

in the blood concentration of co-carboxylase. However, while in younger patients the blood DPT rises from 5.1  $\mu\text{g}\%$  to 7.5  $\mu\text{g}\%$  (mean values), the last amount being equal to that which may be found in normal conditions, in aged diabetics the response is significantly less marked and is insufficient to bring the blood cocarboxylase content back to normal values.

These results prove that in young diabetic patients the effect of the administration of insulin is quantitatively different from that which may be obtained in aged patients.

It is suggested that in senile diabetes anti-insulinic factors are particularly active and interfere with the action of endogenous insulin in the same way as they inhibit or suppress that of the administered insulin. This confirms the smaller efficiency of insulin in senile diabetes at the level of metabolic processes directly affected by this hormone.

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*Institute of Chemical Biology\**,  
*Institute of Human Physiology\*\**,  
*University of Rome (Italy)*

DANTE GIARNIERI  
VITTORIO LUMIA

<sup>1</sup> D. GIARNIERI AND P. L. IPATA, *Acta Vitaminol.*, 1 (1957) 33.

<sup>2</sup> G. PELLEGRINI in *Atti 59° Congr. Soc. ital. med. int.*, Palermo, 1958, p. 91.

<sup>3</sup> N. SILIPRANDI AND R. TRAVERSO, *Farmaco, Ed. sci.*, 5 (1950) 655.

<sup>4</sup> N. SILIPRANDI AND F. NAVAZIO, *Acta Med. Scand.*, 142 (1952) 11.

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\* Director: Prof. A. ROSSI FANELLI.

\*\* Director: Prof. G. MARTINO.

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### Inorganic phosphate and alkaline phosphatase determination according to Raabe

Some years ago RAABE<sup>1</sup> published a method for the determination of inorganic phosphate and phosphatase activity in human serum. Little attention has been paid to this method. One of the reasons for this attitude is that RAABE did not statistically compare his method with other methods to prove the validity of the proposed method. The aim of this short communication is to fill up this gap.

TABLE I

	Briggs (B)	Raabe (R)
Arithmetic mean in mg% ( $n=30$ )	3.60	3.43
Standard deviation in mg%	2.62	2.54
Correlation coefficient	$r = 0.99$	
Regression equations	$B = 1.02R + 0.09$	$R = 0.96B - 0.03$
Standard errors of estimate	$S_B = 0.37$	$S_R = 0.36$

The method is economical of material and time and has the following advantages.

1. The amount of serum needed only is 0.1 ml for inorganic phosphate as well as for the alkaline phosphatase determination.

2. The precipitation of protein is omitted.
3. All manipulations can be done in the same reagent vessel.

We compared the method with the method of BRIGGS<sup>2</sup> for the estimation of inorganic phosphate (see Table I).

From the high correlation coefficient and the practically overlapping regression lines it can be concluded that there exists no difference between the two methods. The same standard errors of estimate indicate that both methods have the same accuracy.

The alkaline phosphatase determination of RAABE was compared with a slightly modified method of JENNER AND KAY<sup>3</sup> (see Table II).

TABLE II

	<i>Bodansky units</i>	
	<i>Jenner and Kay (J)</i>	<i>Raabe (R)</i>
Arithmetic mean ( $n=14$ )	12.9	14.6
Standard deviation	5.5	5.0
Coefficient of correlation	$r = 0.93$	
Regression equations	$J = 1.02R - 2.0$	$R = 0.85J + 3.6$
Standard errors of estimate	$S_J = 1.98$	$S_R = 1.80$

It appears that there is no significant difference between these two methods. The values found with RAABE's method are slightly higher but the differences are of no clinical importance.

*Department of Pediatrics, State University,  
Utrecht (The Netherlands)*

O. MEULEMANS

<sup>1</sup> S. RAABE, *Rec. trav. chim.*, 74 (1955) 652.

<sup>2</sup> O.P. BRIGGS, *J. Biol. Chem.*, 53 (1922) 13.

<sup>3</sup> H.D. JENNER AND H.D. KAY, *Brit. J. Exptl. Pathol.*, 13 (1932) 22.

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### A note on the Searcy-Bergquist cholesterol reaction

SEARCY AND BERGQUIST<sup>1</sup> recently described a new reaction for the determination of serum cholesterol. The spectrum for this reaction is identical, except for sensitivity, to one we have studied by modifying the ratio of sulfuric and acetic acids in the ZAK reaction<sup>2</sup>. We were thus led to investigate some variables of this new reaction.

The SEARCY-BERGQUIST reagent was prepared by stirring an excess of freshly powdered  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  for a few minutes with reagent-grade glacial acetic acid, and then filtering to obtain a clear solution. Different reagents were made by using either Dupont or Mallinckrodt reagent grade glacial acetic acids or Technicon aldehyde-free glacial acetic acid\*. A solution of 100  $\mu\text{g}$  of cholesterol, or the same equivalent of

\* Generously supplied by Technicon Chemical Co., Inc., Chauncy, N.Y. The acid was prepared by refluxing over chromium trioxide, and then redistilling and retaining the middle 80% fraction.