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Effect of Morphine in Moderate Doses Upon Growth of the White Rat.

HAROLD B. MYERS AND JOHN B. FLYNN.

From the Department of Pharmacology, University of Oregon Medical School.

Sollmann¹ reported upon the growth of rats chronically poisoned with morphine, showing that a material increase in weight over that of control animals occurred for a time, followed by a sharp decline in the weight curve after 11 weeks of morphine feeding with as little as 2.5 mgm. of the drug per kilo weight. The rats fed morphine showed a preference for the poisoned food, eating more readily of it than of similar food not containing morphine. The primary increase in weight might be explained, in part at least, on the basis of greater food consumption.

Hildebrandt² reports little change in the weight of rats injected subcutaneously with morphine, during the first 2 weeks, succeeded after a period averaging 4 weeks with pronounced loss of weight. He began injections with 100 mgm. morphine, increasing the dose rapidly to amounts of 600 to 1000 mgm. per kilo. An increased metabolism was found in the morphine poisoned rats by Hildebrandt.

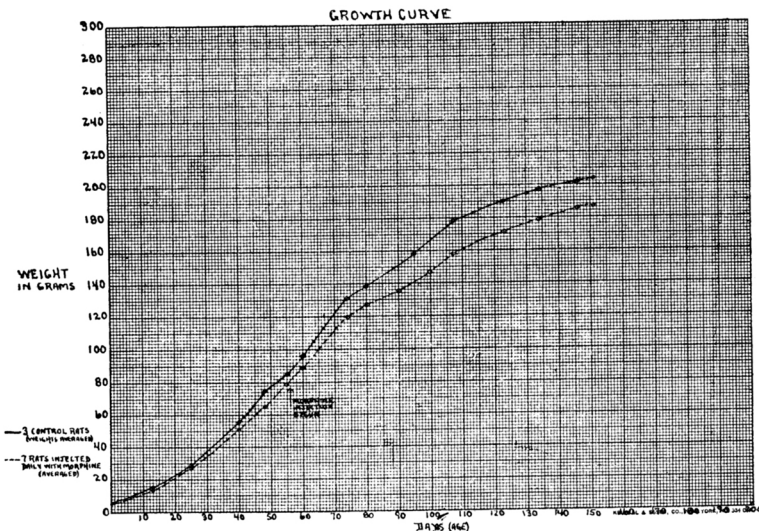


FIG. 1.

¹ Sollmann, T., *J. Pharm. Exp. Ther.*, 1924, xxiii, 449.

² Hildebrandt, F., *Arch. Exp. Path. Pharm.*, 1922, xcii, 68.

Two series of rats were injected daily with morphine, the first group consisting of young animals, the second of mature rats. Morphine injections were begun in the first group on the 56th day of life. Ten injected animals were divided into 5 pairs according to dosage, ranging from 1 to 5 mgm. per kilo. A moderate impairment in growth weight was observed, as shown in the average curve in Fig. 1.

The mature animals chronically poisoned with morphine in uniform dosage gradually increased to 10 mgm. per kilo showed a decreased increment in the weight curve quite analogous to that observed with the young rats. The average curves for the second series are shown in Fig. 2.

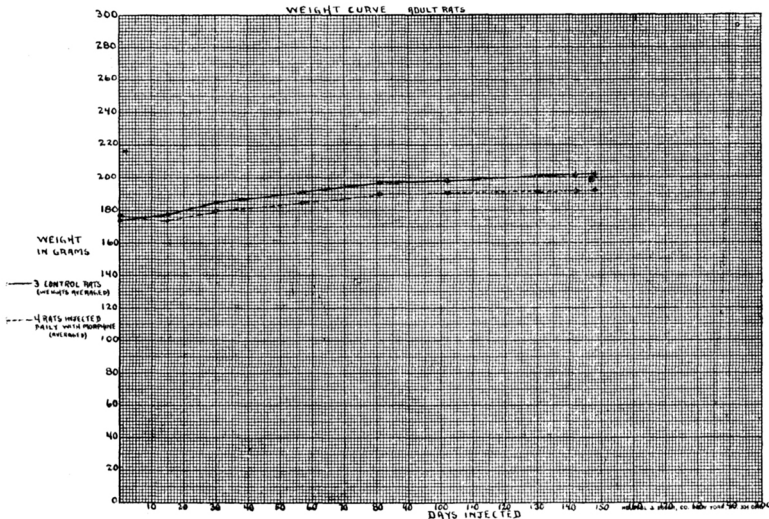


FIG. 2.

No difference in observable activity, desire for food, alimentary disturbances or other departures from the condition of the control animals was observed to account for the impaired weight curves in the morphine poisoned rats.

One may conclude that young rats injected daily with morphine in dosage of 1 to 5 mgm. and mature rats given up to 10 mgm. per kilo weight exhibit a moderate handicap in growth and mature weight, respectively.