

DOG, 9 KILOS IN BODY WEIGHT—A TYPICAL EXPERIMENT  
 (The analyses are expressed in milligrams per 100 c.c. of blood or lymph)

Period before or after fat injection	Lymph			Blood	
	Total fatty acids	Phos- pha- tides	Volume of lymph	Total fatty acids	Phos- pha- tides
Before .....	280	160	11 c.c.	600	440
0-2 hours after.....	270	180	39 c.c.	570	430
2-4 hours after.....	480	210	19 c.c.	660	550
4-6 hours after.....	1,550	240	45 c.c.	630	500
6-8 hours after.....	1,670	230	8 c.c.	810	490
8-10 hours after.....	1,600	200	47 c.c.	800	510
10-12 hours after.....	1,700	200	20 c.c.	800	550
12-14 hours after.....	2,400	200	11 c.c.	790	520
14-15 hours after.....	1,720	200	14 c.c.	560	490

The results show clearly that while the total fatty acids of the lymph increase rapidly during fat absorption, the content of phosphatides remains unchanged. Hence there is no reason to believe that synthesis of phosphatides takes place before the fat leaves the thoracic duct.

36 (1996)

The inorganic phosphorus and calcium in maternal and foetal blood.

By ALFRED F. HESS and M. MATZNER.

[From the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York City.]

This study included examinations of the blood of pregnant women in the latter months of pregnancy, of the cord blood of infants, and of mothers' blood within forty-eight hours after labor. The calcium was determined on serum by the Lyman method,

and the inorganic phosphorus on the whole blood, using the Bell and Doisy method, without the addition of oxalate or other anticoagulant. The calcium determinations did not indicate significant variations from the normal; the eleven specimens taken antepartem gave an average of 10.4 mg. per cent., whereas eighteen taken postpartem averaged 9.75 mg. per cent. It is possible that tests taken at various periods of pregnancy would give more significant figures. The calcium of the cord blood in eighteen cases gave an average of 10.75 mg. per cent. Howland and Marriott<sup>1</sup> found a normal percentage of calcium in three tests of cord blood. Jones and Nye<sup>2</sup> have reported a calcium content averaging 12.6 mg. per cent. in the plasma of five babies under the age of 14 hours.

As far as we know there have been no tests for phosphorus in the cord blood of infants. McKellips, De Young and Bloor<sup>3</sup> tested the blood of infants during the first 26 days of life and found the inorganic phosphorus the same in the plasma of infants and of adults, and that in the corpuscles somewhat lower in infants. The average inorganic phosphorus of twenty-one cases we found to be 3.71 mg. per cent.; the mothers' blood in these cases averaged 2.89 mg. when taken a day or two following labor. In twelve cases where the inorganic phosphorus was tested during pregnancy, the percentage was 2.77 mg. There are two comments suggested by these figures. First, that inorganic phosphate is considerably higher in the blood of the foetus than in that of its mother. Second, that although the content of inorganic phosphate is higher in the foetal than in the maternal blood, it is markedly lower than that of the young infant. The normal content of inorganic phosphorus in infants is about 4.5 mg. when tested by this method. The percentage 3.71 mg. which we obtained is generally indicative of rickets in postnatal life. Radiographs of the epiphyses showed no evidence of rickets in these cases.

---

<sup>1</sup> Howland, J. and Marriott, W. McK., *Proc. Amer. Ped. Soc.*, 1916, xxviii, 202.

<sup>2</sup> Jones, M. R. and Nye, L. L., *Jour. Biol. Chem.*, 1921, xlvi, 321.

<sup>3</sup> McKellips, G. M., De Young, I. M. and Bloor, W. R., *Jour. Biol. Chem.*, 1921, xlvi, 53.