

Global multi-stakeholder endorsement of the MAFLD definition

Comprising over 1000 signatories representative of multiple stakeholders, including hepatologists, internists, diabetologists, endocrinologists, paediatricians, primary-care providers, nephrologists, cardiologists, pathologists, patient advocates, nurses, nutritionists, and pharmaceutical experts from over 134 countries, we—the undersigned—endorse both the name metabolic (dysfunction)-associated fatty liver disease (MAFLD) as an overarching term and its definition for fatty liver diseases associated with metabolic dysregulation.¹⁻³ We advocate for this change because it more accurately reflects the underlying pathogenesis of the disease than does the previously used term, non-alcoholic fatty liver disease (NAFLD). Furthermore, we believe that this designation will enhance our ability to advance the science of fatty liver disease and to improve patient care.^{4,5} This open letter represents the voices of individuals and multiple stakeholders across the global liver health community; it is not intended to devalue any other initiative, but to complement and inform them.

We publish this letter in response to substantial evidence showing the superior use of the MAFLD definition over that of NAFLD for patient awareness and management,⁶⁻⁹ alignment with other diseases associated with metabolic dysregulation, advocacy for a more comprehensive approach to policies related to non-communicable diseases, and because the term is devoid of stigma.^{10,11} Widespread adoption of the name and definition of MAFLD will allow for greater standardisation across the spectrum of disease and will help to set us on the path to a more cogent, coherent, and logical framework to understand, diagnose, and treat this commonly encountered condition.

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- 1 Eslam M, Sanyal AJ, George J; International Consensus Panel. MAFLD: a consensus-driven proposed nomenclature for metabolic associated fatty liver disease. *Gastroenterology* 2020; **158**: 1999–2014.
 - 2 Eslam M, Newsome PN, Sarin SK, et al. A new definition for metabolic dysfunction-associated fatty liver disease: an international expert consensus statement. *J Hepatol* 2020; **73**: 202–09.
 - 3 Eslam M, Alkhoury N, Vajro P, et al. Defining paediatric metabolic (dysfunction)-associated fatty liver disease: an international expert consensus statement. *Lancet Gastroenterol Hepatol* 2021; **6**: 864–73.
 - 4 Mendez-Sanchez N, Arrese M, et al. The Latin American Association for the Study of the Liver (ALEH) position statement on the redefinition of fatty liver disease. *Lancet Gastroenterol Hepatol* 2021; **6**: 65–72.
 - 5 Shiha G, Alswat K, Al Khatry M, et al. Nomenclature and definition of metabolic-associated fatty liver disease: a consensus from the Middle East and north Africa. *Lancet Gastroenterol Hepatol* 2021; **6**: 57–64.
 - 6 Yamamura S, Eslam M, Kawaguchi T, et al. MAFLD identifies patients with significant hepatic fibrosis better than NAFLD. *Liver Int* 2020; **40**: 3018–30.
 - 7 van Kleef LA, Ayada I, Alferink LJM, Pan Q, de Knecht RJ. Metabolic dysfunction-associated fatty liver disease improves detection of high liver stiffness: The Rotterdam Study. *Hepatology* 2022; **75**: 419–29.
 - 8 Tsutsumi T, Eslam M, Kawaguchi T, et al. MAFLD better predicts the progression of atherosclerotic cardiovascular risk than NAFLD: generalized estimating equation approach. *Hepatol Res* 2021; **51**: 1115–28.
 - 9 Ayada I, van Kleef LA, Alferink LJM, Li P, de Knecht RJ, Pan Q. Systematically comparing epidemiological and clinical features of MAFLD and NAFLD by meta-analysis: focusing on the non-overlap groups. *Liver Int* 2022; **42**: 277–87.
 - 10 Eslam M, Ahmed A, Després JP, et al. Incorporating fatty liver disease in multidisciplinary care and novel clinical trial designs for patients with metabolic diseases. *Lancet Gastroenterol Hepatol* 2021; **6**: 743–53.
 - 11 Shiha G, Korenjak M, Eskridge W, et al. Redefining fatty liver disease: an international patient perspective. *Lancet Gastroenterol Hepatol* 2021; **6**: 73–79.