

Distribution of Glycogen in the Dog's Heart.*

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Dogs free of disease and in a good state of nutrition were anesthetized by the intravenous injection of sodium phenobarbital solution (50 mg to the cc). From 100 to 150 mg per kilo induced surgical anesthesia in from 4 to 5 minutes. The chest was quickly opened with scissors and bone forceps, the heart removed while still beating and divided into the 2 atria, the 2 ventricles, and the septum. A piece of each was excised, dropped into a weighed hydrolyzing tube, and weighed. A hot hydrolyzing fluid (30% KOH) was then added. The whole procedure from opening the chest to this point consumed less than 5 minutes.

Hydrolysis of the tissue was carried out according to Pflüger's method as modified by Good, Kramer, and Somogyi.¹ We made 2 further slight modifications: (a) The tissue was weighed before the hydrolyzing fluid was added and (b) following acid hydrolysis of the glycogen the solution was made neutral to litmus by the addition of NaOH solution. Glucose was determined by the method described

TABLE I.
Glycogen in Normal Dog Hearts (mg per g of tissue calculated as glucose).

No.	Atria		Ventricles		Septum
	Right	Left	Right	Left	
1	4.44	5.53	6.98	4.29	6.63
2	6.67	9.37	10.42	6.71	7.15
3	5.50	8.29	12.44	9.28	10.16
4	5.60	6.84	7.78	6.57	5.98
5	6.13	7.42	6.95	5.75	4.85
6	5.90	8.89	10.33	7.50	7.19
7	5.27	5.05	5.82	4.30	4.70
8	4.65	5.01	6.03	6.81	6.63
9	5.85	8.44	10.15	5.87	5.88
10	3.45	8.02	4.16	4.38	4.35
11	6.76	8.03	12.94	8.13	10.68
12	6.58	11.14	12.58	10.80	7.44
Avg.	5.57	7.67	8.88	6.70	6.80

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¹ Good, C. A., Kramer, H., and Somogyi, Michael, *J. Biol. Chem.*, 1933, **100**, 485.

by Shaffer and Somogyi,² using the modified reagent No. 50 and the modified procedure suggested by Somogyi.³ Table I contains the results of these analyses.

Summary. While individual hearts show wide variations in the comparative contents of glycogen in the several parts, averages for the 12 hearts studied indicate that in a large series these differences would not be great. In general, the left atrium and the right ventricle show slightly higher percentages than do the remaining parts of the heart. Whether this greater content would hold for a larger series and possible structural or functional significance of such differences are matters entirely speculative in nature.

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Effect of Parathyroid Hormone on Diffusion of Calcium, Magnesium and Phosphorus into the Peritoneum. I.

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Eight adult dogs were given intraperitoneal injections of 2.5% dextrose and 0.9% NaCl solution in the dosage of 100 cc per kg. After 16 hours, 20 cc of blood were withdrawn from the femoral artery and 20 cc of fluid from the peritoneum. Five hundred units of parathyroid hormone* were then injected intramuscularly. Similar blood and fluid samples were obtained hourly for 8 hours and were examined for Ca, Mg and inorganic P content.

Magnesium. The control values for serum Mg were 2.1-3.26 mg %. In 6 cases parathyroid administration was followed by a fall in serum Mg, the maximum decrease being 0.35-0.8 mg % at 1-6 hours, with a tendency to return to normal at 3-8 hours. In one case the serum Mg increased (0.3 mg). No significant change occurred in one case.

The control values for peritoneal fluid Mg were 1.75-2.0 mg %. These increased in each instance, the maximum increase being 0.17-1.02 mg %, the peak occurring at 5-8 hours. The control ratio of fluid to serum Mg was 57-87%, the mean being 75%. This ratio rose in each case, the maximum rise being 12-46% at 5-7 hours.

² Shaffer, Phillip A., and Somogyi, Michael, *J. Biol. Chem.*, 1933, **100**, 695.

³ Somogyi, Michael, *J. Biol. Chem.*, 1937, **117**, 771.

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