

4587

Basal Metabolic Rate in Advanced Age.

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The number of measurements which have been recorded of the basal metabolic rate in persons over 70 is small. Magnus-Levy and Falk measured 5 men of the ages of 64 to 78 and 7 women of the ages of 71 to 86. Aub and DuBois examined 6 old men with obvious stigmata of senility. With all these cases there was a definite lowering of the basal metabolic rate below the predicted. In one case in the Aub and DuBois series the rate was —30.

In contrast to these stand the measurements by Dr. Stoner made for Professor F. G. Benedict on Professor Keen, aged 89. With the 3 standard methods of prediction, Professor Keen's basal metabolism was above the predicted. With the Harris-Benedict method the basal metabolic rate was +26.2. Benedict is inclined to believe that this represents more accurately the physical condition of Dr. Keen than do the other two.

I have examined the basal metabolic rate of 4 persons whose ages range from 72 to 89. The subjects were 3 men of great mental and physical vigor, one of these was a person standing 6 ft. 1 inch in height. The woman examined is unusually small, who has never had any illness during 35 years service in my family, is physically most active and mentally highly acute.

TABLE I.

Subject	Age	Weight	Height	Harris-Benedict	Aub & DuBois	Dreyer
		kgm.	cm.	%	%	%
W. W. K.	89	60.3	154	+26.2	+2.9	+1.1
J. C-B.	89	58.8	172	+15	—5.7	—2.7
A. C. H.	74	71.3	178	+ 5	—5.5	+1
E. W. H.	72	59.4	186	+ 5	—9.2	+2.5
S. K.	79	41.6	149	+ 9	+3.2	+6.0

Note. The Aub and DuBois values for W. W. K. and J. C-B. are based on 34.5 cal. per M² per hr. and for S. K. on 35.5 less 7% = 33.5 cal. per M² per hr.

In the case of J. C-B. 6 measurements were made, 2 measurements per day being made on 3 different days. In the case of S. K. 2 measurements were made on each of 2 successive days. In the other cases 2 measurements were made on a single day. The meas-

urements were made with the Benedict Student Apparatus in the strictly post absorptive condition. In no case was a heavy meal taken the previous night. The subjects were examined in their own homes after an undisturbed night's rest. The position adopted was the recumbent one. For the purposes of comparison I have entered the results on Professor W. W. Keen. In none of these cases is there any obvious evidence of a decreased metabolic rate as the result of advanced age. The single prediction which falls much below the centre point is that of E. W. H., whose rate is -9.2 by Aub and DuBois' prediction. This may be accounted for by his unusual configuration owing to his great height and slight weight.

In Aub and DuBois' discussion, the lowering of the metabolic rate is assumed on the basis of 39.7 calories per M^2 per hour, a value which is the average for subjects between the ages of 20 and 50. The average lowering was 12%. If one were to calculate Professor Keen's heat exchange on this basis he would give -10.6 and J. C-B. -17.6% .

With these subjects the exchange averages about 2 cal. per M^2 per hour lower than the men of Aub and DuBois' series. This may be due partly to the method of measurement and partly to the very complete absence of movement which was obtained with my exceptionally intelligent and co-operating group. The very small and active female subject gives a value close to that obtained with Professor Keen.

The results obtained do not afford any ground for assuming that the slope of the curve of Aub and DuBois for subjects between 20 and 70 years of age changes after the latter age is reached.

4588

Spectrographic Examination of Pellagrins' Sera.

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That exposure to direct sunlight produces or intensifies the erythematous eruptions on the exposed parts of the bodies of pellagrins is an opinion of many observers; the underlying cause of this apparent photo-sensitization is, however, entirely obscure. The auto-experiment of Meyer-Betz¹ with hematoporphyrin and the skin manifesta-

¹ Meyer-Betz, F., *Deutsches Archiv. f. Klin. Med.*, 1913, cxii, 476.