Eating a lot of so-called healthy fats — such as those found in olive oil and avocados — may increase the risk for fatty liver disease and metabolic complications, such as type 2 diabetes and hypertension, down the line, according to new research published by scientists at the University of California, San Francisco.

The surprising new findings, based on studies conducted on mice, effectively showed that eating a diet high in saturated fat (popularly referred to as the worst kind of fat for the body) might actually be less harmful to liver health than diets high in monounsaturated fats with high starch content. In addition to warning against trendy diets that push vegetable fats over other types of fat as a healthier option, the findings further emphasize that simply counting calories does not guarantee a healthy diet.

For the study, researchers at UCSF set out to study the role of different nutrients on the development of non-alcoholic fatty liver disease, or NAFLD. In the study, they paired a fat (saturated or monounsaturated) with a carbohydrate, sucrose or starch to create four different high-fat diets, which were fed to four groups of 10 mice each for a period of six months. These mice were then compared to mice that were fed regular mouse food, which is much lower in fat.

By the end of the trial period, all the mice on the experimental diets grew obese and developed some degree of fatty liver disease. However, to the researchers’ surprise, the mice on the starchy monounsaturated fat diet had by far the most severe disease, accumulating 40 percent more liver fat than the mice on the other three diets.

Researchers say it is unclear why the pairing of starch and monounsaturated fat seems to exacerbate fatty liver disease in obese animal models, but they plan to further study how the transfer of fat to the liver is affected by diet. In the meantime, study authors recommended eating so-called healthy fats, such as olive oil and avocados in moderation, along with a healthy diet.