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Limiting carbs, not calories, reduces liver fat faster, UT Southwestern researchers find

DALLAS – April 19, 2011 – Curbing carbohydrates is more effective than cutting calories for individuals who want to quickly reduce the amount of fat in their liver, report UT Southwestern Medical Center researchers.

“What this study tells us is that if your doctor says that you need to reduce the amount of fat in your liver, you can do something within a month,” said Dr. Jeffrey Browning, assistant professor of internal medicine at UT Southwestern and the study’s lead author.

The results, available online and in an upcoming issue of the *American Journal of Clinical Nutrition*, could have implications for treating numerous diseases including diabetes, insulin resistance and nonalcoholic fatty liver disease, or NAFLD. The disease, characterized by high levels of triglycerides in the liver, affects as many as one-third of American adults. It can lead to liver inflammation, cirrhosis and liver cancer.

For the study, researchers assigned 18 participants with NAFLD to eat either a low-carbohydrate or a low-calorie diet for 14 days.

The participants assigned to the low-carb diet limited their carbohydrate intake to less than 20 grams a day – the equivalent of a small banana or a half-cup of egg noodles – for the first seven days. For the final seven days, they switched to frozen meals prepared by UT Southwestern’s Clinical and Translational Research Center (CTRC) kitchen that matched their individual food preferences, carbohydrate intake and energy needs.

Those assigned to the low-calorie diet continued their regular diet and kept a food diary for the four days preceding the study. The CTRC kitchen then used these individual records to prepare all meals during the 14-day study. Researchers limited the total number of calories to roughly 1,200 a day for the female participants and 1,500 a day for the males.

After two weeks, researchers used advanced imaging techniques to analyze the amount of liver fat in each individual. They found that the study participants on the low-carb diet lost more liver fat.

Although the study was not designed to determine which diet was more effective for losing
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Carbohydrate limitation – 2

weight, both the low-calorie dieters and the low-carbohydrate dieters lost an average of 10 pounds.

Dr. Browning cautioned that the findings do not explain why participants on the low-carb diet saw a greater reduction in liver fat, and that they should not be extrapolated beyond the two-week period of study.

“This is not a long-term study, and I don’t think that low-carb diets are fundamentally better than low-fat ones,” he said. “Our approach is likely to be only of short-term benefit because at some point the benefits of weight loss alone trounce any benefits derived from manipulating dietary macronutrients such as calories and carbohydrates.

“Weight loss, regardless of the mechanism, is currently the most effective way to reduce liver fat.”

Other UT Southwestern researchers involved in the study were Dr. Shawn Burgess, senior author and assistant professor of pharmacology in the Advanced Imaging Research Center (AIRC); Dr. Jonathan Baker, assistant professor of pathology; Dr. Thomas Rogers, former professor of pathology; Jeannie Davis, clinical research coordinator in the AIRC; and Dr. Santhosh Satapati, postdoctoral researcher in the AIRC.

The National Institutes of Health supported the study.

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