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Plasma growth factors measured as thymidine activity  
in children with average and tall stature.

It was previously demonstrated that 3H Thymidine uptake into human lectin-activated lymphocytes is related to plasma GH-dependant growth factors, thymidine activity (TA) thus measuring plasma somatomedin activity as defined by Daughaday et al.

TA has been measured in 20 children with average stature (A) and 37 constitutionally tall children with 2 to 4 SD advanced height (T), age 4 to 16 years. In both groups, mean  $\pm$  SEM TA is higher after age 10, and the difference is significant when TA is related to bone age (BA); in A,  $0.78 \pm 0.06$  U/ml before BA 10,  $1.02 \pm 0.05$  beyond BA 10 ( $p < 0.005$ ); in T,  $0.75 \pm 0.05$  U/ml before BA 10,  $1.05 \pm 0.05$  beyond BA 10 ( $p < 0.01$ ). Yet, there was no significant difference between T and A children. In both groups TA was correlated with BA ( $r = 0.572$ ,  $p < 0.001$ ).

In individual subjects, no correlation was found between TA and sulfation activity. The discrepancies between these two biologic measurements of plasma growth activity could be of physiologic significance.

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Decreased serum TSH and T<sub>4</sub> levels in newborns with  
severe hyperbilirubinaemia.

Serum TSH and T<sub>4</sub> was determined radioimmunologically in 125 newborns with severe hyperbilirubinaemia before blood exchange /HB/ and in 220 normal newborns /without pathological findings in other blood parameters/as control group /K/. The results are shown in the table:

Day of life	1-st	2-nd	3-rd	4-7-th
TSH $\mu$ U/ml $\bar{x}$	7,9	3,8	2,3	1,1
HB T <sub>4</sub> nmol/l $\bar{x}$	196	211	197	179
n	18	28	31	48
TSH $\mu$ U/ml $\bar{x}$	30,1	12,8	6,3	2,3
K T <sub>4</sub> nmol/l $\bar{x}$	218	236	224	195
n	34	32	34	120

It seems that TSH response to birth-stress is in HB diminished. It is also possible that bilirubin blocks TRP. Therefore total T<sub>4</sub> is lowered but free T<sub>4</sub> is elevated and exerts greater feed-back blocking of thyrotrophs.

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Comparison of Primary TSH (pTSH) to Primary T4 with  
Confirmatory TSH (T4/TSH) Screening for Congenital  
Hypothyroidism (CH), Pittsburgh, PA and Portland, OR.

Our recent survey of 38 states in U.S. & 10 countries indicated that 4.45 million(m) infants were screened for CH by 12/31/79, & 1048 cases of primary hypothyroidism detected (incidence of 1 in 4245) on the 1st specimen. Screening methods varied: (1) T4/TSH: 3.73m, 835 cases, 1 in 4466 incidence; (2) pTSH: 0.5m, 157 cases (1 in 3239); (3) both T4 & TSH: 0.2m, 56 cases (1 in 3695). In summary, programs using pTSH screening detected a higher incidence of CH than programs using T4/TSH screening. When confirmatory TSH is tested on the lowest 10-15% of T4 values, the incidence of CH approaches a maximum comparable to pTSH screening. In programs collecting 2 routine specimens, 169 cases were detected in 0.78m newborn (nb) specimens (1 in 4600) & 22 cases in 0.6m followup(fu) specimens (1 in 26,000). Of the 38 cases of CH that were missed, 12 had normal T4 levels & 4 with primary CH had normal TSH levels. For 3 years we have tested both nb & fu specimens by 2 methods: (1) T4/TSH (TSH test on lowest 3% of T4) & (2) pTSH. Normal TSH is  $< 30$   $\mu$ U/ml of serum in two 3 mm blood discs. 60% of nb specimens were obtained by age 2 days, & the false positive (elevated TSH) rate was 0.9% whereas the rate in nb specimens collected after 2 days & in all fu specimens was  $< 0.2\%$ , comparable to pTSH cord serum screening. Summary: For specimens collected before 48h of age, higher TSH cutoff levels (30-60  $\mu$ U/ml) must be determined to avoid false positive recall rates, yet identify all infants with CH.

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IODINE EXCRETION AND THYROID FUNCTION IN MOTHERS AND THEIR  
NEWBORNS AFTER USE OF PVP-IODINE IN OBSTETRICS.

Screening for hypothyroidism shows that use of PVP-iodine as des-infectant may cause TSH elevations in the newborns. In order to examine if these elevations are a pathological symptom, we determined TSH, T<sub>4</sub>, T<sub>3</sub> and fT<sub>4</sub> and the iodine excretion on days 1, 3 and 5 in 23 mothers and their newborns after use of PVP-I. for different periods of time before delivery (7-14h, mean 25h). Results are shown below (mean values, mother = M, newborn = NB, day = D).

	D1	M	NB	D3	M	NB	D5	M	NB
TSH $\mu$ U/ml		3.4	11.8		2.8	14.8		2.1	11.3
T <sub>4</sub> $\mu$ g %		12.3	9.7		12.5	13.7		13.1	14.4
T <sub>3</sub> ng/ml		1.5	0.4		1.7	1.7		1.8	1.9
I $\mu$ g %		780.	333.		73.	--		29.	83.

Four NB had elevated TSH levels, but T<sub>4</sub>, T<sub>3</sub> and free T<sub>4</sub> were normal. Two other NB showed hyperthyroid serum levels on days 3 and 5. None of the mothers had TSH elevations or other impairment of thyroid function. No correlation was found between duration of PVP-I. use and iodine levels, nor between iodine levels of mothers and newborns. Finally, there was no correlation between iodine levels and impairment of newborn thyroid function. We conclude that the newborn thyroid is very sensitive towards iodine excess, but we don't think that these infants need treatment.

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Idiopathic isolated central hypothyroidism associated  
with congenital ichthyosiform desquamans erythrodermia.

We report an idiopathic isolated central hypothyroidism, supposed as consequence of TRH deficiency, in a child with congenital ichthyosiform desquamata erythrodermia, first seen by us at the age of 10y. D.V. was born preterm, vaginally, after a referred uncomplicated pregnancy. Skin lesions appeared during the first days of life and stunted growth and feeding problems within the first months; intellectual development appeared as normal and a normal sexual development started at the age of 12 1/2y. Arginine, insulin, TRH and LHRH tests excluded GH, PRL, ACTH, FSH or LH deficiency. Two TRH tests showed  $\Delta$ TSH = 3.7 and 3.3  $\mu$ U/ml (n.v. = 12.5-4.0) with basal TSH values = 1.2 and 0.9  $\mu$ U/ml respectively; T<sub>4</sub> and T<sub>3</sub> basal levels were 6.6  $\mu$ g/dl (8.9  $\pm$  2.2) and 123.3 ng/dl (163.4  $\pm$  29.7) respectively;  $\Delta$ T<sub>3</sub> was 33.7 ng/dl (65  $\pm$  38). Radioimmunological assays were performed in triplicate (Biodata, Milan). Electrolytes, karyotype, skull radiography were normal. A thyroidal therapy (130 mg/day of desiccated thyroid) was started when he was 13 4/12y. old and after 3y. variations of clinical parameters were: delay of height and bone age in respect to chronological age from -6 to -4y. and from -5 to -2 1/2y. respectively; height velocity grew from 4.8 to 10.0 cm./y.; skin lesions did not improve. T<sub>3</sub> serum reduced increase supports a TRH more likely than a TSH deficiency.

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Adverse effect of iodide containing contrast agents  
on newborn thyroid function.

Administration of iodine containing antiseptic agents during perinatal life is known as the most frequent reason for transient hypothyroidism in newborns. Since we have detected one newborn infant who developed transient hypothyroidism after angiocardigraphy (ACG), we investigated thyroid function in 30 babies with congenital heart disease before and after ACG. Informed consent was given by the parents. RESULTS: After ACG with 20 ml diatrizoate 76% (iodide content 200-400  $\mu$ g) 6 newborns developed transient hypothyroidism within 5 days. In 3 of them renal function was reduced for a few days. Thyroid function returned to normal within 2 weeks in 4 newborns and after 2 weeks in 2 infants. All infants with transient hypothyroidism were less than 4 weeks of age. Infants older than 4 weeks did not develop hypothyroidism, but showed a slight increase of their T<sub>4</sub>- and T<sub>3</sub>-serum concentrations 2 to 4 weeks after ACG.

CONCLUSION: Newborn infants develop transient hypothyroidism after ACG in more than 80%. Even the administration of relatively small doses of iodide may be followed by an acute Wolff-Chaikoff-Effect. This may be due to immaturity of thyroid autoregulative function.