

53 (2576)

The effect of double adrenalectomy on the development of rickets in rats.

By ALFRED F. HESS and H. L. JAFFE.

[From the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York, N. Y.]

It has been claimed by many investigators that there is an intimate association between the action of the adrenal glands and the development of rickets. Adrenalin has been given in this disorder by Stoeltzner¹ and "hormones" from the adrenal glands by Vollmer² and others who have claimed for them an important rôle in the pathogenesis and therapy of rickets. With these results in mind, we extirpated the adrenal glands in a considerable number of rats weighing from 100 to 150 gms. Complete bilateral adrenalectomy was performed by the lumbar route. These rats were then placed on the Sherman-Pappenheimer low phosphorus diet, or on a similar ration in which 5 percent of dried milk (Dryco) is substituted for an equal percentage of the flour. The latter is a much less defective ration than the former, and more suited for the nutrition of rats which have undergone a severe operation and evince a markedly lowered resistance.

No difference in regard to the development of rickets was found between the rats in which the adrenals had been removed and the control animals which had not been operated upon. Both groups regularly developed rickets of about the same degree as judged by the roentgenologic picture, the microscopic examination of the bones, and the percentage of inorganic phosphorus in the blood after a period of 26 to 42 days. We are of the opinion, therefore, that the functional activity of the adrenal glands is not an essential or important factor in the pathogenesis or cure of rickets.

¹ Stoeltzner, W., *Muench med. Woch.*, 1921, Nr. 46, 1481.

² Vollmer, H., *Jahrb. f. Kinderh.*, 1922, 1c, 133.