

similar to that caused by histamine. Hydroxyethylglyoxaline showed no stimulation of gastric secretion nor did it affect the blood pressure in the dog. This is apparently due to the absence of either the methyl or ethyl-amino group from this compound.

Conclusions. (1) Methylhistamine and histamine are equally potent in stimulating the gastric glands to secrete acid. (2) Methylhistamine and histamine cause a similar fall in the blood pressure in the dog. (3) Hydroxyethylglyoxaline has no effect upon gastric secretion and blood pressure in the dog.

7858 P

Body Temperature Changes Produced by Sodium Salts of Some Aromatic Acids.*

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Concerning the relations between the chemical constitution of the nitrophenols and their specific action on cellular metabolism Heymans¹ makes the following statements:

"In the dinitrophenol the stimulating action on metabolism is associated with position 1 to 4 of one of the NO₂ radicles, the greater the distance between the two NO₂ radicles the greater is the hyperthermic action. The introduction of one or more aliphatic CH chains up to the pentyl chain, progressively increases the specific action of the dinitro-derivatives as catalyzers of cellular respiration. The stimulating action on cellular metabolism is decreased by the addition of an NH₂ radicle to the benzyl chain and is abolished by the addition of an HSO₃ radicle."

3-5 dinitrosalicylic acid which has the two NO₂ groups in the desired positions relative to each other and hydroxyl group offers the opportunity to study the effect on body temperature when a COOH group is substituted into a dinitrophenol.

Sodium 3,5 dinitrosalicylate injected intramuscularly into pigeons and subcutaneously, intramuscularly or intraperitoneally into rats, in the range dosage 25 to 133 mg. per kilo body weight, does not produce a rise in body temperature, but on the contrary

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¹ Heymans, C., *J. Pharm. and Exp. Therap.*, 1934, **51**, 144.

produces a distinct and sustained decrease. The maximum decrease (2° to 4°C.) is reached about 2 hours after injection and the return to normal is slow—4 to 7 hours.

The symptoms produced by the larger doses were shivering, retching and vomiting in the pigeons and shivering and drowsiness in the rats.

Assuming that the nitro groups were in a measure responsible for the greater decreases produced by sodium dinitrosalicylate than are produced by sodium salicylate we compared the temperature decreasing effects of sodium 3,5 dinitrobenzoate and sodium benzoate.

Sodium 3,5 dinitrobenzoate causes definite decreases in body temperature of normal pigeons and rats but is not as effective as sodium dinitrosalicylate and the similar symptoms produced are less severe.

In 12 control experiments using untreated animals and animals injected with solutions of antipyrine or sodium salicylate or sodium benzoate, temperature variations less than 2°C. were obtained in all cases.

In 11 pigeon and 10 rat experiments using sodium dinitrosalicylate and in 6 pigeon and 11 rat experiments using sodium dinitrobenzoate, marked depressant effects (more than 2°C.) on body temperature were produced.

7859 C

Low Basal Metabolic Rates Obtained by Low Calorie Diets in Coronary Artery Disease.

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That a diminished food intake results in lowered basal metabolic rates has been known for many years. It is only necessary to mention the classical work performed by Benedict¹ and reviewed by Lusk.² In view of the fact that the basal metabolic rate is raised in congestive heart disease, tachycardia, severe dyspnea, and in dias-

¹ Benedict, F. G., Niles, W. R., Roth, P., and Smith, H. M., *Carnegie Institute of Washington*, 1919, Publication 280.

² Lusk, G., *Physiol. Rev.*, 1921, **1**, 523.