

TABLE I.
Lipid Metabolism of Blood in Vitamin D Deficiency
(Fatty Acids and Phospholipids)
P—pathological; C—control.

| Animal No. | | Wt. gm. | | Exp. Period (Days) | Fatty Acids (mg. per 100 cc.) | | Phospholipids (mg. per 100 cc.) | |
|------------|--------|---------|-------|-----------------------|----------------------------------|------|------------------------------------|------|
| P | C | Init. | Final | | Range | Ave. | Range | Ave. |
| ♂ 8773 | | 43 | 57 | 35 | 218-262 | 243 | 197-248 | 222 |
| | ♂ 8777 | 39 | 64 | 35 | 236-262 | 255 | 209-282 | 232 |
| ♂ 8775 | | 49 | 61 | 35 | 228-262 | 247 | 197-253 | 227 |
| | ♂ 8790 | 46 | 60 | 33 | 214-279 | 252 | 209-260 | 237 |

TABLE II.
Lipid Metabolism of Blood in Vitamin D Deficiency (Cholesterol).

| Animal No. | | Wt. gm. | | Exp. Period (Days) | Cholesterol (mg. per 100 cc.) | |
|------------|--------|---------|-------|-----------------------|----------------------------------|------|
| P | C | Init. | Final | | Range | Ave. |
| ♀ 8622 | | 45 | 63 | 42 | 86-101 | 100 |
| ♀ 8623 | | 45 | 58 | 42 | 82-101 | 93 |
| ♂ 8624 | | 45 | 60 | 41 | 82-107 | 91 |
| ♂ 8625 | | 45 | 64 | 41 | 88-107 | 94 |
| | ♀ 8626 | 42 | 69 | 41 | 88-112 | 100 |
| | ♂ 8627 | 35 | 59 | 41 | 82-92 | 8 |

It will be noted from the tabular data that the vitamin D deficient animals showed the same range of concentration of blood lipids as the controls.

Further work in progress will establish whether a longer fast will eliminate the changes in metabolism due to absorption of food lipids, and will bring about less fluctuations in the normal and whether, by the use of the modified technique, avitaminotic rats will show any definite departure from the normal in concentration of blood lipids.

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Dietary Requirements for Fertility and Lactation. XXV. Does Amount of Fat in Diet Influence Vitamin B Requirements for Lactation?*

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The experimental data presented by Evans and Lepkovsky¹ in support of the thesis that fat produces a sparing action on vitamin

* Research paper 297, Journal series, University of Arkansas.

¹ Evans, H. M., and Lepkovsky, S., *J. Biol. Chem.*, 1929, **83**, 269; *J. Nutri.*, 1931, **3**, 353; *J. Biol. Chem.*, 1932, **99**, 235.

B suggested an attempt to determine whether increasing amounts of fat in the ration would influence the incidence of infant mortality on a maternal diet deficient only in vitamin B or the vitamin B complex. The lactation efficiency index was studied on rations containing 3 levels of fat intake, namely 10, 20, and 30. The fat used was lard. Two types of yeast were used as a source of vitamin B complex for the control diets, *i. e.*, Northwestern dehydrated, and Fleischman's dried.† The same types of yeast, autoclaved, were used as a source of vitamin G for the pathological animals. Of the former 10% was used in the ration and of the latter, 15%. A total of 72 mothers with litters were employed. It was realized that, because of the large amounts of vitamin B required for lactation compared with that for growth, nothing like normal rearing of young could be anticipated by virtue of such a modification in the diet as the introduction of additional amounts of fat, since the basal rations were deficient in either the B vitamin or B vitamins. Yet, if large amounts of fat produce a sparing action on vitamin B requirements, the young should have been reared for a longer term before collapse ensued. The results, however, indicate no benefits derived in lactation from the additional increments of fat available to the nursing mother.

A critical examination of the data of Evans and Lepkovsky does not, in our opinion, justify the interpretation that fats have any sparing action on vitamin B requirements. We are, therefore, at present subjecting this problem to a severe test, using growing animals, the results of which will appear elsewhere in detail.

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Effects of Pitressin on Water Interchange in Normal and
Decapitated Frogs.

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Recently it was shown¹ that the permeability of the frog's skin is very much increased by injections of pitressin. Heller² also reported that frogs, previously decapitated, showed a smaller increase

† Supplied by the Standard Brands, Inc., New York.

¹ Steggerda, F. R., *Am. J. Physiol.*, 1931, **98**, 255.

² Heller, J., *Arch. f. exp. Path. u. Pharm.*, 1930, **157**, 298.