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Decreased Carbohydrate Appetite of Adrenalectomized Rats.*

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In previous experiments in the self-selection of foods it was reported that adrenalectomized rats had an increased appetite for a 3% solution of sodium chloride and tap water and a decreased appetite for a 40% dextrose solution, but no change in appetite for the stock diet (Richter¹). Although the results seemed to prove quite conclusively that the adrenalectomized rats had a decreased appetite for the carbohydrate (dextrose), the possibility remained that the rats may have taken less of the dextrose solution because of a markedly increased thirst for plain water. A definite answer to this question was obtained from experiments in which the dextrose was offered in solid form.

In these experiments the rats were kept separately in cages which contained one cup for the saltless stock diet and one for the dextrose and a graduated inverted 100 cc bottle for a 3% solution of sodium chloride and another for tap water. Readings were made daily of the intake from each container and weekly of body weight. Records were taken for 20 days before adrenalectomy and 70 days postoperatively. During the last 30 days the rats were treated with daily injections of desoxycorticosterone (Percorten).

Table I summarizes the results of the observations made on 5 rats. The average daily sodium chloride intake increased from 2.1 cc for the 10-day period immediately preceding adrenalectomy to 12.4 cc for the 30- to 40-day postoperative period; water intake increased from 18.9 cc to 23.0 cc (average daily intake of fluids corrected for evaporation of 1 cc); dextrose intake decreased from 5.8 g to 2.3 g. All 5 rats showed these changes. The intake of stock food increased in 3 rats and decreased in 2 rats.

Daily injections of Percorten (0.1 cc) started on the 40th postoperative day caused a prompt reversal of the appetites. The average sodium chloride intake decreased from 12.4 cc to 1.5 cc, approximately the preoperative level. Water intake decreased from an average of 23.0 cc to 17.4 cc; the average dextrose intake increased

* Dr. Ernst Oppenheimer of Ciba Pharmaceutical Products, Inc., Summit, New Jersey, kindly supplied the Percorten for these experiments.

¹ Richter, Curt P., *Endocrinology*, 1941, **29**, 115.

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TABLE I.
Dietary Selections of 5 Rats Before and After Adrenalectomy and During Percorten Treatment.

Rat No.	Age at operation	Sex	Sodium chloride, 3%		
			10-day period before operation, cc	30-40-day period after adrenalectomy, cc	Last 10-day period on Percorten, cc
1	155	♂	1.3	10.9	1.0
2	156	♂	2.4	11.7	0.5
3	156	♂	5.0	16.8	3.1
4	176	♂	1.2	8.6	1.2
5	160	♂	0.6	14.2	1.5
Avg	161		2.1	12.4	1.5

Water		
	cc	cc
1	20.0	22.4
2	15.0	21.1
3	16.3	25.0
4	19.8	20.7
5	23.2	25.7
Avg	18.9	23.0

Dextrose		
	g	g
1	4.4	1.8
2	8.4	3.0
3	5.8	1.8
4	4.7	1.8
5	5.5	3.3
Avg	5.8	2.3

Stock diet without added sodium chloride		
	g	g
1	7.3	10.4
2	7.5	10.8
3	9.7	10.6
4	10.0	9.3
5	12.4	5.9
Avg	9.4	9.4

from 2.3 g to 4.5 g. Four rats showed an increase in food intake, 1 a decrease.

Clinically an inverse relationship between salt and sugar appetite has also been noticed in a variety of conditions, most common of which is diabetes (Wilder²).

² Wilder, Russell M., *Clinical Diabetes Mellitus and Hyperinsulinism*, Philadelphia, W. B. Saunders Company, 1940.

Summary. 1. Five rats were given access to a 3% solution of sodium chloride, tap water, dry dextrose, and the saltless stock diet in 4 separate containers. 2. After adrenalectomy the rats greatly increased their intake of sodium chloride, decreased their intake of dextrose, but continued to eat about the same amount of saltless stock diet as before. They showed a small increase in water intake. 3. Daily treatment with desoxycorticosterone decreased the intake of sodium chloride solution and tap water to the normal levels and increased the dextrose intake nearly to the normal level. 4. Thus it was shown that adrenalectomized rats have a definitely decreased appetite for dextrose, as well as an increased appetite for sodium chloride.

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Armstrong Mouse Adapted Poliomyelitis Virus: Effect of pH of Inoculum, and of "Enteric Organism Filtrate."*

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PH OF THE INOCULUM. In reviewing the literature on experimental poliomyelitis, no reports have been found on the optimum pH of the inoculum for monkeys or other susceptible animals. Recently, Howitt noted that poliomyelitis virus suspended in broth of acid reaction appeared to accelerate the action of strains of poliomyelitis virus which were of low pathogenicity for monkeys.¹ At her suggestion, since we were working with the Armstrong adapted virus[†] in mice, experiments were made to determine definitely the possible effect of the pH of the medium in which the virus was suspended. By employing these inexpensive animals large numbers could be used and more conclusive results be obtained than by using monkeys.

Method. Virus suspensions were prepared by grinding a number of brain stems and cords from dying mice with alundum and saline to make a 20% suspension by weight. This was either employed immediately or in some cases was frozen in ampoules and stored

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¹ Howitt, B., personal communication.

[†] The virus was obtained originally from Dr. C. Armstrong.