

The Effect of Cortisone on the Spleen in Mice.* (17700)

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During the course of an investigation on the effect of Cortisone on the reticulo-endothelial system in mice, it was noted that doses of Cortisone of the comparable order of magnitude employed therapeutically significantly influenced the size of the spleen. Forty 20-25 g Swiss-albino male mice from a Bartonella-free herd were controlled for enteric and upper respiratory infection and divided into two equivalent groups according to weight. Diet and housing were controlled, each mouse was housed individually and food and water intake grossly noted. The Cortisone-treated mice received daily intraperitoneal injections of 2 mg total divided into 2 equal doses of one mg each, administered 8 hours apart.

The injection schedule was followed for 6 days with daily sacrifices given below. Animals were sacrificed 12 hours after the preceding injections. The control group of mice received the suspending diluent without Cortisone administered in the same volume and manner as the treated group and sacrificed similarly. At sacrifice each animal was subjected to a complete autopsy, gross and micro-

scopic examination made of all organs and tissues. For the purpose of the present report the spleens were weighed and sections prepared. The doses of Cortisone, schedule of sacrifice and spleen findings are all given in Table I.

Microscopic findings. Sections of spleens from Cortisone-treated animals revealed smaller Malphigian bodies and fewer mononuclear and lymphocytic cells in the pulp. No abnormal cells nor evidence of any degeneration was noted. The spleens of the Cortisone-treated animals appeared similar to those of the controls in all respects with the exception of the changes noted above.

Summary. 1. Cortisone causes a significant reduction in the spleen size of mice. The average spleen size of the Cortisone-treated mice was 21% of the controls.

2. As little as 4 mg of Cortisone during a 2 day period produced this effect. Continued Cortisone treatment did not increase the original depletion, indicating that the effect is rapid and maximal.

3. Histologically there was a reduction in the size of the Malphigian bodies and in the number of cellular elements in the pulp in the Cortisone-treated group.

* The Cortisone for this study was allocated by The Committee on Cortisone of the National Research Council.

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TABLE I.

A. Cortisone Treated Dose: 1 mg 2 times daily 4 mice in each experiment.				B. Controls. No Cortisone Diluent: 2 times daily		
No. of days treated	Total dose per mouse, mg	Inj. per mouse	Avg wt per spleen, mg	No. of days treated	Inj. per mouse	Avg wt per spleen, mg
2	4	4	37	2	4	204
3	6	6	44	3	6	156
4	8	8	47	4	8	198
5	10	10	39	5	10	196
6	12	12	33	6	12	196
Avg wt per spleen 40 mg Range: 15 to 55 mg				Avg wt per spleen 190 mg Range: 53 to 208 mg		