

Normal  $T_4$  concentration but high  $T_3$  concentration was observed in 19/188 samples and low  $T_3$  concentration was observed in 20/188 samples. (4) Normal  $T_3$ -Resin Uptake but high TSH levels was obtained in 35/172 samples, normal  $T_3$  concentration but high TSH levels was shown in 28/169 samples and normal  $T_4$  concentration but high TSH levels was observed in 22/179 samples. (5) Good correlation was observed between thyroid

iodine uptake and thyroid hormone levels as coefficient of correlation on thyroid iodine uptake and  $T_3$ -Resin Uptake were  $r=+0.66$ , and  $T_3$  concentration were  $r=+0.83$ , and  $T_4$  concentration were  $r=+0.79$ .

These results suggested that each RI tests for thyroid function was shown dynamic status of thyroid functions.

### **Radioimmunoassay of Thyrotropin as a Screening Test for Cretinism**

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Since 1974, we have screened for neonatal hypothyroidism using determination of TSH by means of double antibody radioimmunoassay. The mean  $\pm$  standard deviation of values for TSH was  $9.0 \pm 11.3 \mu\text{U/ml}$  in 500 cord serum samples. Follow up studies in 8 subjects with high TSH levels (over  $30 \mu\text{U/ml}$ ) indicate that these may give false positive values.

A method for measuring TSH in eluates of dried blood samples on filter paper like those used for screening test for phenylketonuria was evaluated and improved. A linear relationship between the volume of eluate and the TSH value, and good recoveries of endogeneous TSH (104%) and added TSH (89%) were obtained, indicating

that TSH in dried blood was extracted well by overnight elution and determined accurately by radioimmunoassay. Coefficient of variation was 3.4–20.7%. The TSH in dried blood samples on filter paper was stable at  $4^\circ\text{C}$ ,  $25^\circ\text{C}$  or  $37^\circ\text{C}$  for 1 month. The TSH values of eluates were correlated with those of whole blood ( $r=0.90$ ) and serum (0.81). Cases of primary hypothyroidism could be readily differentiated from normal subjects by this method even when eluates of their blood were combined with those of normal blood for assay of TSH. In a preliminary screening test on 15,000 randomly selected newborn infants, no cases of cretinism was found but 14 cases for "blind control" were consistently identified.

### **Serum Thyroid Hormone Levels in Liver Diseases**

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In order to obtain the information regarding the role of the liver on the thyroidhormone metabolisms in man,  $T_3$ ,  $T_4$ , TSH levels (radioimmunoassay, Riagnost) and total thyroxine binding capacity (TBC) were measured in sera obtained from patients with various hepatic diseases. The patients were all positive for intradermal test for

*schistosoma japonicum*. Patients were classified according to the histology in the following groups, hepatitis (H), liver fibrosis (F), and liver cirrhosis (L). Serum albumin (g/dl as measured by immuno diffusion) was markedly reduced in L groups. H ( $n=23$ ,  $3.67 \pm 1.14$ ), F ( $n=14$ ,  $3.84 \pm 1.11$ ), L ( $n=15$ ,  $2.73 \pm 0.74$ ) Serum TBC (%),  $T_3$  (ng/ml),