

skin over them was discoloured. Needle biopsy was done in the second case and confirmed the diagnosis.

There was no fall in haemoglobin before or after therapy; platelet counts were normal before and 3, 7, and 30 days after therapy; bleeding time and clotting times were normal when the haematomas developed. However, prothrombin times were prolonged in both patients. In the first patient though there were no significant change in prothrombin index (control/patient's prothrombin time) before and at 3 or 7 days after treatment. The index was 46% (13 s/28 s) at the time of presentation. In the second patient prothrombin index was unchanged on the 3rd day but was 59% on the 7th and 65% on the 30th days. No specific therapy was given to the first patient whereas the second patient was transfused with freshly prepared blood. The swellings cleared within a week.

The cause of this bleeding seems to be related to the prolonged prothrombin time. The patients were not taking any other medications. There were no disturbances in liver function tests before or after therapy so it is unlikely that the prothrombin time was prolonged because of liver disease. That this problem is related to ivermectin is suggested by the fact that in the other 26 patients studied there was a progressive prolongation of prothrombin time on days 3, 7, and 30 from the baseline test. The difference was significant when prothrombin indices for days 7 and 30 were individually compared with those before therapy ($p < 0.05$; paired Student's *t* test). There was no difference in the tests between days 7 and 30.

The prolonged prothrombin time may be attributed to an antagonistic effect of ivermectin on vitamin K, and its prolonged effect is readily explained by the drug's unusually long half-life.

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MOTONEURON DISEASE AS MANIFESTATION OF LUPIN SEED TOXICITY

SIR,—The neurotoxic amino acid beta-N-oxalylamino-L-alanine has been isolated from *Lathyrus sativus* seed, leading to speculation that it may be the causative agent of lathyrism.¹ Lathyrism is a neurological syndrome associated with excessive seed consumption and characterised by features of motoneuron disease (MND) such as spasticity and amyotrophy. We present a case of rapidly progressive MND linked to the long-term consumption of lupin, a seed now popular in Europe.

After a normal pregnancy, this previously healthy 28-year-old woman experienced progressive difficulty writing and knitting. Right hemidystonia, manifested by abnormal posturing of the right foot, was treated with up to 40 mg benzhexol per day. The treatment was stopped after 3 months because of adverse reactions. At this time the patient became increasingly dysarthric and had dystonic right-sided movements, diffuse hyperreflexia, and extensor plantar responses. Over the next 5 months, progressive weakness was accompanied by dysphagia and fasciculations of limbs and tongue. Sensory testing and ocular movements were normal. The patient was unable to inhibit the glabellar reflex. The dystonic movements gradually disappeared and, at this time, electromyography revealed polyphasic motor units mainly in the upper limbs. Other neurological examinations and plasma copper, caeruloplasmin, and hexosaminidase A levels were normal.

14 months after the onset of symptoms, the patient revealed that she had been consuming up to 3 g of lupin seed a month for 8 years. Although the seeds were initially imported from Portugal, she had soon realised that lupin seeds were readily available in France,

under the name "spécialité portugaise". The seed contained fifty times more lupin alkaloids than either *Lupinus luteus* or *L. angustifolius*, suggesting that the seed in question was *L. albus* (Analytical Chemistry Laboratory, Société des Agriculteurs de France, Paris). Within 2 months of stopping the use of lupin seed, she began to recover. 20 months later the clinical picture remained stable, allowing an almost normal life despite incomplete recovery. The patient and her husband estimated the global improvement to be 5%. She still had pyramidal signs, weakness of the limbs, and amyotrophy on all extremities. Fasciculations were no longer present, dysphagia had resolved, and dysarthria was significantly improved.

This atypical case of MND gradually evolved after exposure to and partly resolved after withdrawal of lupin alkaloids, the putative toxin. Though far from proof, this suggests that lupin seed ingestion may result in MND. The symptoms started several years after long-term ingestion of the seed, very probably after a long-standing and quiescent death of motor neurons. Such a mechanism has been postulated in Parkinson's disease.²

These findings may have implications in the aetiology of other forms of MND and should lead to further toxicological and epidemiological studies of lupin seed exposure. Since lupin seed is gaining wider use in Europe, patients with MND should be systematically asked about, and perhaps discouraged from heavy consumption of, unselected lupin seed.

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- Spencer PS, Roy DN, Ludolph A, Hugon J, Dwivedi MP, Schaumburg HH. Lathyrism: Evidence for role of the neuroexcitatory amino acid BOAA. *Lancet* 1986; *ii*: 1066-67.
- Agid Y, Blin J. Nerve cell death in degenerative diseases of the central nervous system. Clinical aspects. In: Selective neuronal death. Chichester. Wiley, 1987: 3-19.

FETAL "SOAP" ADDICTION

SIR,—Mothers have reported that their newborn infants seem to pay attention to television and to "watch" their mother's favourite programmes, often television "soap operas". Personal observation of some of these infants indicated that they adopted a quiet alert behavioural state¹ at the start of the programme. This attention exhibited by the newborn may be a result of prenatal learning.

There is much evidence² that the fetus can perceive and learn auditory signals. Under controlled experimental conditions³ music that has been associated with maternal relaxation during pregnancy was found to inhibit crying and induce relaxation in newborn babies soon after birth.

The relevance of such laboratory experiments³ for normal development during pregnancy can be questioned, especially with respect to how such associations would occur naturally. However, the television soap opera provides naturally the experimental conditions used in the laboratory.³ These regular programmes are heralded by a distinctive signature tune. Mothers "addicted" to these programmes report "settling down with a cup of tea, and feet up" to watch them, so they may be said to be relaxed. Thus mothers will experience frequent exposure to a signature tune whilst relaxing, often for the duration of pregnancy. The fetus may thus become conditioned to the tune.

The response to the theme tune of the programme *Neighbours* was studied 4-5 days after birth in infants whose mothers had watched it daily during pregnancy ("soap" group, $n = 7$) and in those whose mothers had not watched it (control, $n = 8$). The theme tune was played to the infants individually and their behaviour observed. Both the babies in the soap group who were crying stopped upon hearing the theme; 4 crying babies in the control group did not. Furthermore 6 babies of the soap group adopted the quiet alert state on hearing the theme tune whereas only 2 in the control group did so (Fisher's exact probability, $p = 0.0317$).

The results indicate that the reaction of a newborn baby to "watching" television may reflect long-term exposure to the theme tune of the programme during pregnancy. Although "soap operas"

provide ideal conditions for conditioning the fetus (ie, repeated daily exposure), other auditory signals which occur in similar frequency could be expected to exert a similar effect. Indeed one stimulus to which the fetus is repeatedly exposed throughout pregnancy, the mother's voice, has been shown to be perceived and learned by the fetus.⁴

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1. Brazelton TB. Neonatal behavioural assessment scale. London: National Spastics Society, 1973.
2. Busnel M, Granier-Deferre C. And what of fetal audition? In: Olivero A, Zappella M, eds. The behaviour of human infants. New York: Plenum, 1983: 93-126.
3. Feijoo J. Ut conscientia noscatue. *Cahier Sophrol* 1975; 13: 14-20.
4. DeCasper AJ, Fifer WP. Of human bonding: newborns prefer their mothers' voices. *Science* 1980; 208: 1175-76.

Commentary from Westminster

The Minister of Health

Tony Newton, who was in the news this week when he appeared yet again in front of the House of Commons Social Services Select Committee (this time in his capacity as chairman of the Health Service Management Board), does not fit the public image of a hard-boiled politician. Norman Tebbit and Nicholas Ridley belong to the confrontational school of politics, aggressively challenging attitudes with which they disagree. Newton and a few other ministers belong to the quieter, deeply caring, often more gradualist group. The 50-year-old Minister of Health has the reputation of being approachable, courteous, concerned about what he is doing and widely respected by ministers and officials. You might expect Newton, a cigarette smoker, to be at war with his controversial junior minister Edwina Currie, but he seems to get on well with her. He applauds her success in promoting discussion on health-care measures and accepts the need to do more to ensure that non-smokers do not have to suffer from the smoke of others. He sounds almost too good to be true. He has looked a likely candidate for the Cabinet. If he is stopped from getting there, it could be because he is regarded as being too much absorbed in his current job.

At the same time, Newton is an effective party politician. He may not be a brilliant orator—there are not too many of those in this Government—but he is a master of the facts and is dogged in defending policies when he has to. Only a few weeks ago he found himself the only Conservative to speak in a Commons' debate in defence of the introduction of charges for eye tests, and he gave a robust, fighting speech. The Prime Minister cannot have a moment's anxiety when Newton is replying in the Commons. He is now by far the longest serving health minister. He became a Parliamentary Under Secretary of Health six years ago, progressing to become Minister for the Disabled, then Social Security, and, in 1986, Health.

It has fallen to him to make this week's announcement about new guidelines on the use of fetal material in transplants, he has been holding the ring in the stormy abortion debate, and he will be bringing forward the Warnock legislation in the next Parliamentary session. He also has to face the rising costs of treatment of AIDS patients and to make recommendations next month on the report on the handling of sexual abuse of young children in Cleveland. When John Moore was ill last year, it was Newton who faced

the fury over NHS spending, the closure of hospital beds and cancelled operations on young children. And it was Newton who, apparently against the wishes of the Prime Minister, announced an extra £100 million to ease immediate problems.

Margaret Thatcher thinks well of him, even though he is not on precisely her wavelength. She made him the first political chairman of the Health Service Management Board and has appointed him to her five-strong Cabinet group looking at the NHS.

If he was ever a "wet", his actions over the past three or four years show that he has changed. He seems to have been fortunate to move from his job as Social Security Minister when he did. He had played a big part in drawing up the social security reforms which have caused the Government so much embarrassment, and which it has fallen to his successor, Nick Scott, and the Social Services Secretary to defend. He had been secretary of the Bow Group in its liberal, pro-Macmillan era of the 1960s and was vice-president of the Federation of University Conservatives at a time when that body was well on the left of the Tory Party. Furthermore he comes from a Quaker family and went to a Friends' school at Saffron Walden, and with that background he might have been expected to finish up in the Liberal or Labour parties. The Quaker experience still influences his thinking, and most Tory MPs who know him think that he still is "wet".

Newton has defended the social security changes by arguing that the new structure is fairer, directing money to where it is most needed and providing for the first time a consistency in the rules for all benefits. Where he is said to have differed strongly with colleagues is on the level at which the changes should have been funded. He would have liked more generous treatment from the beginning. In the end, concessions have had to be made anyway. It is part of Tory propaganda that you cannot provide the social services you want without a strong economy: if you spend too much and damage the economy then you damage the your long-term aims for social improvements. Newton believes it.

Newton's concern with health matters has been accompanied by interest in economics. After Oxford (politics, philosophy, and economics) he went into the Conservative Party's research department, becoming assistant director before entering Parliament in 1974. As an MP, he tried to secure higher income tax allowances for the elderly and for the blind. He has been secretary of the backbench health committee and has served on the standing committees of a series of finance bills.

Asked about the wisdom of having a politician at the head of a management team, Newton seems to accept that it makes sense when so many of the management decisions in the NHS are also highly political. It was partly the frustration at having to refer so many issues to ministers because of the political implications which led to the resignation of his predecessor, Victor Paige.

All the signs are that Newton's view, that change should be gradual, is being accepted by the Prime Minister and other members of the Cabinet team. The Social Services Secretary has been stressing that there will be no "big bang" in NHS reform. Whether Newton is having a big influence on the Cabinet group's thinking or not, the direction seems to be the one he wants. Nonetheless her political opponents are still warning that the Prime Minister is about to dismantle the NHS. The final proposals are not expected until the end of the year.

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