Much of the controversy in recent years has been whether low carbohydrate or low fat diets are healthier. In fact, the average American diet is high in both carbohydrate and fat. Almost anything would be healthier!

When it comes to cancer there is considerable evidence that high fat diets increase cancer risk - particularly when the fat consists primarily of saturated fats, trans fats and omega-6 polyunsaturated fats.That is logical because those fats are known tumor promoters. That is, they promote the growth of tumor cells.

But are high carbohydrate, low fat diets any better? The answer appears to be no. Several clinical studies over the past few years suggest that high carbohydrate diets also increase cancer risk. This is also logical because tumor cells rely on glucose as an energy source, and both insulin and the related insulin-like growth factor stimulate cell division in tumor cells. What is left, you might ask? Well the answer is fairly obvious - protein.

But how do you test that hypothesis?

The previous clinical studies that I mentioned were all retrospective studies. That means that they looked at groups of people habitually consuming high fat and low fat diets or people habitually consuming high carbohydrate and low carbohydrate diets to reach their conclusions.

Of course, it would be much better to put people on a particular diet and see if that influences cancer risk, but cancer simply takes too long to develop for an intervention study like that to work.

And, unfortunately, we don't have enough people habitually consuming high protein diets that are identical in all other ways to the general population to perform a retrospective study on protein intake versus cancer risk (For example, body builders often consume a high protein diet, but finding a control group of body builders consuming a low protein diet would a challenge).

So the study that I am featuring this week (Ho et al, Cancer Research, 71: 4484-4493, 2011) was done with mice. One group of mice was put on a diet composition resembling the standard American diet or SAD (55%, carbohydrate, 23% protein and 22% fat). Actually, the diet used in that study is a bit higher in protein and a bit lower in fat than what most Americans consume.

In the other groups carbohydrate content ranged from 8 to 15% of calories and protein content ranged from 58% to 69%. For the sake of simplicity I will lump the results of these three groups together and compare the results for the mice consuming the SAD diet and those consuming the high protein, low carbohydrate diet.

The fat content was kept constant in all four groups. Only healthy fat and protein sources were used, but the carbohydrate was mostly simple sugars.

In the first study, the mice were injected with cancer cells at 8 weeks and the rate of tumor growth was measured. In this study, tumor growth was slowed significantly in the mice on the low carbohydrate diet compared to mice on the SAD diet.

In the second study mice containing a mutation known to greatly increase the risk of breast cancer in humans were used. And, just like humans, these mice develop breast cancer spontaneously at a very high rate. The results of this study were even more remarkable.

50% of the mice consuming the SAD diet had developed breast cancer at one year (middle age for mice) whereas **none** of the mice consuming the high protein, low carbohydrate diet had developed breast cancer at that time.
Only one of the mice consuming the SAD diet reached normal life span (all the rest had died of breast cancer) whereas 50% of the mice consuming the high protein, low carbohydrate diet reached or exceeded normal life span.

So what is the bottom line for you?

This study reinforces previous human studies suggesting high fat AND high carbohydrate intake should both be avoided if you want to reduce your cancer risk. A better choice may be a diet with moderate amounts of healthy carbohydrates and healthy fats (more about that later) and a higher intake of healthy proteins than most of us are used to.

There is another very important point that you may have missed. Remember that the second study utilized mice that were genetically predisposed to breast cancer. The results of that study emphatically make the point that good nutrition can make a difference even if you are predisposed to cancer. We can't change our genetics, but we can reduce the impact that genetics has on our health and our life.

Of course, we need to keep in mind that this study was conducted in mice, not in humans. None of us are likely to be eating diets containing only 8-15% carbohydrates - nor would I recommend that we go to that extreme. And, of course, not just any carbohydrates, fats and proteins will do. You should choose complex carbohydrates with a low glycemic index - fresh fruits & vegetables and unprocessed whole grains are best.

Of the fats try to increase monounsaturated and omega-3 polyunsaturated fats and keep saturated fats to the minimum. The best way to achieve a healthy moderate fat diet is to choose lower fat varieties of unprocessed foods - not to rely on low fat processed foods.

With respect to proteins there is an increasing body of evidence that red meats and processed meats increase the risk of certain types of cancer. So many experts recommend emphasizing chicken, fish and vegetable proteins. Processed meats should be avoided and red meats should be eaten sparingly.

To Your Health!
Dr. Stephen G Chaney