

supplemented with 15 μ g of pyridoxin while the florid dermatitis (acrodynia) characteristic of pyridoxin deficiency was readily produced on a diet supplemented with 80 mg of ethyl linoleate.

Summary. In an attempt to disclose the possibility of a "sparing action" of fatty acids on pyridoxin deficiency, varying levels of ethyl linoleate were fed in conjunction with a subnormal and an optimal level of pyridoxin; the "sparing action" was not observed.

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Failure to Cure or Prevent Graying of Rats with p-Amino Benzoic Acid.*

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Ansbacher¹ has reported that p-amino benzoic acid would cure the characteristic graying of areas of the pelage of rats maintained on a vitamin B deficient diet supplemented with thiamin hydrochloride, riboflavin, pyridoxin hydrochloride, calcium pantothenate, nicotinic acid, inositol and choline chloride. On the appearance of this paper a considerable number of characteristically grayed rats were available to us for experimentation. They had been raised on a somewhat different ration than that employed by Ansbacher, for they received a vitamin B deficient diet supplemented with only three substances, to wit: thiamin hydrochloride, riboflavin and pyridoxin hydrochloride. They were divided into four groups as follows:

(1) Controls: Animals continued on the same diet and supplements which had produced the graying.

(2) Animals receiving daily, in addition to the 3 supplements mentioned, 100 μ g pantothenic acid.

(3) Animals receiving daily, in addition to the 3 supplements mentioned, 3 mg of p-amino benzoic acid.

(4) Animals receiving daily, in addition to the 3 supplements mentioned, both 100 μ g of pantothenic acid and 3 mg of p-amino benzoic acid.

*Aided by grants from the Research Board and the Department of Agriculture of the University of California, the Rockefeller Foundation, and Merck and Co., Rahway, New Jersey. Assistance was rendered by the Works Projects Administration, Official Project No. 65-1-08-62, Unit A-5.

¹ Ansbacher, S., *Science*, 1941, **93**, 164.

After 25-30 days on the diet, a marked darkening of the fur amounting practically to a cure (only "stippling" remaining) was noted in the group supplemented with calcium pantothenate alone and with calcium pantothenate plus p-amino benzoic acid. The animals receiving p-amino benzoic acid alone were not altered in appearance and were indistinguishable from the controls. There was an evident stimulus to growth as well as cure of the graying in the animals supplemented with the calcium pantothenate alone or the pantothenate and p-amino benzoic acid. The p-amino benzoic acid alone, which had no influence on the graying, also evoked no growth response.

In spite of the negative curative efforts just enumerated, there remained the possibility that graying could be produced with the exact Ansbacher diet regardless of the fact that it was supplemented with 500 μ g of calcium pantothenate daily and that such graying could be prevented or cured with p-amino benzoic acid.

Accordingly 30 animals were divided into 3 groups of 10 each, as follows: (1) This group received the Ansbacher supplements. (2) Same as above; it was planned to give p-amino benzoic acid when graying developed. (3) This group received prophylactically the Ansbacher diet plus 3 mg p-amino benzoic acid.

After more than 2 months on this diet, no evidence of graying has appeared in any of these animals. In our experience animals deficient in pantothenic acid invariably show marked graying before the expiration of this time interval.

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Cellular Response to Insulin in Suprarenals of Pigeons.

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Several years ago this laboratory reported that the suprarenals of pigeons and doves respond by enlargement to single large doses or to repeated smaller doses of insulin.¹ It was found further that delayed or secondary effects of heavy doses of insulin sometimes included the production of abnormally high blood sugars. Histological examination of the suprarenals indicated that the enlarge-

¹ Riddle, O., Honeywell, H. E., and Fisher, W. S., *Am. J. Physiol.*, 1924, **67**, 333.