THE EFFECT OF EARLY VITAMIN DEPLETION ON THE CAPACITY OF ANIMALS TO GROW AND DEVELOP DURING LATER LIFE*

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Albino rats of the same sex and age and approximately the same weight were divided into groups of three. The first animal of each group was given a diet deficient in either vitamin A or B. The second animal which served as a control was given the same diet supplemented with the lacking vitamin but the amount of food allowed was restricted to that voluntarily consumed by the first animal. The third animal received the same diet as the second but was allowed to eat *ad libitum*. After a period of three or four weeks during which time the first two animals had lost considerable body weight the lacking vitamin was added to the diet of the first animal and all three animals were allowed to eat *ad libitum*. During the next few weeks the first two animals regained much of their lost weight and established a fairly constant rate of growth. All three animals were then transferred to a stock diet and observations made of their ability to grow, reproduce and survive unfavorable conditions during the next few months.

Graphic representation of the results not presented here bring out the fact that following a period of vitamin A or B depletion or simply forced fasting as in the case of the second animal in each group, the animals regained their lost weight at a rate greater than the rate of growth of normal animals. In most instances they attained the size and weight of normal animals of the same sex and age. This was particularly true of the males. The females were able to reproduce and raise their young although several of the depleted animals remained undersized and appeared especially susceptible to infections of the nasal tract. Several of the animals which had been depleted in vitamin A but which had been returned to a normal diet and were making consistent gains in weight died during a period of hot weather. Their controls survived.

The results indicate that in most instances, avitaminosis produced by withholding either vitamin A or B over a reasonable period of time has little influence on the capacity of animals to grow and develop during later life.

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