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A longitudinal study on plasma Somatomedin activity and Cortisol blood levels in newborn.

Plasma Somatomedin activity (SM) and cortisol were studied in 8 premature, 5 small for date and 6 at term newborns during the 3 first days of life. SM was measured by porcine cartilage bioassay, Cortisol by radioimmunoassay. SM at first day was detectable in 3 premature, 1 small for date and 3 at term newborns. SM increased at second day and it fell at 3th day in premature and small for date infants. All at term newborns pursued the SM increase in the 3th day too. The subjects with not detectable SM had very high circulating cortisol and those with low circulating cortisol showed always detectable SM levels. Small for date and premature plasmas showed an inhibitory effect on plasma standard, removed by heating at 60°C for 20 minutes. The high cortisol levels and in addition a termolabile substance (only in premature and small for date newborns) may explain the SM behaviour in newborns at the first days of life.

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Morphometric studies in undescended testes.

The volumetric fractions (VF) of various types of testicular tissue and the mean tubular diameter (MTD) were determined in biopsies from 134 cryptorchids aged 3.5-16.9 years and in a normal material (67 autopsies). In the normal group VF of spermatogonia A was relatively stable in all age groups, whereas VF of the total spermiogenesis increased sharply after 10 years. In the patients the mean values of both these parameters were markedly decreased in all age groups. VF of tubular tissue was relatively stable in childhood and increased after 10 years both in the normals and the patients. In the youngest patients the testicular volume, the volume of tubular tissue per testis, and MTD were decreased whereas the volume of interstitial tissue per testis was normal. After 10 years of age MTD was decreased in the patients. None of the parameters investigated showed significant differences between cases with high (intraabdominal and canalicular) and low retention. The results indicate that reduction of the spermatogonial and Sertoli cell lines are present in retained testes from 3.5 years of age. At puberty the maturation of tubular tissues is inhibited in untreated retained testes.

75 J.WIEBEL. Univ.-Hospital for Children, Hamburg, Germany. Decreased Steroid Glucuronyl Transferase Activity in Hypothyroidism of Children Aged 1-6 Years.

In 12 hypo- and 32 euthyroid children the distribution of urinary steroids on the fractions of free steroids (F), glucuronides (G), and sulfates (S) was studied. F, G, and S were separated on SEPHADEX LH-20 before cleavage of conjugates, steroids determined by capillary-GLC. Although G remained the main fraction in hypothyroidism the percentage of S and F was about twice as high as in euthyroid patients, especially after ACTH-stimulation. Apparently the decrease in glucuronyltransferase activity was more pronounced than that in the sulfotransferase system, a situation like in newborns, indicating retarded development rather than temporarily reduced activity in hypothyroidism. The fact that it took more than 4 weeks after start of therapy with thyroid hormone for the %-distribution of steroids to equal that of healthy children supports this contention.

$$\text{hypothyroid} = a / \text{hypo} + \text{ACTH} = b / 2 - 4 \text{ weeks therapy} = c / \text{euthyroid} = d$$

F	11,4±3,9	13,5±3,6	6,4±1,5 (II, III)	4,8±1,5 (V)
G	80,0±7,6	74,3±6,3 (I)	84,5±5,3 (II, III)	89,9±2,4 (IV-VI)
S	8,5±5,3	12,2±4,0 (I)	10,0±3,8 (III)	5,4±2,2 (IV-VI)

p 0,01: I=a-b; II=a-c; III=b-c (Wilcoxon-test) / IV=c-d; V=a-d; VI=b-d (untied t-test).

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Arrest in growth and pubertal development in anorexia nervosa.

Anorexia nervosa starting at the onset of puberty may induce an arrest of development. We report the cases of five children, four girls and one boy, who started anorexia nervosa at the age of 12 to 13 years. Investigations were performed one to four years after the onset of weight loss. Clinical, psychological and biological signs are typical of anorexia nervosa. Decreased growth rate, delayed bone maturation and arrest of pubertal development is documented in all cases. The serum HGH response to standard stimulation tests is normal. The serum LH and FSH response to LHRH stimulation is immature and comparable to that of unpubertal children. Reversion from pubertal to immature pattern of gonadotropin response is documented in one case.

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The Diagnosis and Treatment of Children with Short Stature (film)

This film is for paediatric endocrinologists and dysmorphologists. It is in three self-contained sections:

Part 1 is entitled "The range of normal and the diagnosis of short stature" and discusses variations in normal growth and the diagnosis of small/delay.

Part 2 is entitled "Growth hormone deficiency" and discusses aetiology, diagnosis and treatment.

Part 3 is entitled "Differential diagnosis of short stature" and discusses various other causes of short stature, such as Silver-Russell Syndrome, Turner's Syndrome, achondroplasia and the dysmorphic syndromes.

The film lasts for one hour.

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SHBG concentration in girls during puberty.

Using a membrane filter method the role of Sexual Hormone Binding Globulin (SHBG) during female sexual development was investigated. Details on the method and values in boys have already been reported. Before puberty there is no sex difference in SBHG levels. With the onset of puberty, SHBG levels progressively decline in males, but do not show significant changes in females (range P1 to P4 8.8-7.0 ug/ml) until stage P5 when a significant decline (3.7 ug/ml) is observed. In adult females SHBG values show marked scatter resulting in a higher mean concentration. The post-pubertal scatter found in this study might be related to the cyclic fluctuations in the plasma concentration of sexual steroids, and therefore, to changes in the oestrogen to androgen ratio.