in Table II. It may be mentioned that other substances are not absorbed in the same way as sugars. For instance, the rate of absorption of sodium lactate depends on the amount fed.[4] The mechanism of absorption of other substances will soon be reported.

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Influence of Food Fat on the Constitution of the Phospholipids.

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In the course of an investigation concerning the mechanism of fat absorption, it was thought that possibly the phospholipids of the intestinal mucosa are intermediary products in the process of fat resynthesis from the absorbed fatty acids and glycerol. If this be true, during the absorption of fat the constituent fatty acids of the phospholipids in the mucosa must consist, in part at least, of the fatty acids of the ingested fat. In order to test this idea it was decided to see if the absorption of such fats as cod liver oil and cocoanut oil (which are characterized by high and low degrees of unsaturation, respectively) produces a change in the iodine absorption value (I.N.) of the phospholipid fatty acids in the absorbing mucosa. Later the investigation was extended to include a study of the effect of fat absorption and of different continued diets on the constitution of the phospholipids of the intestinal and skeletal muscles and of the liver.

The experimental plan was as follows: To one of a pair of cats which had been kept on the same diet for 2 weeks or longer either cod liver oil or cocoanut oil was administered by stomach tube; some time later (usually 5-7 hours) the animal was killed. The other cat was killed in a post-absorptive state to serve as a control. The mucosa and the muscle of the small intestine were separated; the muscles of one hind leg were used to typify skeletal muscle. The lipids were extracted with hot alcohol and the phospholipids were isolated and purified by acetone precipitation from ether solution, according to the method of Bloor.[1] After saponification of the phospholipids, the weight and I.N. of the constituent fatty acids were determined.

[4] Cori, C. F., and Cori, G. T., *J. Biol. Chem.*, 1929, lxxxi, 389.

[1] Bloor, W. R., *J. Biol. Chem.*, 1926, lxviii, 33.

TABLE I.

Fatty Acids of the Acetone-Insoluble Lipids.

Tissue	Preliminary diet	Controls; fasted 18 to 24 hrs.			Fasted 18 to 24 hrs.; then fed oil.				Time of feeding before death
		Weight in tissue		Iodine number	Iodine number	Weight in tissue		Oil fed	
		moist	dry			moist	dry		
		%	%			%	%		hours
Mucosa of small intestine	beef kidney	1.03	6.35	112±1.6	103±4.1	0.92	5.60	C. O.*	6
	meat scraps	1.13	7.44	94±2.1	107±1.5	1.15	7.21	C. L. O.	5 to 7
Muscle of small intestine	beef kidney	0.43	2.12	108±2.9	104±4.5	0.39	1.81	C. O.	6
	meat scraps	0.59	3.06	97±1.4	99±0.6	0.64	3.37	C. L. O.	5 to 7
	lean beef and bread	0.70	3.83	92±1.5	93±1.5	0.60	3.26	C. L. O.	2 to 75
Skeletal muscle	lean beef and bread	0.62	3.21	108±2.6	108±0.9	0.61	3.22	C. L. O.	2 to 8
	beef kidney	0.79	3.70	130±5.9	129±0.7	0.66	3.17	O. O.	10 to 12
Liver	lean beef and bread	2.08	8.78	115±5.0	135±2.6	2.20	10.06	C. L. O.	4 to 8
	beef kidney	2.50	10.21	145±0.6	144±2.5	2.50	10.20	O. O.	10 to 12
Rat skeletal muscle	extracted casein, corn starch, salt and yeast	0.75	2.99	131±1.7	131±1.2	0.74	2.98	O. O.	4 to 96

*C. O. stands for Cocoanut Oil; C. L. O., for Cod Liver Oil; and O. O. for Olive Oil.

Results: The average values from several series of experiments (Table I) show: (1) There is no change in the amount of the phospholipid fatty acids in any of the tissues studied during the absorption of fat. (2) The fatty acids of the ingested fat are incorporated into the phospholipid of the intestinal mucosa and of the liver. (3) The composition of the phospholipid fatty acids in both smooth and skeletal muscle is not influenced by fat absorption. (4) The type of diet fed over a considerable period of time (2 weeks) has a significant influence on the degree of unsaturation of the constituent fatty acids of the phospholipids in the intestinal mucosa, the liver, and smooth and skeletal muscles.

These results would seem to indicate that the phospholipids have at least 2 functions: in the intestinal mucosa and in the liver part of the phospholipids fulfill a rôle in the absorption and assimilation of fat; in the muscles the phospholipids probably are vital constituents of protoplasm and, as has been suggested by Bloor,[2] undergo wear and tear and reconstruction.

Further work on the effect of diet and of starvation on the constitution of the phospholipids is in progress.

It is a pleasure to acknowledge the continued helpful advice received from Professor W. R. Bloor throughout this investigation.

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Comparison of the Icteric Index and the Direct Van den Bergh Tests.

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In 316 specimens submitted for the determination of the degree of pigmentation of the serum by the method of Meulengracht[1] the direct diazo reaction described by Van den Bergh[2] was also carried out. The table shows the relationship found between the results of the 2 tests. When the icteric index was high practically all specimens gave a positive diazo reaction, but when it was low the number of specimens which gave this result was much smaller. The time required for the reaction to become positive also varied with the

TABLE I.
Icteric Index and Direct Van den Bergh Tests Compared.

Index	Total	Tested	Neg.	Minutes for reaction to develop						
				0	5	10	15	20	25	30
units	No.	No.	%	%	%	%	%	%	%	%
to 7	68	25	56	0	0	0	16	20	24	32
7- 10	73	31	42	0	0	3	16	26	26	36
10- 12	72	72	18	1	1	8	18	40	51	71
12- 15	69	69	13	1	3	14	29	51	61	78
15- 20	45	45	16	9	9	20	36	64	71	80
20- 30	48	48	4	23	29	42	60	69	79	88
30- 50	12	12	0	58	67	75	100	—	—	—
50-100	2	2	0	100	—	—	—	—	—	—
over 100	12	12	0	100	—	—	—	—	—	—

[2] Bloor, W. R., *J. Biol. Chem.*, 1927, lxxii, 327.

[1] Meulengracht, E., *Deut. Arch. f. klin. Med.*, 1921, cxxxvii, 38.

[2] Van den Bergh, A. A. H., *Presse Médical*, 1921, xx, 441.