control and treated animals will be discussed to show the effectiveness of 3-hydroxy-3-methylglutarate in combating atherosclerosis.

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Effects of Cycloheximide and Actinomycin D on Hepatic 3-Hydroxy-3-methylglutaryl-Coenzyme A Hydrolase Activity

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Earlier work in this laboratory showed that starvation or feeding with cholesterol caused a two- to three-fold increase in hepatic 3-hydroxy-3-methylglutaryl-CoA hydrolase activity. This increase is not due to the formation of more enzyme because cycloheximide alone or in combination with actinomycin D did not inhibit, but increased, the enzyme activity. Unlike cycloheximide, actinomycin D is not known to produce fatty liver. To correlate hepatic lipid concentrations and 3-hydroxy-3-methylglutaryl-CoA hydrolase activity, a detailed investigation of liver lipid components was made with animals treated with actinomycin D and with actinomycin D plus cycloheximide.

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Unusual Features of Sterol Excretion and Distribution in the White Carneau Pigeon

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Some features of sterol excretion and distribution were examined in spontaneously atherosclerosis-susceptible white carneau pigeons by using t.l.c., t.l.c. on AgNO₃-impregnated gel, g.l.c. and mass spectrometry. Unlike man and rodents, these pigeons did not excrete any coprostanol or coprostanone derivatives of C₂₇, C₂₈, and C₂₉ sterols. In the chicken, however, the coprostanol derivatives contributed about 20–50% of the total faecal sterols. Unlike human faeces, the faeces of these pigeons cannot convert [¹⁴C]cholesterol into coprostanol.

Bacteriological examination of pigeon faeces indicated that it lacked the anaerobes (such as *Peptostreptococcus* species and *Bacteroides melaninogenicus*, *Bacteroides fragilis* and *Bacteroides incommunis*) found in human faeces, and this might account for the inability to form coprostanol. These pigeons also excreted an unusual amount of 5 α -cholestan-3 β -ol in the faeces (20% of sterols in the cholesterol group and 13% of total 5 α -stanols). Pigeon testes contained 5 α -cholestan-3 β -ol in the highest concentration reported in any normal animal tissue (26% of total sterols; 384 $\pm$ 29.4 μ g/g of tissue). Chicken testes contained only 0.5–2% of total sterols as stanol. Other pigeon tissues contained the stanol to an extent of 1–8% of total sterols. Pigeon faecal cultures containing [¹⁴C]cholesterol indicated that this stanol could not be formed by bacteria, and the diet contained no 5 α -cholestan-3 β -ol, indicating that most of the stanol in the species is of endogenous origin. These unusual features of sterol metabolism are of interest from the standpoint of both spontaneous atherogenesis and comparative biochemistry.

Studies on the Incorporation of [U-¹⁴C]Glucose into Intestinal Lipids in Vitamin A-Deficient Rats

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The effect of vitamin A deficiency on the incorporation of ¹⁴C from [U-¹⁴C]glucose into intestinal lipids was studied. Groups of weanling rats were maintained on a vitamin A-deficient diet along with controls receiving vitamin A supplement. Rats at the 'weight-plateau' stage of deficiency with comparable normal controls were used in this study. [U-¹⁴C]Glucose was injected intraperitoneally and the rats were killed 19 h later. Intestinal tissue was removed and the lipids were extracted with chloroform-methanol (2:1, v/v) and processed further (Folch *et al.*, 1957). Fractionation of the pooled lipid samples from normal and vitamin A-deficient animals on a silicic acid column was also carried out. The total lipid, phospholipids, cerebrosides, sulphatides and cholesterol were determined by standard procedures.

These studies confirm our observation that the glycerides are significantly decreased in the vitamin A-deficient state. It was also observed that ¹⁴C incorporation into the glyceride+cholesterol fraction is increased over fivefold with a concomitant increase in specific radioactivity (c.p.m./mg of glyceride). No significant change was observed in the incorporation of label into the glycolipid fraction as indicated by the specific radioactivity (c.p.m./mg of galactose). However, a higher specific radioactivity (about 30% more) for the phospholipid fraction was apparent.