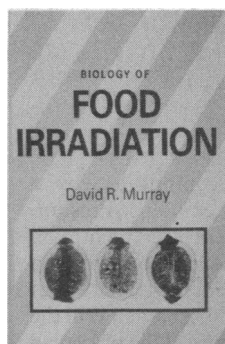


Case for the prosecution

Research Studies in Botany and Related Applied Fields. "Biology of Food Irradiation." DR Murray. Series editor P S Nutman. (Pp xv+255; figs; £25.) Taunton: Research Studies Press, 1989. Distributed by John Wiley and Sons. ISBN 0-86380-096-3.



When I read newspaper accounts of a sensational trial I become increasingly amazed, day by day, that the defendant, whom I had always regarded as a reasonably honest public figure, was evidently a monster of depravity and deceit. A few days later the defence case is presented, and it seems that really the defendant is honourable and much maligned. I started Dr Murray's book (I suppose he is Dr Murray—nothing is revealed of his provenance, but he obviously knows a lot of biochemistry and food science) believing that food irradiation was probably a technique that would prove useful in reducing infestation and infection in certain types of food, with less danger of toxicity than with some current chemical pesticides. By the end I was aware that irradiation of food entailed potential hazards that I had not considered, and that this process may have no useful part to play. But then, this is the case for the prosecution: I feel confident that there is no argument against food irradiation that Dr Murray has failed to advance.

Some of his points made little impact on me. He says that irradiation is prohibitively expensive, that it is superfluous and ineffective against serious grain pests, and that it spoils the taste or cooking qualities of some foods. This may be so, but I have enough faith in the commercial acumen of the food industry to be confident that if this process costs too much, or spoils the food in a way that will make it impossible to sell, it will not invest the necessary capital in this process. Even Dr Murray agrees that irradiation at energy levels less than 10 MeV does not induce radioactivity in the food. If mung beans are irradiated they will not sprout, but I was not much impressed by the section (pp 43-5) on the nutritional advantages of eating mung bean sprouts instead of the whole cooked seeds.

Even if we dismiss these arguments as trivial there are other aspects of the prosecution case that deserve an answer. Firstly, there is the general problem of the safety of workers in irradiation plants, and of escape of radioactive material. This obviously needs monitoring as for nuclear energy plants. Secondly, there is the loss of nutrients in the food as a result of irradiation. Thirdly, there is the risk of toxic hazards in irradiated food, which would not be present, or which would be more easily detected, if the food had not been irradiated.

The recent trend in human nutrition has been to pay more attention to the provision in the diet of fresh fruit and vegetables and unsaturated fatty acids, rather than the classical recommended dietary allowance of energy, protein, vitamins, and minerals. It is exactly these fruits and vegetables that are prime targets for irradiation, because their shelf life is limited by attack by bacteria and moulds. But the irradiation that kills the bacteria does so by generating toxic free radicals with which vitamins E, A, and C interact. Irradiation of unsaturated fatty acids greatly increases peroxidation. Does this matter? That depends on many factors: the dose of radiation used, the period of storage after irradiation, the cultivar of plant irradiated, and the perceived adequacy of the diet with respect to antioxidant vitamins and unsaturated fatty acids. No doubt proponents and opponents of food irradiation will continue to choose examples favourable to their case and thus refute the arguments of the other side. Dr Murray believes that vitamin C requirements are around 45-100 mg a day, whereas the British

recommended dietary allowance is 30 mg and the average British intake about 70 mg. If you accept his premises then destruction of vitamin C (or conversion to dehydroascorbate) represents a serious nutritional loss.

I found the section on potential toxicity of irradiated foods most interesting. Potatoes that have been irradiated to prevent sprouting may synthesise solanine if they are exposed to light but will not show the warning green discoloration. Cereals, potatoes, and onions that have been irradiated produce more aflatoxin when inoculated with *Aspergillus parasiticus* than non-irradiated food. Irradiated crab meat may remain "fresh" (that is, non-smelly) for 40 days, but if it happened to contain *Clostridium botulinum* the toxin accumulated after this time might be horrific. There is some (disputed) evidence that malnourished Indian children fed recently irradiated wheat showed chromosomal aberrations not seen in control children fed non-irradiated wheat.

May we now hear the case for the defence?—JOHN S GARROW, Rank professor of human nutrition, St Bartholomew's Hospital Medical College, London

Wider still . . .

The Practice of Behavioural Medicine. Ed S Pearce, J Wardle. (Pp xvii+313; £35.) Oxford: British Psychological Society in association with Oxford University Press, 1989. ISBN 0-19-261691-9.

Clinical psychology is a profession with expansionist aims. Its therapeutic value has been established by its proved success in treating psychiatric disorders, but during the past decade it has attempted to apply behavioural techniques to a wider range of medical conditions. Thus psychologists have become concerned in the management of illnesses like diabetes, hypertension, ischaemic heart disease, and cancer, which were previously considered to be outside their province, and stress management clinics have been established in many general hospitals. There are sound theoretical reasons to support these developments. Several common conditions treated in contemporary medical practice are largely a result of maladaptive patterns of behaviour, and research studies are indicating the importance of psychological factors in many others.

Behavioural medicine has therefore emerged as a new subspecialty of clinical psychology, loosening psychology's links with psychiatry and bringing it closer to mainstream medicine. As the editors of this book observe, however, practical developments have been modest in contrast to the burgeoning academic research activity.

Shirley Pearce and Jane Wardle, both clinical psychologists, have aimed at producing a practical book that can be used as an introduction to the techniques of behavioural assessment and intervention for various medical illnesses. Each chapter is written by experts with a special knowledge of a particular condition. The approach is empirical rather than critical. Some chapters are essentially a description of psychological practice in the authors' own unit, based on clinical impression rather than controlled trials. One of the more scholarly is on hypertension by Derek Johnston and Andrew Steptoe, who provide a clear account of the techniques of managing stress that have been shown to be effective in mild to moderate hypertension.

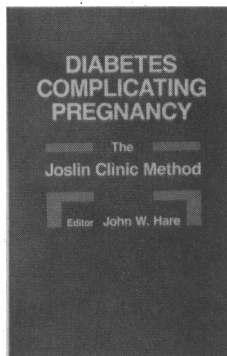
The book succeeds in its aims of providing a practical introduction to behavioural medicine and will interest clinicians from various professional backgrounds who wish to understand what this new specialty encompasses. The techniques described are not the strict preserve of psychologists; they can be learnt and successfully applied by clinicians from all backgrounds. The editors have declined the challenge of producing a comprehensive text. This is a pity, for such a book is needed. The present volume includes a chapter on smoking but not on alcohol abuse and on obesity but not on bulimia or anorexia. But perhaps the most serious omission is the lack of a chapter on the role of psychological factors in malignancy. Several studies have suggested that outcome in malignant disease may be

influenced by the patient's emotional response and it would be instructive to read a review of the possibilities for behavioural management.

If behavioural medicine is to develop further the interventions described here need to be validated by appropriate controlled clinical studies. Any expansion that follows must receive adequate funding and not take place at the expense of psychology's well proved contribution to the chronic neurotic and psychotic illnesses that are responsible for so much morbidity in psychiatric clinics.—G G LLOYD, *consultant psychiatrist, Royal Free Hospital, London*

Revolutionary progress

Diabetes Complicating Pregnancy: the Joslin Clinic Method. Ed J W Hare. (Pp xii+194; figs; £31.) New York: Liss, 1989. Distributed by John Wiley and Sons. ISBN 0-471-92387-7.



On the afternoon of 11 January 1922, in Toronto, Leonard Thompson, a patient dying from diabetes, was injected with 15 ml of a "thick brown muck." The "muck" contained a pancreatic extract, and in a subsequent report of its effect Banting, Best, Collip, Campbell, and Fletcher concluded that the extract offered "a therapeutic measure of unquestionable value in the treatment of many phases of the disease." The arrival of insulin treatment for diabetes was one of medicine's finest achievements, resulting in the development of major centres for managing the disease. Among these centres three were outstanding, and in each case their success was inextricably associated with one exceptional individual. In Copenhagen Dr Hagedorn founded the Steno Memorial Hospital; in London Robin Lawrence founded the diabetes department at King's College Hospital; and in Boston Elliot Joslin developed the clinic which came to bear his name.

A major problem faced by these distinguished figures was the unacceptable mortality and morbidity in pregnant women with diabetes. Before insulin treatment pregnancy in a diabetic woman was disastrous, and Joslin himself cited the famous French physician Bouchardet, who reported in 1875 that he had never seen a pregnant diabetic woman. Although the introduction of insulin treatment brought an immediate and large fall in maternal mortality, from 45% to about 2%, the perinatal mortality did not fall so rapidly, being about 60% before the discovery of insulin in 1920, 40% in 1940, and about 6% in 1980. Toxaemia, hydramnios, infections, macrosomia, and malformations were the major factors responsible for the excess perinatal mortality. The improved perinatal outcome was associated with reduced rates of toxaemia, hydramnios, and infections—owing predominantly to changes in obstetric care and the quality of glucose control in the second and third trimesters. Prepregnancy counselling and rigorous attention to strict glucose control in the first trimester have now been shown to reduce, even eliminate, the excess risk of congenital malformations.

This book from the Joslin Clinic details the current management of pregnant diabetic women, which is built on the foundation laid by Joslin and his eminent colleague Priscilla White. The authors present a comprehensive and conservative approach, a policy that has been patently successful. Today the perinatal mortality rate for well managed pregnant women with diabetes is low, indeed comparable with that for non-diabetic women. Specialists may want a more detailed discussion of contentious issues such as gestational diabetes, obstetric policies at delivery, and the management of patients with proteinuria. For general clinicians, however, the guidelines here are refreshingly clear and straightforward.

It is just over a century since Bouchardet reported that he had never seen a pregnant diabetic woman. This book is a tribute to those outstanding clinicians, not only at the Joslin but throughout the

world, who contributed to the remarkable change in the outcome of diabetic pregnancy. In as much as this has been a revolution it has not been one gloriously identified with a single spectacular discovery. On the contrary, the successful management policy for these patients derives from collective common sense, astute observation, and careful clinical application over a period of 60 years. A beacon of hope to us all for the future.—R D G LESLIE, *consultant physician, Charing Cross and Westminster Medical School, London*

Playing up

Behaviour Problems in Children: Orthodox and Paradox in Therapy. R Wilkins. (Pp viii+147; £12.95 paperback.) Oxford: Heinemann, 1989. ISBN 0-433-00072-4.



At last, a book about behavioural problems in children that acknowledges that parents driven to the end of their tethers may lay a finger on their child without provoking the wrath of God. But Robert Wilkins's perceptive text wastes no time going over the well trodden debate on corporal punishment. Packed with fascinating anecdotes illustrating a wide range of the infinite repertoire of appalling behaviour in children it provides an explanation of the cause and evolution of this behaviour and suggestions for overcoming it.

The cause is usually clear: parental inconsistency, both on an individual basis and between a couple, is at the root of most behavioural problems in children. The key to overcoming these problems is to work out a detailed strategy that all concerned—parents, grandparents, nannies, etc—agree to follow. Given the almost unlimited resourcefulness of children Wilkins makes it clear that formulating a strategy and seeing it through may well take every ounce of a parent's courage, determination, cunning, patience, and love. Picking the right time to go to battle is important, as is adhering to the rules and maintaining the front until the child realises that he or she has been outmanoeuvred and throws in the towel.

Strategies range from the deceptively easy—simply ignore the temper tantrums, for example—to the paradoxical—actively encourage them in length and intensity and invite the family to watch and applaud as a spectator sport. That is a ploy designed to take the wind out of the most seasoned tantrum thrower's sails. And, for the truly brave, Emily's mother's calculated response to her daughter's invariable screaming fits in the supermarket can be attempted. "Mum took a deep breath . . . emitted a high pitched scream . . . and in a performance that would have done credit to Sarah Bernhardt fell to the ground, beating her fists into a bag of ripe tomatoes." The effect on Emily (and the supermarket staff) we are told, was profound. Shocked to the core "she has never been tempted to browbeat her mother by public tantrums since."

Similar strategies with tactics modified for the individual circumstances may be applied, Wilkins's case histories suggest, with success to many other behaviour problems. Children with aggressive and destructive behaviour, children who refuse to eat or go to school, who steal, tell lies, refuse to go to bed, persist in coming into their parents' bed, or truant, and those who are permanently on the go. The catalogue is so comprehensive and the examples so graphic that by the end of the book most readers will probably be thanking their lucky stars that their children are mere novices in the art of playing them up. More importantly, they will also have learnt that even the most antisocial and difficult behaviour may be changed—provided parents have insight into its genesis and are sufficiently motivated and consistent in their attempt to change it.

The book is not only an illuminating read for parents. General practitioners, child psychiatrists, and anyone fascinated by the art of applied gamesmanship should get hold of a copy.—TESSA RICHARDS, *assistant editor, BMJ*