

dioxide failed to reduce the resistance to the disease in mice or rabbits, nor did the addition of mucin to the virus aid in using mice, or hypophysectomy in using rats.

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Cataract Formation in Rats Fed on a Diet Containing Galactose.*

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Mitchell and Dodge¹ report the occurrence of cataracts in rats fed on a high lactose diet. A similar investigation conducted in our laboratory corroborated their ocular findings. It was therefore considered of interest to determine whether cataracts could be provoked with galactose.

Eight female albino rats, 21 days old and weighing approximately 40 gm. were fed a diet consisting of 50% galactose, 20% cornstarch, 15% caseine, 9% crisco, 4% (Osborn and Mendel) salt mixture, and 2% cod liver oil. In addition, 5 drops of cod liver oil and 0.5 gm. dried yeast powder were fed separately each day.

The rats on this diet appeared well nourished and grew as well as the animals on the standard laboratory ration described by Bing and Smith.² In the course of 12 to 14 days, the young animals developed changes in the lens of the eye. The manifestation was bilateral. It was apparent from daily examination of the eyes that the lenticular changes developed in the nucleus of the lens.

Six animals were sacrificed for histological study and 2 were allowed to stay on the same diet. At autopsy no gross pathological changes were noted. The liver, kidney, adrenal, thyroid, and parathyroid glands were fixed for future histological study.

At the end of 7 weeks the remaining 2 animals have matured cataracts in both eyes and are still growing well. They show none of the deficiency manifestations noted in albino rats on diets lacking vitamin A or G. At no time during the experiment was a gastrointestinal disturbance noted.

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¹ Mitchell, H. S., and Dodge, W. M., Jr., *J. Nutrition*, 1935, **9**, 37.

² Smith, A. H., and Bing, F. C., *J. Nutrition*, 1928, **1**, 129.

Because of the nuclear changes in the lens of young animals it was important to determine the effect of a similar diet on older animals. Two albino rats, 64 days old and weighing 150 and 157 gm. respectively, and 2 animals 78 days old, weighing 144 and 159 gm. respectively, were placed on the aforementioned galactose diet. They continued to grow and maintain good health. Between the 18th and 23rd day, they developed changes in the lens. Daily examination of the eyes revealed opacities in the periphery of the lens. When allowed to continue on the diet, the nucleus of the lens also became opaque or cataractous. Two of the 4 animals were sacrificed for histological study of the eyes and the internal organs. On gross examination, no pathological changes were noted. A study of the urine output of the animals showed a marked reduction of Benedict's quantitative sugar reagent. It was calculated that 1 cc. of urine showed 52 mg. of galactose.³

A new group of animals have been placed on diets of varying amounts of galactose to determine whether the blood chemistry is similar to that found in rats on a high lactose diet. A more detailed histological study of the ocular changes is contemplated.

It is safe to speculate that galactose given in the diet interferes with the metabolism of the lens. The changes take place in the growing areas of the tissue—in the young albino rat the nucleus is altered whereas in the adult rat, the periphery of the lens is involved.

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Nature of Nitrogenous Constituents in Petroleum Ether Extract of Plasma.

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Neither the amino nor the non-amino nitrogen obtained in the petroleum ether extract of plasma by the technique of Kirk, Page, and Van Slyke¹ derives entirely from phosphatides. The N:P ratio for lecithin and cephalin is 1, while the Amino N:P ratios are 0 and 1 respectively. In a mixture of these phosphatides the N:P ratio would accordingly be 1, and the Amino N:P ratio between 0 and 1, according to the proportion of cephalin present. Petroleum ether

³ Roe, J. H., and Schwartzman, A. S., *Am. J. M. S.*, 1933, **186**, 455.

¹ Kirk, E., Page, I. H., and Van Slyke, D. D., *J. Biol. Chem.*, 1934, **106**, 203.