paper that the interpretation and treatment of measurements of plasma proteins in the preterm infant is greatly overrated, and I think that Cartlidge and Rutter have done paediatrics a service in drawing attention to the curiously large scatter of plasma proteins concentrations in preterm and newborn infants.

J D BAUM
Royal Hospital for Sick Children,
Bristol BS2 8BJ

Drs Cartlidge and Rutter comment:

We were sorry to discover that Professor Baum has carried out so much work in the field of neonatal oedema to which we made no reference. This was no intended slight (we were unaware of his work), but his disappointment is understandable. When we set out to perform the study we carried out a search of the published works through *Index Medicus*, using the preterm infant, oedema, and albumin as key words, and choosing papers that seemed relevant by their titles. We knew of the study from 1971 on colloid osmotic pressure in the fetus and newborn infant,² but as it contains no data on albumin concentrations or oedema in preterm infants we did not refer to it. The study on colloid osmotic pressure in erythroblastosis fetalis does contain data on albumin concentrations in preterm infants but the title gives no clue to this.³ The most important reference, the monograph 'Oedema in the newborn,'⁴ certainly contains a lot of information on oedema and albumin concentrations in the preterm infant, some of which we have duplicated. It does not appear in *Index Medicus*, however, and is not referred to in any article that we have come across. We regret that we were unaware of it, but the exponential rise in the volume of medical publications (to which these letters will contribute!) makes such rediscovery of the wheel more likely.

We have since read and enjoyed 'Oedema in the newborn.'⁴ The chapter on oedema in the preterm infant provides data on cord albumin concentrations at different gestational ages from 33 weeks onwards. Our values are somewhat lower, perhaps because they were all obtained after birth, but show a similarly large scatter—our findings on infants below 33 weeks' gestation further emphasise the important influence of gestation on serum albumin. Baum suggests that oedema in preterm infants is not looked for now compared with the earlier days of neonatology, except in very immature infants. Our data strongly supports this. We do not know why very immature infants develop oedema—it does not seem to relate to illness or serum albumin. Clearly, we have both shown that subcutaneous oedema is not simply due to a low colloid osmotic pressure produced by a low serum albumin concentration. Baum has found that levels of colloid osmotic pressure in preterm infants without oedema are often below 20 cm of water, levels that would produce generalised oedema in a child with the nephrotic syndrome. Perhaps the low mean arterial pressure of the preterm infant results in a low hydrostatic pressure and therefore protects against severe oedema. Whatever the reasons are for oedema, the message seems to be that hypoalbuminaemia of prematurity is a usual finding, not a disorder that needs treatment.

References

- 1 Cartlidge PHT, Rutter N. Serum albumin concentrations and oedema in the newborn. *Arch Dis Child* 1986;**61**:657–60.
- 2 Baum JD, Eisenberg C, Franklin FA Jr, Meschia G, Battaglia FC. Studies on colloid osmotic pressure in the fetus and newborn infant. *Biol Neon* 1971;**18**:311–20.
- 3 Baum JD, Harris D. Colloid osmotic pressure in erythroblastosis fetalis. *Br Med J* 1972;**i**:601–3.
- 4 Barnes SE, Bryan EM, Harris DA, Baum JD. Oedema in the newborn. In: Baum H, Gergely J, eds. *Molecular aspects of medicine*. Oxford: Pergamon, 1977:187–282.

Cystic fibrosis and diabetes mellitus

Sir,

Cystic fibrosis is associated not only with chronic suppurative lung disease and exocrine pancreatic insufficiency but also with endocrine dysfunction of the pancreas, leading to impaired glucose tolerance, decreased insulin production, and diabetes mellitus in some children.¹ Measurement of glycosylated haemoglobin (HbA_{1c}) has been shown to be useful for assessment of children with impaired glucose tolerance.

We measured stable HbA_{1c} concentrations by a modification of the Corning electrophoresis method² in 21 children with cystic fibrosis, aged 1–16 years, regularly attending our clinic, and in 50 normal children, aged 1–16 years. Three of the children with cystic fibrosis were receiving insulin for clinical diabetes mellitus. The mean (SD) HbA_{1c} concentration in the remaining 18 children was 8.1 (1.5)% (range 6.0–11.3%) compared with 6.0 (0.8)% (range 4.3–7.7%) in the normal group ($p < 0.001$). All of the children with cystic fibrosis had HbA_{1c} concentrations equal to or greater than the mean of the normal group and in 55% the HbA_{1c} concentrations were more than two standard deviations greater than the normal group mean.

The degree of glucose intolerance may be relevant to morbidity and problems of growth in children with cystic fibrosis and requires further study. Treatment with prednisone has been shown to improve pulmonary function in such children,³ and although that study detected no change in HbA_{1c} concentrations, careful monitoring of glucose tolerance would seem to be indicated if this treatment is begun.

We suggest that HbA_{1c} concentrations will be of value for monitoring children with cystic fibrosis and if repeated at six to 12 month intervals would indicate any progressive impairment of glucose tolerance. This would allow earlier detection and treatment of associated diabetes mellitus.

References

- 1 Goodchild MC, Dodge JA. *Cystic fibrosis: manual of diagnosis and management*. 2nd ed. London: Baillière Tindall, 1985.
- 2 Caiger P, Frost GJ, Forsyth CC. Stable glycosylated haemoglobin and target management of diabetes mellitus. In: *Proceedings of the British Paediatric Association*. 56th Annual Meeting. London: BPA, 1984:81.
- 3 Auerbach HS, Williams M, Kirkpatrick JA, Colten HR.

Alternate-day prednisone reduces morbidity and improves pulmonary function in cystic fibrosis. *Lancet* 1985;ii:686-8.

P CAIGER, G J FROST, L E BRUCE, and S G F WILSON
Departments of Biochemical Medicine and Child Health,
Ninewells Hospital,
Dundee DD1 9SY

Spermatic cord torsion

Sir,

In his recent annotation Matthews raises a number of points that require correction.¹ The statement that neonatal spermatic cord torsion occurs 'especially in the premature baby' is not borne out by any other authors on the topic, and, in fact, in 62 patients in the published reports for whom information is available the mean birth weight was 3600 g. In fact, this condition seems to be confined to term babies and, indeed, in general to large term babies. While I agree that surgery to fix the contralateral testis is mandatory in these infants, urgent surgery to attempt detorsion of the twisted testis is not necessary in most instances as the testis is almost invariably beyond salvage. In 25 instances in the published reports where detorsion and retention of the testis was performed there were only two occasions where testicular survival was thought to have occurred. (Burge DM. Neonatal testicular torsion and infarction: aetiology and management. Unpublished data.)

The comment that idiopathic scrotal oedema is a rare condition is slightly misleading. Of the children referred to this unit from the Southampton district in the years 1980-85, there were 46 children with testicular torsion, 22 children with torsion of hydatid of Morgagni, and 31 with idiopathic scrotal oedema. Other authors have noted that this condition is probably the second commonest cause of acute scrotal disease that leads to admission to hospital.² Considerable experience in making this diagnosis is required, however, before conservative management is adopted.

I wholeheartedly agree with the comments made regarding epididymo-orchitis and the worrying frequency with which this extremely rare condition in the paediatric age group is still being diagnosed by referring practitioners. The medical school teaching that all acute scrotal disease requires surgical exploration is still by far the safest starting point in the management of a child with scrotal pain.

References

- Matthews PN. Spermatic cord torsion. *Arch Dis Child* 1986;61:426-7.
- Brereton RJ, Manley S. Acute scrotal pathology in boys. *Z Kinderchir* 1980;29:343-57.

D M BURGE
Southampton General Hospital,
Southampton SO9 4XY

Dr Matthews comments:

Thank you for correctly pointing out that neonatal spermatic cord torsion usually occurs in the full term baby.

I still believe that urgent surgery offers the best chance of testicular salvage and although I concede that more babies will be lost than saved, there is nothing to be gained by delay, and with more widespread adoption of an urgent surgery policy maybe we could improve on the rather dismal testicular salvage rates in the neonate.

I agree that idiopathic scrotal oedema is more common than was originally thought but felt that non-diagnosis of this strange condition was preferable to wrongly diagnosed testicular torsion.

Cost of Stycar boxes

Sir,

I was extremely surprised to find that the Stycar Vision and Hearing test equipment cost £95.00 and £59.95, respectively. These boxes consist of a few toys, rattles, polystyrene balls, and standard cards for vision and hearing checks.

The rattles break often and the toys go missing frequently, and I am sure it is a very profitable business for the manufacturers.

I hope all of us who use Stycar boxes realise their cost and ask ourselves and the manufacturers why they cost so much.

A THENABADU
New Malden,
Surrey

Mr M Jackson comments:

We are grateful to Dr Thenabadu in raising this question but are rather upset at the suggestion that Stycar offers only 'a few toys, rattles, etc'.

The Stycar series of tests, Hearing, Vision and Language, have, of course, proved of immense value to practitioners over the years in helping them to obtain reliable information about children's capacity in hearing comprehension and visual comprehension and acuity and their ability to comprehend and express themselves in the spoken language.

The components and style of packaging have been those that suited the needs of practitioners but it is perhaps important that over the last 12 months or so a slightly different pattern of requests has begun to emerge and we have recently been in touch with many paediatricians and medical officers to identify if a repackaging is required. The current 'make up' of the Stycar tests and style of packaging is certainly not cheap—partly because several of the items need to be especially prepared and in such small quantities that high costs are inevitable.

If we are able to identify accurately alternative and more economic means of presentation then we will be only too happy to examine them because, ironically enough and in direct contradiction to what Dr Thenabadu suggests, the present format of these tests is most certainly not profitable to us.

NFER-Nelson do operate responsibly and we fully appreciate that there are probably many 'costs' and other