Hence it would seem that one factor responsible for the more rapid rate of removal of fructose from the serum of male baboons as compared with female baboons is the greater incorporation of fructose into the serum glycerides of the male animals.

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REFERENCES

Jourdan, M. H. (1969), *Proc. Nutr. Soc.* **28**, 10A.

Blood glucose following oral loads of glucose, maltose and starch during pregnancy. By T. LIND and F. E. HYTTEN, *MRC Reproduction and Growth Research Unit, Princess Mary Maternity Hospital, Newcastle upon Tyne, NE2 3BD*

The blood glucose response curve to an oral load of 50 g of glucose varied considerably between normal pregnant women (Lind, Cheyne, Billewicz & Fairweather, 1968). Repeated tests on the same women showed that the response was not affected by the stage of gestation or by body-weight for height, but was 'flatter' when the test was done after resting in hospital overnight than when done in the out-patient clinic.

Differences of absorption may be the cause of the varying response between individuals. To investigate this, and also differences of carbohydrate digestion, three tolerance tests using 50 g of glucose, maltose and potato starch respectively were made on twelve pregnant and twelve non-pregnant women. The potato starch was given in the form of mashed potato made up from 50 g of pure potato starch granules with water. The tests were made in random order and were completed within 10 days in each individual. None of the non-pregnant women were taking oral contraceptive tablets.

There were no significant differences between the fasting, peak, 2 h blood glucose levels obtained with any carbohydrate in either group of women. Pregnant, compared to non-pregnant, had a somewhat slower absorption and a delayed blood glucose peak in response to glucose and maltose. The response of blood glucose levels to potato starch was similar in each group, the pregnant women reaching a peak more rapidly than after an equivalent load of glucose or of maltose.

The passage of glucose from the stomach may be delayed in pregnancy, which could explain why pregnant women are so often nauseated after a glucose load.

REFERENCE

Lind, T., Cheyne, G. A., Billewicz, W. Z. & Fairweather, D. V. I. (1968). *J. Obstet. Gynaec. Br. Commonw.* **75**, 540.

Relationship between the component fatty acids of plasma cholesteryl esters and phospholipids in the rat and pig. By W. M. F. LEAT, *ARC Institute of Animal Physiology, Babraham, Cambridge* and D. J. NAISMITH, *Department of Nutrition, Queen Elizabeth College, London, W8*

Rats rendered deficient in linoleic acid were fed a single dose of safflower-seed oil (≡350 mg linoleic acid/rat) and were then killed in groups of six at 12, 24, 48,

144 and 336 h after feeding. Changes in the fatty acid composition of plasma lipids were followed using thin-layer and gas–liquid chromatography. Data for pigs were obtained from animals reared on diets containing varying amounts of linoleic acid (Leat, 1963).

The composition of the various plasma lipids showed striking changes during the period of study. Nevertheless a linear relationship was maintained between certain fatty acids (those altered most by linoleic acid deficiency) of the cholesteryl esters

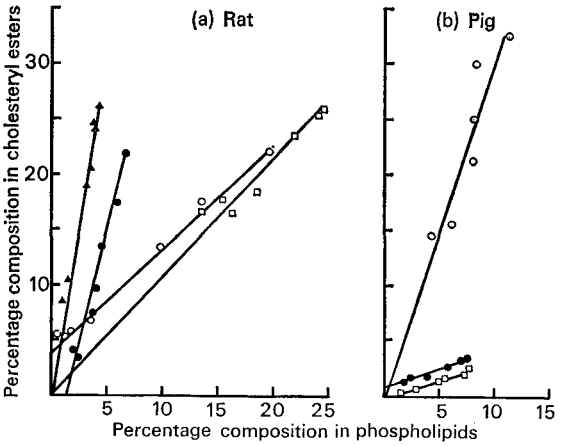

Fig. 1. Relationship between the fatty acids of plasma cholesteryl esters and phospholipids in (a) rats, (b) pigs. ▲——▲, $C_{16:1}$; ○——○, $C_{18:2}$; □——□, $C_{20:3}$; ●——●, $C_{20:4}$.

and the phospholipids. Fig. 1 shows that, in rats, $C_{16:1}$ and $C_{20:4}$ acids have a high affinity for esterification as cholesteryl esters whilst $C_{18:2}$ and $C_{20:3}$ acids have a lower affinity. However, in pigs, $C_{20:3}$ and $C_{20:4}$ have a very low affinity and $C_{18:2}$ acid a high affinity for cholesteryl esters.

Much evidence suggests that plasma cholesteryl esters are formed in plasma by the transesterification of free cholesterol with the β-fatty acids of lecithin (Glomset, 1968). In both species studied here over 90% of the $C_{18:2}$, $C_{20:3}$ and $C_{20:4}$ acids are located in the β position of plasma lecithin. It is therefore concluded that the fatty acid composition of plasma cholesteryl esters is determined by (a) the composition of the β-fatty acids of plasma lecithin and (b) the fatty acid specificity of the β-acyl transferase, which varies between species.

REFERENCES

Glomset, J. A. (1968). *J. Lipid Res.* **9**, 155.
Leat, W. M. F. (1963). *Biochem. J.* **89**, 44.

Precursors of aromatic acids found in sheep urine. By A. K. MARTIN, *Hannah Dairy Research Institute, Ayr*

The aromatic acids excreted by ruminants are mainly glycine conjugates of benzoic and phenylacetic acids and can be expressed in terms of benzoic acid equivalent