A PSYCHIATRIC-PSYCHOLOGICAL STUDY OF 50 SEVERELY 
HYPOGONADAL MALE PATIENTS, INCLUDING 34 WITH 
KLINFELETER’S SYNDROME, 47, XXY By J. Nielsen, A. 
Sørensen, A. Thelgaard, A. Frøland and S. G. John-
sen. (Pp. 183; 26 tables, 8 figures; 45 Dan. Kron.). 
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hagen. 1969.

In this monograph a detailed comparison is made be-
tween 34 patients with Klinefelter’s syndrome (47, XXY) and 16 patients in whom hypogonadism is due to causes other than an abnormal chromosome constitution. The purpose of the investigation was to study the effects of the chromosome constitution 47, XXY on intelligence, personality, and mental illness. The patients were referred to the hypogonadal study section associated with the medical out-patients’ clinic at Copenhagen University Hospital on account of gynaecomastia, infertility, or small or undescended testes. Thus the patients were derived from a more representative popu-
lation than in most previous studies which have usually depended on screening hospitals for the mentally ill or the mentally subnormal. Some selection inevitably did occur and the authors attribute the relatively high mean IQs of both groups to the exclusion of institutionalized patients and the predominantly urban population which was studied. The patients underwent careful psychiatric, psychological and anthropological, physical, and endo-
crine examinations which were conducted independently of each other and before disclosure of the results of the chromosome studies. In addition, urinary gonadotrophins and 17-ketosteroids were assayed.

The authors predicted that they would be able to distinguish between the Klinefelter groups of patients and the cytogenetically normal hypogonadal patients on the basis of the psychiatric examinations and a psychiatric weighted score: the Klinefelter patients were expected to display more psychiatric abnormalities. They were correct in their expectations and found that the Klinefelter patients fell into two groups—a psychi-
atrically more disabled group of 19 patients who were older and less intelligent, and a more stable group of 15 patients. In addition to a greater proneness to mental illness, Klinefelter patients were found to show more immaturity, feelings of insecurity, and boastful or self-
assertive behaviour. Their intelligence was lower (mean IQ 102-8) than the other hypogonadal patients (mean IQ 115-3). Criminal behaviour, including sexual offences against children, was also relatively frequent. The psy-
chiatric morbidity in Klinefelter patients is thus frequent (41%) and serious and increases with advancing age. The authors say that they are uncertain of the patho-
genesis of these mental abnormalities, but attribute their principal causation to the abnormal sex chromosome constitution XXY. Environmental factors may also play a part in view of their findings that the more unstable group of Klinefelter patients had come from more disturbed homes. Hypogonadism as such did not appear to be responsible for psychiatric abnormalities.

This study therefore throws light on the frequency and character of psychiatric disturbances in the Kline-
felter syndrome. The presence of these disturbances, especially when found in patients with gynaecomastia or with extremely small testes allows a diagnosis to be made from other causes of hypogonadism unassociated with an abnormal sex chromosome structure.

The authors came to a number of conclusions of practical importance. They advise against drawing the patient’s notice to the smallness of his testes or his sterility. Gynaecomastia, more commonly seen in the Klinefelter patients, is often a source of serious distress and a mastectomy in patients suitably handled by psychotherapy is often beneficial. Testosterone treatment judiciously administered is useful in relieving impotence and increasing libido, and may improve the mental state, but should preferably be begun before the age of 25.

The work discussed in this monograph follows the best Scandinavian traditions of medical research with a scrupulous attention to detail, careful case reporting, and sophisticated statistical treatment of the results. The only apparent flaw in the study is the possibility that the psychiatrists in the course of their examination might have been influenced by noticing the physical appearance of patients with severe hypogonadism who, as a rule, fall into the Klinefelter group. In theory this might have biased their psychiatric assessment; in practice this objection is probably unwarranted. Some of the terms used to describe personality traits such as ‘immaturity’ or psychological defects such as ‘word blindness’ would have meant more if accompanied by operational definitions. These main criticisms do not, however, detract significantly from a serious and valuable contribution to the understanding of the psychological and psychiatric sequelae of chromosomal aberrations.

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Most of this short monograph is in agreement with one’s own experience. The emphasis on the important role of emotional disturbance in precipitating myasthenic crisis is not sufficiently well known. The vicious cycle of venti-
latory failure and cerebral hypoxia following upper respiratory infection is well described. In other ways the book is less satisfactory. I believe that the serious deterioration which may occur in the first 48 hours after thymectomy is almost entirely cholinergic. The validity of this opinion is supported by the fact that I have not lost a single patient post-operatively in the last 14 years with management based on this view. (The 8% mortality
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