestation). My consumption of decaffeinated coffee, however, increased further when I had a bad respiratory infection, and then both babies began to behave strangely. In fact, the smaller one had a fit; he threw himself into hyperextension with his head thrown to one side with an upward gaze and sardonic smile. The whole attack lasted 20-30 seconds and was repeated on several occasions on successive days, including one in the presence of the paediatric neurologist who was carrying out a routine follow up assessment. She insisted that electroencephalography be performed, which showed no abnormalities. The other episode was uncontrolled inappropriate laughter as if the baby was hallucinating. This behaviour clinched the diagnosis for my husband (also a doctor) and me that the boys had been poisoned by caffeine. Devastated, I drank a large volume of water and did not touch drink or food containing caffeine until I had stopped breast feeding. The attacks ceased within 24 hours and never recurred; the babies became more settled in every way. The larger twin was not as affected, presumably because some of his feeds were supplemented with formula milk in a bottle.

The boys subsequently showed a continuing sensitivity to caffeine. Their only source was chocolate, which I avoided for as long as possible by using carob as a substitute. Chocolate is, however, still favourite, but if they eat more than several mouthfuls they become overactive and unable to sleep six to seven hours after ingestion. The effect is consistent and has been repeated on several occasions.

Caffeine is a powerful drug, and I do not think that its effects on young children are fully appreciated and reported; caffeine may account for some of the features of the hypermanic syndrome. Careful limitation of maternal caffeine consumption should probably be encouraged during breast feeding, and perhaps certain restrictions should be recommended for toddlers.

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Daily intake of caffeine in 22 children aged under 2 years

	Age (years)	Body weight (kg)	Concentration of caffeine in tea (mg/l)	Volume of tea taken daily (ml)	Daily intake of caffeine (mg/kg)
Mean (SD)	1·4 (0·4)	10·0 (1·9)	111 (54)	471 (491)	5·9 (7·9)
Range	0·9-2·0	7·0-13·6	38-226	90-1680	0·8-27·7

Profile of the GMC

SIR,—There is a danger nowadays that if an organisation cannot show that it has changed something, preferably of fundamental importance, in the past few weeks it risks being accused of obstructing truth and standing in the way of progress. And there is the allied danger that people who do not subscribe to the "radical" or the "newness at any cost" solutions may be labelled reactionary and blind supporters of the status quo. A sad consequence of these fashionable pressures is that weak minded organisations or people who see opportunities for personal advancement in seeming to be fashionable will entertain or even press for fundamental change before they know that what they propose to put in its place will work. These dangers pose serious problems for medical education and should be resisted.

Medical education is not new, and considerable experience has accumulated about how medical knowledge can be transmitted from one generation to the next. This has built up over many years from the thinking of many astute minds such as those of Aristotle, Hippocrates, Galen, Vesalius, Hunter, Bernard, Flexner, Osler, Pickering, and countless others and from the experience in many countries of many generations of doctors and students on what can and what cannot be done with the available people and resources. The way we train doctors today stems from that accumulated wealth of experience. That does not mean necessarily that it is right. But it suggests that it would be prudent to pause for reflection before concluding that it is wrong.

What students need of medical education remains fairly straightforward. Firstly, they need a sound understanding of how the human organism works and the enormous vocabulary needed to handle the ideas concerned in this. Secondly, they need a wealth of clinical experience in a wide variety of health care settings. For both they need sympathetic teachers who both know and love their subjects. Preclinical and clinical training are not just pejorative words but reflections of the fundamental components of medical education. We should try to improve them not mess about with them lightly or turn them on their heads.

Dr Richard Smith catalogued the well rehearsed complaints about medical training in Britain and laid the the blame for this on the General Medical Council, which in his opinion is "stultifying medical education."[1] Because of this he claimed that "Britain has not experienced the innovation in medical education that has been seen in countries like Canada, Australia, the United States, and The Netherlands." Is this necessarily a bad thing? Does it prove that the General Medical Council has done a bad job? Is it even true? Knowing something of medical education in these countries and the effects of some of the innovations (which fortunately have not been introduced universally), I feel rather grateful to the council for protecting us against their worst excesses.

It would be useful for Dr Smith to visit some of the schools that have enjoyed these innovations to see what improvements in medical education have accrued and, if possible, make a rough cost-benefit analysis. I think he would find few bodies as receptive to sound data on this matter as the education committee of the council. In the mean time I am glad that the council does not force us into educational gyrations to reflect each latest twist in perceived educational wisdom but encourages medical schools to experiment freely within a broad educational context to develop young people into doctors.

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