

Zone Notes by Michael A. Sylvester

Core Essentialssm

From lecture/debate at Natick Labs (2/2002) Captain Samuel Cheuvront vs. Dr. Barry Sears

Synopsis: I attended this lecture and have summarized the key points regarding Dr. Sears and Captain Cheuvront's respective views on weight loss.

“To Zone or not to Zone”

The Zone Diet made its debut in 1995 by Dr. Barry Sears. The Zone is a physiological state in which the hormones (insulin and a vast array of others) are maintained within 'zones' that are not too high, nor too low, according to Dr. Sears, author of the book, “Enter the Zone”.

The Zone dietary program is based upon consistent insulin control. Insulin control is achieved by balancing protein and carbohydrate at each meal, according to Dr. Sears. It is the ratio of protein to carbohydrates (.75 or 40% carbohydrate/30% protein) that regulates control of your body weight as well as many disease states.

Is there any studies that support the Zone?

No studies, at the time of the debate, directly studied the Zone vs. the NRC (National Research Counsel) diet but as Cheuvront pointed out, we have to review the literature and find similar studies that have similar ratio's of the Zone's protein to carb ratio and similar ratio's of the NRC and compare the effects.

Studies reveal that there were no significant differences in insulin concentrations when they compared subjects that consumed the NRC diet (.27 ratio-protein to CHO) vs. The zone (.75 ratio -protein to CHO)-which is the whole basis of the zone diet. In other words, for every 4 grams of carbohydrates you consume, you consume 3 grams of protein when on the Zone diet (40% carbs; 30% protein). Whereas, the NRC promotes the following: for every 4 grams of carbohydrates you consume 1 gram of protein.

Since everything in the book relies around this concept,-disproving this point-overturns all the benefits from a 'proposed' lower insulin concentration.

The only way to chronically decrease the concentration of insulin is thru a ketogenic (Atkins) diet-since fat has no effect on insulin . But the health risks associated with this type of diet outweigh the lowering of insulin, according to Cheuvront.

Although the reduction of the insulin/glucagon ratio has been shown on the zone diet, this is less important than the absolute level of insulin, since insulin is a strong inhibitor of glucagon.

Things to consider in fairness to Dr. Barry Sears (9-1-05)

New studies published in peer reviewed scientific journals do support the notion that increasing protein, higher than amounts that the NRC promotes (15-18% of energy intake) may have additive effects on body composition during weight loss. Put differently, in a recent study published in The Journal of Nutrition, authored by Layman, et al. (August 2005), subjects consuming a diet consisting of a protein to carbohydrate ratio of .75 or higher (which is similar to Dr. Sears advice) lost more total weight and body fat and tended to lose less lean body mass compared with those consuming a diet consisting of a protein to carbohydrate ratio of .27 or less.

The authors point out that traditional nutritional wisdom fixates on consuming a percentage of our calories from protein (15-18%) but when a dieting individual reduces caloric intake (in an effort to lose weight), total caloric intake decreases, consequently decreasing total intake of protein, which is incidentally lower than recommended amounts (0.8 g/kg/day) according to the study reviewed here. This is why the authors comment, and I quote, “Dietary outcomes observed in this study raise questions regarding the relative merits of expressing dietary intakes of macronutrients as a percentage of energy versus absolute amounts.”

Another factor to consider here is that, although Dr. Sears may have been “off the mark” regarding insulin and its proposed effects on hindering weight loss, he is right, according to this study and many recent studies promoting the consumption of more protein (for weight loss) than the NRC promotes. Some studies do point out that Leucine (an essential branched chain amino acid [protein]) may play a role in maintaining lean body mass, which is important for weight control.

I have included some studies (abstracts) that support this concept below.

Full text article at
nutrition.org

Dietary protein and exercise have additive effects on body composition during weight loss in adult women.

[Layman DK](#), [Evans E](#), [Baum JI](#), [Seyler J](#), [Erickson DJ](#), [Boileau RA](#).

Department of Food Science and Human Nutrition, University of Illinois, Urbana, 61801, USA. dlayman@uiuc.edu

This study examined the interaction of 2 diets (high protein, reduced carbohydrates vs. low protein, high carbohydrates) with exercise on body composition and blood lipids in women (n = 48, approximately 46 y old, BMI = 33 kg/m²) during weight loss. The study was a 4-mo weight loss trial using a 2 x 2 block design (Diet x Exercise). Diets were equal in total energy (7.1 MJ/d) and lipids (approximately 30% energy intake) but differed in protein content and the ratio of carbohydrate:protein at 1.6 g/(kg . d) and <1.5 (PRO group) vs. 0.8 g/(kg . d) and >3.5 (CHO group), respectively. Exercise comparisons were lifestyle activity (control) vs. a supervised exercise program (EX: 5 d/wk walking and 2 d/wk resistance training). Subjects in the PRO and PRO + EX groups lost more total weight and fat mass and tended to lose less lean mass (P = 0.10) than the CHO and CHO + EX groups. Exercise increased loss of body fat and preserved lean mass. The combined effects of diet and exercise were additive for improving body composition. Serum lipid profiles improved in all groups, but changes varied among diet treatments. Subjects in the CHO groups had larger reductions in total cholesterol and LDL cholesterol, whereas subjects in the PRO groups had greater reductions in triacylglycerol and maintained higher concentrations of HDL cholesterol. This study demonstrated that a diet with higher protein and reduced carbohydrates combined with exercise additively improved body composition during weight loss, whereas the effects on blood lipids differed between diet treatments.

Full text article at
www.jacn.org

Protein quantity and quality at levels above the RDA improves adult weight loss.

[Layman DK.](#)

Department of Food Science and Human Nutrition,, University of Illinois at Urbana-Champaign, 905 South Goodw, inUrbana, IL 61801, USA. dlayman@uiuc.edu

Evidence is accumulating that diets with reduced carbohydrates and increased levels of high quality protein are effective for weight loss. These diets appear to provide a metabolic advantage during restricted energy intake that targets increased loss of body fat while reducing loss of lean tissue and stabilizing regulations of blood glucose. We have proposed that the branched-chain amino acid leucine is a key to the metabolic advantage of a higher protein diet because of its unique roles in regulation of muscle protein synthesis, insulin signaling and glucose re-cycling via alanine. These metabolic actions of leucine require plasma and intracellular concentrations to increase above minimum levels maintained by current dietary guidelines and dietary practices in the U.S. Initial findings support use of dietary at levels above 1.5 g/kg . d during weight loss. Further, our research suggests that increased use of high quality protein at breakfast maybe important for the metabolic advantage of a higher protein diet.

FREE full text article at
nutrition.org

The role of leucine in weight loss diets and glucose homeostasis.

[Layman DK.](#)

Department of Food Science and Human Nutrition, Division of Nutritional Sciences,
University of Illinois Urbana-Champaign, 61801, USA. d-layman@uiuc.edu

Debate about the optimum balance of macronutrients for adult weight maintenance or weight loss continues to expand. Often this debate centers on the relative merits or risks of carbohydrates vs. fats; however, there is increasing interest in the optimal level of dietary protein for weight loss. Diets with a reduced ratio of carbohydrates/protein are reported to be beneficial for weight loss, although diet studies appear to lack a fundamental hypothesis to support higher protein intakes. Presently, needs for dietary proteins are established by the recommended daily allowance (RDA) as the minimum level of protein necessary to maintain nitrogen balance. The RDA define the primary use of amino acids as substrates for synthesis of body proteins. There is emerging evidence that additional metabolic roles for some amino acids require plasma and intracellular levels above minimum needs for protein synthesis. The branched-chain amino acid leucine is an example of an amino acid with numerous metabolic roles that function in proportion with cellular concentration. This review provides an overview of the current understanding of metabolic roles of leucine and proposes a metabolic framework to evaluate the merits of a higher protein diet for weight loss.