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COMMUNICATIONS

CLINICAL REPORT ON MINERS' NYSTAGMUS*

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THIS report is based on my observations on 44 cases of miners' Nystagmus which have been referred for a report, or which came to the Coventry and Warwickshire Hospital during the period June 1, 1945 to May 31, 1947.

Each man has been investigated as to clinical symptoms, and supervision has continued by getting him to attend the hospital clinic at regular intervals, usually once a month.

General treatment has consisted of the prescribing of glasses, where necessary, and the administration of general tonics or vitamins. Orthoptic treatment has been given in a few cases, and a course of rehabilitation exercises was attempted in 12 cases.

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Every attempt was made to get the men to return as soon as possible to some form of work (See Table I).

Miners' Nystagmus — 44 Cases

TABLE I

Name	Age	Date of Certification	Nystagmus	Giddiness	Photophobia	Blepharospasm	Present Work 1st May, 1947
1947			Symptoms at first visit				
E.D.	49	1944	—	—	+	—	Surface
E.H.	52	1943 & 1947	—	—	+	—	Surface
F.P.	39	Prewar & 1947	—	—	—	—	Underground
F.S.	36	1947	+	+	+	—	Off work
1946							
W.A.	45	1946	—	++	++	+	On light wk. surf.
R.B.	42	1945	—	+	+	—	Surf/Powerhouse
A.H.B.	60	1932	...	...	...	...	Surface
S.B.	52	1945/46	+	+	—	—	Blacksmith's mate
T.H.C.	50	1937/40/42	—	...	...	...	Surface
E.F.	44	1931/41	—	—	+	...	Goods Guard
T.D.	31	1946	++	...	...	...	Hotel Porter
N.F.	45	1945	+ L.E.	...	...	—	Chimney Sweep
E.R.	64	1945	—	...	...	...	Off work (age)
A.R.	42	1944	+	...	...	...	Surface
J.H.R.	41	1946	—	...	...	...	Off work
J.S.	72	1946	+	...	...	...	Surface
H.S.	47	1945	+	...	...	...	Surface
T.S.	53	1945	—	...	...	...	Surface
F.S.	43	1. 45	occ.	—	—	—	Bank till Mch. 1947
S.A.	71	1933	—	...	...	...	Off work (age)
N.W.	48	1945	+	...	...	...	Labourer
A.W.	46	1946	—	+	—	—	Labourer
E.J.	46	1945	—	—	—	—	Flour packer
1945							
E.B.	47	1941 & 1944	+	+	+	—	Labourer
E.B.	59	1946	+	—	—	—	Surface
J.T.D.	43	1944	+	+	+	—	Surface
S.D.	60	1945	—	+	—	—	Surface
G.E.	58	1946	+	—	—	—	Finished wk. (age)
R.E.	59	1940	—	—	—	+	Watchman (Colliery)
B.H.	64	1943	+	+	+	+	Labourer
W.H.	47	1945	+	—	—	—	Surface
E.M.	57	1943	—	—	—	—	Underground
J.M.	46	1945 & May 1947	—	—	—	—	" till May, 47
O.	52	1946	+	—	—	—	Surface
P.	50	1943	+	—	—	—	Underground
J.P.	43	1939 & 1946	—	—	—	+	Released
C.P.	34	1945	+	—	—	—	Office (Colliery)
E.P.	45	1945	+	—	—	—	Surface
W.R.	43	1944	+	—	+	—	Still off work
H.T.	48	1942	—	—	+	—	Corporation Emp.
T.	31	1945	—	—	—	—	Factory
T.T.	47	1939	—	—	—	—	Underground
D.W.	47	1946	+	—	—	—	Surface
B.W.	62	1944	—	—	+	++	Surface

For purposes of comparison, a number of "control" miners (42) were also examined. These were men who attended hospital in most instances for a minor eye injury, or for refraction for reading glasses.

In addition, there was a small group (Group 3) of 8 miners, whose clinical symptoms were suspicious of early nystagmus, and a group (Group 4) of 5 miners who were working underground without symptoms, but with active nystagmus. Total number of miners examined—99.

In addition, the men were examined in the Research Department of the Birmingham Eye Hospital by several members of the Medical Sub-committee of the Miners' Nystagmus Research Committee of the Coal Board. It should be noted that the miners appreciated the tests, but it was very necessary to gain their confidence beforehand.

The special tests are described in the accompanying papers. They consist of:—

1. The estimation of "threshold" of dark adaptation. (See Dr. Sharpley's records.)
2. A psychological examination. (See Dr. Stern's records.)
3. Measurements of binocular vision. (a) in full light adaptation. (b) in dark adaptation.
4. Estimations of:—Blood vitamin A. Blood alkaline phosphatase. Test for liver function.
5. Inquiry into the nutrition of miners.

Clinical survey

Of the 44 certified cases (see Table I) all were off work when I first saw them; 20 showed active nystagmus; in 9, giddiness was the most prominent symptom; and in 12, photophobia. Only 6 showed blepharospasm—and these were psychologically abnormal to the ordinary observer. After coming under medical supervision, the average duration of incapacity before resuming work was six months. A review of the cases on the 1st May, 1947, showed that all but 3 (2 recently certified, and 1 who was psychologically hopeless) had returned to work.

Of the 8 suspected cases of miners' nystagmus 5 continued to work on the coal face, and 1 as deputy on lighted roadways; the other 2 were given surface work, but were not certified.

The 5 cases of nystagmus-sine symptoms were working on the coal face, but 1 of these broke down in May, 1947.

Of 42 control miners—36 were working underground, 3 were

on the surface, 2 released to factory and brickyard, and 1 was an outdoor mine official.

It was interesting to compare my results with the official figures issued by the West Midland Division of 49 compensable new cases of miners' nystagmus which were certified during the year 1946. They included 6 of my own cases—but if these are eliminated the state of recovery of the men who presumably had no medical "follow-up"—is more evident (See Table II).

Recovery of certified cases of Miners' Nystagmus

TABLE II

	Total	Not Working	On light work	Under-ground	In other industries
Group 1					
Under Hospital Supervision	44	3	21	5	12
Unsupervised cases	43	22	19	0	2

It is clear that with or without treatment 50 per cent. of the certified cases can return to light work (usually on the surface) within a very short time, *i.e.*, in 1-3 months. With encouragement even the worst cases, if they are not too old, are capable of resuming some form of occupation in an average of six months. (Cf. the period of disablement for those described as "totally disabled" in the official list—is left a blank!) It is surely better for men to leave the mining industry altogether than for them to remain off work indefinitely.

It must be remembered that there are numerous economic factors which encourage a miner to stay off work for a long time unless pressure is brought to bear on him—*e.g.*, work on the surface can be as profitable to him as underground work provided that he remains in receipt of compensation. Further a better selection of light work is required—as the newly certified case cannot easily return to such work as screening, "tippling," loading of wagons, or laying of sleepers, which involve a great deal of stooping.

Conclusions

As the result of a clinical investigation of miners suffering from nystagmus, I have come to the following conclusions:—

1. The initial system of certification is unsatisfactory, in that :—

- (a) The certifying surgeon is not required to have any special ophthalmic knowledge.
- (b) The present terms for certification are open to criticism.
- (c) A miner with nystagmus, but without symptoms, is often made conscious of this "disease" by his optician or doctor, or even a friend, and is then sent for certification in order that he may get his just compensation. Such a man might continue to work happily underground, particularly if he could be given better illumination.

2. When certified, the miner remains without treatment of any kind—he may not work for many months and continues to draw a monthly certificate. He is only referred to an ophthalmic surgeon when the continuance of compensation comes under question.

3. Cases of miner's nystagmus fall into three grades :—

- (a) Those with actual nystagmus, but no symptoms, who continue to work underground.
- (b) Those who come within the act for certification, who have headaches, photophobia or giddiness, and also complain that oscillation of lights underground prevents them from working.
- (c) Those with psycho-neurosis, who—in addition to the usual symptoms—develop blepharospasm whenever they are subjected to examination.

The lack of treatment and lack of occupation after certification may easily convert a man of grade B into grade C, and cause a further deterioration in patients in group C.

4. It is, therefore, most desirable that :—

- (a) The miner should return to suitable work, *e.g.* on the surface as soon as possible—preferably without an interval of unemployment.
- (b) That his fitness for work and the necessity for certification should be judged at the onset by an ophthalmic surgeon and a psychiatrist, who have special knowledge of the disease.
- (c) When a man is found unfit for work, he should be given initially some form of holiday, and/or, rehabilitation treatment. My experience has shown that the latter, in the form of remedial exercises, is unsatisfactory when conducted in an out-patient department, owing to the difficulty of travelling and the unsteadiness which follows

exercise. *Residential treatment is therefore recommended, particularly for grade B. It should include general and special physical training, occupational therapy, and psychiatric consultations, together with orthoptic treatment in cases where it is likely to be beneficial.

- (d) In the "follow-up" work necessary in cases of miners' nystagmus, a medico-social worker would be most helpful.
- (e) Some adjustment in the mode and rate of payment of compensation should be made, so as to make a return to work financially attractive.
- (f) A more careful selection of appropriate tasks is required, in order that the miner shall not be required to work in poor illumination and in awkward postures.

Vast sums are spent in the annual payment of compensation for miners' nystagmus. These recommendations are made in the hope of improving the treatment of the disease once it has occurred, and of procuring a state of physical and psychological recovery (see Dr. Stern's paper) which no longer requires compensation. So far, there appears little hope of achieving such a degree of cure as to enable the certified man to return to work underground—without the probability of a relapse within a year or two.

The original reports issued by the Medical Research Council (almost twenty years ago) stressed the need for improvement in working conditions underground—particularly in the matter of illumination. It is true to say that these recommendations have been almost entirely disregarded—and that little has been done to prevent the disease. When one remembers that the average age of certification is 47—and that the disease affects skilled men in the prime of life—every effort should still be made to stimulate the interest of ophthalmic surgeons and management committees in the prevention and cure of this disease.

* As from October 1, 1947, through the Miners' Welfare Commission, facilities for residential treatment have been made available at the Miners' Rehabilitation Centre, Higham Grange.