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The carbon dioxide and oxygen content of the blood after ligation of the abdominal aorta and the inferior vena cava.

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Respiration experiments on normal and depancreatized anaesthetized animals after ligation of the abdominal aorta and the inferior vena cava[1] and on normal animals after exclusion of the liver by joining the portal vein to the inferior vena cava[2] show an increase in the respiratory quotient, which is interpreted by the v. Noorden school to demonstrate the combustion of sugar in the depancreatized animal and the dependence of the normal animal upon the liver for its ability to burn protein and fat. These experiments, however, were not accompanied by analyses of the blood gases. It is possible that the higher respiratory quotient after shortening of the circulating stream might be due to an interference with the oxygen absorption (passive congestion of the lungs) or to increased elimination of carbon dioxide by more rapid circulation of the blood through the lungs.

Preliminary to some respiration experiments on depancreatized dogs in which we are seeking the explanation of the altered respiratory quotient, we have made a number of experiments on normal dogs analyzing the carotid blood before and after simultaneous clamping of the abdominal aorta and the inferior vena cava. The results follow:

Date.	Dog No.	Wt., kg.m.	Pulse per min.		Resp. per min.		O_2 per cent. in blood.		CO_2 per cent. in blood.		Clamps on.
			Normal.	Clamped.	Normal.	Clamped.	Normal.	Clamped.	Normal.	Clamped.	
1913											
3/22	I	8	108	140	36	30	14.73	14.83	43.16	22.53	30 min.
4/10	II	12	66	102	35	12	16.40	16.45	38.35	37.47	23 min.
4/19	III	9	132	121	66	77	18.88	16.39	39.42	24.28	1 hr.
5/10	IV	10	108	120	33	15	12.62	10.90	57.06	34.16	1 hr.

[1] Porjes, O., *Biochem. Zeitschr.*, 1910, XXVII, p. 131; Porjes and Salomon, *idem*, p. 143.

[2] Verzar, *idem*, 1912, XXXIV, p. 52.

Chloretone anaesthesia was used. In the case of the last dog which eliminated about 80 c.c. of CO_2 per minute, it may be estimated that a reduction from 57 to 34 per cent. would remove from the body in the course of one hour, about 800 c.c. of CO_2 or enough to raise the R. Q. from 0.75 to 0.88. It cannot be assumed as Porges has done that the blood gases, under the circumstances, would reach an equilibrium within 10–15 minutes, for with the circulation diminished to one half and the heart beating at its normal rate, or higher, the blood would pour through the lungs twice as often and would continue to lose carbon dioxide until the tension in all the tissues became very much reduced.

In dog II the compensation in the rate of respiration was almost sufficient to prevent loss of CO_2.

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On the influence of certain diets upon the growth of experimental tumors.

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The study of the experimental tumors of animals has brought forward numerous interesting observations upon the variation in susceptibility of animals of the same species obtained from different sources, to a given tumor strain, as well as variation in the rate of growth of the transplanted tumors. We have undertaken the study of the relation of certain diets to tumor growth and wish to briefly report the results obtained with a diet based upon the work of Mendel and Osborne. In their studies of the effect of feeding with pure vegetable proteins they encountered numerous combinations which effectively prevented growth, the animal meanwhile appearing in good health. This seemed to us to offer a most interesting opportunity to study the behavior of the tumor cell under these conditions; in other words, regardless of whatever the cause of cancer may be, can an inoculable tumor grow in a host which is apparently incapable of normal cell growth?

This report, while based on a small series as tumor experiments go, shows a result so uniform and striking that its con-