5941

Peripheral Vaso-Constriction by Tobacco Demonstrated by Skin Temperature Changes.

WALTER G. MADDOCK AND FREDERICK A. COLLER.
(Introduced by L. H. Newburgh.)

From the Department of Surgery, University of Michigan.

The skin temperature of normal individuals lying quietly, unclothed, on a stretcher in a room of constant temperature and air currents reaches a reliable constancy at a given body point in about one hour. Thereafter, variations in skin temperature are due to changes in vaso-constrictor tonus. Variations tend to occur more commonly and with greater amplitude towards the tips of the extremities. Measurements of the magnitude of such variations can have a definite value in well controlled psychological, physiological and pharmacological experiments.

Our interest in tobacco smoking arose as a result of its alleged etiological relationship to peripheral vascular disturbances. An example of our investigation is shown in Fig. 1. Subject K. H.

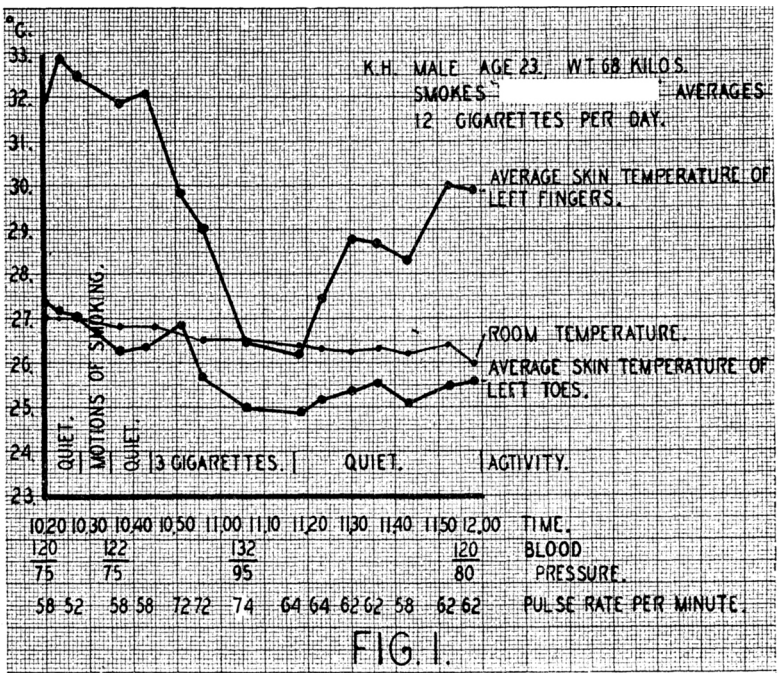

FIG. 1.

Readings began one hour after exposure to environmental conditions. The results show: 1. A rise in blood pressure and pulse rate while smoking, followed by a gradual return to the previous level on cessation of smoking. 2. A fall in the average skin temperature of the left fingers from 32.1°C. to 26.2°C., and in left toes from 26.4°C. to 24.9°C. while smoking, followed by a gradual rise in the skin temperature on cessation of smoking. A negligible change in the skin temperature occurred while going through the motions of smoking with a small paper tube.

This peripheral vaso-constrictor effect of tobacco smoking was demonstrated in man by Bruce, Miller and Hooker,[1] and Simici and Marcu,[2] using the volume changes in the hand and arm.

In general, the results shown with K. H. have been corroborated in 20 other subjects, both light and heavy smokers. Control experiments substituting cubebs for cigarettes, using the water pipe principle or first passing the smoke through a layer of cotton moistened with $FeCl_3$, produces a negligible fall in the skin temperatures. These controls substantiate our opinion that the peripheral vaso-constriction produced is the result of active products absorbed from the tobacco smoke.

5942

Influence of Vitamin A and B Deficiency upon Intestinal Acid-Base Equilibrium and Bacterial Flora.

E. E. SEIDMON AND LLOYD ARNOLD.

From the Department of Bacteriology and Preventive Medicine, University of Illinois, College of Medicine, and Research Laboratories of the Illinois Department of Public Health, Chicago.

The intra-intestinal acid-base equilibrium and the distribution of the bacterial flora have been investigated in certain vitamin deficiencies. The basic diet consisted of casein, cornstarch, Osborne and Mendel salt mixture, butter fat and dried yeast. In the vitamin A deficient diet, the butter fat was omitted. In the vitamin B deficient diet the yeast was omitted. Sixty-five 50 gm. rats were placed upon each of these 3 diets. The vitamin A deficiency series were

[1] Bruce, James W., Miller, James R., and Hooker, Donald R., *Am. J. Physiol.*, 1909, **24**, 104.

[2] Simici, D., and Marcu, I., *J. de Physiol. et de Path. Gen.*, 1927, **25**, 58.