the sensitivity of sweat glands to acetylcholine is a function of local skin temperature.

The evidence suggests the possibility that the sudomotor axone reflex, should it occur physiologically, may serve to modify the response of the sweat glands to their central control. As indicated previously, however, the existence of such an axone reflex has not been demonstrated under physiological conditions.

Summary. The dose-response characteristics of nicotine axone reflex sweating are similar to those of the nicotine action on autonomic ganglia. The threshold for nicotine axone reflex sweating is raised with lowered environmental temperature. The effect appears to be due predominantly to alteration in local skin temperature.

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Effect of Preweanling Administration of Lactose on Subsequent Caries Susceptibility.* (23713)

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Previous work(1) showed that administration of a 20% sucrose solution 3 times a day to suckling white rats during calcification of their molars produced a highly significant increase in the subsequent caries score as compared with unsupplemented litter mates. This technic which measures only the systemic effect of supplements apart from local effects thus appeared useful in studying the systemic effect that other carbohydrates may have on subsequent caries.† The present study was designed to determine if lactose given under these conditions would also produce a significant change in caries.

Method. Fifty-eight animals from 7 litters were divided into 2 groups. One group of 30 animals was given 20% lactose solution orally 3 times a day, from the 3rd day following birth through the 21st day. The amount administered was approximately 1:1000 of body weight. In addition all animals received dam's milk *ad libitum*. Litter mates totaling 28 animals were used as controls and were given nothing in addition to dam's milk throughout the suckling period. When weaned at 21 days of age, all animals were placed on a cariogenic diet of the following composition: casein 24, sucrose 65, salts USP XIV 4, corn oil 5, dehydrated whole liver 4, vitamin mix 2(2), choline 0.2 part. Animals were sacrificed at the end of 13 weeks, and the molars were examined under a 20-power dissecting microscope after grinding successive planes parallel to the occlusal surface. Individual charts which showed the relationship of enamel, dentin, and pulp of each molar were used to record the carious lesions. The lesions were scored by the method of Shaw(3). Table I shows these results.

Results. The 10% difference in caries score between experimental and control animals was not significant. This is in marked contrast to results obtained when a 20% sucrose solution was administered in equal dosage to

TABLE I. Administration of 20% Lactose and Resulting Caries Score 13 Weeks Later.

Supplement	No. animals	Caries score (± S.E.)	t value
Lactose	30	20.4 ± 2.87	.53
Control	28	18.2 ± 2.88	

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† Reported at International Assn. for Dental Research, 1957 meeting.

suckling rats. In previous work(1), 20% sucrose solution given under similar circumstances caused over a 100% increase in caries as compared with unsupplemented litter mates. A 20% glucose and fructose mixture given in a dosage of 1 to 1000 of body weight also increased the subsequent caries of white rats(4). If this increase in caries was due alone to dilution of the diets of suckling rats, the caries scores would be similar.

The results of the previous work are in agreement with findings of Sognnaes(5) in which rats fed high sucrose diet during calcification of teeth had higher incidence of caries over animals not so treated. Work with monkeys also showed an adverse effect of high sucrose diet during calcification on later caries experience of teeth. Reduced caries experience of children during and after World War II also correlated with reduction in sugar imports(6). These results are in contrast with those reported in this paper in which no significant change in caries resulted from addition of lactose to diet of suckling rats during calcification of their teeth.

Lactose is hydrolyzed more slowly than sucrose in the gastrointestinal tract. Since hydrolyzed sucrose is absorbed very rapidly, it might possibly produce a temporary mineral imbalance during the suckling period. This imbalance may be reflected in a significant increase in the caries developed later.

Summary. A 20% solution of lactose given 3 times a day for 18 days during calcification period of molars, resulted in no significant increase in caries of teeth of white rats over control litter mates.

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Excretion of Sulfated Mucopolysaccharides in Gargoylism. (Hurler's Syndrome)* (23714)

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The presence of sulfated polysaccharides has been demonstrated histologically in a number of cases of gargoylism(1) and, from their various organs, an unidentified sulfated mucopolysaccharide has been isolated(1,2). It has been established recently that the urine of 2 cases of gargoylism contained chondroitin sulfate B (ChS-B)(3,4) as well as a minor component with a positive rotation(4) designated either as heparitin sulfate(5) or heparin monosulfate(6). This paper is concerned with studies on specimens of urine from 5 patients with gargoylism and a sample of liver obtained at autopsy and preserved in a frozen state, from another patient.

Methods. The method used for isolation of sulfated mucopolysaccharides was a modification of that of Di Ferrante and Rich(7). An attempt was made to collect total urine for periods of 4 to 6 days from Cases 1-4, however, accurate collections during this entire period were not possible and the pools do not represent complete samples. The urine samples were acidified to pH 6.0 and a warm aqueous solution of 5% cetyl trimethylammonium bromide was added (1.7 ml/100 ml of urine). After standing overnight at 4° and centrifuging, the precipitate was repeatedly

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