LETTERS TO THE EDITOR

The changing clinical pattern of Reye's syndrome 1982-90

EDITOR,-We read with interest the paper by Dr Hardie and colleagues.1 We all agree now on the non-specificity of the case definition and on the heterogeneous nature of Reve's syndrome.2-4 Updated Reye's syndrome is not a specific clinicopathological entity, but a descriptive term used to designate the condition of a child presenting with an unexplained non-inflammatory encephalopathy and signs of liver dysfunction (international workshop 'Reye's syndrome revisited', Leuven, 3 May 1996).

However, as there is a wide spectrum of differential diagnoses in patients meeting the diagnostic criteria,⁵ classifying them now in two groups, the 'Reye group' and the 'Reye-like inherited metabolic disease group' is inaccurate: the Reye group again is heterogeneous, composed of patients with infections (and fever), and of patients with toxic and other diseases. This classification again enhances the risk of epidemiological biases1-3.

Whether the scoring system devised by the authors is a valid predictor of 'Reye' (high score) versus 'Reye-like' (low score) has to be challenged as well. This scoring system does include exclusion criteria for Reye's syndrome (for example a patient with positive cerebrospinal fluid can still be diagnosed as having Reye's syndrome), and in several sections a not recorded feature does increase the score in such a way that an insufficiently documented patient already gets a score of 8 simply by not measured or not recorded features.

Moreover, when applying this 'Reye score' to our two patients reported earlier on, they would both be high scorers, namely 17 and 19 respectively.2 Yet-by including careful analysis of the preadmission medication-we proved that their 'Reye's syndrome' was a combination of infection (influenza A and cytomegalovirus respectively) together with extrapyramidal reactions after antiemetics.

Either one can conclude that the scoring system is not a valid one to differentiate 'non-classical' (low scorers) from 'classical Reye's syndrome' (high scorers). Or one can also assume that high scorers defined by the authors as those with 'onset in mid to late childhood; peak in winter months; influenzalike or varicella prodrome; profuse vomiting before change in conscious level' are the ones who most likely have been given antiemetics and are indeed the patients with 'classical Reye's syndrome'. This would be a major argument for our hypothesis supported by the from Food data the and Drug Administration-as to the role of the side effects of antiemetics in the report of this syndrome in 1963 (temporal relation with the marketing of the phenothiazines-antiemetics) and for its boom in the seventies.2-4 Later on, once the extrapyramidal reactions and the malignant neuroleptic syndrome got well known, they contributed to the decline of Reye's syndrome as they were no longer misdiagnosed as 'Reye's syndrome'.

The agreement on the heterogeneous nature of Reye's syndrome is the crux of the whole discussion. Logically, it implies that the hypothesis of the epidemiological surveys suggesting a link between Reye's syndrome and aspirin is not valid, as the case subjects of these surveys were not specific.4

As to the decline, may we draw attention to the erroneous referral to our publications: we never attributed this decline of Reye's syndrome solely to a correct identification of 'Reye-like' inherited metabolic disorders. We mentioned clearly that the apparent decline of 'Reye's syndrome' can be explained by 'an increased recognition of metabolic, viral or toxic diseases'.3 The increase of a more precise diagnosis is also proved by the authors' own data, which show a steady rise of revised diagnoses from 18.9% in 1982 to 43.8% in 1990.

The authors of this letter have no ongoing affiliation or financial involvement with any pharmaceutical company nor with any other entity with a financial interest in the subject matter.

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Dr Hall and coauthors comment: Dr Casteels-Van Daele et al misinterpret our paper and others' publications.

We clearly stated that 'Reye-like' includes not only certain inherited metabolic disorders but also other conditions. We emphasised the former because they can mimic 'classic' Reve's syndrome in every detail and their prompt recognition can prevent death and disability. Furthermore, some enzyme defects undoubtedly remain undiscovered, so an unexplained Reve-like illness may still be due to such a disorder, especially in children under 3 years, those with recurrences, a family history, or a low Reye score.

The 'epidemiological biases' described in the authors' previous publications have been refuted.67 They criticise the non-specificity of our high scoring category and that of the case definition used in the case-control studies even though the 'dilutional' effect of including non-cases strengthens the aspirin association. Our Reye score is new, reflects the limitations of data from national voluntary epidemiological surveillance and, as we stated, requires further validation. We are pleased that Casteels-Van Daele et al tried it on their two cases; however, in practice, scoring would have been unnecessary because a diagnosis of antiemetic toxicity should have been made at presentation.

We have no evidence that the highest scorers were those most likely to have received antiemetics. The authors' hypothesis about their role in Reye's syndrome has been criticised7 ; their interpretation of the Food and Drug Administration's conclusion is inaccurate.

The authors confuse numbers and proportions when referring to our data showing a 'rise in revised diagnoses 1982-90'. The numbers were equal in the two study periods, the proportion rising as the total annual numbers fell.

Finally, our data clearly demonstrated a high scoring subgroup of Reye's syndrome associated with aspirin exposure. Experience at referral centres is that there has been a dramatic decline in patients with these clinical features (JFT Glasgow, unpublished data; J

Orlowski, discussion at international workshop 'Reye's syndrome revisited', Leuven, 3 May 1996).9 This should not have occurred if the decline in reported Reve's syndrome is due to improved diagnostic classification.

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- Casteels-Van Daele M. Reye syndrome or side-effects of anti-emetics? *Eur J Pediatr* 1991;150: 456-9.
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 Casteels-Van Daele M, Eggermont E. Reye's *Distribution* 2014.
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- 5 Mowat AP, Reye's syndrome. In: Buts JP, Sokal EM, eds. Management of digestive and liver disorders in infants and children. Amsterdam: Elsevier Science Publishers, 1993:603-22.
- 6 Khan AS, Kent J, Schonberger LB. Aspirin and Reye's syndrome. *Lancet* 1993;341:968.
- 7 Hall SM. Reye's syndrome. BMJ 1994;309:411. 8 Partin JC. General management of Reye's syndrome. In: Wood C, ed. Reye's syndrome. Royal Society of Medicine Services Round Table Series No 8. London: RSM, 1986:156-1301 72
- 9 Holmes Morton D. Through my window— remarks at the 125th celebration of the Children's Hospital of Boston. *Pediatrics* 1994; 94:785-91.

Chromosome 22g11 microdeletion and isolated conotruncal heart defects

EDITOR,-We read in a recent issue of the journal the paper by Trainer et al on 22q11 microdeletion (del22q11) in patients with tetralogy of Fallot.1 Del22q11 was detected in patients with classic and mild DiGeorge/ velocardiofacial syndrome, but also in 'nondysmorphic' patients. The authors suggest that fluorescence in situ hybridisation (FISH) for del22a11 should routinely be performed in all patients with tetralogy of Fallot. Our experience on a large sample of patients with isolated conotruncal heart defects (CTHDs) demonstrated, on the contrary, that clinical examination can select the patients at risk for del22q11.23 From 1993 to 1996 we evaluated 315 children with CTHD (table 1). All patients underwent phenotypical evaluation. Particular attention was paid to minor dysmorphic features associated with DiGeorge/velocardiofacial syndrome,4 including lateral displacement of inner canthi, narrow upslanting palpebral fissures, prominent nose with hypoplastic nares, small mouth, dysmorphic ears, and slender fingers. Standard karyotype on peripheral lymphocytes was performed, and FISH was used for detecting del22q11 in all cases.5 Patients presenting with CTHD that was associated with one or more extracardiac anomalies were considered as syndromic. The distribution of syndromic and isolated cases in the different types of CTHD and the presence of del22a11 is shown in table 1. Only one of the children with isolated CTHD presented del22q11. Five patients originally diagnosed as isolated were subsequently included in the group of syndromic cases, because of the presence of subtle facial dysmorphisms which was previously overlooked.

The occurrence of del22q11 in our series of true isolated CTHDs is extremely low. In order to define the exact prevalence of del22q11 in non-syndromic CTHDs it is essential to exclude patients with subtle dvsmorphisms evoking features of DiGeorge or velocardiofacial syndromes.¹⁶ These dysmorphisms may be barely recognisable, but their presence can be associated with a high prevalence of del22q11.1 A precise phenotypical analysis and clinical follow up are essential to

Table 1 Clinical and molecular findings in our series of patients with CTHDs

Cardiac defect	Total No of patients	Syndromic patients					
		DG/VCF		Other		- Isolated patients	
		With del22	Without del22	With del22	Without del22	With del22	Without del22
TF	161	16	7	0	33	0	105
TGA	45	2	1	0	0	1	41
Corrected TGA	30	0	0	0	0	0	30
TF with PA	29	13	3	0	3	0	10
Heterotaxia	20	0	0	0	20	0	0
DORV	14	1	1	0	2	0	10
TA	12	2	1	0	2	0	7
IAA	4	3	0	0	1	0	0

Abbreviations: del22, microdeletion 22 q11; DG, DiGeorge syndrome; DORV, double outlet right ventricle; IAA, interrupted aortic arch; PA, pulmonary atresia; TA, truncus arteriosus; TF, tetralogy of Fallot; TGA, transposition of the great arteries; VCF, velocardiofacial syndrome.

distinguish syndromic from isolated CTHD. We believe that accurate clinical evaluation is generally sufficient for a first screening to identify patients at risk for del22q11, and only syndromic cases should be screened for this chromosomal anomaly. Routine FISH analysis in both syndromic and isolated cases is valuable as a research tool to evaluate the exact prevalence of del22q11 in isolated CTHD and in patients with different types of cardiac malformation, but we feel that in clinical practice this technique could be reserved for patients previously selected by clinical evaluation.Letters to Editor

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- Trainer AH, Morrison N, Dunlop A, Wilson N, Tolmie J. Chromosome 22q11 microdeletions in tetralogy of Fallot. Arch Dis Child 1996;74:62-3.
- 2 Amati F, Mari A, Digilio MC, et al. 22q11 deletions in isolated and syndromic patients with tetralogy of Fallot. Hum Genet 1995;95:479-82.
- 3 Melchionda S, Digilio MC, Mingarelli R, et al. Transposition of the great arteries associated with deletion of chromosome 22q11. Am J Cardiol 1995;75:95-8.
- Will detention of chromosome 22(11, Am f) Cardiol 1995;75:95-8.
 Wilson DI, Burn J, Scambler P, Goodship J. DiGeorge syndrome: part of CATCH 22. J Med Genet 1993;30:852-6.
- 5 Pizzuti A, Novelli G, Mari A, et al. Human homologue sequences to the drosophila dishevelled segment polarity gene are deleted in the DiGeorge syndrome. Am J Hum Genet 1996; 58:722-9.
- 6 Goldmuntz E, Driscoll D, Budarf ML, et al. Microdeletions of chromosomal region 22q11 in patients with congenital construncal cardiac defects. *J Med Genet* 1993;30:807-12.

A negative association between Down's syndrome and neuroblastoma

EDITOR,—Only one ganglioneuroma and a poorly documentated case of neuroblastoma associated with Down's syndrome have ever been published.¹ In order to obtain population based data an epidemiological study was conducted in seven European countries, five with specialised registries (Denmark, Germany, Great Britain, Italy, Switzerland), one with four regional registries (Netherlands), and one with centralised registration of treatment of children with neuroblastoma (France), covering the whole population to verify if neuroblastomas are underrepresented in Down's syndrome.

In a total of 6484 cases of neuroblastomas, there were no cases of Down's syndrome. Taking the general prevalence of Down's syndrome at birth as 12/10 000 live births and the life expectancy at 15 years for the syndrome as 76%, but making no allowance for the predominantly young age of children with neuroblastoma, 5.91 cases would be expected. The Poisson probability of no cases is 0.0027, strongly suggesting a reduced risk of neuroblastoma in Down's syndrome, probably specific because other neoplasms, particularly leukaemias, lymphomas, and testicular and extragonadal germ cell, and perhaps bone and pancreatic tumours, are seen in excess in Down's syndrome.² This result could be linked to the hypoplasia of the sympathetic nervous system and particularly of the adrenal medulla observed in those with Down's syndrome.

A proposed mechanism for both phenomena could be related to the overproduction of S-100 b protein by gene dosage effect both prenatally and after birth, the gene of which is situated on the long arm of chromosome 21. This protein expressed in utero induces neural differentiation in vitro and is in excess in blood, cerebral fluid, and nervous tissues in Down's syndrome both prenatally and after birth. S-100 protein is abundant in the stroma of neuroblastomas with good prognosis and absent in neuroblastomas with poor outcome. In vitro, it specifically inhibits the growth of different human and murine cell lines of neuroblastoma (personal data, D Satge).3 Although several genetic disorders such as Von Recklinghausen's disease, Hirschsprung's disease, Wiedeman-Beckwith syndrome, Turner's syndrome, Duchenne muscular dystrophy, and cystic fibrosis have been described in association with neuroblastoma no definite relationship between a higher risk of neuroblastoma and a specific genetic disease is proved.4 Furthermore, as far as we know a decreased incidence of a specific neoplasm in a particular genetic disease has not yet been reported. These arguments and data favour a protective effect of Down's syndrome against emergence of neuroblastoma. They should be considered regarding both understanding of oncogenesis and treatment of neuroblastoma.

A grant from 'Ligue pour la Lutte Contre le Cancer' Tulle, Correze, France supported this study.

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- Fano G, Mariggio MA, Angelella P, et al. The S-100 protein causes an increase of intracellular calcium and death of PC12 cells. *Neuro*science 1993;53:919-25.
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A study of bereavement care after a sudden and unexpected death

EDITOR,—Dent *et al* state that no studies have concentrated on parents' perception of standards of bereavement care in sudden death.¹ In 1986 Ward *et al* reported the findings in 100 families who had experienced a sudden infant death who were visited at home by a social worker.² Serious deficiencies were highlighted.

Our Lady's Hospital for Sick Children, serving the south side of Dublin city, produced new procedures based on discussion between nurses, chaplaincy, social service, and paediatric staff with involvement of police and funeral directors. Specific responsibilities were given to each professional. A parents' booklet explained their roles.

A senior paediatrician led the group and the parents saw the paediatrician immediately. He gave them the necropsy results in two to three days. He saw them again in six to eight weeks and ongoing liaison was maintained through the casualty ward sister who maintained an open line of communication. The family doctor and public health nurse were informed.

An independent review was conducted by The Irish Sudden Infant Death Association in 1989. This confirmed that the guidelines were effective. Familes found the system helped, was sympathetic, honest, and informative. Good procedures can avoid short term dissatisfaction among families. Of greater importance however are the long term benefits. A review by Powell made it possible to make a comparison between those who had been counselled as described and those who had not.³ Only three of 18 families who had had medical counselling had long term unresolved grief problems (18%), as against 17 of 23 (74%) who had not had medical counselling.

Good procedures can be of long term benefit and every district should review its working practices in the light of the study of Dent *et* $al.^{1}$

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- 1 Dent A, Condon L, Blair P, P Fleming. A study of bereavement care after a sudden and unexpected death. Arch Dis Child 1995;74:522-
- 6. 2 Ward S, McNamara D, Ward OC. Parents perceptions of hospital services for sudden infant death syndrome. *Ir Med J* 1986;79:209-11
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Jenner, romanticism, and research

EDITOR,—I read the annotation 'Jenner, romanticism, and research' and I note that Chiswick gives all the credit of this immuni-

sation discovery to Jenner.¹ Yet Reeves and Todd in their book *Lecture Notes on Immunol*ogy describe how a kind of smallpox immunisation was used in the Ottoman Empire around 1700, much earlier than Jenner's use of cowpox inoculation in 1796. Apparently, Mary Pierrepont Montagu wrote of her observations from Istanbul (then Constantinople) in 1717 and subsequently introduced the method into England. I am writing this historical note to indicate that Jenner's important discovery was related to Mary Pierrepont-Montagu's letters.

S ÖZSOYLU

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Professor Chiswick comments:

Quite right. Mary Pierrepont-Montagu introduced into England from the Ottoman Empire the practice of inoculating individuals with material obtained from smallpox crusts (variolation).

1 Chiswick ML. Jenner, romanticism, and research. Arch Dis Child 1996;74:1-2. 2 Reeves G, Todd I. The nature of immunity. Lecture notes on immunology. 2nd Ed. London: Blackwell Scientific Publications, 1991:3–18.

The new antiepileptic drugs

EDITOR,—In the recently published current topic on new antiepileptic drugs,¹ reference 45 (CD Ferrie *et al*) was unfortunately misquoted. The reported synergism in controlling typical absence seizures was between lamotrigine and sodium valproate and not, as quoted, between lamotrigine and ethosux-imide.

There is, however, evidence (as yet unreported and again anecdotal, including the author's own experience), that the combination of lamotrigine and ethosuximide may also be effective in treating previously 'drug resistant' typical absence seizures.

> RICHARD E APPLETON The Roald Dahl EEG Unit, Royal Liverpool Children's Hospital (Alder Hey), Eaton Road, Liverpool L12 2AP

1 Appleton RE. The new antiepileptic drugs. Arch Dis Child 1996;75:256-62.

MEETINGS IN 1997

Neonatal Society

6 March, London 20–21 June, Edinburgh 30 October, London *Further details*: Dr Neena Modi, Department of Paediatrics and Neonatal Medicine, Royal Postgraduate Medical School, Hammersmith Hospital, Du Cane Road, London W12 ONN (for London meetings) or Professor Neil McIntosh, Department of Child Life and Health, 20 Sylvan Place, Edinburgh EH9 1UW (for Edinburgh meeting)

Paediatric Palliative Care Conference 14 March, Edinburgh

Further details: Index Communications Meetings Services, Crown House, 28 Winchester Road, Romsey, Hampshire SO51 8AA

Paediatric Research Society

14–15 March, Norwich 12–13 September, Sheffield *Further details:* Dr Alistair Thomson, Leighton Hospital, Middlewich Road, Crewe, Cheshire CW1 4QT

International Paediatric Respiratory Congress

16–19 March, Sydney, Australia Further details: Congress Manager, GPO Box 2609, Sydney, NSW 2001, Australia

Spectrum of Developmental Disabilities XIX: Mental Retardation and Associated Deficit

17–19 March, Baltimore, USA *Further details:* Office of Continuing Medical Education, Johns Hopkins Medical Institutions, Turner Building 20, 720 Rutland Avenue, Baltimore, MD 21205-2195, USA

9th Asian Congress of Paediatrics:

Paediatric Priorities in the 21st Century 23–27 March, Hong Kong *Further details:* Congress Secretariat, Meeting Planners (HK) Ltd, 12A Dai Fat Street, Tai Po Industrial Estate, Tai Po, NT, Hong Kong

Clinical Genetics Society

25 March, London *Further details:* Dr Peter Farndon, Clinical Genetics Unit, Birmingham Women's Hospital, Edgbaston, Birmingham B15 2TG

XVIIIth Course of Paediatric Dermatology

1–4 April, Arcachon, France *Further details:* Professor A Taieb, Unite de Dermatologies Pediatrique, Hopital Pellegrin-Enfants, 33076 Bordeaux, France

Consensus Conference on Anti-D Prophylaxis 8–9 April, Edinburgh

8–9 April, Edinburgh *Further details:* Education, Audit and Research Department, Royal College of Physicians, 9 Queen Street, Edinburgh EH2 1JQ

25th Annual Pediatric Trends

14–19 April, Baltimore, USA *Further details:* Office of Continuing Medical Education, Johns Hopkins Medical Institutions, Turner Building 20, 720 Rutland Avenue, Baltimore, MD 21205-2195, USA

Royal College of Paediatrics and Child Health Annual Meeting

15–18 April, York *Further details:* Miss Rosalind Topping, Royal College of Paediatrics and Child Health, 5 St Andrews Place, Regent's Park, London NW1 4LB

Second European Forum on Quality Improvement in Health Care

24–26 April, Paris, France *Further details:* BMA Conference Unit, PO Box 295, London WC1H 9TE

Complex Hydrocephalus and

Hydrocephalus Complications 27–30 April, Assisi, Italy *Further details:* PTS Congress, Via Pietro Tacchini, 19, 00197 Rome, Italy

Pediatric Allergy and Immunology for the Practitioner

8–9 May, Baltimore, USA *Further details:* Office of Continuing Medical Education, Johns Hopkins Medical Institutions, Turner Building 20, 720 Rutland Avenue, Baltimore, MD 21205-2195, USA

XVI Congress of the European Society for Paediatric Haematology and Immunology

14–17 May, Thessaloniki, Greece *Further details:* Congress Secretariat,4 Filellinon Street, 105 57 Athens, Greece

30th Annual Advances and Controversies in Clinical Paediatrics

15–17 May, San Francisco, USA *Further details:* University of California, Office of Continuing Medical Education, 1855 Folsom Street, MCB-630, Box 0742, San Francisco, CA 94143-0742, USA

12th Annual Meeting of the German Society for Paediatric Gastroenterology and Nutrition

15–17 May, Kloster Irsee bei Kaufbeuren/ Allgäu, Germany *Further details*: Congress Organisation C Schäfer, Karl-Theodor-Str 64, 80803 München, Germany (please note that the congress language is German)

VIII Annual Congress of the European Society of Pediatirc Allergy and Clinical Immunology (ESPACI) and the II Iberian Meeting of Pediatric Allergy and Clinical Immunology 17–20 May, Lisbon, Portugal *Further details:* Congress Secretariat, AV Barbosa do Boscage, 87-2°-1050 Lisbon, Portugal

Advanced Pediatric Life Support

9–11 June, Baltimore, USA *Further details:* Office of Continuing Medical Education, Johns Hopkins Medical Institution, Turner Building 20, 720 Rutland Avenue, Baltimore, MD 21205-2195, USA

Society for Research into

Hydrocephalus and Spina Bifida 2–5 July, Manchester *Further details:* Miss CA Sobkowiak, Child Development Centre, Darlington Memorial Hospital, Hollyhurst Road, Darlington, Co Durham DL3 6HX

Pediatrics in the Community-2000+

6–10 July, Jerusalem, Israel *Further details:* ISAS International Seminars, PO Box 34001, Jerusalem 91340, Israel

8th International Congress on Cleft Palate and Related Craniofacial Anomalies

7–12 September, Singapore *Further details:* Congress Secretariat, Academy of Medicine, Singapore, College of Medicine Building, 16 College Road 1-01, Singapore 0316

British Human Genetics Conference

15–17 September, York *Further details:* Dr Peter Farndon, Clinical Genetics Unit, Birmingham Women's Hospital, Edgbaston, Birmingham B15 2TG

British Association of Perinatal Medicine

18–19 September, London Further details: Dr PA Hamilton, Department of Child Health, Lanesborough Wing, St George's Hospital, Tooting, London SW17 0RE

Pediatrics for the Practitioner Update '97

18–19 September, Baltimore, USA *Further details:* Office of Continuing Medical Education, Johns Hopkins Medical Institutions, Turner Building 20, 720 Rutland Avenue, Baltimore, MD 21205-2195, USA

European Respiratory Society Annual Congress

20–24 September, Berlin, Germany *Further details:* ERS, 1 Boulevard de Grancy, CH-1006 Lausanne, Switzerland

6th Congress of the European Society for Gynaecological Endoscopy

7–10 December, Birmingham *Further details:* ESGE 97 Secretariat, Congress House, 65 West Drive, Cheam, Sutton, Surrey SM2 7NB

LUCINA

The three main conclusions of an Oxford study of deliberate self harm in under 16 year olds (*British Journal of Psychiatry* 1996;**169**:202-8) were that paracetamol poisoning has increased (from 20% of episodes in 1976–81 to 55% in 1988–93), nearly 10% repeat the self harm within a year, and psychiatric referral should be made in all cases. Of 854 episodes in 755 patients, 801 were poisonings alone and a further 23 were poisonings plus self injury. Girls outnumbered boys by nearly 6:1 and only 12 patients were less than 12 years old. Clashes with parents were the most common problem volunteered.

In the early 1980s a group of young male orphan elephants was transferred from South Africa's Kruger National Park to a smaller game reserve after their herd had been culled. They were reared without maternal input and lacking the discipline which older bulls are known to administer to young aggressive bulls in the mating season, and that, say elephant experts, may explain why there has been an increase in attacks on other animals and on people by these elephants in recent years (New Scientist 1996; July 20:5). In future the integrity of families will be preserved when elephants are transferred between reserves.

A study of 19 adult volunteers in Augusta, Georgia (*Oph-thalmology* 1996;**103**:1139-43) may have implications for the correction of minor degrees of anisometropia in children. When unilateral myopia, hyperopia, or astigmatism was induced by wearing appropriate lenses the volunteers showed significant deterioration in binocular function and a suppression zone (scotoma) appeared in the ametropic eye. Significant loss of stereoscopic vision occurred with small (1 dioptre) degrees of anisometropia. It may be necessary to correct even small differences of visual acuity between the two eyes in children in order to preserve full binocular vision.

Experiments on the sciatic nerve of a toad may result in improved hearing for cochlear transplant recipients (Nature Medicine 1996;2:928-32 and 860-2). Adding background noise to the system improved the nerve response to vowel sounds as delivered to the nerve through a cochlear implant device. Improving the information content of systems by adding random 'noise' is called stochastic resonance (Greek, stochastikos, a guess or conjecture, applied to randomness) and the mathematical theory involved was first applied to climatology.

About one in 20 children presenting to a skin clinic in Italy with nappy rash had characteristic dry, glazed, papyraceous, brown skin largely confined to the inguinal and gluteal skin folds (*Dermatology* 1996;**193**:36-40). Personal or family atopy was common. The usually upper class parents had changed the nappies frequently and washed the skin with acidic liquid detergent. Less frequent nappy changes, stopping detergent washes and zinc oxide preparations, and substituting oil based detergents and emollient creams produced resolution within two weeks.

Twenty two American children aged 3–14 years had marrow transplants from sibling donors for severe sickle cell disease (New England Journal of Medicine 1996;335:369-76). One to four years later 15 of them were cured. Two died, one from intracranial bleeding and one from graft-versus-host disease, and four others had graft rejection or late graft failure. One had no symptoms 18 months after transplantation but had mixed chimerism with 30% haemoglobin S.

Studies in AIDS patients may provide answers to the treatment of atypical mycobacterial infections. An American study of adults with AIDS and *Mycobacterium avium* bacteraemia (*New England Journal of Medicine* 1996;**335**:377-83) showed a combination of rifabutin, ethambutol, and clarithromycin to be better than four drug treatment with rifampicin, ethambutol, clofazimine, and ciprofloxacin.

A study of 141 young people aged 12–16 years who had had neonatal intensive care in Ontario, Canada after being born weighing less than 1000 g (Journal of the American Medical Association 1996;**276**:453-9) has shown that most of them rated their health related quality of life (HRQL) highly despite a 27% rate of neurological impairment. Some 71% of the extremely low birthweight survivors and 73% of controls rated their quality of life at 95% of maximum or higher. Mean HRQL scores were 87% for extremely low birthweight subjects and 93% for controls.

A financially driven move in the USA towards outpatient tonsil and adenoid surgery makes it important to define those children for whom it is safe. At the Cincinnati Children's Hospital (*Archives of Otolaryngology - Head and Neck Surgery* 1996;122:811-4) the following criteria are taken to indicate overnight stay or postponement of operation: upper respiratory infection within four weeks, age under 3 years, significant associated medical conditions (such as neuromuscular problems or chromosomal anomalies), and a history of airway obstruction (breathing difficulty in sleep, restlessness in sleep, or loud snoring with apnoea). Children who do not snore seem to be at low risk of postoperative airway problems.

Prolonged lactation necessitates maternal calcium mobilisation and over six months there is about 5% loss in bone mineral density but the mechanisms controlling the mother's calcium turnover during this time are unclear. Raised prolactin concentrations may lead to relative hypoestrogenism with consequent bone mineral loss but data from the USA (Journal of the American Medical Association 1996;276:549-54) suggest an important role for parathyroid hormone related peptide (PTHrP). This substance, first identified in patients with hypercalcaemia of malignancy, may be produced in response to hypothalamic oxytocin and prolactin. Its exact role in controlling bone loss during lactation, and subsequent recovery, remains to be clarified.

The 11 year old children of mothers who in the early 1980s ate Lake Michigan fish contaminated with polychlorinated biphenyls had decreased full scale IQs and problems with memory, reading, and attention (*New England Journal of Medicine* 1996;**335**:783-9). These compounds have been banned as insulating materials in transformers and capacitors for 20 years but they are still around and may contaminate dairy foods and fatty meats as well as fish.