

kindness and cooperation in making available to us the material and cases reported in this note.

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Skin Reactions to Pollen and to Histamine.

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Certain "allergic" patients are classed as non-sensitive because no skin reactions are obtained when they are tested with the usual allergens. It is important to know if a direct relationship exists between reaction capacity and the type of skin under study, or if the site of the test is an important factor. The work of Lewis¹ and his associates has furnished us a method for studying reaction capacity in the skin hypersensitive or non-sensitive individual.

Histamine, in the following dilutions, 1-1,000; 1-10,000; and 1-100,000 (of the base) was employed as a test substance for both types of patients. Similar dilutions of pollen extracts were tested on those who were pollen sensitive. All tests were intracutaneous, and were made in the long axis on the flexor surface of the forearm. The amount injected, usually 0.01 cc., produced a welt 1.0 to 1.5 mm. in diameter. Beginning at the antecubital space the first welt was made with the 1-1,000 dilution of the test substance. The 1-100,000 was the most distal. At the wrist the opposite margin of the arm was employed and the tests were in the reverse order—the 1-1,000 was most distal. The tests were repeated 3 times using alternate arms. The wheal, the area of "reflex arteriolar dilatation",¹—secondary erythema—was measured and the presence of pseudopods noted. The patients included some with an elastic and others with a senile or crepe-paper type of skin. Some were taking epinephrin frequently, others had never employed the drug.

The senile, atrophic, "crepe-paper" type of skin may give as large a reaction to histamine, or to pollen if the patient is sensitive, as is given by an elastic skin. The variation from patient to patient is characteristic of the individual and seemed to be unrelated to the type of skin. There were many instances where a patient gave a

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¹ Lewis T., *et al.*, *Heart*, 1924, **xi**; 1926, **xiii**; 1927, **xiv**.

similar reaction to pollen and to histamine in the 1-1,000 dilution, thus suggesting that histamine may actually measure reaction capacity. The "non-sensitive" individual reacts to histamine as readily as does the sensitive one.

Twelve different patients were used in these studies, some of them being used for two different phases of the work, and in each case the tests were checked 2 or 3 times, often with an interval of a week between tests.

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Effect of Epinephrin Upon Skin Reactions to Pollen and to Histamine.

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Most "Allergists" assume that injection of epinephrin within an hour or two of the time of testing will cause false negative skin reactions. This drug is frequently given in an attempt to alleviate the symptoms of urticaria and to hasten the involution of the lesions.

Skin sensitive patients were tested as before described¹ to pollen or to histamine or to both, and non-sensitive individuals tested to the latter only. As a control the normal disappearance time of pollen or histamine wheals was determined. This factor was found to vary considerably from patient to patient but to be fairly consistent for the individual, and seemed unrelated to the test substance or type of skin.

A series of intracutaneous injections was made, measurements were taken 15 minutes later and epinephrin solution (1-1,000), 0.3 cc. (M.V.) per 150 pounds of body weight was given subcutaneously. This amount is sufficient to give a definite systemic response in most patients within 10 to 15 minutes, and to alleviate the symptoms of asthma or hay fever. Fifteen minutes after the epinephrin injection a second set of welts was made parallel to and about 1½ inches from the first set in the antecubital space and at the wrist. It was thus possible to observe the effect of this drug upon the involution of wheals already formed and the genesis of them when the test substance was injected 15 minutes after the epinephrin. The

* With the technical assistance of Maurine Cannon, R. N.

¹ Lamson, R. W., *Proc. Soc. Exp. Biol. and Med.*, 1929, **xxvi**, 611.