

ability to cope well. All the children enjoyed school and took part in several extracurricular activities; all but one mother worked outside the home. These findings suggest that busy families may cope well with added demands. They also suggest that a teacher's assessment might be useful in selecting children for clinical trials. All the children except Sam gave their own insulin injection. Such independence might be a more important sign of maturity among children with diabetes than age or compliance with urine tests alone.<sup>8</sup>

Although selection might be improved, the observations made show the limitations of selection criteria in avoiding psychosocial difficulties during research; in this trial it proved impossible to apply four simple selection criteria in all cases, and even obtaining written consent did not ensure that the whole family wished to take part.

Equally important, most problems presented were either unpredictable or unavoidable in children of this age group. Adolescence is accompanied by more changes than at any other time of life except infancy,<sup>9</sup> and diabetes tends to be unstable at this time.<sup>10</sup> It was impossible in this study to predict which child would have trouble with diabetic control, changing schools, taking exams, or coping with illness or death in the family.

We conclude that despite careful selection, children and adolescents in clinical trials will have social and emotional problems and these will be mainly unpredictable. Therefore, children and their families who are engaged in research will require continuing emotional support, and provision for the necessary support should perhaps be built into the design of such trials.

These observations illustrate the types of demands that

families face when taking part in clinical research. Nevertheless, a description of the events making up the "normal life" under which the data of a trial are collected also provides an extra dimension for the scientific interpretation and clinical application of the results.

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## References

- 1 Anonymous. Risks and benefits in research on children. *Arch Dis Child* 1980;**55**:2.
- 2 Gath A, Smith MA, Baum JD. Emotional, behavioural, and educational disorders in diabetic children. *Arch Dis Child* 1980;**55**:371-5.
- 3 Hinkle LE, Wolf S. Importance of life stress in the course and management of diabetes mellitus. *Journal of the Mount Sinai Hospital* 1952;**19**:537-70.
- 4 Kinmonth AL, Angus RM, Jenkins PA, Smith MA, Baum JD. Whole foods and increased dietary fibre improve blood glucose control in diabetic children. *Arch Dis Child* 1982;**57**:187-94.
- 5 Tanner JM. *Growth at adolescence*. 3rd ed. Oxford: Blackwell Scientific, 1978:70.
- 6 Welch SG, Boucher BJ. A rapid microscale method for the measurement of haemoglobin A<sub>1</sub> (a+b+c). *Diabetologia* 1978;**14**:209-11.
- 7 Green SA, Baum JD. Clinical application of an open loop infusion system in adolescents with insulin dependent diabetes mellitus [Abstract]. *Arch Dis Child* 1982;**10**:799.
- 8 Naughton E, Smith MA, Baum JD. At what age do diabetic children give their own injections? *Am J Dis Child* 1982;**136**:690-2.
- 9 Capes M. Adolescence and change. In: Meyerson S, ed. *Adolescence: the crisis of adjustment*. 1st ed. London: Allen and Unwin, 1975:41.
- 10 Malins JM, Walsh CH. Changes in control of diabetes during the menstrual cycle. *Diabetologia* 1976;**12**:408.

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*Polychlorinated biphenyls are used as coolants in transformers. What treatment is advised when a person is contaminated as a result of a leak?*

Polychlorinated biphenyls have the general structure shown (figure).

They are used commercially (Arochlor, Kanechlor, etc) as mixtures of polychlorinated biphenyls described in terms of percent chlorine. The materials range from oily liquids to waxy or hard solids, and because of their chemical stability and high dielectric constants they have been used extensively in electrical equipment as dielectrics and coolants. Polychlorinated biphenyls have also been used as heat exchange fluids, cutting fluid additives, and hydraulic fluids and in carbonless copy paper systems. Owing to evidence for their environmental stability and accumulation in the food chain, their use has been restricted to closed systems since 1971 in the United Kingdom and production here ceased entirely in 1977.<sup>1</sup> They are potent inducers of an acneform dermatitis, chloracne, known in various trades as cable rash. Lesions, normally papules and yellowish cysts surrounded by mild erythema, appear on the face, chest, abdomen, thighs, and buttocks. Comedones and pustules may develop later, and pruritus is common. Apparently polychlorinated biphenyls and chlorinated naphthalenes (which have similar toxicological properties) alter the differentiation of the sebaceous glands—keratinocytes form to plug the pilosebaceous unit creating cysts containing keratin.<sup>2</sup> They also cause irritation of the eye and transient visual disturbance.

Polychlorinated biphenyls are also hepatotoxic. In general oxides of polychlorinated biphenyls and higher degrees of chlorination are associated with higher toxicity. More highly substituted polychlorinated biphenyls are also retained longer in vivo. Symptoms of systemic intoxication, which include anorexia, nausea, vomiting, oedema, abdominal pain, and jaundice, usually occur some time after exposure, particularly after chronic exposure or when polychlorinated biphenyls are used in poorly ventilated areas. Deaths from toxic hepatitis have been reported.

The National Institute for Occupational Safety and Health (USA) has recommended the following procedures in the event of a leak or

spill of polychlorinated biphenyls<sup>3</sup>; all non-essential personnel to be evacuated; adequate ventilation to prevent accumulation of vapours; clearing of the area; and the use of appropriate protective clothing and equipment. People occupationally exposed to polychlorinated biphenyls should work in well ventilated areas, wear protective clothing, have access to showers, and undergo periodic examinations of the skin and liver function tests. Barrier creams are of little use in controlling chloracne. If polychlorinated biphenyls are spilt on the skin the affected area should be washed thoroughly with soap and water for at least 15 minutes. If splashed in the eye the eye should be irrigated for at least 15 minutes. If chloracne develops exposure to polychlorinated biphenyls should cease. There is no evidence that chloracne responds to conventional treatment for acne, and ultraviolet or x radiation may exacerbate the rash. Damage to the liver and other features of systemic toxicity should be treated symptomatically.—G N VOLANS, director poisons unit, London.

<sup>1</sup> Ministry of Agriculture, Fisheries and Food. *Survey of PCB residues in food and human tissues*. London: HMSO (in press). (10th report of the steering group on food surveillance. The working party on pesticide residues.)

<sup>2</sup> Hamilton A, Hardy HL. *Industrial toxicology*. USA: Publishing Science Group Inc, 1974:289.

<sup>3</sup> National Institute for Occupational Safety and Health. *Criteria for recommended standard. Occupational exposure to polychlorinated biphenyls*. Washington: NIOSH, 1977.

## Corrections

### Medical lessons from the Falklands

We regret that some errors appeared in the conference report by Dr Tessa Richards (5 March, p 790). The position of Port San Carlos and Ajax Bay should have appeared on the west coast of East Falkland. The dose of methylprednisolone should have been 2 g. HMS *Antelope* and *Covestry* were attacked by bombs and rockets but not by Exocet missiles.

### Is weighing babies in clinics worth while?

We regret that in the Clinical Research edition an error occurred in figures 2 and 3 of this paper by Professor D P Davies and Dr T Williams (12 March, p 861). The figure shown above the legend to figure 2 should have appeared as figure 3 and vice versa.