THE HEALTH NUGGET

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Much More vs Much Less

Protein has been at the forefront of nutritional concern for decades. Its very title comes from the Greek word *proteios*, which means "of prime importance." The most popular fad diets of our era uphold this macronutrient as the most revered.

It was the subject of protein that led T. Colin Campbell, Ph.D. to begin research that led to the most comprehensive study of health and nutrition ever conducted, the China Study.

In the beginning of his investigations Dr. Campbell read a research paper from India dealing with liver cancer and its connection with protein consumption. Two groups of rats were given aflatoxin, said to be a potent chemical carcinogen. Every single rat fed a 20% protein diet developed liver cancer, while not a single rat developed liver cancer that was given only a 5% protein diet. These observations led to questions in Campbell's mind. His career had been bent on finding ways to increase protein consumption, especially for the world's poor. But why was protein implicated in the development of cancer 100% of the time in the Indian study? What affect does protein consumption have on tumor development?

To answer these and other questions, Dr. Campbell entered into decades of research that would lead to changes in his own diet and culminate in his book entitled, *The China Study*. In it, he outlines three stages of cancer: initiation, promotion and progression. By analogy, the initiation stage is like the planting of seeds. This invasion of carcinogens causes genetic changes or mutations in the body's cells. In this stage, normal cells have been transformed into cancer-prone cells.

Promotion occurs when the conditions needed for growth are met. Promotion is considered reversible. It is here ". . .where certain dietary factors become so important. These dietary factors, called promoters, feed cancer growth. Other dietary factors, called anti-promoters, slow cancer growth. Cancer growth flourishes when there are more promoters than anti-promoters; when anti-promoters prevail cancer growth slows or stops. It is a push-pull process. The profound importance of this reversibility cannot be overemphasized."[1]

The last stage is progression. This occurs as cancer cells advance, multiply and invade everything around it or wander from its initial site.

In Dr. Campbell's research it was quantifiably observed that simply by lowering protein intake the initiation phase of cancer was dramatically affected: less aflatoxin entered the cell, cells multiplied more slowly, and its ability to damage cells was reduced. "From our extensive research, one idea seemed to be clear: lower protein intake dramatically decreased tumor initiation."[2]

After the initiation of cancer, tiny clusters of cancer-like cells normally appear which are capable of growing into cancerous tumors. These are called foci. By studying foci development rather than tumor growth Campbell and his team were able to research the stage of promotion. It was found that

"*Foci development was almost entirely dependent on how much protein was consumed, regardless of how much aflatoxin was consumed!*"[3] High aflatoxin exposure (cancer initiation) combined with low protein ingestion resulted in low foci response; whereas low aflatoxin exposure combined with high protein intake resulted in very high foci response.

"Foci development, initially determined by the amount of the carcinogen exposure, is actually controlled far more by dietary protein consumed during promotion."[4] Simply by manipulating how much protein was ingested, foci growth could be increased or decreased in size and number. In fact, foci development was completely prevented on a lowered (<10%) protein diet even when animals were given the highest tolerated dose of aflatoxin.

Casein, a milk protein was used as the protein source. Casein "makes up 87 percent of cow's milk protein."[5] To determine whether plant protein had the same effect on cancer promotion more experiments were conducted. Neither soy nor wheat protein (gluten) promoted cancer growth even when fed at the same 20% level.

The "grand finale" as Campbell called it was a large study involving several hundred rats to examine full grown tumor formation over the entire lifetime. "All animals that were administered aflatoxin and fed the regular 20% levels of casein either were dead or near death from liver tumors at 100 weeks. All animals administered the same level of aflatoxin but fed the low 5% protein diet were alive, active and thrifty, with sleek hair coats at 100 weeks."[6] To see if tumor development could be reversed through dietary change, some of the rats' diets were altered about half way through. The animals that transitioned from a high-protein to a low-protein diet had 35-40% less tumor growth than animals fed a constant high-protein diet. Whereas tumor growth became evident in those switched from a low-protein to high-protein intake.

It was looking like cancer development could be turned "on or off" through "dietary manipulation."[7]

There are two ways of looking at this study: 1) those poor rats were subjected to such a strict program, living with less (protein), much less. Or 2) wow, the life of the rats was completely transformed for good when they embraced a different way of eating. They experienced less protein but more life.

What is the language of your heart in your Christian experience? Is your life governed by the much less mentality: rigidity, fear or drudgery? Our failures often arise from the fact that we have substituted our 'much less' in place of God's 'much more.'

Our heavenly Father longs to reinstate much more into our lives. "For if by one man's offense death reigned by one; much more they which receive abundance of grace and of the gift of righteousness shall reign in life by one, Jesus Christ"[8] Live with conquering faith and gratitude in this gift of His abundance, the kingdom of much more.

[1]Campbell, T. Colin. *The China Study*, p. 50.
[2]ibid. p. 53.
[3]ibid. p. 54.
[4] ibid. p. 56.
[5] ibid. p. 59.
[6] ibid. p. 61.
[7] ibid. p. 62.
[8] Romans 5:17.

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