

fluoride added to communal water supplies will need to be increased in communities served by water having a high inorganic ion content in order to maintain significant anticariogenic benefits. The data in this study apply to this problem, since they strongly suggest that when fluoride is added to a water supply containing Ca^{++} , Mg^{++} , Fe^{++} , and PO_4^{---} together, significantly less fluoride is retained in the whole rat carcass than when similar amounts of fluoride are added to a mineral-deficient water. The contribution of individual inorganic ions in producing this collective effect is not clearly defined, since when Ca^{++} , Mg^{++} , Fe^{++} , or PO_4^{---} ions are tested separately by measuring fluoride retention in the whole carcass, no significant changes are noted. As a result, additional study is needed of combinations of ions common to communal water supplies to determine the unique properties of the ion combination which make it capable of significantly affecting fluoride absorption or retention.

Summary. 1) The whole carcass retention of fluoride by rats receiving a fluoride drinking water containing a combination of Ca^{++} , Mg^{++} , Fe^{++} , and PO_4^{---} ions was significantly less than in rats drinking a chemically pure fluoride water containing no additional inor-

ganic ions. 2) In contrast, studies of the individual ions at various concentrations show only small fluctuations in the proportion retained. No significant influence on retention was noted when any of the ions were studied singly. 3) The decrease in retention seen in rats ingesting the water containing a combination of ions suggests that the influence of the ions may be additive or synergistic. This may be important since most natural waters contain a group of several inorganic constituents. More attention should be placed on inorganic composition of the communal water supplies before fortifying them with fluoride. It is possible that if the combination of major inorganic constituents of natural waters exceeds a yet-to-be determined concentration, optimal fluoride concentration would need to differ from the now accepted level of 1 ppm in order to produce maximum anticariogenic benefits.

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Effect of Banana Ingestion on Urinary Excretion of 5-Hydroxyindole Compounds in Normal Adults. (24088)

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Anderson and coworkers(1) have reported that addition of bananas to the diet increases the urinary excretion of 5-hydroxyindole acetic acid (5-HIAA). Their study was done on 4 Rhesus monkeys and 2 sick children. 5-hydroxyindole (5-OH indole) compounds are excreted in larger than normal amounts in the clinical syndrome produced by malignant carcinoid with metastases, and both the roughly quantitative "screening test"(2,3), and the precise quantitative determination(4) are

useful laboratory procedures in establishing the diagnosis. Anderson's cited report suggests that high levels of urinary 5-HIAA may be produced in normal patients by banana ingestion, thus leading to an erroneous diagnosis of malignant carcinoid.

The present investigation was undertaken to determine whether urinary excretion of 5-OH indole compounds in normal adults can be affected significantly by addition of bananas to the diet.

amounts of serotonin, norepinephrine and dopamine. This finding suggests that dietary (exogenous) precursors can increase the urinary excretion of 5-OH indole compounds.

Summary. 1. Banana ingestion (12 g/kg/24 hr) by normal adults produced an average 2-fold increase in urinary excretion of 5-OH indoles. This was not of such magnitude as to suggest an erroneous diagnosis of malignant carcinoid. 2. Collection of 24-hour urine specimens and use of a quantitative test are advocated over collection of random urine specimens. Positive screening tests should be checked by a quantitative method.

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Hemagglutination with Adenoviruses. Nature of Viral Antigen. (24089)

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It has been demonstrated that antigens can be adsorbed to tannic acid-treated erythrocytes so that the red blood cells agglutinate when mixed with specific antiserum(1,2,3). An attempt therefore was made to apply this technic to a study of the antigens of adenoviruses and the antibodies directed against these viral materials. Since the completion of this investigation it has been reported that antibodies directed against adenoviruses(4), herpes simplex(5), and poliomyelitis(6) viruses can be measured by use of tannic acid-treated sheep erythrocytes. The study to be reported confirms the data presented by Friedman and Bennett(4), and indicates that a modified hemagglutination technic can measure not only the adenovirus group antigen but also type-specific antibodies in approximately 50% of the sera tested. In addition, identification of the major antigen which adsorbs to tannic acid-treated erythrocytes will be described.

Materials and methods. Tissue culture.

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Strain HeLa cells (Gey) derived from an epidermoid carcinoma of the uterus were employed. The methods used for serial propagation and preparation of tube cultures have been described(7). The nutrient fluid consisted of 40% human serum and 60% Hanks' balanced salt solution or Eagle's basal medium supplemented with 10% human serum. *Viruses.* Adenoviruses types 1, 2, 3 and 4 were grown in HeLa cells using a maintenance mixture consisting of Scherer's amino acid-vitamin mixture (MS) 67.5%, chicken serum 7.5%, and tryptose phosphate broth 25% (8). Virus suspensions were prepared by freezing and thawing infected cells 6 times following which cellular debris was removed by centrifugation(7). Viruses were stored in sealed glass ampules at -70°C or in screw cap tubes at -30°C . *Hemagglutination (HA) test.* A modification of the method reported by Stavitsky(3) was used. Chicken erythrocytes were employed because a more distinct endpoint was obtained with these cells than with sheep or rabbit red blood cells. Erythrocytes from white leghorns were obtained weekly and stored in Alsever's solution at 4°C . Before use, cells were washed 3 times with