

"The findings in our studies¹⁻⁹ are consonant with but do not validate the hypothesis that subtle endocrinopathy involving hydrocortisone and thyroid hormone production may indeed be a feature of so-called normal aging. Thus, the administration of replacement-displacement dosages of hydrocortisone, desiccated thyroid or the two together did lower the serum cholesterol and certain other lipid levels in healthy male adults. In a sense this can be spoken of as a restoration of more youthful lipid levels, but this does not imply that the time clock of aging has been turned back. It may be that the hands of the clock, in this case the lipid levels, have merely been set back. However, these findings raise the possibility that the prophylactic administration of these two types of hormones to youthful adults may defer the onset of aging, an hypothesis which we have not attempted to test.

"Our data indicate that in healthy adults, even up to the age of fifty, living in a penitentiary, such therapy appears to be innocuous even though it is associated with definite effects, including partial or complete suppression of endogenous production of hydrocortisone, ACTH, and thyroid hormones. These findings cannot be taken to indicate that such therapy will prove equally innocuous in the population as a whole which will inevitably include individuals in whom a slight measure of hyper- or hypoadrenocorticism of the 11-oxysteroid type or of thyroid hormone excess may prove harmful."¹

REFERENCES

- ¹ Danowski, T. S., and Moses, C.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. I. Introduction to studies of hypolipemic and other effects including relationships to the aging process. *Metabolism* 11:648-52, 1962.
- ² Moses, C., Jablonski, J. R., Sunder, J. H., Greenman, J. H., and Danowski, T. S.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. II. Hypolipemic effects. *Metabolism* 11:653-64, 1962.
- ³ Danowski, T. S., Moses, C., and Heineman, A. C., Jr.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. III. Effects on urinary steroids, pressor amines and gonadotropins. *Metabolism* 11:665-78, 1962.
- ⁴ Danowski, T. S., Moses, C., and Mateer, F. M.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. IV. Serum protein-bound iodine and other thyroid hormone indices. *Metabolism* 11:679-88, 1962.
- ⁵ Danowski, T. S., and Moses, C.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. V. Serum solutes and electrolytes. *Metabolism* 11:689-98, 1962.
- ⁶ Danowski, T. S., Moses, C., and Mateer, F. M.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. VI. Effects on glucose tolerance and insulin tolerance. *Metabolism* 11:699-704, 1962.
- ⁷ Danowski, T. S., Moses, C., Borecky, D. C., Balash, W. R., Bonessi, J. V., and Gilberti, M. V.: Hydrocortisone and/or des-

iccated thyroid in physiologic dosage. VII. Pituitary-adrenocortical and thyroïdal function. *Metabolism* 11:705-15, 1962.

⁸ Danowski, T. S., Tinsman, C. A., and Moses, C.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. VIII. Lipid and body fluid patterns in North American Negro and white prisoners. *Metabolism* 12:117-25, 1963.

⁹ Moses, C., and Danowski, T. S.: Hydrocortisone and/or desiccated thyroid in physiologic dosage. IX. Comparable hypolipemic effects of desiccated thyroid in Negroes and whites. *Metabolism* 12:126-31, 1963.

T. S. DANOWSKI, M.D.
CAMPBELL MOSES, M.D.

*University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania*

BOOK REVIEW

THE DIABETES SURVEY IN BERGEN, NORWAY, 1956. By Rolf Jerde. *Universitetet I Bergen, Arbok 1961-62, pp. 165. Norwegian Universities Press, Bergen, Oslo, Norway, 1962.*

This book contains critical reviews of certain aspects of the diabetes mellitus literature and results of a diabetes survey in a portion of Bergen, Nygard, Norway. The aspects of the diabetes literature reviewed are prevalence, methods of case ascertainment, laboratory technics for diagnostic tests, and the relationships between blood sugar values and sex, age and weight.

The survey was planned to answer certain questions concerning diabetes in a community in Norway such as: Is it reasonable to combine mass radiography and diabetes screening? How great is the prevalence of previously known diabetes, of latent (newly diagnosed subsequent to a screening test) diabetes, and of cases with abnormal blood sugar screening values that need further observation? What is the role of heredity in diabetes? How do factors such as age, sex, obesity, parity, occupation and socio-economic status affect diabetes prevalence? Do the usual subjective symptoms of diabetes occur more often in latent diabetic than in non-diabetic persons?

The survey demonstrated that it is difficult to get complete participation in a screening program even for the portion of the program that is supposedly compulsory. The compulsory mass X-ray screening program had only 66 per cent participation and the proportion participating differed by age and sex. The diabetes screening tests were voluntary and were subsequent to the X-ray screening procedure. About 80 per cent of those attending the X-ray screening were screened for diabetes or about 53 per cent of the total population. The appeal to be screened for diabetes was least effective among the fourteen- to nineteen-year-old females. Only 71 per cent of this group who had chest X-ray were screened for diabetes.

The prevalence rate of known diabetes was 7.0 per 1,000 population, an increase of 84 per cent over the rate of 3.8 per 1,000 population found in a survey in Bergen in 1941. Further comparison of the results of the two surveys showed a decrease in the age specific prevalence for males and females in the fifty to fifty-nine age group and for females only in the sixty to sixty-nine age group.

The prevalence rate of latent diabetics among those sur-

veyed was 11.8 per 1,000. Undoubtedly there were latent diabetics among those not tested, but no attempt was made to estimate how many. As has been frequently found in diabetic detection drives in the United States, a greater proportion of diabetic persons was found among the males than among the females tested.

Among known diabetic and nondiabetic persons, no significant difference in mean height or weight was noted. The mean weight of latent diabetic persons was higher than for nondiabetic persons.

The prevalence of previous known diabetes in women of fifty or more years of age with and without children was examined and showed that diabetes was more frequent in women with children.* It is further suggested that the number of pregnancies has some bearing on the development of

*The comparison was made on the basis of the crude prevalence rates. Age distribution differences, for example, could be such that they would increase or decrease the observed difference. These distributions are not given.

diabetes because the mean number of children born to known diabetic women was 3.53, to latent diabetic women 2.71, and to nondiabetic women 2.64.

Again evidence is presented that blood sugar screening tests are superior to urine screening tests for the detection of diabetes. The blood sugar test alone identified 90 per cent of the latent diabetic persons; the urine test identified only 41 per cent. The blood sugar test also led to the larger number of re-examinations.

As part of the survey, 194 glucose tolerance tests were performed on normal people. The age, sex and weight distributions of the data are presented and discussed.

One of the strengths of the book is that most of the data, or adequate summaries thereof, are presented so that one can manipulate and evaluate them for himself. Many issues important to the ultimate knowledge of diabetes are raised by the author and, even though the results of the survey do not supply many of the definitive answers, the book is well worth reading and is a valuable addition to the library of information concerning diabetes.

ABSTRACTS

Am. J. Dis. Child. 104: November 1962. Pediatric Research Abstracts.

This number consists of abstracts of the spring meeting of the American Pediatric Society and the Society for Pediatric Research. Abstracts of possible interest include Society for Pediatric Research numbers 3, 4, 6, 67, and 68. J.M.P.

Aylett, Pamela (The Gordon Hosp., Vauxhall Bridge Rd., London, S.W. 1, England): GASTRIC EMPTYING AND CHANGE OF BLOOD GLUCOSE LEVEL, AS AFFECTED BY GLUCAGON AND INSULIN. *Clin. Sc.* 22:171-78, April 1962.

Patients with peptic ulcer were studied with a quantitative test meal. Glucagon slowed, while glucagon-free insulin hastened, gastric emptying. Oral or intravenous glucose also delayed gastric emptying but not to the same extent as glucagon despite comparable blood glucose levels. An inverse relationship was found between gastric emptying and the rise or fall of blood glucose with reference to the fasting level. G.D.M.

Banerjee, R. N.; and Gibson, K. (Inst. of Nuclear Medicine, The Middlesex Hosp., London, England): PREPARATION AND PURIFICATION OF HIGH SPECIFIC ACTIVITY INSULIN-¹³¹IODINE. *J. Endocrinol.* 25:145-46, September 1962.

A method is described for preparing insulin-I¹³¹ with a specific activity of 1 curie per milligram. Chloramine T was used to oxidize the I¹³¹ during the iodination procedure. Fresh human serum was added to the iodinated insulin, and then removed by passage through a column of Sephadex G-75. The final product contained approximately 3 per cent "damaged" insulin-I¹³¹ which could be identified by an abnormal migration with added plasma proteins during paper electrophoresis. H.T.N.

Beigelman, Paul M. (Dept. of Medicine, Univ. of Southern California Med. Sch., and the Los Angeles County Hosp., Los Angeles, Calif.): ADDITIONAL STUDIES WITH INSULIN BIOASSAY EMPLOYING GLUCOSE UPTAKE BY RAT ADIPOSE TISSUE. *Metabolism* 11:1315-24, December 1962.

Studies of a bioassay utilizing glucose uptake by rat epididymal adipose tissue confirmed the importance of employing rats weighing less than 225 gm. and of increased duration of incubation to six hours. The range of sensitivity is 1 to 100 micro-units of insulin per milliliter with glucose concentration of 1 mg. per milliliter and is 10 to 1,000 micro-units per milliliter with higher glucose concentration to 2 to 3 mg. per milliliter. Adipose tissue exposed for ten minutes to 1,000 micro-units per milliliter of insulin does not bind this insulin. Proteins in concentrations of 0.2 to 2.0 per cent have a variable effect upon glucose uptake by adipose tissue, occasional significant increases being observed. Postprandial sera (diluted 1/30) from untreated adult diabetics demonstrated significantly lower insulin-like activity than comparable normal sera. Sera (diluted 1/30) from ketoacidotic diabetics who had received insulin therapy at some time in the past, possessed significantly less ILA than sera (diluted 1/30) from diabetic ketoacidotic subjects who had never received insulin therapy.

C.A.R.

Block, M. A.; Smith, R. F.; Haubrich, W. S.; and Horn, R. C. (Henry Ford Hosp., Detroit, Mich.): SURGICAL PROBLEMS IN MANAGEMENT OF ISLET-CELL TUMORS WITH GASTRIC HYPERSECRETION. *Arch. Surg.* 85:270-78, August 1962.

Based upon six patients with the syndrome, the authors review the management of nonhypoglycemic islet-cell tumors with gastric hypersecretion. The diagnostic significance is in-