

VITAMINS AND LUNG CANCER. A Lopez-S, BY LeGardeur\*, WD Johnson\*, Department of Medicine, Louisiana State University Medical School, New Orleans, LA.

Studies have reported a relationship between lung cancer incidence and vitamin A; however, epidemiological studies investigating the association of other vitamins with lung cancer are few. In a case-control study, we evaluated serum vitamins C and E levels along with vitamin A in patients with lung cancer (n=45) and controls (n=45) matched by age, sex, and race. We found significantly (p<0.05) lower mean levels of vitamin E (0.82±0.05, 1.22±0.05 mg%); vitamin C (0.41±0.04, 0.59±0.06 mg%); carotenoids (62±4, 88±7 µg%); retinol-binding protein (4.3±0.2, 5.2±0.3 mg%) and cholesterol (152±5, 180±5 mg%) in cases than in controls. To account for an effect of a cholesterol-vitamin association, serum vitamin E and carotenoids levels were adjusted for cholesterol. The mean case-control difference of cholesterol-adjusted levels for vitamin E was 0.15 mg (p<0.04) and for carotenoids was 9.86 µg (p<0.20). Differences between cases and controls did not appear to be the result of malnutrition associated with cancer.

In an attempt to determine the variable(s) best able to predict risk of lung cancer, we calculated R, a measure of the predictive ability of a model after a correction is made to penalize for the number of variables in the model. The combinations of vitamin C and total cholesterol levels (R=0.64) and vitamin E and total pack years (R=0.63) were the ones most associated with risk. It appears that adding other variables to the model does not increase the ability of the model to predict lung cancer risk.

These results indicate that vitamins C and E may be of more importance than vitamin A in predicting lung cancer.



EFFECT OF PROTEIN QUANTITY AND QUALITY ON THE SERUM GLUCOSE RESPONSE TO THE SUGARS OF A FORMULA DIET.

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We had previously shown (A J Clin Nutr, 39:671, 1984) the role of protein on the serum glucose (SG) response to a formula diet (FD). In this study, we determined the effect of 4 levels of protein: 16 g (PRO1), 25 g (PRO2), 33 g (PRO3) and 49 g (PRO4) on the SG of healthy adults when mixed with 55g FD sugars: fructose, lactose and corn syrup oligosaccharides (FDS). Fasting mean SG ranged from 75.3 to 86.0 mg/dl. Changes from fasting SG (mean±SEM, mg/dl) were:

Subjects	15 min	30 min	60 min	120 min
FDS	15 +34.0±2.3(a)	+33.9±4.9(a)	+5.7±4.1(a)	-11.1±2.5(ab)
PRO1	14 +26.1±3.6(ab)	+24.5±4.3(a)	-7.8±4.4(ab)	-11.4±2.3(ab)
PRO2	13 +22.7±3.2(b)	+17.0±4.4(ab)	-12.8±1.8(b)	-8.2±2.6(ab)
PRO3	13 +15.1±2.8(b)	+9.1±4.3(bc)	-16.9±3.9(b)	-14.1±2.1(b)
PRO4	14 +17.4±2.2(b)	+2.8±3.5(c)	-13.4±1.7(b)	-2.1±2.3(a)

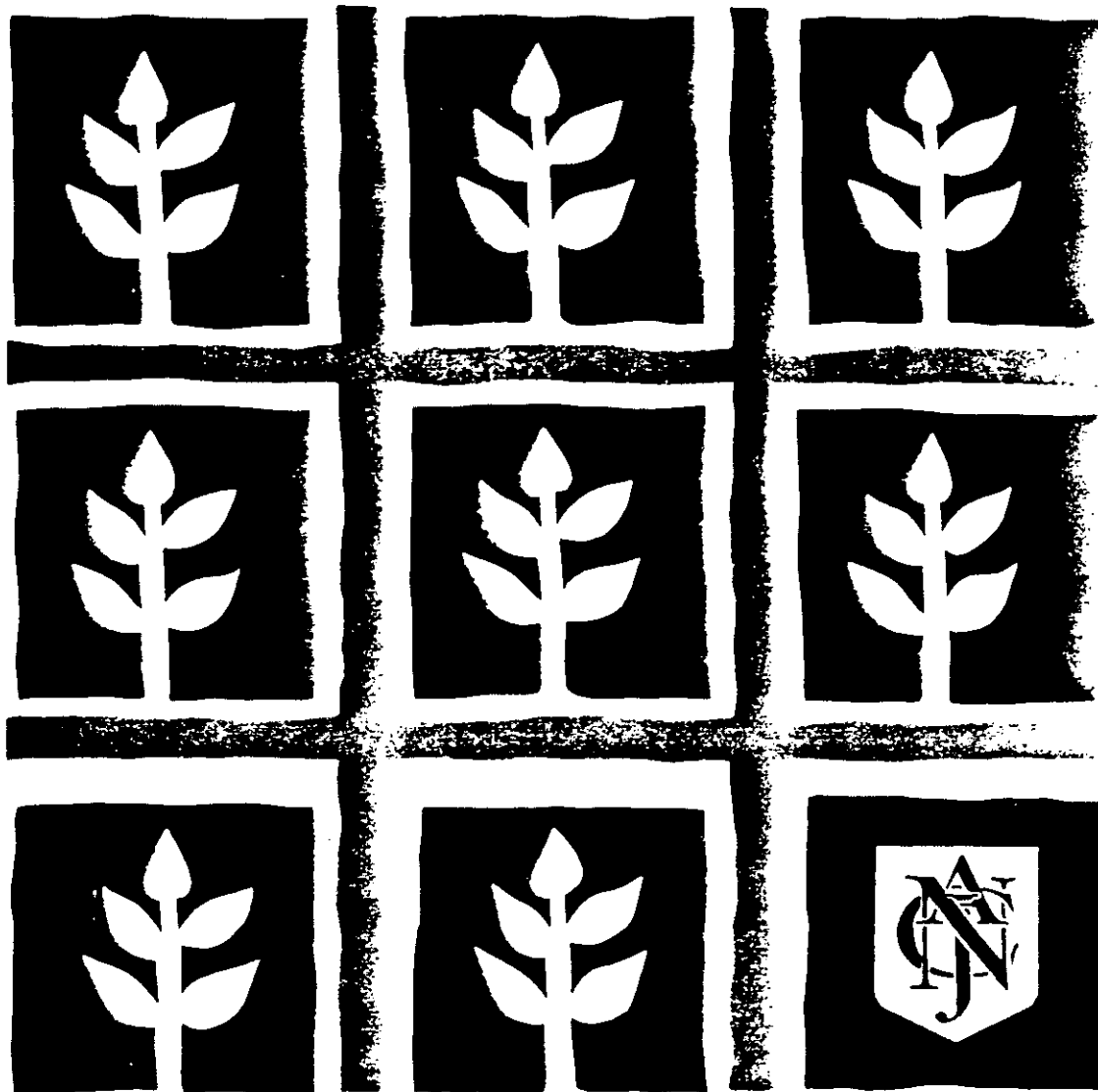
Different letters after SG indicate p<0.05 for each column.

Peak SG (mean±SEM mg/dl changes from fasting) were:

FDS +42.0±3.0(a), PRO1 +35.7±2.9(ab), PRO2 +29.6±3.0(bc), PRO3 +19.5±3.0(c), PRO4 +18.1±2.2(c). Different letters after the SG values indicate significance at p<0.05. Correlation of peak SG to protein level was linear with r = 0.98. Hyperglycemia decreased as protein increased, demonstrating that in a formula diet the glycomic response to sugars is highly responsive to the sugar to protein ratio.

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