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PRA varies in children according to age. Sodium intake accounts for no more than 25% of this variation (personal research). The highest values are found in newborns; they, however, show remarkable differences from case to case. Research on 65 mothers and their healthy babies points out the role of labour in determining such differences. PRA is much higher in newborns than in mothers in normal or induced deliveries, whereas it is similar in the case of elective Caesarean section (15.39 vs. 7.47, 13.23 vs. 6.14, 4.70 vs. 5.38 ng/ml/h). PRA levels steadily decrease in the first 5 days after birth in all mothers and in the newborns when not delivered by Caesarean s. In conclusion: 1) the newborn is capable of producing large quantities of renin under stimuli triggered off by labour; 2) PRA levels in newborns are greatly affected by the modalities of delivery.

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Excretion of iodohistidines, an important laboratory aid for the diagnosis of a special type of thyroidal disorder.

Iodohistidines were found in urines of patients with congenital goiter with abnormal iodoproteins (see also Savoie et al'). They were not detectable in urine of patients with other types of congenital goiter, carcinoma or thyroiditis. Iodohistidines originated from proteolysis of abnormal iodoproteins in the gland and were formed independently of the presence of thyroglobulin, which only contained traces of iodohistidines residues. We examined members of three families of patients with goiter and abnormal iodoproteins. Iodohistidines were found in the urine of one of the parents of each family. These parents were euthyroid, had no goiter or complaints, but goiter was common in their family. We suggest that the determination of iodohistidines in urine can be of great help for the diagnosis of a certain type of hereditary congenital thyroidal disorder.

\*J.C.Savoie, J.P.Massin and F.Savoie J.Clin. Invest. 52: 116, 1973.

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Insulin resistance in obese children.

Insulin secretion and peripheral insulin sensitivity were studied in 19 grossly obese girls and 17 age-matched non-obese girls by means of the intravenous glucose tolerance test (IVGTT) and the simulated early insulin response test (SERT), respectively. The SERT measures the fall in fasting blood glucose after a short infusion of insulin, performed so as to simulate the early phase of insulin release to an acute stimulus ( $ER_{ex}$ ). At the IVGTT, the obese girls showed significantly increased early insulin response ( $ER_{ex}$ ) in comparison with the non-obese girls. In the SERT, the rise in plasma insulin caused a much smaller decrease in blood glucose in the obese girls than in the reference girls. The relationship between insulin sensitivity and insulin secretion of each subject was evaluated from the plot of the  $ER_{ex}/ER_{end}$  ratio vs. blood glucose decrement. This showed that the hyperinsulinemia of the obese girls frequently did not match the degree of peripheral resistance. The results support the concept that hyperfunction of the beta-cells is an effect secondary to the insulin resistance of peripheral tissues.

**58** B.BROCK JACOBSEN<sup>x</sup> and H.ANDERSEN. Children Hospital Fuglebakken, University of Copenhagen, Denmark.

Serum levels of thyroid hormone-binding proteins in fullterm(FT), small-for-gestational age(SGA) and preterm(PT) newborn babies.

We have previously reported our findings of significantly different serum levels of thyroid hormones in FT, SGA and PT newborns. Studies on hormone-binding proteins in these groups are still needed. Therefore, using Laurell's rocket immunoelectrophoresis thyroxine-binding globulin (TBG), prealbumin (TBPA) and albumin (Alb) were determined in sera of 125 FT, 29 SGA and 21 PT babies aged 0-6 days. Significantly different serum levels of corresponding proteins appeared between the 3 groups of newborns. The ratios between serum concentrations of thyroid hormone and hormone-binding protein, however, did also differ for FT, SGA and PT babies indicating that differences in se-TBG, se-TBPA and se-Alb concentrations only in part might explain the various thyroid hormone levels observed in FT, SGA and PT newborn babies.

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Endocrine Function in the Prader-Willi Syndrome.

Five males and 2 females with the Prader-Willi Syndrome, aged 10-26 years, had low levels of circulating LH with a subnormal response to 100 and 500 mcg of gonadotrophin releasing hormone (Gn-RH) IV. Serum FSH response to Gn-RH was absent in 3, but normal in only one. Gonadotrophin response to Gn-RH increased in 4 patients during oral clomiphene (200 mg daily) given one to 6 weeks. This suggests that the pituitary gonadotrophes can function normally and that the deficiency is hypothalamic. Five males received 2000 u HCG twice weekly IM for up to 6 weeks. In 2 there was no response; in the remainder the rise in plasma testosterone was subnormal. Six of 7 patients had exaggerated TSH responses to 200 mcg thyrotrophin releasing hormone IV. All had normal thyroid function and serum prolactin and no evidence of thyroiditis. While gonadotrophin deficiency is present, primary gonadal failure may also be a feature of the hypogonadism.

**60** S.KORTH-SCHUTZ\*, D.SCHWARTZ\*, K.-E.v.MUEHLENDAHL\*, B.WEBER, and H.HELGE. Univ.-Kinderkl. Berlin, FRG. Adrenal and Ovarian Steroids versus Cyproterone Acetate(CA) in Girls with Precocious Puberty(PP).

Serum concentrations of testosterone(T),  $\Delta_4$ -androstenedione(A), dehydroepiandrosterone(DHEA) and its sulfate(DS), estradiol( $E_2$ ), cortisol(F), and CA were measured by radioimmunoassays repeatedly in 11 girls with PP, treated with 81-136 mg/M<sup>2</sup>/d of CA for 2-60 months (Table indicates ranges).

CA	n	$E_2$	T	A	DHEA	DS	F
ng/ml			pg/ml				ng/ml
0	3	78-123	228-371	800-1312	444-2020	63-190	110-180
325-499	6	<28-44	80-429	134-1543	130-2069	80-250	35-201
501-999	8	<28-32	45-173	61-593	38-503	63-245	<25-55
1000-1700	11	<28-45	48-212	20-445	40-440	25-95	<25-110

Hormones were also determined 30' after 0.25mg of tetracosactid i.v. DHEA and A increased in 7/11 and 8/11, T in 2/11, DS in none. There was no relation to the response of F (normal in 4, subnormal in 3, absent in 4) or to the CA levels. Thus high-dose CA treatment suppressed  $E_2$  and adrenal steroids. T remained elevated in half of the girls with high CA concentrations, possibly related to its anti-androgen effect.