

Tissue Ascorbic Acid in Hypophysectomized Rats.

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(Introduced by Edward Muntwyler.)

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Some time ago it was observed that the post-operative administration of crystalline ascorbic acid to hypophysectomized rats caused a very marked and sudden improvement in some cases in which recovery otherwise appeared quite doubtful. The tissue ascorbic acid was estimated in some of the untreated rats which failed to recover and it was found to be very low. Although the full significance of these preliminary observations is not clear a brief account may be of interest.

The 6-week-old rats were maintained since weaning entirely on Ralston Purina Dog Chow which was found to be scorbutigenic for guinea pigs. The ascorbic acid of the tissues was estimated in the usual manner by titrating a metaphosphoric acid extract of the tissues with 2,6-dichlorophenol indophenol. That the tissue ascorbic acid values in the 5 hypophysectomized rats examined are definitely below normal is indicated by the data of Table I. Some of the rats had received daily glucose injections and in all cases the stomachs contained food at autopsy. Hemorrhagic areas in various degrees of severity were also observed. The corresponding values for control, non-hypophysectomized, normal rats, determined at the same time, fell within the normal limits.

These findings indicate that a dietary intake or the injection of ascorbic acid after hypophysectomy in rats may prove highly beneficial. A more detailed study of the ascorbic acid metabolism of such animals is proposed.

TABLE I.
Tissue Ascorbic Acid Values in Hypophysectomized and Normal Rats.

	mg per 100 g of tissue			
	Liver	Kidney	Adrenal	Small intestine
Avg 5 hypophysectomized rats	8.36	6.5	160.8	4.8
Max.	10.25	8.2	164	9.6
Min.	7.2	4.8	89.8	2.0
Avg for 5 normal rats	23.2	15.2	340	21.2
Max.	30.1	19.1	450	26.4
Min.	16	12.3	150	16.2