

FOIE GRAS is French for fatty liver. Though considered a delicacy of French cuisine, its production dates back to ancient Egypt. The Egyptians discovered that migratory geese overfed themselves in preparation for their long flights, which produced desirable meat and livers. Foie gras has been described as having the world's most decadent and buttery flavor when served cold as torchon. When served hot, it reportedly can be crisp, sweet, savory, and melts in your mouth. To produce such livers, geese and ducks are force fed, a process called gavage. A tube is inserted into the duck's mouth two to three times a day to force food down the gullet. The overfeeding results in fatty livers that grow to be 10 times larger than normal. While I have opinions regarding the commercial production of such food and the treatment of animals, my primary concern is centered on the rise of fatty liver in humans.

Fatty liver occurs when fats amass inside the liver cells, causing cell enlargement (steatosis) or inflammation and cell damage (steatohepatitis). Nonalcoholic fatty liver disease refers to two conditions, nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis (NASH). NAFLD is the more common of the two conditions and can progress to NASH, which is the scarring of the liver related to fat deposits. NASH can eventually result in cirrhosis of the liver and is a major cause of liver disease in America. It can take many years for scarring or cirrhosis to develop. While fatty liver and cirrhosis are commonly associated with excessive alcohol consumption, both NAFLD and NASH are a result of fat deposits in the liver that are found in people who drink little or no alcohol.

NAFLD was considered rare a mere 15 years ago. Today, in Western countries, the prevalence of NAFLD in the general adult population is 10 to 30 percent.¹ The prevalence increases 60 to 80 percent in those

with diabetes or metabolic syndrome, and approaches 90 percent in the morbidly obese, though the majority have no awareness of the state of their liver.

Fatty liver is typically symptomless. Lab findings from blood tests in those with NAFLD may or may not include elevated liver enzymes (ALT and/or AST), bilirubin, glucose, triglycerides, and lipids. Fatty liver is typically diagnosed from X-rays or ultrasound imaging. Liver biopsy is the only means of deciphering between NASH and NAFLD. Not until the disease has advanced or cirrhosis has developed are symptoms of fatigue and weakness generally experienced. In severe cases the liver can nearly quadruple its mass to as much as 11 pounds with triglycerides increasing from 5 percent to as much as 40 percent of liver weight.²

An association has been made between the modern lifestyle and associated metabolic comorbidities such as NAFLD, obesity, hyperlipidemia, insulin resistance, and Type 2 diabetes. NAFLD is an independent risk factor for the number one killer in America, heart disease. An article published in *The New England Journal of Medicine* in late 2009 argued that inflammatory factors pumped out by a fat afflicted liver promote atherosclerosis. People with NASH are twice as likely to die from heart attack or stroke as people without it.

Liver disease has widespread effects on virtually all other organ



systems. In this nation the most common causative factor is diet.

The diagnosis of fatty liver commonly elicits the response, “but I don’t drink alcohol.” Remember this is non-alcoholic fatty liver disease.

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Another common response is, “I don’t eat a lot of fat.” While it is stored fat in the liver that poses the problem, it is not dietary fat alone that leads to this condition. The liver has an amazing ability of being able to convert excess carbohydrates and protein into fat. Typically excess total calories, high blood sugar levels, as well as elevated blood lipids, such as cholesterol and triglycerides are present.

Consider how the culinary delicacy of foie gras is manufactured. Geese and ducks are overfed, but what exactly is forced down their gullet? The main ingredient in feed resulting in the development of enlarged fatty livers in livestock is corn and cornstarch. Corn is a rich source of carbohydrates and in the case of cornstarch, refined carbohydrates. On a diet with excessive carbohydrates, a duck’s liver can reportedly grow to be more than ten times its normal size.

David Ludwig, MD, PhD, of the Children’s Hospital in Boston found this to be true in mice as well. He fed mice either a high or low glycemic index diet. “High-glycemic index foods, including white bread, white rice, most prepared breakfast cereals and concentrated sugar, raise

blood sugar quickly. Low-glycemic index foods, like most vegetables, fruits, beans and unprocessed grains, raise blood sugar slowly. On the high-glycemic index diet, mice ate a type of cornstarch that is digested

quickly whereas on the low-glycemic index diet, mice ate a type of cornstarch that is digested slowly. The diets had equal amounts of total calories, fat, protein, and carbohydrates,

and the mice were otherwise treated identically.”³ At the end of the six-month trial the mice fed the high glycemic cornstarch had twice as much fat in their livers.

Though not being forced to overeat or eat any particular form of starch, could humans be experiencing the same metabolic process? Could the 152 pounds of sugar and 146 pounds of refined white flour yearly consumed in the standard American diet be impacting the liver?

Eliminating a possible cause of NAFLD and reversing its effect makes sense as an appropriate therapy. After a dietary assessment, a reduction in calories, refined carbohydrates, and possibly fat would be encouraged. As the prevalence of NAFLD is mostly due to the dramatic increase in obesity rates, weight reduction is a cornerstone treatment. In addition, addressing insulin resistance and/or poorly controlled diabetes warrants treatment for those with elevated blood glucose levels. In cases where fatty liver is caused by malnutrition, a gradual introduction of a high calorie, high protein diet, adequate in all other nutrients is advised.

The liver is an amazing organ that valiantly seeks to fend off the

assaults upon the body. NAFLD is a warning and an opportunity to realize that though powerful, this organ is not invincible. Studies have been done proving the reversibility of NAFLD. Low carbohydrate diets have been shown to be effective in causing the liver to use fat deposits as a source of fuel rather than its own glycogen stores.⁴

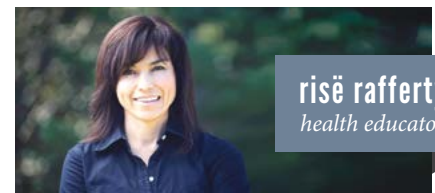
The use of force is antithetical to the gospel. It goes against everything the gospel stands for. Scripture says, “Feed the flock of God, which dependeth upon you, caring for it not by constraint, but willingly: not for filthy lucre, but of a ready mind” (1 Peter 5:2, GNV).

¹ P. Paschos, K. Paletas, “Non alcoholic fatty liver disease and metabolic syndrome,” *Hippokratia*, Jan-Mar 2009, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2633261/>.

² C. Cataldo, L. De Bruyne, E. Whitney, *Nutrition and Diet Therapy*, 6th ed. Sacramento, CA, Wadsworth, 2003, p. 572.

³ Children’s Hospital Boston, “Quick-burning Carbs May Cause Fatty Liver: Low-glycemic Diet Protected Mice,” *ScienceDaily*, Sept 27, 2007, www.sciencedaily.com/releases/2007/09/070921130735.htm.

⁴ “Low carb diet burns more excess fat than low calorie diet,” *Diabetes in Control*, Feb 2009, http://www.diabetesincontrol.com/index.php?option=com_content&view=article&id=6459.



Risë has been writing on various health subjects for over 20 years. She has inspired many through her research and down-to-earth writing and speaking style. She believes that healthy living is intimately tied to happiness and wholeness.