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CHOREIFORM MOVEMENTS AFTER DEPOT INJECTIONS OF FLUPENTHIXOL

DEAR SIR,

I was most interested by Dr. Alan Gibson's account of chorea associated with flupenthixol (*Journal*, July 1974, p. 111). Unequivocal choreiform dyskinesia—'irregular and rapid darting, flexing, writhing or grimacing movements' (mainly around the mouth)—occurred in 41 per cent of a series of patients maintained on oral phenothiazines (Kennedy *et al.*, 1971); and Hunter *et al.* (1964) described irreversible movement disorders in minimally brain-damaged schizophrenics following the withdrawal of phenothiazines.

A 60-year-old ex-waitress with a very long history of schizophrenia and a tendency to drink to excess was, after four years in a mental hospital, placed on fluphenazine depot injections. She soon developed quasi-purposeful writhing and shock-like movements of her limbs, rocking of her trunk, a tremulous undulating gait, grimacing, oral dyskinesia and ataxia, which persisted after the injections were stopped and failed to respond to a variety of anti-parkinsonian drugs. There was nothing in her life story suggestive of rheumatic fever, encephalitis or poisoning by carbon monoxide or heavy metal; nor was there any family history of spontaneous movements or of mental illness. The movements persisted over the three years for which I followed her up.

It would seem, therefore, that movement disorders, reversible and irreversible, can occur with both thioxanthines and phenothiazines, whether given parenterally or orally.

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URINARY CYCLIC AMP AND DEPRESSION

DEAR SIR,

The implication by Hullin *et al.* (*Journal*, November 1974, p. 457), that the 24-hour urinary excretion of cyclic AMP is not related to mood in affective disorders is in direct conflict with our findings in a double blind study of depressed patients and control subjects in which we measured the 24-hour urinary excretion of cyclic AMP in 27 patients suffering from 'classical endogenous' depression, 15 patients suffering from 'classical neurotic' depression and 25 healthy control subjects.

Comparison of mean and S.D. of urinary cyclic AMP (μ mole/24 hr.) in the first 24-hour urine samples

	Control (N = 25)	Neurotic (N = 15)	Endogenous (N = 27)
Mean ..	3·98	2·27	2·88
S.D. ..	±1·55	±1·77	±1·55

Difference between control and neurotic significant $P < 0.0025$.
Difference between control and endogenous significant $P < 0.01$.
Difference between endogenous and neurotic non-significant $P < 0.20$.
(Student's 't' test used for comparison of means.)
(N = number of subjects sampled.)

It can be seen from the above table that depressed patients showed a very significantly decreased 24-hour urinary excretion of cyclic AMP when compared to control subjects. This decreased level of 24-hour urinary cyclic AMP increased significantly to reach and maintain control values as the patients recovered, while the 24-hour urinary excretion of cyclic AMP by the control subjects remained constant. Naylor *et al.* (*Journal*, September 1974, p. 275) reported that in 12 female patients recovering from a depressive psychosis the 24-hour urinary excretion of cyclic AMP increased significantly with recovery, which supports our findings.

Hullin *et al.* report on an example, not a sample, and therefore their conclusions are open to statistical criticism. It would be extremely interesting if they