(Similar remissions, though of shorter duration, had previously been achieved with both triac and desiccated thyroid in two similarly affected sibs.)

Thyroid function was investigated during "stoss-therapy" and during both the early and the late stages of the remission. During stoss-therapy thyroid activity was suppressed only at two hours after the administration of the tracer, but not at 24 and 48 hours. Immediately after the discontinuation of stoss-therapy there was a hyperactive uptake pattern; one and three months later, a low-normal; and six, seven and a half, and nine months later a hyperactive pattern as to ^{131}I uptake, total activity, and conversion which was manifest during observation periods ranging up to seven days. The butanol-soluble fraction of the circulating ^{121}I compounds was somewhat lower than normal. Its chromatographic separation nine months after stoss-therapy revealed the presence of thyroxine and of another, as yet undefined, iodine compound(s). The serum P.B. ^{127}I was, with one exception, at the lower limit of the normal range throughout the whole course of observation.

The implications of these observations are discussed. It is suggested that the end-product of thyroid secretion, if administered in amounts exceeding the physiological range, induces a recovery of thyroid function by correcting a genetically disordered interaction between intracellular thyroid enzymes and hormone-producing cell particles (thyroidal autoregulation).

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REFERENCES

- Gross, J. (1954). *Brit. med. Bull.*, **10**, 218.
Steinberg, A., and Czerniak, P. (1955). *Harefuah*, **48**, 12.
Zondek, H., Leszynsky, H. E., and Zondek, G. W. (1958). *Acta endocr. (Kbh.)*, **29**, 47.
— (1959). *Brit. med. J.*, **1**, 340.
— (1960a). *Arch intern. Med.*, **106**, 15.
— and Stein, J. A. (1960b). *Nature (Lond.)*, **187**, 515.

"A noticeable change in the last ten years [in the general medical, haematological, endocrinological, and mental observation departments] is the increasing number of coloured people both in wards and out-patients; their diseases generally differ little from European illnesses except that they are occasionally infested with hookworm and so develop its resultant anaemia (a condition which can be easy to miss when their pallor is masked by their pigment). As a community they have a smaller number of old people than we do. The old people stay in the West Indies, while the young come to earn better money in England. Family feeling seems strong, and many regular payments are posted back home by those working here. As patients, they are shy and often suspicious, and their speech is so different from ordinary English that the exchange of ideas is slower and less accurate than with English patients. For these reasons West Indians sometimes appear to be moody, morose or ungrateful as patients when they are really embarrassed and fearful. Because their standard of education is lower, instructions like measuring insulin or adhering to particular articles of food are harder to explain. Although their homes are mostly of a lower standard than the average European, their health does not seem to be affected by this except that they have to be taken to hospital for minor illnesses which otherwise might have been managed at home." (Dr. Richard Asher in *Central Middlesex Hospital Annual Report*, 1959.)

THYROID FUNCTION IN THE EUTHYROID PARENTS OF THREE NON-ENDEMIC GOITROUS CRETINS

BY

HERMAN ZONDEK, M.D.

HANNAH E. LESZYNSKY, M.D.

GERDA W. ZONDEK, M.D.

Department of Internal Medicine, Bicur Cholim Hospital,
Jerusalem, Israel

JOSEPH A. STEIN, M.D.

Radium Institute, Rothschild Hadassah University Hospital,
Jerusalem, Israel

AND

STEFFIE GUTTMANN

Department of Experimental Medicine, Hebrew University
Medical School, Jerusalem, Israel

We have under observation three siblings with goitrous cretinism who were born and reared in Israel, a comparatively goitre-free region. They are the fourth, fifth, and eighth of nine children, the other six being clinically healthy. Both parents come from Iraq, from allegedly healthy, unrelated families.

The purpose of this paper is to report the results of tracer studies in the parents. Observations on the affected offspring have been reported elsewhere (Zondek *et al.*, 1958, 1959, 1960a, 1960b, 1961).

The father, aged 62, is healthy and has no complaints. He is clinically euthyroid, and the thyroid gland was normal on palpation. The B.M.R. was +3%, and the serum cholesterol 210 mg./100 ml.

FIG. 1.—Clinically euthyroid mother, aged 50, of three non-endemic goitrous cretins.

His serum protein-bound iodine (P.B. ^{127}I) was 3.4 $\mu\text{g.}/100\text{ ml.}$ (normal range, 3.5–5.5 $\mu\text{g.}/100\text{ ml.}$), and tracer studies revealed perfectly normal values with regard to both uptake and conversion of ^{131}I ; thyroidal uptake was 12.2% at two hours, 20% at four hours, 39% at 24 hours, and 37% at 48 hours. The conversion ratio was 35% at 24 hours and 46% at 48 hours.

The mother, aged 50, at first sight has endocrine stigmata: she is of small stature (1.44 m.), is fat (50 kg.), and mentally dull, and she has a cretinoid appearance, with narrow palpebral fissures and a depressed root of the nose (Fig. 1). The thyroid gland is normal to palpation except for a very small nodule in the middle lobe.

From the clinical viewpoint the mother's thyroid function was found normal in all respects: B.M.R., -2%; serum cholesterol, 226 mg./100 ml.; heart function and configuration normal; E.C.G., normal. The serum P.B. ^{127}I was 4 $\mu\text{g.}/100\text{ ml.}$ Twice-repeated tracer studies (see Table and Fig. 2) revealed

a high thyroïdal uptake of ^{131}I which remained practically steady during the four days of observation, with a correspondingly low urinary excretion of the tracer. During the first two days the total plasma

Investigations in Clinically Euthyroid Mother of Non-endemic Goitrous Cretins

	Total Plasma ^{131}I (% of Dose l.)	P.B. ^{131}I (% of Dose/l.)	Non-butanol-soluble ^{131}I (% of Dose/l.)
24 hr. . .	0.1	0.068	0.033
48 " . .	0.1	0.066	0.021
72 " . .	0.19	0.184	0.054
96 " . .	0.26	0.255	0.066

activity was in the low normal range, but, instead of decreasing further, it rose steadily to abnormally high values during the next two days. The conversion ratio was high normal to high. The percentage of the butanol-insoluble fraction was abnormally high throughout. A

FIG. 2.—Thyroidal ^{131}I uptake curves of mother and son.

paper chromatographic separation of the circulating iodine compounds at 24, 48, 72, and 96 hours, performed by the ascending technique with butanol-dioxane-ammonia (Gross, 1954), gave normal results.

Conclusion and Summary

Tracer studies with ^{131}I revealed in the clinically euthyroid but, on appearances, cretinoid mother of three goitrous cretins the following abnormalities: a high thyroïdal uptake which hardly decreased during two observation periods of four days each, with a correspondingly low urinary excretion, a steady increase of total plasma activity during the same time, a high normal to high conversion ratio, and an abnormally low butanol solubility of the circulating iodine compounds.

These findings are in surprising agreement with the results of corresponding studies in one of her affected offspring performed at six, seven and a half, and nine months of a therapy-free remission which was induced by the short-term administration of unphysiologically large quantities of thyroid substances (Zondek *et al.*, 1961). Although some qualitative and quantitative differences are apparent, the general trend is the same in the permanently and endogenously euthyroid mother and in the son whose severely disordered thyroid function was set in motion by the above-described "stosstherapy."

A similar uptake pattern was also evident in the other two affected and similarly treated sibs during their remissions (Zondek *et al.*, 1958, 1959).

REFERENCES

- Gross, J. (1954). *Brit. med. Bull.*, **10**, 218.
 Zondek, H., Leszynsky, H. E., and Zondek, G. W. (1958). *Acta endocr. (Kbh.)*, **29**, 47.
 ——— (1959). *Brit. med. J.*, **1**, 340.
 ——— (1960a). *Arch. intern. Med.*, **106**, 15.
 ——— and Stein, J. A. (1960b). *Nature (Lond.)*, **187**, 515.
 ——— Zondek, G. W., Stein, J. A., and Guttmann, S. (1961). *Brit. med. J.*, **1**, 97.

PUNCH BIOPSY OF THE PERITONEUM

BY

L. R. SARIN, M.B., M.R.C.P.Ed.
Professor of Clinical Medicine

S. R. MEHTA, M.D.
Lecturer in Medicine

AND

J. C. SARIN, M.D., D.T.M.
Reader in Pathology

*Department of Medicine and Department of Pathology,
 S.M.S. Medical College, Jaipur, India*

DeFrancis *et al.* (1955) described a technique, using the Vim Silverman needle, for obtaining parietal pleural biopsy in pleural effusion. Donohoe *et al.* (1959) applied a similar approach to the study of patients with intra-abdominal disease with ascites. They described a technique, also using Vim Silverman needle, for obtaining peritoneal tissue in cases of ascites.

In our hospital we have used the Harefield pleural punch biopsy needle (Fig. 1), devised by Leon D. Abrams (1958), which enabled us to perform paracentesis of the ascitic fluid and punch biopsy of the

FIG. 1.—Abram's needle. A, Stylet; B, Inner concentric tube; C, Outer concentric tube; D, Notch; E, Back hexagonal grip; F, Knob; G, Trocar point; H, Cutting edge; I, Pin; J, Oblique slot; K, Spring clip to hold pin.