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Walnuts, Weight Loss, and Blood Lipids

By James J. Kenney, PhD, FACN

The optimal ratio of fat/carbohydrate/protein for promoting healthy weight loss is still a matter of debate. Some researchers have suggested higher fat, lower carbohydrate diets are better for weight loss in insulin resistant people. It is known that the amount and type of dietary carbohydrates and fats can alter plasma lipids in ways that may increase or decrease coronary artery disease (CAD). Weight loss and exercise can also favorably impact many known and suspected CAD risk factors including dyslipidemia and insulin resistance (IR). To better understand how diet composition affects weight loss and blood lipids, Dr. Cheryl Rock and colleagues at UC San Diego examined more than 200 overweight and obese women (mean weight 90Kg and mean age 50y) who were enrolled in a 1-year behavioral weight loss intervention program.

None of the subjects had type 2 diabetes, but about half of them had elevated fasting insulin levels and homeostatic model assessment (HOMA) scores that indicated they were insulin resistant (1).

All subjects were randomly assigned to one of three diet groups. All three diet groups were instructed to follow a diet with about 1500kcal (+ or - 300kcal) per day. Participants were given a detailed diet prescription and sample meal plans during individual counseling sessions. The overall goal of the dietary guidance was to reduce energy intake, "aiming for a 500- to 1,000-kcal/day deficit relative to expenditure." Participants were also encouraged to use a web-based diet tracking system and were given a pedometer and encouraged to walk at least 10,000 steps per day (2).

One group was instructed to consume a lower fat (20% energy), higher carbohydrate (65% energy) diet [LF]; a sec-

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The results showed serum triglycerides fell significantly in all three diet groups. Insulin sensitivity increased and C-reactive protein levels dropped by a similar amount in all 3 diet groups.

ond group was instructed to consume a lower carbohydrate (45% energy), higher fat (35% energy) diet [HF-1]; and the third group was instructed to consume a similar, higher fat (35% energy), lower carbohydrate (45% energy) diet but with 1.5oz of walnuts daily [HF-2] that provided nearly half of their daily fat intake. Blood samples and data available from 213 women at baseline and at six months were the focus of the statistical analysis. Triglycerides, total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C) and low-density lipoprotein cholesterol (LDL-C) were checked after 6 months. The results showed serum triglycerides fell significantly in all three diet groups. The women in the walnut-rich diet (HF-2) group had their HDL-C increase a bit more than either the LF or HF-1 diet ($P<0.05$). The walnut-rich diet also reduced LDL-C a bit more in the insulin-sensitive women. Women in both the LF and walnut-rich HF-2 diet groups demonstrated a significant reduction in LDL-C, which tended to be greatest for the insulin-sensitive women in the walnut-rich diet group.

The LF group saw a significant drop in TC but also a significant drop in HDL-C, especially for the more insulin-sensitive women ($P<0.05$).

Insulin sensitivity increased and C-reactive protein levels dropped by a similar amount in all 3 diet groups. However, the HOMA scores of the IR subjects on the HF-2 diet fell about half as much as it did in the other two diet groups.

Specific dietary instructions for the LF diet included choosing lean protein sources and reduced-fat dairy foods; for the HF-1 diet, participants were instructed to achieve a high monounsaturated fat intake. The walnut group was instructed to eat an average of 42 g (about 1.5 oz) of walnuts per day. The group weight loss intervention included weekly meetings of participants for the first 4 months, biweekly for the next 2 months, and monthly for the last 6 months.

Confounding Variables Complicate Interpretation of Results

Were the blood lipid and insulin sensitivity changes due mainly to reduced energy intake and weight loss, to increased activity, and/or to alterations in various aspects of dietary components?

Another problem with the study is that the authors provide no data about to what degree the subjects complied with the 10,000 daily step goal. Still another limitation of the study was the lack of specific quantitative data regarding dietary intake and how well the subjects adhered to dietary instructions. Also, some data were self-reported, and restriction to women and the large number of exclusion criteria during screening suggests the results may not generalize to most of the population.

However, one thing they did validate was compliance with the walnut intake in the HF-2 group. This was confirmed by blood fat measurements that reflected their much higher intake of omega-6 and omega-3 PUFA. Compliance appeared very good perhaps because the walnuts were provided to only the HF-2 subjects at no cost by the California Walnut…

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Evaluating Weight Status

Evaluating weight status is tricky. People can be sensitive about their size, especially when they think that they may have lost control of their weight. Plus, there are lots of hurtful ways that people evaluate weight and size in society today.

So how do you address weight when it comes to health and well-being without bringing in the baggage that accompanies discussions about weight?

As you already know, a great deal of it comes down to sensitivity and personal skills. Talking with people individually and in an open and honest manner will do a lot towards addressing weight in a thoughtful and productive way.

Another element that can be helpful is science. Take value judgements out of the equation and focus instead on the science of health. What increases the risk of chronic disease like heart disease and diabetes? What will impact quality of life? Energy levels? Highlight the research that points to the benefits of managing weight as you begin an evaluation of weight status, then turn to scientific measures. BMI and waist circumference are great tools to help evaluate weight status objectively.

BMI stands for body mass index. It's a measure of weight as it relates to height. To calculate BMI, take a person's weight in pounds and multiply it by 703. Take their height in inches and multiply it by their height in inches again. Take the first number (weight times 703) and divide it by the second number (height squared) to get a person's BMI. You can also use a free online BMI calculator.

Traditionally, a normal BMI is between 18.5 and 24.9, an overweight BMI is between 25 and 29.9, and an obese BMI is 30 or more. This can be a good place to start when it comes to exploring weight status.

Another way to examine that is through waist circumference. To measure waist circumference, have the person stand up straight, relax, breathe out, then gently wrap the tape measure around his or her waist. Look at the number on the tape where it reaches the end; that's the waist circumference. Men should keep their waist circumference below 40 inches. Women should keep theirs below 35 inches. Any higher and they face additional health risks.

Using science as a starting point removes value judgments and can make it easier to thoughtfully evaluate weight status.

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