High-Fat, Low Carbohydrate Diet Improves Fatty Liver Disease

Despite not cutting back on calories, people on the high fat diet lost more weight and had better blood sugar levels.

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Compared with a high-carbohydrate/low-fat diet, a low-carbohydrate/high-fat diet greatly improved non-alcoholic fatty liver disease (NAFLD) and blood sugar levels in people with type 2 diabetes, according to findings presented at the EASL International Liver Congress.

Arising from the accumulation of fat in the liver, NAFLD and its more severe form, non-alcoholic steatohepatitis (NASH), are responsible for a growing proportion of advanced liver disease worldwide. As a result of inflammation, NAFLD can lead to liver fibrosis, cirrhosis and even liver cancer. Fatty liver disease is often accompanied by abdominal obesity, hypertension and abnormal blood sugar and fat levels, collectively known as metabolic syndrome. With no effective approved medical therapies, disease management is dependent on lifestyle changes, such as weight loss and exercise.

“The global burden of NAFLD is so high that we’re going to need all the prevention and treatment tools at our disposal to make any real inroads over the coming years,” Aleksander Krag, MD, PhD, of the Odense University Hospital in Denmark, said in a press release. “Prevention through diet is a no-brainer policy: it’s something most people can do of their own accord, and it costs governments very little.”

A little over half of people with type 2 diabetes also have NAFLD. While low-carbohydrate diets are known to improve diabetic control, their effect on fatty liver disease in this context is unclear.

Krag and colleagues carried out a controlled diet study over six months that included 185 people with type 2 diabetes. The average age was 56 years, 58% were women and 88% had NAFLD.

Two thirds of the participants were randomized to adhere to a low-carbohydrate/high-fat diet (LCHF) while the remaining third followed a high-carbohydrate/low-fat diet (HCLF). The LCHF diet consisted of a maximum of 20% of energy from carbohydrates, 50% to 60% from fats and 25% to 30% from protein. The HCLF diet consisted of 50% to 60% from carbohydrates, 20% to 30% from fats and 20% to 25% from protein. All participants were asked to eat until they felt satiated, with no calorie restrictions.

The participants underwent liver biopsies to determine NAFLD activity score, a composite score of liver fat content, lobular inflammation, cellular ballooning and fibrosis. Average blood sugar (HbA1c) was measured at baseline and after six months. All participants had consultations with dietitians, and their diet adherence was assessed through an online food diary.

More people in the LCHF cohort (70%) experienced an improvement of at least one point in their NAFLD activity score compared with those in the HCLF group (49%). Some 23% of people in the HCLF group saw their score worsen compared with only 1% of those in the LCHF group. Those who ate fewer carbohydrates and more fat also lost around 5.7 kilograms (about 13 pounds) and had better blood sugar levels, while those who ate more carbohydrates and less fat lost only 1.8 kg (about 4 pounds) and had higher blood sugar.

“Prevention through diet is a no-brainer policy: It’s something most people can do of their own accord, and it costs governments very little,” said Krag. “Educating young people and their families is going to be the key to unlocking this looming public health disaster,” said Krag. “People need reassuring about why a good diet is so important in the long-term which ensures they live more healthily and longer.”

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