

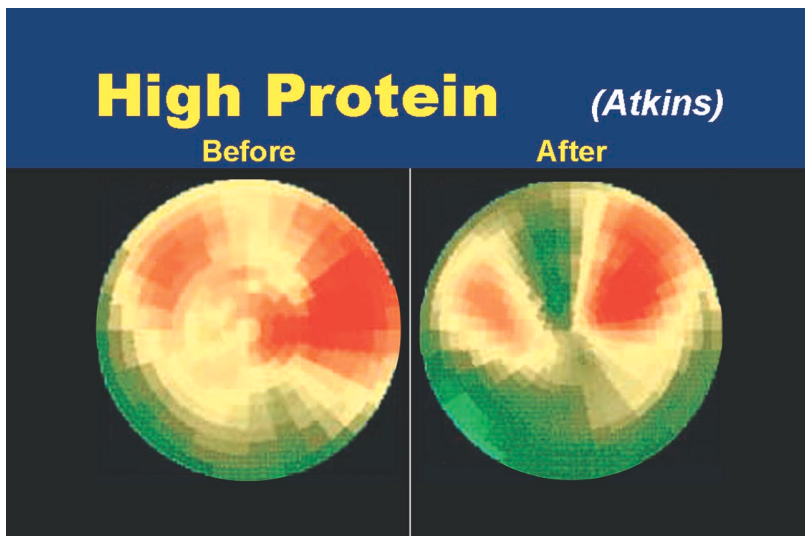
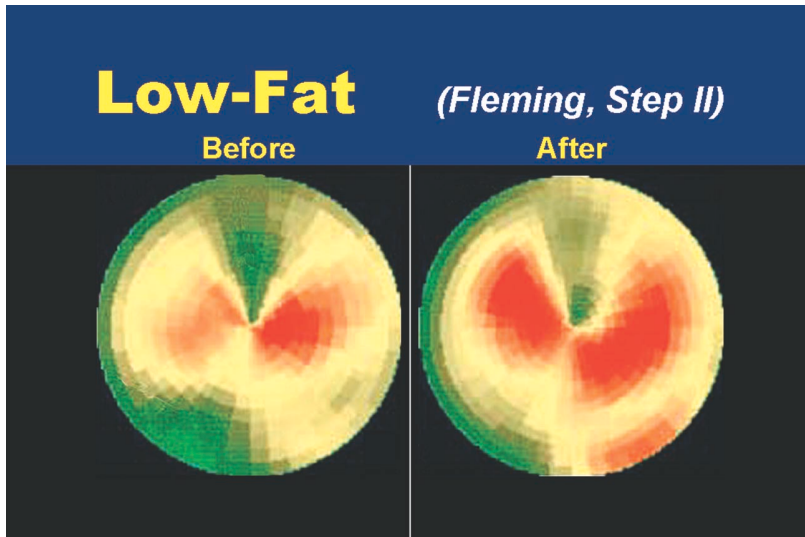
High Protein Diet Alert!

Effect of Diets on Coronary Blood Flow

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The Atkins Diet, the Zone Diet, the Scarsdale Diet—they all have something in common: they push protein and crucify carbohydrates. Their gurus push their wares with evangelical zeal—meat, bacon and eggs, sausages—and the throngs devour their scientifically garbed dietary dogma dispensed in best-selling books. After all, everybody loves good news about their bad habits!

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The examples at the left illustrate patients following either the LF Diet, a diet very low in fat (15%) and high in largely unrefined complex carbohydrates (such as potatoes, grains, beans), or the HP diet, a diet high in protein yet low in carbohydrates.

The four circles present a bulleye image of myocardial perfusion (blood flow to and oxygenation of the heart muscle) before the diets began and one year later. Red color within the circles displaying the various aspects of the heart represents normal, good perfusion. Orange, yellow and green colors show increasingly compromised and inadequate perfusion.

The two “Low-Fat” circles on the left show the effect of 12 months of treatment using medication and the Low Fat Diet. The enlargement of the red colored area in the “After” image clearly shows improved blood flow to and much better perfusion of the heart muscle suggesting reversal and improvement of coronary artery disease (CAD).

In contrast, the two “High Protein” circles (bottom figure) show the effect of treatment using medication and the High Protein Diet. The increase of the orange, yellow and green colors in the “after” image show impaired blood flow to and reduced perfusion of the heart muscle showing progression of CAD.

Dangers of High Protein Diets

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Recently, Dr. Richard Fleming, cardiologist and president of the Fleming Heart and Health Institute, reported his

“Patients have a difficult time adhering to the high animal protein diet.”

extensive clinical research on the effect of diets on coronary blood flow in *Angiology*, the Journal of Vascular Diseases (Vol. 51:10, 817-826).

Patients and Diets

In this prospective 1-year study, 16 patients were

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instructed to consume the LF Diet, a diet very low in fat (15% of calories) and very high in

complex carbohydrates (mostly unrefined).

Another 10 patients elected the HP Diet, a diet high in protein and low in carbohydrates, which they believed would improve their overall health. Patients in both groups affected by angina symptoms or with elevated C-RP received standard drug treatment.

Data Generation

The study subjects not only received extensive bloodwork at the beginning and end of the study. In addition, single-photon emission computed tomography (SPECT) imaging was used to look for coronary artery disease (CAD) and regional cardiac wall motion abnormalities. The extent and severity of perfusion and blood flow through each of the coronary beds was determined quantitatively according to an established protocol.

Results

Fleming reports:

Patients who went on the high protein diet (HP) reported varying degrees of satisfaction. Family reports typically reflected initial patient satisfaction, the patients getting to eat foods they “enjoyed” along with initial weight loss but difficulty with sustaining the dietary pattern for the entire year. Instead, patients tended to adhere to the diet for several months at a time, return to prior eating habits, and then return again in an effort to lose weight.

Table 1 on the next page shows the effect on changes in the extent and severity of CAD in response to the Low Fat Diet (LF) and the High Protein Diet (HP).

For instance: The extent and severity of

Table 1 — *Changes in Extent and Severity of Coronary Artery Disease.*

	LAD		RCA		LCx		L-C		TOTAL CAD	
	% Extent	% Severity	% Extent	% Severity	% Extent	% Severity	% Extent	% Severity	% Extent	% Severity
LF	-4.7	-5.0	-6.1	-10.3	-6.9	-8.2	-5.2	-3.2	-22.9	-21.8
HP	+1.5	+8.0	+5.2	+ 8.1	+15.3	+12.3	+17.7	+13.8	+39.7	+52.0

All changes between the two groups are statistically highly significant at the level of at least <0.005, except for LAD % of Extent.

LF = Low Fat Group HP = High Protein Group

Coronary Artery Designations: LAD = Left Anterior Descending RCA = Right Coronary Artery

LCx = Left Circumflex L-C = Left Anterior Descending Circumflex Artery

CAD in the left anterior descending coronary artery (LAD) showed an average **regression** of -4.7% and -5.0%, respectively, in response to the Low Fat (LF) group. In contrast, the High Protein (HP) group demonstrated CAD **progression** of 1.5% and 8.0% for extent and severity, respectively.

The total overall effect seen in the LF group was 22.9% regression in the extent of CAD and a 21.8% reduction in the total severity of CAD. In contrast, the total overall effect seen in the HP group was 39.7% progression in the extent of CAD and a 52.0% worsening in the severity of the disease.

Conclusion

Diets high in largely unrefined complex carbohydrates and very low in fat (such as Fleming’s Step II 15% fat diet—similar to the CHIP Optimal Diet) improve CAD in facilitating atherosclerotic regression. In contrast, high protein diets (promoted by Atkins, Sears *et al*) not only produce ketosis, osteoporosis, gout and kidney disease, but they also increase lipids (such as cholesterol, LDL, and Lp(a)), homocysteine and inflammatory factors (such as C-Reactive Protein)—all associated with atherogenesis and the progression of CAD.

While the LF diet promoted atherosclerotic regression, the HP diet was associated with a progression of both extent and severity of CAD in the order of

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5 to 10% increase over a 12-month period. In view of the heavy marketing of these high meat and animal protein diets and their popularity, these clinical findings are particularly disturbing and alarming.

For more information on the danger of these high protein diets, please turn to the summary article on the next pages.