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Cell Lipids and Function in Muscle.

W. R. BLOOR AND RUTH H. SNIDER.

From the Department of Biochemistry, School of Medicine and Dentistry, University of Rochester, New York.

A definite correlation between phospholipid content and function in muscle was shown by the results of a comparison of the lipid content of various muscles of wild vs. laboratory rabbit, and hen vs. pigeon. In every case the trained muscles, such as the muscles used in running and jumping by the wild rabbit, had a much higher content of phospholipid than the same muscles in the untrained laboratory animal. The muscles used in flying by the pigeon had a much higher phospholipid content than the same muscles in the domestic hen. The cholesterol content of the muscles in the 2 groups of animals was not definitely different so that the ratio, phospholipid/cholesterol, was always higher in the trained muscle than in the untrained muscle.

Tables I and II will illustrate the differences found.

TABLE I.
Phospholipid Content of Muscles.
(Expressed as phospholipid fatty acids percentage in terms of dry weight.)

	Laboratory Rabbit	Wild Rabbit
Heart	4.0	5.3
Jaw	4.5	2.6
Neck	2.1	3.0
Diaphragm	2.4	3.6
Front Leg	2.0	2.8
Abd. Wall	2.7	3.4
Thigh	1.2	3.4
Back	0.9	2.6

TABLE II.
Pl. F. A. % Dry Weight in Muscles of Birds.

	Hen	Pigeon
Heart	4.0	6.0
Neck	1.6	2.7
Thigh	3.0	2.0
Front Limb	1.2	3.2
Abd. Wall	2.3	3.3
Pector. Maj.	1.5	4.0
Pector. Min.	1.1	2.7