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A modified method for the clinical estimation of pepsin.

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A globular preparation well adapted for the purposes of the Jacoby-Solms pepsin test can be made cheaply from the ordinary garden pea, *Pisum sativum.*[1] This protein dissolves practically completely in ten per cent. sodium chloride solution, and after slight acidification with hyrochloric acid, yields a turbid solution. For the estimation of pepsin, 0.25 gram globulin of the pea is dissolved in 100 cubic centimeters of ten per cent. sodium chloride and filtered. One cubic centimeter portions of the clear filtrate are introduced into a series of small test-tubes, and each portion treated with one cubic centimeter of 0.6 per cent. hydrochloric acid. After the development of the turbidity, increasing amounts (0.1 to 1.0 cubic centimeter) of neutralized, five-times-diluted gastric juice are added to the tubes. Boiled, diluted gastric juice is then added until the volume in each tube is 3.0 cubic centimeters. Digestion is allowed to go on for fifteen minutes in a water-bath at a temperature of 50°–52° C. The enzyme content is expressed by the number of cubic centimeters of the standard protein solution that would be digested until perfectly clear by one cubic centimeter of the undiluted gastric juice, under the standard conditions of time and temperature.

The advantages of the modification over the original Jacoby-Solms procedure are: first, the reduction of the time necessary for the determinations—from three hours to fifteen minutes; second, the use of a perfectly non-toxic substrate; and third, the estimation of the proteolytic activity independently of the variations in acidity, thus eliminating an error in the original method.

[1]The method of preparation of the globulin together with a detailed description of the modified pepsin test will appear in an early issue of the *Archives of Internal Medicine.*