

Relation of Size of Litter to AP Lactogen Content of Nursing Rabbits.*†

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Selye¹ advanced the theory that the maintenance of lactation was due to the act of nursing or milking. Ingelbrecht² further contributed to this theory. Reece and Turner^{3,4, 5} noted a marked decrease in the lactogen content of the AP in rats following the nursing stimuli either with or without milk removal. Holst and Turner⁶ confirmed these observations in both guinea pigs and rabbits. From these varied observations it appeared that the nervous stimulation of nursing caused the discharge of lactogen and in turn influenced the maintenance of lactation.

The question arose whether the extent or intensity of milking or nursing would affect the level of lactogen in the AP during the course of the lactation period. Specifically, it was interesting to determine the effect of the number of young in the litter nursing the mother upon the average lactogen content of the pituitary. If the number in the litter were reduced to 2, there would be present a number of mammary glands in which milk stagnation, resorption and involution would be in progress. Would such a condition tend to suppress the lactogen secretion of the AP?

Experimental. As a control, a group of 11 similar lactating rabbits (New Zealand White) were permitted to keep their entire litters of from 5 to 11 young. The experimental group of 10 lactating animals had their litters reduced to 2 on the fifth day postpartum. The mothers of both groups were sacrificed on the 20th day postpartum. The pituitaries were removed and assayed quantitatively for lactogen by the Reece-Turner method.⁵

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¹ Selye, H., *Am. J. Physiol.*, 1934, **107**, 535.

² Ingelbrecht, P., *Compt. rend. Soc. de Biol.*, 1935, **120**, 1369.

³ Reece, R. P., and Turner, C. W., *PROC. SOC. EXP. BIOL. AND MED.*, 1936, **35**, 367.

⁴ Reece, R. P., and Turner, C. W., *PROC. SOC. EXP. BIOL. AND MED.*, 1937, **35**, 621.

⁵ Reece, R. P., and Turner, C. W., *Mo. Agr. Exp. Sta. Res. Bul.* 266, 1937.

⁶ Holst, S., and Turner, C. W., *PROC. SOC. EXP. BIOL. AND MED.*, 1939, **42**, 479.

TABLE I.
Relation of Size of Litter to the AP Lactogen Content of Nursing Rabbits.

Group	No. of rabbits	Body wt avg, g	Pituitary wt avg, mg	Units per pituitary		Units per mg pituitary tissue		Units per 100 g body wt	
				R.-T.*	I.U.*	R.-T.	I.U.	R.-T.	I.U.
Control	11	3360	42.20	30.05	1.35	.71	.032	.89	.040
Exp.	10	3617	41.03	27.10	1.22	.66	.030	.75	.034

*1 International Unit = 22.2 Reece-Turner units (Meites, J., Bergman, A. J., and Turner, C. W., *Endocrinology*, 1941, **28**).

It will be seen that there is an average of 30.05 Reece-Turner units or 1.35 I.U. of lactogen per pituitary in the control rabbits which were allowed to keep their entire litter. Holst and Turner,⁶ using a similar group of 4 lactating rabbits with entire litters, found an average of 26.63 Reece-Turner units or 1.20 I.U. per pituitary. In the experimental group of rabbits, with litters uniformly reduced to 2 young, there was an average of 27.10 Reece-Turner units or 1.22 I.U. per pituitary. Since the difference between these 2 groups is too small to be significant, it is concluded that the size of the nursing litter does not influence the lactogen content of the pituitaries of nursing rabbits.

Summary. The lactogen content of the AP was quantitatively determined in 21 lactating rabbits killed on the 20th day postpartum. No significant difference was found in hormone content between the 11 does which were permitted to keep their entire litters of 5 to 11 young, and the 10 does whose litters were uniformly reduced to 2 on the 5th day postpartum.

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Effect of 1(—)-Tyrosine on Liver Glycogen of the Normal Rat.*

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In an earlier publication¹ the effect of feeding *dl*-phenylalanine and *dl*-tyrosine on the liver glycogen of rats was described. The former

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¹ Butts, J. S., Dunn, M. S., and Hallman, L. F., *J. Biol. Chem.*, 1938, **123**, 711.