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The Influence of Yeast on Nitrogen Retention in Normal and Depancreatized Dogs.

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One normal dog and 4 completely depancreatized dogs were fed a basal diet with additions of baker's and starch-free yeast in 4 to 6 day periods. The control dog showed a greater nitrogen retention in the yeast periods than in the control periods, amounting, in the first weeks of the experiment, to 150% of the extra nitrogen ingested in the yeast; at the end of 3 months this had decreased to 30%. Following a control period of 3 months the nitrogen retention on a subsequent yeast regime was 190% of the nitrogen contained in the yeast. The high retention was again noted after a month during which the dog had been on stock diet. The loss of nitrogen in the depancreatized dogs was less in the yeast periods than in the control periods, with no significant alteration in the D:N. There was no apparent correlation between the distribution of waste nitrogen to urine and feces and the addition of yeast to the diet.

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Can the Isolated, Perfused Liver of the Dog Form Carbohydrate at the Expense of Fat?

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Eighteen perfusions, 4 using cats and 14 using dogs, have yielded essentially negative results. These animals were fed on XXXX cream for periods extending up to 30 days. The livers were placed on a weighing scale in an incubator kept at 37.5° C. Thirteen perfusions were single, that is, blood was perfused through the portal vein only. Five were double, that is, blood was perfused both through the portal vein and the hepatic artery.

The exclusive fat diet did not remove all the glycogen from such livers, many of which showed a normal glycogen content. The percentages of glycogen and free sugar of the various lobes in each liver showed marked differences.

In such perfusion systems the true blood sugar, blood non-fermentable reducing substance, urea and ammonia nitrogen and lactic acid all increased. Both the liver glycogen and free sugar showed substantially lower values at the close of the perfusions. The blood fatty acids were constant.

In one experiment the total carbohydrate of the perfusion system increased; in 4 a decrease occurred; the rest were unaltered. The 5 double perfusions showed a marked constancy of the total carbohydrate content, all values at the close of the perfusion being within 7% of the initial value. The total fatty acids were fairly constant, 2 experiments showing an increase and 5 a reduction.

The data obtained do not substantiate the hypothesis that carbohydrate is produced at the expense of fat.

4855

Absorption of Epinephrine from the Subcutaneous Tissue of the Rat.

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In a previous investigation of the carbohydrate metabolism of rats a dose of 0.2 mg. of epinephrine per kilo was injected subcutaneously.[1] This made it desirable to find out whether such a dose produced a rise in blood pressure. The animals received amytal intraperitoneally, followed by the injection of a small amount of urethane in order to steady the blood pressure. A glass cannula was tied into the carotid artery and connected with a mercury manometer of small dimensions. Heparin was used as anticoagulant in the cannula. Intravenous injections were made into a femoral vein and were timed by the beats of a metronome. In 4 experiments of the type shown in Fig. 1 the minimal pressoric rate of intravenously injected epinephrine was established before the subcutaneous injection was made. It was found that an intravenous injection of 0.001 mg. per kilo per minute was always followed by a rise in blood pressure, while a subcutaneous injection of 0.2 mg. per kilo made shortly afterwards had no effect on blood pressure. This result permits the conclusion that the absorption of epinephrine from the subcutaneous tissue of the rat proceeds at a rate less than 0.001 mg.

[1] Cori, C. F., and Cori, G. T., *J. Biol. Chem.*, 1928, lxxix, 309, 321, 343.