



Published in final edited form as:

*Eur J Gastroenterol Hepatol.* 2019 January ; 31(1): 143. doi:10.1097/MEG.0000000000001279.

## Fatty Liver Disease: Is it NAFLD or OAFLD?

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Nonalcoholic fatty liver disease (NAFLD) is the most common cause of elevated liver enzymes in children. While the magnitude of the disease, in both adult and pediatric patients, is enormous, our understanding of the underlying pathophysiology is still limited. This is readily apparent from its name, which tells us what the disease is not, rather than what it is. This has already led to editorials calling NAFLD the worst name in hepatology (1).

We therefore propose that the name be changed to obesity-associated fatty liver disease (OAFLD). This name removes the inappropriate emphasis on alcohol intake, which is frankly embarrassing for pediatric patients and hones in on obesity as the underlying risk factor. Furthermore, the acronym OAFLD helps alert the clinician to five risk-factors associated with fatty liver disease, with each letter representing one condition which modulates disease susceptibility. Table 1

“O” stands for obesity or over-weight, the major driver of fatty liver disease in most patients. The risk of fatty liver disease increases with increasing BMI, such that in morbidly obese patients, the prevalence of fatty liver disease approaches 90%. Not all patients with fatty liver disease are obese by standard criteria, but they often have obesity-associated risk-factors, such as metabolic syndrome and insulin resistance. The next letter in the acronym “A” should alert a clinician to assess for the presence of acanthosis nigricans, a clinical sign of insulin resistance. Insulin resistance is present in up to 80% of patients with fatty liver disease and is probably the most common feature of NAFLD. Patients with NAFLD who have normal glucose tolerance on standard testing, have decreased hepatic insulin action when subjected to euglycemic hyperinsulinemic clamp study, the gold standard test for insulin resistance. The third letter in the acronym, “F” should remind a clinician to quantify and reduce the patients’ intake of fructose and other simple carbohydrates. Intake of fructose-sweetened foods is increased in patients with NAFLD and correlates with a degree of liver fibrosis. The fourth letter in the acronym, “L” stands for lipids. Dyslipidemia is a cardinal pathophysiologic defect, such that cardiovascular disease is the most common cause of mortality in patients with fatty liver disease. Finally, the letter “D” stands for disease. To qualify as a liver disease there should be an elevation in liver enzymes, namely ALT and AST, keeping in mind that in some patients with advanced liver disease these markers of liver injury may not be increased.

In summary, OAFLD is us much more appropriate disease name, especially in obese children. Furthermore, the new name demystifies the diagnosis, as currently it is a diagnosis of exclusion, leaving some patients with false impression that the cause of their liver disease could not be identified. Lastly, as we increasingly consider bariatric surgery for the treatment of NAFLD, we should first be comfortable calling it obesity-associated fatty liver disease. However, for a minority of patients with NAFLD who are not obese, the condition should simply be called fatty liver disease.

### **Acknowledgments:**

This work was supported in part by NIH Grants R01 DK031036 and R01 DK033201 to C.R.K, and K12 HD000850 to S.S. The authors would like to thank Norah Alaraifi Softic, Esq. and Rohit Kohli, MD., for critically reading and editing the manuscript.

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**Table 1**

O	Obesity	BMI over 30, or BMI over 95 <sup>th</sup> percentile for children
A	Acanthosis nigricans	Insulin resistance assessed by insulin/glucose levels
F	Fructose intake	Quantification and reduced consumption of sugar-sweetened beverages
L	Lipids	Screening and treatment for dyslipidemia should be routinely performed
D	Disease	Serum ALT is the current recommended screening test for children

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