of the active cation transport system in intact red cells with those of the ATP-hydrolysing system in fragment red-cell membranes[5].

The parallelism of the effects of ouabain and sodium on the maintenance of the tissue-potassium concentration and on the Qo_2 therefore suggests the tentative conclusion that an ATP-hydrolysing system associated with the active transport of cations may act as a pace-maker for about half the respiration of brain and kidney cortex.

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Effect of Thyroxine and 2,4-Dinitrophenol on the Rate of Utilization of Glucose

It has long been recognized that 2,4-dinitrophenol increases oxidative metabolism. The increase of oxygen consumption after the addition of 2,4-dinitrophenol (DNP) is explained as being a result of dissociation between oxidative and phosphorylative processes. Similarly, thyroxine accelerates oxidation by uncoupling an oxidative phosphorylation. But DNP does not prevent the phenomena of hypothyroidism other than basal metabolism[1], and fails to change lipid metabolism[1,2] and nitrogen excretion, the effects of which are known to follow thyroxine administration[1]. Therefore, it was interesting to compare the effects of these agents on carbohydrate metabolism.

In the present experiments I studied the influences of DNP and thyroxine on the rate of utilization of glucose in normal and thyroidectomized rabbits (120 days after operation). The utilization of glucose was determined from the rapid intravenous glucose tolerance test (GTT) which was performed 4 hr. following the subcutaneous administration of DNP (7·5 mgm. rabbit) or thyroxine (0·25 mgm./kgm. body-weight). Immediately after a fasting blood sample of venous blood had been obtained from the vein of the ear, 0·5 gm./kgm. body-weight of glucose was injected intravenously during 10 ± 5 sec. The blood samples for estimation of blood glucose were drawn from the vein of the other ear at intervals of 10, 20, 30, 45, 60, 75, 90 min. after the end of the injection of sugar. From this intravenous GTT the rate of utilization of glucose may be expressed by determining the assimilation coefficient of glucose (K) as was described in previous papers[3,4].

The results of my experiments are summarized in Table 1. 4 hr. after the administration of thyroxine and DNP the fasting blood-sugar levels were slightly increased both in normal and thyroidectomized rabbits. In intravenous GTT it was observed that thyroxine accelerated the utilization of glucose in both groups of experimental animals as early as 4 hr. after administration. Similarly, DNP increases the rate of utilization of glucose in normal and thyroidectomized rabbits. The results of these observations suggest that the influence of thyroxine and DNP on carbohydrate metabolism is similar, in contrast to their effects on lipid or protein metabolism. Both agents accelerate the rate of utilization of glucose, but the precise mechanism of this action is not clear. The increase in the assimilation coefficient of glucose after the addition of DNP may be explained by insulin mobilization (probably due to its hyperglycæmic effect), as suggested by Hetényi *et al.*[5], or by the acceleration of the transfer of sugar across the muscle cell-membrane as observed by Randle *et al.*[6,7]. Further, it is interesting to note that thyroxine accelerates the utilization of glucose as early as 4 hr. following its injection, without any protracted latent period, which is in agreement with the experiments of Christophe and Mayer performed on rats[8].

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Determination of Spontaneous Plasma Fibrinolysis by a Practical Procedure

In a recent review I analysed present aspects and principles of the various methods that are generally used for assessing the phenomenon of proteolysis in the blood. The extensive significance of *in vitro* determination of whole plasma spontaneous fibrinolysis, which expresses a more faithful and exact picture of the evolution of the fibrinolytic mechanism in the circulating blood, was emphasized[1].

As is known, the determination of the spontaneous fibrinolysis of the whole blood or of plasma in physiological conditions takes a long time[2,3]. Repeated attempts to shorten the time of lysis by a strong dilution of plasma[4] or the carrying out of the low-

Table 1. Values of Fasting Blood-Sugar Levels (G) and of Assimilation Coefficient of Glucose (K) in Rabbits before (G_1,K_1) and after Thyroxine (G_2,K_2) or DNP (G_3,K_3) Administration

	No.	G_1	K_1	K_2	G_2	K_3	G_3
Normal rabbits	6	130 ± 3	1·08 ± 0·04	1·34 ± 0·07*	145 ± 10	1·52 ± 0·19*	151 ± 3†
Thyroidectomized rabbits	5	115 ± 7	0·86 ± 0·03	1·33 ± 0·08†	139 ± 16	1·63 ± 0·13†	126 ± 8

Statistical significance: * = $P < 0·05$; † = $P < 0·01$.