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Observations on a Delayed Skin Reaction to Cold.

MILTON H. SAIER, WILLIAM C. VAN DEVENTER AND GEORGE D. BARNETT.

From the Division of Medicine, Stanford Medical School.

Following the application of ice to the skin of the forearm for 2 minutes a late local reaction at the site of application has been noted. The reaction appears after 18 to 24 hours, and varies from a slight erythema to a marked circumscribed local edema and erythema, with itching, burning and pain. The lesions persist from one to 5 or 6 days, the duration varying with the severity of the reaction.

Reactions have been noted in 10% of normals (60 subjects), 7% of patients with heart disease (77 subjects), 45% of patients with asthma or hay fever (20 subjects), 51% of patients with pulmonary tuberculosis (146 subjects), and 61% of diabetic patients (50 subjects). Severe reactions have occurred only in patients with pulmonary tuberculosis. Studies of the immediate behavior of the surface temperature show no difference between reacting and non-reacting subjects.

Immediate urticarial reaction to cold has been described by Duke[1] and others, and is analogous to the immediate reaction seen in protein skin tests on allergic subjects. The late reaction to cold here described corresponds to and resembles the delayed response of the tuberculin and other similar skin tests. This analogy, as well as the frequency of the reaction in the small group of allergic patients suggests that the mechanism of cutaneous hypersensitiveness to cold is closely related to that of other forms of skin hypersensitiveness.

The reaction may be regarded as an experimental chilblain. The high incidence of chilblains among patients with tuberculosis has been noted by Hallam.[2]

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[1] Duke, W. W., *Arch. Int. Med.*, 1930, **45**, 206.

[2] Hallam, R., *Brit. Med. J.*, 1931, **1**, 215.