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Effect of Hyperthyroidism on Sympathetic Nervous System.

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Much has been written concerning the influence of the sympathetic nervous system upon the thyroid; relatively little on the effect of excessive thyroid secretion upon the sympathetic. The general statement is made that "the thyroid gland appears to sensitize the whole or part of the sympathetic nervous system,"[1] and this is suggested as "the most plausible way of explaining" the retracted upper lids, the exophthalmos and the dilated pupils of exophthalmic goiter.

Most of the experiments reported in the literature indicate that in the state of hyperthyroidism, the sympathetic nervous system is more sensitive to adrenalin. In the course of a series of experiments undertaken for another purpose we have made a number of observations which apparently do not support this view. Nine normal dogs served as controls. Seven dogs were fed 10 gm. of desiccated thyroid daily for from 9 to 14 days immediately preceding the experiments. These animals became very excitable, suffered from diarrhea and lost from 0.61 to 5.0 kg. in weight, or from 3.5 to 32.6% of the original weight.

Under ether anesthesia, cannulæ were placed in the trachea and carotid artery and the femoral and jugular veins were exposed, in each animal. The reaction of each dog to one cc. of a fresh 1 to 30,000 solution of adrenalin was determined. The abdomen was then opened and a small rubber tube was placed in position for mechanically constricting the hepatic veins by the method described by Simonds and Brandes.[2] This tube was left loose so that no constriction of the hepatic veins took place at this time.

In Table I is shown the rise in blood pressure induced by corresponding doses of adrenalin in normal and hyperthyroid dogs.

Table II shows the fall in blood pressure in normal and hyperthyroid dogs induced by merely putting the rubber tube in position for constricting the hepatic veins.

From these experiments it appears (1) that the same dose of adrenalin induces approximately twice as great an average rise in blood pressure in normal dogs as in dogs in a state of chronic

1 Wright, Samson, *Applied Physiology*, 5th Ed., New York, 1934, p. 155.

2 Simonds and Brandes, *Am. J. Physiol.*, 1925, **72**, 201.

TABLE I.
Rise in Blood Pressure from Adrenalin.

Normal Dogs		Hyperthyroid Dogs	
mm. Hg.	%	mm. Hg.	%
24	20.7	16	12.3
23	38.3	25	17.2
40	30.8	7	5.3
10	7.2	20	24.4
23	13.4	7	6.8
34	31.5	12	15.8
20	15.9	6	8.8
39	26.4		
36	30.5		
Aver. 26.6	23.7	13.3	12.9

TABLE II.
Fall in Blood Pressure from Putting Constrictor in Place.

Normal Dogs		Hyperthyroid Dogs	
mm. Hg.	%	mm. Hg.	%
4	3.6	52	45.0
9	10.8	45	32.2
18	11.4	62	47.0
7	5.4	16	20.0
30	16.0	41	38.8
7	6.4	22	29.0
7	5.6	6	8.6
6	4.2		
10	9.1		
Aver. 11.0	8.1	34.9	31.5

hyperthyroidism; and (2) that merely putting a ligature in place for constricting the hepatic veins induces an average fall in blood pressure 3 times as great in hyperthyroid as in normal dogs.

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Effect of Oestrogenic Hormone Administration upon Nasal Mucous Membrane of the Monkey *(Macaca mulatta)*.

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Recently, in this laboratory, an opportunity[1] occurred to investigate the condition of the nasal mucosa in normal monkeys, both

[1] Bachman, C., Collip, J. B., and Selye, H., *Proc. Royal Soc.*, Series B, No. 802, 1935, **117**, 16; PROC. SOC. EXP. BIOL. AND MED., 1936, **33**, 549.