

Relation of Dietary Fats to Action of Thyroid Extract in Rats.

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In a previous paper,¹ the relation of some fats, namely, cod liver oil, olive oil, and cocoanut oil, to the action of thyroid extract in rats was studied. It was found that when normal rats are fed thyroid extract and olive oil, the latter at first decreases the rate at which weight is lost. However, if the olive oil is given after considerable loss of weight has occurred, the rate of loss of weight is augmented. Cod liver oil was found to be definitely antagonistic to the loss of weight when given at any period. Cocoanut oil showed no antagonistic action and increased weight loss when administered during any stage of hyperthyroidism. In this paper the results obtained from a study of 2 other dietary fats, namely, lard and crisco will be reported.

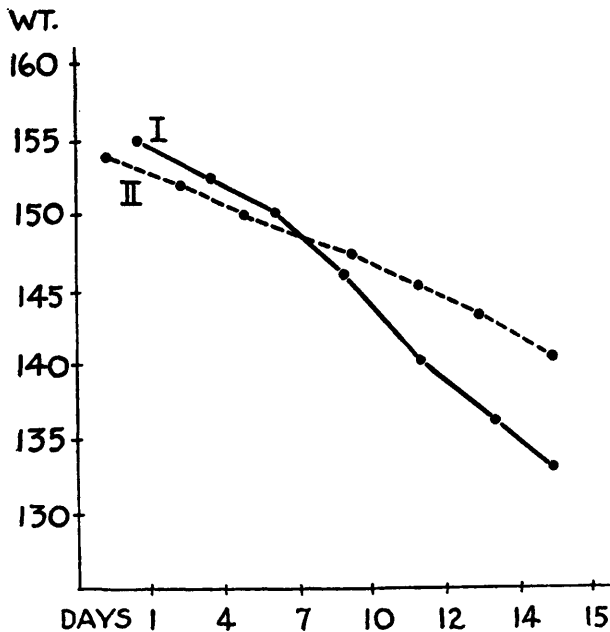


FIG. 1.

Simultaneous feeding of thyroid extract and lard. Curve I is the weight curve of the thyroid extract-fed control. Curve II of the litter mate receiving thyroid plus lard.

¹ Loumos, *Proc. Soc. Exp. Biol. and Med.*, 1934, **31**, 895.

The method used in the previous experiments was employed. The animals were fed the standard diet and kept in individual cages. One hundred milligrams of thyroid extract (U.S.P.) were added to the diet. The control rats received the diet plus thyroid extract, water being used to make a paste. The treated rats received the diet plus thyroid extract plus the fat to be tested, the caloric intake being kept constant in all experiments. Litter mates were distributed between the control and treated groups.

Thyroid extract and pure lard. Twenty-four "adult" rats (150-165 gm.) were used. The 12 rats which received the lard (3 cc. daily) plus thyroid extract, lost weight less rapidly during the first 2 weeks than the control rats. The action of lard was quite similar to olive oil. (Fig. 1.)

Thyroid extract and crisco. The experiment was repeated in 24 "adult" rats. The results were analogous to those obtained with coconut oil. The addition of this fat to the diet very definitely augmented the action of thyroid extract after the first few days. The characteristic preliminary protective effect of olive oil and pure lard was not observed. This is shown in Fig. 2.

(The significance of and the literature related to these observations were discussed in the previous paper.)

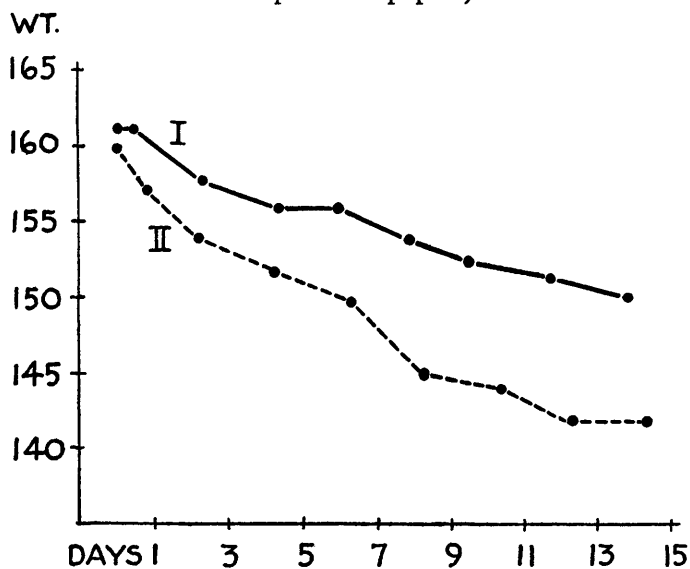


FIG. 2.

Simultaneous feeding of thyroid extract and crisco. Curve I is the weight curve of the thyroid extract-fed control. Curve II of the litter mate receiving thyroid plus crisco.

Conclusion. All fats do not bear the same relation to thyroid extract action. Some fats as cod liver oil, olive oil, lard, antagonize to different degrees the action of thyroid extract; others, as coconut oil, crisco, do not.

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Homologous (Resonance-like) Function in Supernumerary Fingers in a Human Case.

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In amphibia, a supernumerary muscle during spontaneous and reflex activity contracts simultaneously with the homologous normal muscle of the same name.¹ Since this is true for each individual muscle, a supernumerary limb (or limb fragment) always exhibits the same movements as the nearby normal limb (or corresponding limb fragment) of the same side.² From this phenomenon has been derived the concept of a "resonance-like" principle of communication in the nervous system.³ The experimental evidence has been confined, thus far, to the amphibia, where supernumerary limbs can be produced at will. In order to test the validity of the principle of homologous ("resonance-like") response in higher vertebrates and man, where the transplantation of supernumerary limbs has not yet been possible, we must avail ourselves of those cases in which congenital duplications of limbs or of some of their parts present us with a comparable situation. A human case favorable to such study has recently been described by Halverson and Amatruda,⁴ and was re-examined by the author as to its bearing on the problem of homologous function.

The case concerns a girl, L. S., 14 years of age, with congenital duplication of the left forearm and hand. While the radial part of the hand, including the thumb, is absent, its place is taken by a mirror image of the normal ulnar part. The resulting double formation is a symmetrical hand with what appears to be the original

¹ Weiss, P., *Pflüger's Arch. f. d. ges. Physiol.*, 1931, **226**, 600.

² Weiss, P., *Roux' Arch. f. Entwmech.*, 1924, **102**, 635.

³ Weiss, P., *Ergebn. d. Biol.*, 1928, **3**, 1. See summary in P. Weiss, *J. Comp. Neur.*, 1935, **61**, 135.

⁴ Halverson, H. M., and Amatruda, C. S., *J. General Psychol.*, 1935, **13**, 140.