Comments on E. Giovannucci, “Insulin, Insulin-Like Growth Factors and Colon Cancer: A Review of the Evidence”

Dear Editor:

Giovannucci (1) reviewed the evidence linking insulin and insulin-like growth factor-1 (IGF-1) to the etiology of colon cancer and concluded that diets leading to insulin resistance, i.e., high carbohydrate, saturated fatty, were most important. However, this conclusion does not logically follow from these links, i.e., although this diet affects serum insulin, it does not elevate IGF-1, which is elevated by a high protein diet (2).

Although there is evidence that refined carbohydrates are a risk factor for colon cancer, there is an abundance of epidemiologic evidence that animal products provide a greater risk. Meat consumption was found to be a high risk factor in Japan (3), as was animal protein and total fat (4). Processed, fatty meats, saturated fatty acids and refined carbohydrates were found to be high risk factors in France (5). Refined carbohydrates and animal products other than milk were found to correlate with colon cancer in China (6). Low animal product consumption was identified as the risk reduction factor for colon cancer in black South Africa (7).

Two ecologic studies have linked animal products to colon cancer. Armstrong and Doll (8), using data for 23 countries, found that meat consumption had the highest correlation with colon cancer (r = 0.85 for males, 0.89 for females). Grant (9), using mortality data for those aged 75+y in 30 countries in 1986 and dietary supply values in 1970, consistent with the time lag reported in (4), found that the fraction of energy derived from animal products had the highest correlation with colon cancer (r = 0.95 for men, 0.93 for women), whereas cereals were inversely correlated with colon cancer (r = −0.69 for men, −0.67 for women).

Another factor that gives significant protection against colon cancer is vitamin D, either through exposure to solar UV-B radiation or from diet (10). Grant (11) recently showed that there are 5000 premature deaths (95% confidence interval, 4500–5500) out of 41,000 annual colon cancer deaths for Caucasian Americans due to insufficient solar UV-B radiation.

Thus, although reducing the consumption of refined carbohydrates would reduce the risk of colon cancer, greater reductions would be achieved by reducing the consumption of animal products, and increasing serum vitamin D. These steps would also help reduce the mortality from breast cancer, which is also linked to animal products (12) and insufficient vitamin D (10–12).

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LITERATURE CITED