TABLE 1

CLEARING OF DILUTED MILK DURING INCUBATION WITH HEPARINIZED PLASMA

Min of incubation	Turbidity reading	
	Control mixture (nonheparinized plasma and diluted milk)	Test mixture (Heparinized plasma and diluted milk)
1	103	94
15	102	85
30	101	80
45	103	80
60	103	77
120	105	74

The procedure consists of a quantitative determination by turbidimetry of the decrease in turbidity obtained in milk when it is incubated with heparinized plasma. After a 12-hr fast a 15-ml control specimen of venous blood is obtained from the subject, and 100 mg of a solution of the sodium salt of heparin is given intravenously. No food is taken during the test period. Fifteen ml of venous blood is then collected at intervals that vary from 1 to 120 min after the administration of heparin. Each specimen is collected in an oxalated tube containing the evaporated residue of 1.5 ml 1.2% ammonium oxalate and 0.8% potassium oxalate. The specimens are centrifuged at 2000 rpm for 10 min, and the supernatant plasma is pipetted off. Three ml of each plasma specimen, including the control, are then thoroughly mixed with 1 ml of diluted fresh homogenized grade A milk previously diluted 1: 60 with physiologic saline and preheated to 37° C. The mixture of plasma and diluted milk is then incubated in a water bath at 37° C. Turbidity readings are made immediately after mixing and at various intervals during the next 24 hr in a photoelectric colorimeter, using microtubes. Distilled water is used as a blank, and a red filter (640–700 μ) is used to minimize serum color or slight degrees of hemolysis. We have expressed our results in terms of the direct scale readings[2] obtained in a Klett-Summerson photoelectric colorimeter.

Ten physically normal male psychiatric patients who varied in age from 18 to 30 years were tested. All showed the presence of lipid clearing factor by a variable decrease in turbidity of the diluted milk when it was incubated with heparinized plasma. Clearing activity could be demonstrated in plasma withdrawn as soon as 1 min after the intravenous injection of heparin. In general, maximum clearing activity was noted in plasma specimens withdrawn approximately 10 min after the administration of heparin. Following the incubation of the plasma and diluted milk mixture there was a gradual decrease in turbidity, with a maximum of clearing usually after 2 hr incubation. There was no significant change in the turbidity of the control specimens throughout the incubation. A typical assay of a plasma specimen collected 10 min after the administration of heparin is presented in Table 1.

A comparison of clearing factor activity in the 10 tested subjects revealed variable degrees of activity. In 2 subjects clearing activity was not noted until 1 and 2 hr, respectively, after the injection of heparin. In the remaining 8 individuals the presence of clearing factor was readily demonstrable in plasma specimens obtained 10 min after heparin injection. After 2 hr incubation turbidity decreased 5, 7, 13, 13, 14, 20, 21, and 28 scale units, respectively, in the plasma specimens of these subjects.

The results suggest that the procedure may be standardized as a useful clinical tool in evaluating the possible role of clearing factor precursor in the etiology of atherosclerosis. The study described here is being extended in an effort further to simplify the procedure and possibly to find other lipoprotein substances that may serve as more sensitive indicators of the presence of lipid clearing factor in plasma.

[2] Optical density values may be obtained by multiplying the direct scale readings by 0.002.

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Manuscript received September 11, 1952.

Radioactive Iodine as an Indicator of the Uptake of Iodine by the Liver, Gastrocnemius, and Thyroid of *Rana pipiens*

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Iodine metabolism in body tissues has long been a problem, and until recently the only available methods for following the fate of iodine in the body were chemical determinations or biological assay of tissues. Today, the approach to the problem of iodine metabolism in body tissues can be simplified by the use of the radioactive isotope of iodine (I^{131}), which has a half-life of 8 days. With radioactive iodine tracer techniques it is possible to label the circulating iodine in the organs without altering the amount of iodine already present, since samples of radioactive iodine can be prepared practically free of iodine.

For the most part, such studies have dealt with the accumulation of iodine in the thyroid gland of warm-blooded animals. The present paper, on the contrary, is a report of experiments carried out on the frog to determine the concentration of iodine in hepatic and striated muscle tissue (gastrocnemius), as well as in thyroid tissue.

In these experiments male and female frogs (*Rana pipiens*) of 17–23 g body weight were kept in a

TABLE 1*

Frogs	Sex	Av wt of frogs	Av wt of thyroids	Av wt of livers	Av wt of liver slices	Av wt of gastrocnemius muscles	Av wt of muscle slices	Av count of thyroids	Av count of liver slices	Av count of muscle slices
8	♂	20.3	0.00036	0.91	0.00183	0.72	0.00200	1712	808	475
4	♀	19.9	0.00034	0.93	0.00201	0.67	0.00216	1720	832	431

* The mean values in grams for the weight of the frogs, of the thyroid glands, livers, liver slices, gastrocnemius muscles, and muscle slices of separate groups of male and female frogs; also the mean values for radioactivity counts/2-min interval for the thyroids, liver slices, and muscle slices.

screened cage under dripping water in an air-conditioned room at 5° C. Groups of animals were given intraperitoneal injections of approximately 22.5 μc of carrier-free radioactive iodine in a sodium bisulfite solution. The animals were sacrificed 4 hr after the injection of the radioactive iodine. The thyroids were removed, rinsed in frog Ringer's solution, blotted, weighed, and pressed flat on clean microscope slides; radioactivity counts were made for 2 min with a Geiger-Müller counter. Next, the liver and gastrocnemius muscles were removed from each animal, rinsed in frog Ringer's solution, blotted, and weighed. Thin slices of liver and striated muscle tissue were made with a razor blade, weighed, and prepared for reading as were the thyroids.

The results of these experiments are shown in Table 1. On the basis of recovery of radioactivity, Table 1 shows that the radioactive iodine uptake of the thyroid glands is greater than that of the liver slices, and the uptake of the liver slices is greater than that of the slices of striated muscle.

The weight of the thyroid glands averaged 0.00035 g, the liver slices 0.00192 g, and the striated muscle slices 0.00208 g. The average amount of radioactivity given off for the thyroids was 1716 counts/2 min, for the liver slices 820 counts/2 min, and for the striated muscle slices 453 counts/2 min. Although the average weight of the liver slices is 5.48 times that of the thyroids, and the average weight of the striated muscle slices is 5.94 times that of the thyroids, the thyroids gave off 2.09 times as much radioactivity as the liver slices and 3.78 times as much radioactivity as the striated muscle slices. A comparison of the liver and striated muscle slices shows that, on the average, the muscle slices are 1.08 times as heavy as the liver slices, but the average amount of radioactivity given off by the liver slices is 1.81 times the average for the muscle slices.

The findings reported here indicate that there is a differential iodine uptake by thyroid, liver, and striated muscle tissue of the frog. These findings for thyroid and liver tissue are similar to those of Perlman, Chaikoff, and Morton (*1*) for the rat, and of Chaikoff and Taurog (*2*) for surviving slices of thyroid and liver tissue of sheep. Similar differences between the activities of thyroid and other tissues have been observed by Hertz, Roberts, and Evans (*3*) and by Salter (*4*).

The findings of these experiments may be summarized by stating that the iodine-concentration capacity of thyroid, liver, and striated muscle tissue of the frog, as measured by the uptake of radioactive iodine, showed that the frog's thyroid tissue had the greatest avidity for iodine, liver and striated muscle tissue following in that order.

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Manuscript received September 4, 1952.

Comments and Communications

More on Editorial Prerogatives

(*The following communications are published without editorial alteration.*)

Please refer to "Editorial Prerogatives" (Science, **116** [693–695]).

Now that all other cards probably are down, I'm ready to toss in mine too. Coming this late, my thought will have to make its way strictly on merit, in competition with ideas presumably already formed.

When complaints like this author's are milder, my experience has been that the author has a limited command of English, has not been exposed soon enough in his life to competent editorial work, thinks that the method of expression to which he has accustomed himself is the only possible correct method, and resents any change as if the change were translation into a foreign language. To such an author, an extensive vocabulary and a method of expression different from his own actually are a foreign language.

The rumpus that this author has kicked up over picayune matters, however, suggests in both degree and time element that a good course may be to forget him and concentrate on presenting the following ideas:

Every journal and every printing house has its