Figure One dimensional electrophoretic separation of mucopolysaccharides stained with alcian blue. Lane 1: standards: CS, chondroitin sulphate; DS, dermatan sulphate; HS, heparan sulphate. Lane 2: urine collected into cytogenetics bottle; lane 3: urine from a child with Sanfillipo syndrome; and lane 4: urine from a normal child.

The diagnosis of Sanfillipo syndrome should always be confirmed by white cell enzyme analysis. Heparin contamination is a previously unreported cause of abnormal urine mucopolysaccharide electrophoresis.

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Duration of protection against tuberculosis conferred by BCG vaccination in infancy

Sir,

Recent studies confirm that BCG vaccination in the newborn and in infants confers valuable protection against tuberculosis.¹ However, little is known about the duration of protection provided by BCG vaccination. It is often implied that tuberculin skin sensitivity induced by BCG

Table Decreasing effect of BCG with time after vaccination

Age band (years)	No of cases	Protective efficacy of vaccination (%)	95% Confidence interval (%)
0-3	36	77	53 to 89
4-6	36	60	7 to 83
7-9	21	49	-41 to 82
10-12	15	27	-193 to 92

vaccination equates with immunity provided by BCG, and that sequential tuberculin skin testing therefore gives information about the duration of protection provided by BCG.² Nevertheless, there is contrary evidence which suggests that the level of immunity provided by BCG is unrelated to the degree of tuberculin skin sensitivity.³

In order to study the duration of protection provided by BCG we reanalysed the data from a recently published study looking at the effectiveness of BCG given to infant Asian children.⁴ In brief, this showed that 57% (62/108) of Asian children who developed tuberculosis had received vaccination, compared with 78% (336/432) of a group of age and sex matched controls who did not develop tuberculosis. The overall protective efficacy of BCG vaccination was 64% (95% confidence interval: 43% to 77%).

The further analysis we undertook consisted of subdividing the cases and controls into four age bands determined by the age at which the cases developed tuberculosis. The proportion of patients and controls within each age band who had received BCG was then ascertained, and the percent efficacy of BCG vaccination calculated as described previously.⁴ The table shows the results.

The numbers of cases and controls within each age band were relatively small compared with the overall analysis therefore the 95% confidence interval for each estimate of protective efficacy is wide, and the results must be interpreted with caution. However, the figures for protective efficacy suggest that BCG vaccination in infancy may confer useful protection against tuberculosis for at least nine years after vaccination. More importantly, the maximum protection is provided during the first three years after vaccination—the time when children are at greatest risk from disseminated tuberculosis.

We suggest that the above data reinforce the view expressed in our original publication that BCG vaccination in infant Asians is a valuable protective measure against tuberculosis.

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Tubular dysfunction and microalbuminuria in insulin dependent diabetes

Sir,

In a recent paper by Walton *et al* investigating tubular function in diabetics, urinary α -1-microglobulin excretion was found to be significantly higher in diabetic children compared with controls.¹ Using an enzyme immunoassay (Imzyne α -M, Fujirebio Inc) we obtained similar results.²

In 62 type 1 diabetics (38 girls), aged 3 to 21 years, with duration of disease from one week to 13 years, urinary α -1-microglobulin excretion was evaluated prospectively every three months for one year; 54 healthy subjects (32 girls), aged 4 to 21 years served as controls. Diabetics were divided into three groups according to their duration of disease (group A: less than five years; group B: five to 10 years; group C: more than 10 years); during the study 28 poorly controlled children (with stable glycated haemoglobin (HbA_{1c}) concentration >10%) improved their metabolic control and after 12 months HbA_{1c} concentrations were less than 8%. In diabetics urinary excretion of α -1-microglobulin was significantly higher than in controls, particularly in group C patients. In agreement with Dr

Walton's study, a significant correlation was found between HbA_{1c} values and urinary α -1-microglobulin excretion as well as between 24 hour glycosuria and urinary excretion of α -1-microglobulin. In poorly controlled diabetics with duration of disease shorter than 10 years (group A and B) urinary α -1-microglobulin excretion returned to normal when metabolic control improved, while it remained high in children with duration of diabetes longer than 10 years (group C) (table). Albumin excretion rate was less than 15 μ g/minute in all diabetic children during the study.

Our data confirm that glycaemic control influences urinary excretion of α -1-microglobulin; however, despite good metabolic control, children with long duration of diabetes and without microalbuminuria show an increased excretion of α -1-microglobulin.

Although diabetic kidney disease is primarily a glomerulopathy,³ we believe that impaired tubular function is detectable earlier than glomerular damage.

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Table Urinary α -1-microglobulin excretion (mg/mmol creatinine) in 28 poorly controlled diabetic children and in 54 normal children

	During poor glycaemic control (stable HbA _{1c} >10%)	After 12 months of improved metabolic control (HbA _{1c} <8%)
Diabetic children:		
Group A (n=9)		
Median	0.54*	0.27
Range	0.21-1.64	0.11-0.94
Group B (n=10)		
Median	0.62*	0.29
Range	0.18-1.78	0.16-0.96
Group C (n=9)		
Median	0.75*	0.66*
Range	0.28-2.07	0.22-1.98
Normal children		
Median	0.25	
Range	0.10-0.88	

*p<0.001 compared with normal children.

Bulging fontanelles in infants without meningitis

Sir,

We read with interest the article by Mann *et al* on transient intracranial hypertension of infancy.¹ We submitted a similar report to this journal in 1986 that was not accepted for publication in competition with other papers coming through at that time.

Over a six year period, seven infants (see table) were admitted to the Royal Alexandra Hospital for Sick Children, Brighton, with bulging fontanelles and fever. Examination of the cerebrospinal fluid and blood cultures was normal in each case. All seven were previously healthy, but case 4 had Poland's anomaly. Cerebrospinal fluid pressure was raised in the three infants who had the investigation performed. All the infants' fontanelles had returned to normal within 72 hours. We believe all our patients were suffering from viral infections, but the relevant investigations were not complete. A history of mild head injury was obtained in case 3. In two of our cases the bulging fontanelles returned in the presence of further infections. The mother of case 4 brought her daughter back