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Regulation of glucose-6-phosphatase activity
in human fetal liver in vitro.

G-6-Pase activity in human fetal liver remains constant at 8-28 nmoles/min/mg protein from the 8th week of gestation to week 28, this value being approx. 25-35% of that found in the adult. This enzyme activity is well maintained for 2-3 days in organ culture of fetal liver explants. Incubation with dibutyryl cyclic AMP (0.1 mM) and theophylline (0.5 mM) increased G-6-Pase activity 4-8-fold within 24h. Theophylline alone was ineffective, but markedly potentiated the effects of dBcAMP. The increase in enzyme activity was completely abolished by simultaneous incubation with cycloheximide or actinomycin D. Insulin significantly decreased G-6-Pase activity to 50% of the control value after 24h incubation. In addition, insulin tended to diminish the elevated G-6-Pase activity which resulted from preincubation with dBcAMP. The smallest fetus obtained (36mm crown-rump length) was capable of elevating liver G-6-Pase activity more than 3-fold in response to dBcAMP, suggesting that the human fetal liver has the competence to respond to hormonal agents at a very early stage.

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On the personality development in diabetic schoolchildren.

The personality development in 59 diabetic children, 27 boys and 32 girls, 7-15 years old has been studied. The duration of the disease exceeded one year in all cases. The personality assessment included an intelligence test, projective techniques and interviews with the children, their parents, and teachers. The projective techniques consistently indicated a much higher frequency of emotional disturbances and adjustment problems in the diabetic children than in a control group of healthy children matched for age, intelligence, and social group. These emotional disturbances concerned fundamental personality processes such as the development of the body image perception, and the ego structure, and the progress of the identification process. These personality data have been correlated to clinical variables such as age at onset of the disease, duration and degree of control, and to some electroencephalographic data. Although this analysis gave some interesting correlations between clinical data and personality, the interviews with the parents showed a more apparent relation between the personality structure of the diabetic children and the attitudes and reactions of the parents to the disease and its impact on the family situation.

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Adherence to treatment of children with familial hypercholesterolaemia.

Treatment to lower serum cholesterol in children with familial hypercholesterolaemia (FH) must be maintained on a lifelong basis. We have investigated the adherence of children with FH to 3 treatment regimes:-
1). Reduction in dietary saturated fat resulted in mean reduction of serum cholesterol of 24% (9-45%), but few children have adhered strictly to the diet, and after 2 years only 5 of 14 remained satisfactorily controlled.
2). In 9 patients in whom diet had only resulted in mean reduction of 13% (8-23%), clofibrate was used in addition and a further mean reduction of 11% was achieved. Within 3 years, however, all 9 had abandoned treatment because of difficulty in maintaining the diet and unsatisfactory control of serum cholesterol.
3). Children treated with cholestyramine have not required dietary fat restriction, and a mean reduction in cholesterol of 36% (27-47%) has been achieved. Of 35 children treated for periods up to 4 years, 7 have already abandoned treatment mainly because of unpalatability of the resin. There has been no loss of therapeutic effect in those continuing on the drug.

The problems of treating children with FH have not yet been solved.

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The effect of β -adrenergic receptor blockers on cold induced thermogenesis in the newborn rabbit.

The aim of this study was to clarify whether *in vivo* the membrane stabilizing action of β -blockers is an important factor in cold induced thermogenesis or whether this effect is mediated purely through their β -adrenergic blockade. Propranolol /+Prop/, Practolol /Pract/, or Dextroisomer-Practolol /+Prop/ was injected intraperitoneally in doses of 1; 2.25 and 5 mg/kg into 3-6 day old rabbits /n=98/ and O_2 consumption / VO_2 / /colonic/ T_c / brown fat / T_b / muscle/ T_m / temperatures plasma FFA and blood glucose levels were measured at an ambient temperature / T_a / of 35°C and 25°C before and after the administration of the drugs. VO_2 at T_a 35°C was not influenced by either agents. +Prop and Pract abolished cold induced thermogenesis in 2.25 and 5 mg/kg doses / $p < 0.001$ / while +Prop depressed it only slightly. / $p > 0.1$ /. +Prop lowered blood glucose levels while Pract. and +Prop. had no effect. All three agents tended to depress the cold induced increase of circulating FFA.

It can be concluded a/ that in the newborn rabbit cold induced i.e. brown fat thermogenesis is mediated through type β_1 -adrenergic receptors and b./ that the *in vivo* anticalorigenic action of β -blockers at these dosages appears not to be dependent on their membrane stabilizing effect.