

pholipid values found in these dogs at the beginning of the present series of experiments (60 mgm. %) were not reached.

The rabbits were alternated between a nearly fat-free diet of hay, alfalfa and cabbage and a diet of sun-flower seeds, the meats of which contained about 40% of fat. On these diets the phospholipid values in the plasma differed very widely, the cholesterol less widely but definitely. Table I will illustrate the average results obtained on the first of the rabbits. Results on the others were similar.

TABLE I.

	Phospholipid mgm. %	Cholesterol mgm. %	Fat mgm. %	Total Lipid mgm. %
Low Fat Diet	25	18	100	130
High Fat Diet	175	70	150	370

The feeding periods were about one month long and both dogs and rabbits remained in good health and spirits, gaining weight slowly. The differences noted above were repeated 3 or more times on the same animals.

The results show that in the rabbits the level of the plasma lipids was closely dependent on the amount of fat in the food. The results with the dogs showed that the level of the plasma lipids was influenced by the fat in the diet but the effect was much less marked than in the rabbits and indicated that other factors were influential.

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Increased Resistance to Cold Produced by Cortin After Adrenalectomy.*

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It is well known that adrenalectomized animals resist cold poorly. This appears to be due to cortical rather than medullary deficiency, because cortical transplants enable adrenalectomized rats to resist cold well.¹ In the present study we have been able to show that an extract of the adrenal cortex protects adrenalectomized rats so that they resist cold very well.

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¹ Wyman, L. C., and Tum Suden, C., *Am. J. Physiol.*, 1929, **89**, 362.

Two series of rats were completely adrenalectomized at one operation. The rats in series A (20 rats) were adrenalectomized 10 to 25 days before the experiment with cold. These were protected by injection of cortical extract twice daily (the product from 15 to 25 gm. of cortex each time). The rats in series B (19 rats) were adrenalectomized 4 to 25 days before the experiment. These were injected with the same volume of isotonic NaCl solution at the same time that the cortical extract was given to those in series A.

One extra injection of 0.5 cc. of the respective solutions was administered 12 hours before starting the test with cold, and others as follows: 4 hours before (0.5 cc.), at the test (0.4 cc.), and 4 hours after starting the test (0.5 cc.).

The rats had lived all their lives at a temperature of 27°C. The rats of series A and B together with 6 normal rats of the same weights were exposed to a temperature which gradually fell from 13°C. to 8°C. in 10 hours, when they were again placed in the warm room (27°C.).

The average changes in rectal temperature are shown in the accompanying table.

TABLE I.
Rectal Temperatures of Rats Exposed to Cold.

	Start	6 hours	10 hours	14 hours
Normals	38.6°C.	37.0°C.	36.88°C.	38.45°C.
Cortical treated	37.76	37.14	35.33	37.33
NaCl treated	37.24	33.19	27.28	37.46

Four of the adrenalectomized, NaCl treated rats eventually died. None of the cortin treated animals fared the worse for their experience.

The cortical hormone, therefore, bears an important relation to the maintenance of body temperature.