

fusions were well tolerated. Serum levels of estrogen as determined by bioassay varying from 17.6 to 48 μg were obtained and only negligible quantities of estrogen remained in the blood after 8 hours.

The feasibility of rapidly inducing a high

serum estrogen level by intravenous infusion is demonstrated. The clinical usefulness of this form of estrogen therapy in carcinoma of the breast and prostate remains to be evaluated.

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Blood Pressure in the Rat.* (17374)

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The work of Kersten *et al.* on the indirect measurement of blood pressure in the rat^{1,2} will increase the use of rats for studying various phases of the hypertension problem. If rats of different ages are to be used it should be remembered that "a tendency to a slight rise in blood pressure with age" has been noted.³ It was the scope of the following investigations to establish accurate data which the literature does not provide.

Rats of the Long-Evans strain were kept on Friskies and water. The blood pressure was measured in unanesthetized, unheated animals with the foot method described by Kersten, Brosene, Ablondi and SubbaRow.¹ Readings obtained about 1 minute apart in the same animal rarely differed more than ± 3 mm Hg.

Fig. 1 shows that the systolic blood pres-

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¹ Kersten, H., Brosene, W. G., Jr., Ablondi, F., and SubbaRow, Y., *J. Lab. and Clin. Med.*, 1947, **32**, 1090.

² Ablondi, F., SubbaRow, Y., Lipchuck, L., and Personens, G., *J. Lab. and Clin. Med.*, 1947, **32**, 1099.

³ Griffin, John A., and Parris, E. J., *The Rat in Laboratory Investigation*, J. B. Lippincott Co., Philadelphia-Montreal-London, 1942, p. 286.

† An apparatus was obtained from the Lederle Laboratories Division, American Cyanamid Company, through the courtesy of the late Dr. Y. SubbaRow.

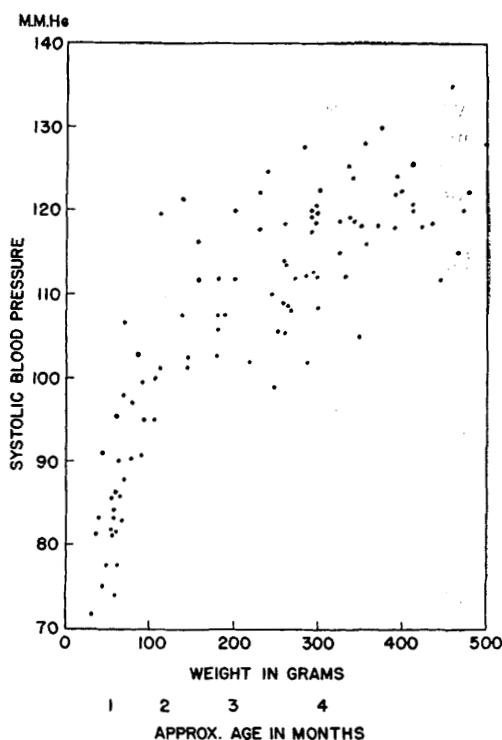


FIG. 1.

Systolic blood pressure in rats of different weights and ages.

sure increases with age in the growing rat. Within the first 2 months up to a weight of 150 g the pressure increases rapidly. A slower, but still progressive rise is noted in rats weighing 200 to 350 g.

The age conditioned differences in the sys-

tolic blood pressure in the rat are of a magnitude which deserves attention. A pressure of 120 mm Hg, normal for a rat weighing 300 to 500 g, is definitely hypertensive for a rat weighing less than 100 g.

The blood pressure in man increases in the corresponding age groups of infancy and early childhood in a similar fashion.^{4,5} The consid-

eration of this fact is common practice in pediatric experience.

Summary. The systolic blood pressure has been recorded in 100 unanesthetized, unheated rats of various ages. It increases with weight and age and normal values were established.

⁴ Graham, Archibald W., Hines, Edgar A., Jr., and Gage, Robert P., *Am. J. Dis. Child.*, 1945, **69**, 203.

⁵ Downing, Elizabeth M., *Am. J. Dis. Child.*, 1947, **73**, 293.

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Budding of Thrombocytes from Megakaryocytes.* (17375)

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It is now generally agreed that the megakaryocyte is the source of the thrombocyte.¹ Dameshek and Miller² discuss the changes that occur in the marrow in idiopathic thrombocytopenic purpura. The latter authors found that, in the marrows of 10 normal subjects, an average of 68.6% of the megakaryocytes showed thrombocyte budding. Cartwright and associates³ found thrombocyte budding in 75% of megakaryocytes in normal marrows. In a recent study of bone marrow films made by the citrate technic, as described below, from 12 patients with idiopathic thrombocytopenic purpura before operation, it was found that 0.14% of the megakaryocytes showed evidence of thrombocyte budding. Eighteen postoperative films, made at varying intervals after operation on 10 of these patients showed thrombocyte budding from 9.2% of megakaryocytes. When the bone marrows of 7 normal control patients

without hematological abnormality were examined, however, thrombocyte budding was seen in only 0.43% of the megakaryocytes. This discrepancy in the results obtained in the normal suggested that the differences might be due to variations in the technic used. Since the routine method for making bone marrow films in this Institute involves the use of a dry syringe, further investigations were carried out on material obtained here in this way.

Methods. Citrate method. The puncture of the sternum was performed with a Salah needle introduced at the level of the third or fourth intercostal space. The syringe and needle were first washed out with sterile 3.8% solution of sodium citrate, and aspirated material, usually 1 cc or less, was expressed on a watch glass which also had been rinsed with sodium citrate. Flecks of marrow were gently lifted with tweezers, and placed on carefully cleaned glass slides. They were then spread by means of another glass slide which was laid on top of the marrow flecks and slid rapidly across the surface of the first slide. The marrow films were dried in air. In the investigations referred to above, May-Grunwald-Giemsa stain had been used. In the investigations described below, Wright's stain was used, and the technic differed in that, following aspiration with a dry syringe, a sec-

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¹ Tocantins, L. M., *Medicine*, 1938, **17**, 155.

² Dameshek, W., and Miller, E. B., *Blood*, 1946, **1**, 27.

³ Cartwright, G. E., Chung, Hui-Lan, and Chang, An, *Blood*, 1948, **3**, 249.