

before and after the experimental period. The clotting time of blood was not significantly altered.

Histologic Studies of Viscera. Twenty-three animals in all were autopsied and sections were prepared from the brain, heart, liver, and kidney for microscopic examination. Grossly no pathologic signs were observed.

Microscopic sections from the first generation animals appeared normal in character. The liver of some animals displayed a granularity of cytoplasm that was thought to be of little significance in connection with these experiments. Two animals in this group each having consumed 107 g of calcium arabonate in their food over a period of 215 days, were

autopsied. No pathological lesions were observed grossly or microscopically in these animals. Male and female animals from subsequent generations failed to demonstrate signs of pathologic changes.

Conclusions. The feeding of 5% calcium arabonate in the diet of the white rat for 3 generations does not significantly alter the growth pattern or fecundity. No significant pathological lesions were observed in the brain, heart, liver, or kidney of these animals. The blood clotting time was not influenced.

The calcium arabonate used in this investigation was kindly supplied by the Hoffmann LaRoche Co., Inc., of Nutley, N.J.

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Experimental Atherosclerosis. VII. Effect of Vitamin E.

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Dam and Kelman¹ showed that vitamin E exerts an effect on the plasma lipids of the vitamin E-deficient chick similar to that of lipocaic. Since considerable lipotropic activity was ascribed to this vitamin, studies were initiated to determine the effect of alpha-tocopherol on experimental atherosclerosis in rabbits. During the course of these experiments, Dam² published his work on cholesterol-fed rabbits and showed that vitamin E, fed as 10 mg% *d,l*-alpha-tocopherol acetate in the basal diet, failed to modify the deposition of cholesterol in the aorta of rabbits fed a diet of ground oats and carrots plus 1% cholesterol.

In the present studies, 22 female rabbits, 3 to 5 months old, were used. Each was fed a basal diet of Ralston Purina rabbit chow daily. Ten of these served as controls; 4 received 100 mg of *d,l*-alpha-tocopherol in olive oil (1 ml) intramuscularly 3 times weekly

for 12 weeks and 6 one gram of cholesterol added to chow 3 times weekly for the same time. Twelve rabbits received both the tocopherol (in olive or sesame oil) and cholesterol.

The whole blood cholesterol was determined at regular intervals by a modified Bloor method.³ At the end of the experimental period (12 weeks), the rabbits were sacrificed. The procedure used for killing the animal, removing the aorta and determining its cholesterol content has been described elsewhere.⁴ An alcohol-ether extract of the wet liver was also analyzed for cholesterol by Bloor's procedure.³

Results and Comment. Table I indicates that the parenteral administration of vitamin E augments appreciably the deposition of cholesterol in the aorta of cholesterol-fed rabbits. These results are at variance with those recently published by Dam² who did not ob-

¹ Dam, H., and Kelman, E. M., *Science*, 1942, **96**, 430.

² Dam, H., *J. Nutrition*, 1944, **28**, 289.

³ Bloor, W. R., and Knudson, A., *J. Biol. Chem.*, 1916, **27**, 107.

⁴ Bruger, M., and Fitz, F., *Arch. Path.*, 1938, **25**, 637.

TABLE I.
Effect of Vitamin E With and Without Feeding of Cholesterol on Cholesterol Content of the Blood, Aorta and Liver of Rabbits.

Experiment 3 times a week	No. of rabbits	Avg whole blood cholesterol (mg/100 ml)					Avg aorta cholesterol g/100 g dry wt	Avg liver cholesterol g/100 g wet wt
		0	2	4	8	12		
100 mg Vit. E intramuscu- larly	4	95	103	104	82	89	0.360	0.372
1 g cholesterol added to chow	6	101	123	194	329	325	0.897	0.743
100 mg Vit. E intramuscu- larly and 1 g cholesterol added to chow	12	103	105	285	392	448	2.165	0.794

serve this effect. The apparent discrepancy may be ascribed to the different routes and dosages employed in the two investigations. Dam fed vitamin E in concentrations of 100 mg of *d,l*-alpha-tocopherol per kg of oats-cholesterol mixture; the amount of this vitamin consumed by the rabbits in the experimental period of 85-97 days is not stated. Assuming a rabbit eats approximately 100 g of food per day, each rabbit in his series ingested about 900 mg of this vitamin in 13 weeks. In the present experiments, vitamin E was injected intramuscularly 3 times weekly for 12 weeks in doses of 100 mg per injection, *i.e.*, a total of 3600 mg of vitamin E per rabbit or about

four times the amount of vitamin E probably used by Dam.

Conclusion. In cholesterol-fed rabbits, the intramuscular administration of *d,l*-alpha-tocopherol (vitamin E) in olive oil or sesame oil augments appreciably the deposition of cholesterol in the aorta but increases only slightly the concentration of this lipid in whole blood and liver.

Mr. Samuel Member, B.S., and Miss Shirley Wechsler rendered valuable technical assistance. The vitamin E was generously supplied by Hoffmann-LaRoche, Inc., Nutley, N.J., through the courtesy of Dr. William T. Strauss.

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Inhibitory Effect of Glycogen upon Anaphylactic Shock in the Rabbit.

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In another paper from this laboratory¹ it was shown that hydatid fluid produces a sharp reduction in rabbit blood histamine and the leucocyte count. Since under urethane anesthesia, a similar decrease in blood histamine occurred, without leucopenia, the conclusion was drawn that both phenomena are independent. As platelets always disappeared from blood after the injection of hydatid fluid, we have concluded that the fall in blood histamine is more likely to depend on a decrease of platelets, additional evidence in favor of the

theory proposed by Minard² and Zon, Ceder, and Crigler³ that the main carriers of histamine in rabbit blood are the platelets. Submitting hydatid fluid to further fractionation, we have been able to verify that a macromolecular, polysaccharide fraction is the con-

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¹ Graña, A., and Rocha e Silva, M., in press.

² Minard, D., *Am. J. Physiol.*, 1941, **132**, 327.

³ Zon, L., Ceder, E. T., and Crigler, C. W., *Publ. Health Rep.*, 1939, **54**, 1978.