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A precipitin reaction in epidemic poliomyelitis.

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For several years I have used the precipitin reaction, together with agglutination tests, in the identification of various streptococci which culturally and morphologically are very similar. Observing the almost constant presence of a relatively mild infection in the nasopharynx of patients suffering from epidemic poliomyelitis, it occurred to me that a precipitin reaction might be obtained by simply layering the cleared salt solution extract of the nasopharyngeal washings or swabbings over the hyperimmune poliomyelitis streptococcus serum used in the treatment of poliomyelitis.

The first opportunity to test this possibility presented itself between September 20 and October 5, 1924, in four typical cases of acute poliomyelitis which occurred near Rochester, Minnesota. The reaction was positive in all with the poliomyelitis serum, but negative with normal horse serum and various immune serums used as controls. Through the splendid cooperation of the Health Department and the medical profession of Detroit, Michigan, I have been able to apply this test in a large number of cases of epidemic poliomyelitis and poliomyelitis contacts. Moreover, many control tests have been made on persons suffering from miscellaneous diseases and on normal persons, both within and without the epidemic zones. The accompanying table illustrates the results obtained.

In a number of instances in which the nasopharyngeal extract has given strongly positive results with the hyperimmune horse serum, positive results have also been obtained with the serums of patients convalescing from poliomyelitis.

Results of precipitin experiments in epidemic poliomyelitis.

Groups	Number of persons	Positive			Negative
		Mildly	Strongly	Total	
Poliomyelitis	Proved cases	25	42	67	15
	Abortive cases	3	4	7	1
	Total	28	46	74 (82%)	16*
Normal contacts		11	18	29 (76%)	9
Miscellaneous diseases	In Rochester	1	0	1 (4.8%)	20
	In Detroit	7	6	13 (65%)	7
Scarlet fever	In Detroit	4	1	5 (24%)	16
	In Chicago	2	0	2 (9.5%)	19
Normal persons	In epidemic zone, Detroit	34	19	53 (59%)	37
	Outside epidemic zone, Rochester and Chicago	5	0	5 (5.5%)	85

*The 16 tests which were negative were all made 15 days or more after onset of symptoms.