practice of putting the pancreas at rest will start the antidiabetic agent almost as soon as the diagnosis has been established. Others will limit therapy to that required to prevent severe glycosuria and hyperglycemia. In later stages of the disease, Singer and Hurwitz point out, it is the clinical judgment of the attending physician that is paramount.

Whenever a physician examines a patient who is on treatment for a chronic disease, he should ask himself whether the patient still needs the medication. In patients with diabetes he should be treating the person and not the disease. He should remember that in any large group of maturity-onset diabetics there will be some who are overt diabetics some of the time, there will be others who are overt diabetics most of the time, but it is most unlikely that all will be overt diabetics all of the time.

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EFFECT OF LSD ON CHROMOSOMES

THE cytogenetic effect of lysergic acid (LSD) can be studied both by *in vitro* and by *in vivo* techniques. In the former, cultured lymphocytes are exposed to varying dilutions of the drug and the resultant chromosomal mutations are assessed. *In vivo* studies require investigation of the actual users of LSD.

The structural changes that have been observed in the chromosomes following both kinds of study consist of chromatid and isochromatid breaks which permit subsequent incorrect healing and resultant structural alterations, including balanced reciprocal translocations; polyploidy is also a possibility. These changes are similar to those found following radiation, certain viral infections and administration of such agents as aminopterin, cyclophosphamide and nitrogen mustard. They may persist for a number of years, but as yet no opinion can be given on the risk to the offspring of the individuals concerned. It must be pointed out that chromatid breaks can be present in control subjects, but the incidence is likely to be from two to four times as high in subjects who are users of LSD.

Cohen, Hirschhorn and Frosch[1] have recently described the investigation of 18 subjects who were users of LSD: in every case the frequency of chromosomal damage was markedly higher than in controls. The investigators found no relation between the frequency of chromosomal damage and the number of occasions on which LSD was taken, or the amount of the dose or the interval between the last dose and the taking of the blood sample. The same study permitted examination of four children of mothers who had taken LSD during pregnancy. An unduly high frequency of chromatid breaks was found in the infants whose mothers had taken the usual dose (stated to be between 300 and 600 μg.) about the third or fourth month of gestation, while the effect was minimal in one case where a low dose was taken late in pregnancy. In one child investigated at the age of 2½ years a persistent high incidence of chromosome breaks (13% of cells) was found. Similar findings in the infants of such mothers have been reported elsewhere.[2]

Insufficient evidence is available to assess the significance of these structural chromosomal changes in the offspring of LSD users because these can be found in the absence of any recognizable anomaly. Nevertheless, the knowledge that the chromosomes can be affected, and bearing in mind the generally deleterious influence of chromosomal mutations, the possibility of congenital anomalies or mental retardation appearing in later generations must cause serious disquiet.

Already there is impressive evidence that LSD injected in early pregnancy in rats can increase the rate of stillbirth and produce stunting of growth,[3] and in mice can be responsible for cerebral abnormalities.[4] Similarly the offspring of hamsters receiving an injection of LSD on the eighth day of pregnancy showed defects chiefly of the brain and spinal cord.[5]

A case has very recently been described[6] of an infant with an extensive malformation of one leg (unilateral fibular aplastic syndrome) born to a mother who took LSD during pregnancy. The drug was taken on the 25th day after the onset of the last menstrual period and three times between the 45th and 98th days. (The most active differentiation of the lower limb takes place in the seventh week of gestation, as was demonstrated during the thalidomide epidemic.) The father had also taken LSD and it was possible to identify chromatid breaks in the father, mother and infant. This represents the first reported case where LSD may have caused a gross fetal abnormality.

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CORRESPONDENCE

Letters are welcomed and will be published, if suitable, as space permits. They should be typewritten, double spaced.

NORMAL-PRESSURE, COMMUNICATING HYDROCEPHALUS

To the Editor:

The report[1] in your issue of November 25 upon a treatable form of dementia due to normal-pressure, communicating hydrocephalus is encouraging. The writers are to be congratulated upon their skill, patience, erudition and initiative.

It is understandable that a control series could not be included. Nevertheless, the omission of such a series leaves room for doubt as to the efficacy of the procedures described in alleviating the dementia.

Cerebral arteriosclerosis and senile brain disease are commonly found in (and believed to be causally related to) dementia in the older age groups. The pneumoencephalographic picture in such cases includes ventricular dilatation.

The dementia associated with senile brain disease and with cerebral arteriosclerosis is subject to marked exacerbations and remissions, although these have been classically regarded as more characteristic of cerebral arteriosclerosis.

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HEART TRANSPLANTATION

To the Editor:

Dr. J. C. Callaghan of Edmonton deserves to be commended on his stand with regard to the much over-sensationalized heart transplant feat of Dr. Christiaan Barnard.

Whereas Dr. Callaghan bases his criticism on the issue of trial and result, premature proclamation of surgical success, etc., I wish to raise my objection to yet another aspect of medical practice in this and other instances. My concern here is with the ethical aspects of the situation.

As we study the history of medical progress, sensationalism was never the accompanying hallmark of the accomplishments of our truly great forebears. Theirs was a veritable achievement by the sweat of their brows. Indeed, often their novel, epoch-making contributions to science and progress were rejected by the shortsightedness of their generation. Need I recall the stories of Vesalius, Harvey, Semmelweiss, Ehrlich and their ilk? Why, Auenbrugger's Inventum Novum would have perhaps gone into oblivion had it not been for its enthusiastic re-discovery by Corvisart! Hard work, dedication, and above all humility were always the very qualities of true genius.

Must we follow the example of Big Powers that use the discoveries of *their* scientists to advance their (the Powers') destructive designs? Wherefore then all the publicity given by the daily news media to the daily reports on what the patient did or said? So far, the only thing omitted is the record of the bowel habits of the patient. This criticism is directed not only to Dr. Barnard, but also to all other medical men, teams and medical centres, that for the desire "to be put on the map" virtually compete circus-like with their feats.

A letter is not the vehicle for a lengthy discussion. However, one should be aware of the fact that there are also numerous social, psychological, ethical and moral issues that require contemplation and consideration in the practice of medicine in today's rapidly changing world.

There is still a *written* International Code of Medical Ethics which among other things states: "The following practices are deemed unethical: Any self advertisement except such as is expressly authorized by the national code of medical ethics. . . . A doctor is advised to use great caution in publishing discoveries. The same applies to methods of treatment. . . ." Until the Code is changed, modified or rewritten, one would expect the medical man to abide by it, wherever he be, whatever his specialty.

Finally, I strongly deplore this spectacle of responsible medical practitioners lending themselves to exploitation by newspapers, radio, television and other media of communication.

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IMMUNOLOGY: VIEWS OF THE PAST AND VISIONS FOR THE FUTURE

To the Editor:

Professor Witebsky begins his excellent article on immunology (*Canad. Med. Ass. J.*, 97: 1371, 1967) with a reference to King Mithridates who reputedly took small daily doses of different poisons to immunize himself against their effects, as he lived in constant fear of being poisoned.

Professor Witebsky states, "Ironically enough, Mithridates finally met his death by taking poison when he became a captive of the Romans."