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## B6 and Lung Cancer

The European Prospective Investigation into Cancer and Nutrition (EPIC) is one of the largest observational studies ever conducted with over 520,000 subjects from 23 different centers in 10 European countries. I've written about some of the papers published from the data before. But it seems like not a week goes by without another study published from the data collected in the EPIC Study. In this past week's *Journal of the American Medical Association*, the EPIC data was the source of another published study. In this case, it was about lung cancer (1).

### The Study

You already know the scope of the EPIC Study—over 500,000 subjects. In this case, they used only the subjects that had blood drawn upon entry into the study—about 390,000 subjects. Researchers examined the blood for several B vitamins and their metabolites: vitamins B2, B6, B12, and folate, and methionine, and homocysteine.

Then they collected data on lung cancer diagnoses for eight years. Of those subjects who had complete data, 899 subjects were diagnosed with lung cancer. As you might expect, the incidence of lung cancer was greatest in the smokers, lower in the former smokers, and the lowest in the never smokers.

Researchers then examined the blood levels of each B vitamin and metabolite in those who had lung cancer and a group of age-matched controls. As the blood levels of B6 increased, the rate of lung cancer decreased. The same was true for methionine levels. The other B-vitamin levels didn't produce a consistent pattern.

### The Interpretation

If you smoke, you are at greater risk for getting lung cancer. The message? Don't smoke, because even in former smokers, the risk decreases. But the risk is lowest if you never smoked. It's as simple as that. But whether you smoke or not, the higher the B6 levels in your blood, the lower your risk of getting lung cancer. This was the same conclusion as it related to colorectal cancer.

But before you run off and start taking vitamin B6 by the handful, remember, these were blood levels of vitamin B6; researchers did not measure intake of B6 or any of the B vitamins. While it stands to reason that the B vitamin intake was higher in those subjects with high blood levels, that wasn't specifically tested so we can't assume that's true; the difference in blood levels could be explained by a unique genetic factor that has a role in metabolizing B vitamins. More about this later.

### EPIC—Yes or No?

This is the third time I've written about research published from the EPIC Study. Two were positive reports and one was not. Here's the reason. The studies that provide the best information have hard data points. Serum B6 is a hard data point, but a Food Frequency Questionnaire is most definitely not. A snapshot of blood levels is more precise and more meaningful than a handful of answers on a questionnaire. The blood levels reflected what people had been eating; the Questionnaire was reflective of what they thought they had eaten. No question that the blood levels are more meaningful data.

## The Bottom Line

I said earlier that you shouldn't run out and megadose on vitamin B6. But what I think you should do is increase your intake of vitamin B6, B12, and folate—especially if you smoke. B12 and folate are used with vitamin B6 to convert homocysteine into methionine. They neutralize the inflammatory homocysteine, and make a benign methionine. This is a classic example of balance. Take all these Bs together and you can protect yourself from cancer. Or you could just quit smoking and still take the nutrients. That's undoubtedly the best idea.

What are you prepared to do today?

**Dr. Chet**

**Reference:**

1. JAMA. 2010;303(23):2377-2385

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