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

G-6-Pase activity in human fetal li-
ver remains constant at 8-28 nmoles/min/
mg protein from the 8th week of gesta-
tion to week 28, this value being appr.
25-35% of that found in the adult. This
enzyme activity is well maintained for
2-3 days in organ culture of fetal li-
ver explants. Incubation with dibutyryl
cyclic AMP (0.1mM) and theophylline
(0.5mM) increased G-6-Pase activity 4-
8-fold within 24h. Theophylline alone
was ineffective, but markedly potentia-
ted the effects of dBcAMP. The increase
in enzyme activity was completely abo-
lished by simultaneous incubation with
cycloheximide or actinomycin D. Insulin
significantly decreased G-6-Pase acti-
vity to 50% of the control value after
24h incubation. In addition, insulin
tended to diminish the elevated G-6-Pase
activity which resulted from preincuba-
tion with dBcAMP. The smallest fetus
obtained (36mm crown-rump length) was
capable of elevating liver G-6-Pase ac-
tivity 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 di-
sease exceeded one year in all cases. The
personality assessment included an intelli-
gence test, projective techniques and inter-
views with the children, their parents, and
teachers. The projective techniques consis-
tently indicated a much higher frequency of
emotional disturbances and adjustment prob-
lems in the diabetic children than in a con-
trol 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 identifi-
cation process. These personality data have
been correlated to clinical variables such as
age at onset of the disease, duration and de-
gree of control, and to some electroencephalo-
graphic data. Although this analysis gave so-
me interesting correlations between clinical
data and personality, the interviews with the
parents showed a more apparent relation be-
tween the personality structure of the diabe-
tic 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 treat-
ment 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 block-
ers on cold induced thermogenesis in the
newborn rabbit.

The aim of this study was to clarify wether
in vivo the membrane stabilizing action of
 β -blockers is an important factor in cold
induced thermogenesis or wether this effect
is mediated purely through their β -adrenergic
blockade. Propranolol /+Prop/, Practolol
/Pract/, or Dextroisomer-Propriolol /+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 thermoge-
nesis is mediated through type β_1 -adrenergic
receptors and b./ that the in vivo anticalo-
rigenic action of β -blockers at these dosages
appears not to be dependent on their membrane
stabilizing effect.