



Opinions

Global multi-societies endorsement of the MAFLD definition



Mohamed Alboraie^{1,2,*}, Tawesak Tanwandee^{3,4}, Xiaoyuan Xu^{5,6}, Dafina Nikolova^{7,8}, Enrique Carrera Estupiñan^{9,10}, Hasmik Ghazinyan^{11,12}, Sameer Alawadhi^{13,14}, Ponsiano Ocama^{15,16}, Gulnara Aghayeva^{17,18}, Alejandro Piscoya^{19,20}, Taghreed Farahat^{21,22}, Pramendra Prasad^{23,24}, Cosmas Rinaldi Adithya Lesmana^{25,26}, Shashank R Joshi^{27,28}, Said Al-Busafi^{29,30}, Vladimir Milivojevic^{31,32}, Violet Kayamba^{33,34}, Yeong Yeh Lee^{35,36}, Shahinul Alam^{37,38}, Chengwei Tang^{39,40}, Wei-Fen Xie^{40,41}, Moutaz Derbala^{42,43}, Yuemin Nan^{6,44}, Dennis Ndububa^{45,46}, Hongting Zheng^{47,48}, Jiajun Zhao^{48,49}, Nawal Alkhalidi^{50,51}, Yahya Ghanem^{52,53}, Phunchai Charatcharoenwitthaya^{54,55}, Mamun Mahtab^{56,57}, Nagwa N. Hegazy^{21,58}, Edford Sinkala^{33,34}, Cecil Kwaku Dovia⁵⁹, Moussa Ali Mahamat^{60,61}, Mortada El-Shabrawi^{62,63}, Dao Viet Hang^{64,65}, Shlomo Vinker^{66,67}, Bilal Hotayt^{68,69}, Mohammed Tahiri^{70,71}, Pavel Bogomolov^{72,73}, Nawal Afredj^{74,75}, Inass Shaltout^{76,77}, Reda Elwakil^{78,79}, Abd Elkhalek Hamed^{77,80}, Lubna Kamani^{81,82}, Maheeba Abdulla^{83,84}, Constant Assi^{85,86}, Oidov Baatarkhuu^{87,88,89}, Munira Al Tarrah^{90,99}, Yousef Ajlouni^{91,92}, Bounena Abidine^{70,71}, Christopher Muñoz⁹³, Mohammad Ali^{94,95}, Emad Salama^{96,97}, Abdelaziz Elamin^{98,99}, Iqbal Ahmad Memon^{100,101,102}, Aram Mirijanyan^{11,12}, Sajjad Jamil^{81,82}, Alexander V. Nersesov^{103,104}, Nseabasi Ekanem¹⁰⁵, Waseem Hamoudi^{106,107}, Bisi Bright^{108,109}, Teresa Casanovas^{110,111}, Ewaoche Itodo^{112,113}, Esther A Torres^{114,115}, Maja Karin^{116,117}, Enver Zerem^{118,119,120}, Svetlana Turcan^{121,122}, Audrius Dulskas^{123,124}, Iulianna Lupasco^{125,126}, Alina Jucov^{127,128}, Christian Tzeuton^{129,130}, Roger Sombie^{131,132}, Kateryna Lapshyna^{133,134}, Andriy Dorofeyev^{134,135}, Yaw A Awuku^{136,137}, Hilal Ünalmiş Duda¹³⁸, Rijimra Ande¹³⁹, Nehal El Koofy^{140,141}, Naglaa Kamal^{142,143,144}, Ziyan Pan¹⁴⁵, Angela Peltec¹⁴⁶, Liang Qiao^{145,147}, Andry Lalaina Rinà Rakotozafindrabe^{148,149}, Ahmed Salama^{150,151}, Reham Soliman¹⁵², Badre Wafaa¹⁵³, Marinela Debu¹⁵⁴, Eileen A Micah^{155,156}, Gamal Shiha^{157,158}, Mohammed Eslam¹⁴⁵, Yasser Fouad^{159,160}

¹ Department of Internal Medicine, Al-Azhar University, Cairo, Egypt.

² Egyptian Association for Research and Training in Hepato-Gastroenterology (EARTH)

³ Division of Gastroenterology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand.

⁴ Liver Foundation of Thailand and Thai Association for the Study of the Liver

⁵ Department of Infectious Diseases, Peking University First Hospital, Beijing, China

⁶ Chinese Society of Hepatology

⁷ University clinic of Gastroenterohepatology, Faculty of Medicine, University "Ss Cyril and Methodius", Skopje, RN Macedonia.

⁸ Macedonian Society for Gastroenterohepatology.

⁹ Division of Clinical Gastroenterology and Hepatology, Hospital Eugenio Espejo, Quito, Ecuador.

¹⁰ Sociedad Ecuatoriana de Gastroenterología.

¹¹ Gastroenterology and Hepatology Service, Yerevan Medical Scientific Center, Yerevan, Armenia

¹² Armenian Hepatological Association.

¹³ Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Rashid Hospital, Dubai Health.

¹⁴ Emirates Gastroenterology and Hepatology Society

¹⁵ School of Medicine, Department of Medicine, Makerere University College of Health Sciences, Kampala, Uganda.

¹⁶ Uganda Gastroenterology Society (UGES).

¹⁷ Liver Diseases Department, Baku Health Center, Azerbaijan

¹⁸ Azerbaijan Gastroenterologists and Hepatologists Association.

¹⁹ Hospital Guillermo Kaelin de la Fuente, Lima, Perú; Editor Principal, Revista de Gastroenterología del Perú.

²⁰ Sociedad de Gastroenterología del Perú.

* Corresponding author: Mohamed Alboraie, Department of Internal Medicine, Faculty of Medicine, Al-Azhar University, Nasr City, Cairo 11884, Egypt.
E-mail address: alboraie@azhar.edu.eg (M. Alboraie).

- ²¹ Department of Public Health and Community Medicines, Menoufia University, Menoufia, Egypt.
- ²² WONCA East Mediterranean.
- ²³ Department of General Practice and Emergency Medicine, B.P.Koirala Institute of Health Sciences, Dharan, Nepal.
- ²⁴ World Organization of Family Doctors (WONCA)
- ²⁵ Hepatobiliary Division, Department of Internal Medicine, Dr. Cipto Mangunkusumo National General Hospital, Medical Faculty Universitas Indonesia, Jakarta, Indonesia.
- ²⁶ Indonesian Association for the Study of the Liver
- ²⁷ Senior Endocrinologist, Department of Endocrinology, Joshi Clinic, Mumbai, Maharashtra, India.
- ²⁸ The International Diabetes Federation Southeast Asia
- ²⁹ Department of Medicine, College of Medicine and Health Sciences, Sultan Qaboos University.
- ³⁰ Oman Gastroenterology Society
- ³¹ Department of Gastroenterology, Clinical Center of Serbia, University of Belgrade School of Medicine, Belgrade, Serbia.
- ³² Medcompass Alliance
- ³³ Department of Internal Medicine, Univeristy of Zambia, Zambia
- ³⁴ Zambian association of Gastroenetrology and Nutrition
- ³⁵ Department of Medicine, School of Medical Sciences, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia. GI & Motility Unit, Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia.
- ³⁶ Malaysian Society of Gastroenterology & Hepatology
- ³⁷ Department of Hepatology, BSM Medical University, Dhaka, Bangladesh.
- ³⁸ Bangladesh Hepatology Society
- ³⁹ Department of Gastroenterology, West China Hospital, Sichuan University, Chengdu, China
- ⁴⁰ Chinese Society of Gastroenterology
- ⁴¹ Department of Gastroenterology, Changzheng Hospital, Naval Medical University, Shanghai, China.
- ⁴² Gastroenterology and Hepatology Department, Hamad Medical Corporation, Doha, Qatar.
- ⁴³ Qatar Society of liver disease.
- ⁴⁴ Department of Traditional and Western Medical Hepatology, Hebei Medical University Third Hospital, Shijiazhuang, China.
- ⁴⁵ Department of Medicine, Faculty of Clinical Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria
- ⁴⁶ Society for Gastroenterology & Hepatology in Nigeria (SOGHIN)
- ⁴⁷ Department of Endocrinology, Translational Research of Diabetes Key Laboratory of Chongqing Education Commission of China, the Second Affiliated Hospital of Army Medical University, Chongqing, China.
- ⁴⁸ Chinese Society of Endocrinology
- ⁴⁹ Department of Endocrinology, Shandong Provincial Hospital Affiliated to Shandong First Medical University, Jinan, Shandong, China; Shandong Key Laboratory of Endocrinology and Lipid Metabolism, Jinan, Shandong, China.
- ⁵⁰ Gastroenterology & Hepatology Teaching Hospital, Medical City, Ministry of Health and Environment, Baghdad, Iraq
- ⁵¹ Iraqi society of gastroenterology
- ⁵² Gastroenterology and Hepatology Department, Sanaa university medical college, Yemen.
- ⁵³ Yemeni society for gastroenterology and hepatology
- ⁵⁴ Medicine Department, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand
- ⁵⁵ Thai Association for the Study of the Liver (THASL)
- ⁵⁶ Hepatology Unit, Bangabandhu Sheikh Mujib Medical University, Bangladesh
- ⁵⁷ Association for the Study of Liver Diseases Bangladesh.
- ⁵⁸ The Egyptian Family Medicine Association (EFMA)
- ⁵⁹ Cedaku Foundation of Ghana
- ⁶⁰ Department of Internal Medicine and Gastroenterology, Hôpital La Référence Nationale de N'Djamena
- ⁶¹ Societé Tchadienne des Maladies de l'Appareil Digestif (STMAD)
- ⁶² Paediatric Hepatology Unit, Department of Paediatrics, Faculty of Medicine, Cairo University, Cairo, Egypt.
- ⁶³ The International Society of Tropical Paediatrics (ISTP).
- ⁶⁴ Internal Medicine Faculty, Hanoi Medical University, Endoscopy Centre, Hanoi Medical University Hospital, Hanoi, Vietnam.
- ⁶⁵ Vietnam Association for the Study of Liver diseases
- ⁶⁶ Department of Family Medicine, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
- ⁶⁷ WONCA Europe
- ⁶⁸ Gastroenterology Department, Sahel General Hospital, Beirut P.O. Box 90-1603, Lebanon.
- ⁶⁹ Lebanese Society of Gastroenterology and Hepatology.
- ⁷⁰ Service de Gastro-entérologie, Centre Hospitalier Universitaire Ibn Rochd, Casablanca, Maroc.
- ⁷¹ Moroccan society of digestive diseases
- ⁷² Moscow Regional Research Clinical Institute, Moscow, Russian
- ⁷³ The Russian Scientific Liver Society
- ⁷⁴ Hepatology Unit, Department of Medicine Mustapha Hospital, Algiers, Algeria.
- ⁷⁵ Société Algérienne d'Hépatogastroentérologie et d'Endoscopie Digestive (SAHGEEED)
- ⁷⁶ Department of Internal Medicine, Faculty of Medicine, Cairo University, Cairo, Egypt.
- ⁷⁷ Arabic Association for the Study of Diabetes and Metabolism.
- ⁷⁸ Tropical Medicine Department, Faculty of Medicine, Ain Shams University, Egypt.
- ⁷⁹ The African Middle East association of Gastroenterology (AMAGE)
- ⁸⁰ Department of Internal Medicine, Hepatology, and Diabetes, Egyptian Military Medical Academy, Cairo, Egypt.
- ⁸¹ Department of Gastroenterology, Liaquat National Hospital, Karachi, Pakistan.
- ⁸² Pakistan GI and Liver Disease Society (PGLDS)
- ⁸³ Department of Internal Medicine, Ibn Al Nafees Hospital, Manama 54533, Bahrain.
- ⁸⁴ Bahrain Gastroenterology Interest Group
- ⁸⁵ Service d'Hépatogastroentérologie, CHU de Cocody, Abidjan, Cote d'Ivoire
- ⁸⁶ Société Ivoirienne de Gastro-Entérologie et d'Endoscopie Digestive (SIGEEED)
- ⁸⁷ Department of Infectious Diseases, School of Medicine, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia.
- ⁸⁸ Mongolian Association for the Study of Liver Diseases.
- ⁸⁹ Hepatology, Gastroenterology and Infectious diseases Department, Al-Amiri Hospital, Kuwait City, Kuwait.
- ⁹⁰ Gastronenterology and hepatology unit, Al Amiri hospital. Kuwait Gastroenterology Association
- ⁹¹ Department of Internal Medicine, Royal Medical Services, King Hussein Medical City, Amman, Jordan.
- ⁹² The Jordanian Society of Gastroenterology.
- ⁹³ Yellow Warriors Society Philippines (YWSP), Manila, Philippines.
- ⁹⁴ Hepato-Biliary-Pancreatic- Surgery & Liver transplamt unit, BIRDEM General Hospital, Dhaka, Bangladesh.
- ⁹⁵ National Liver Foundation of Bangladesh, Dhaka, Bangladesh.
- ⁹⁶ Pediatrics Department, Medical Research & Clinical Studies Institute, National Research Centre, Cairo, Egypt.

- ⁹⁷ The Arabian International Society of Nutrition, Gastroenterology, and Infectious Diseases (AISNGID)
- ⁹⁸ Pediatrics Department, College of Medicine and Medical Sciences, Arabian Gulf University, Manama, Bahrain.
- ⁹⁹ Sudanese society of pediatric hepatology.
- ¹⁰⁰ Sir Syed College of Medical Sciences for Girls, Karachi, Pakistan.
- ¹⁰¹ Pakistan Pediatric liver society
- ¹⁰² Asian Pan Pacific Societies of Pediatric Gastroenterology, Hepatology & Nutrition (APPSPGHAN).
- ¹⁰³ Department of Gastroenterology and Hepatology, National Research Institute of Cardiology and Internal Diseases, Asfendiyarov National Medical University, Almaty 050000, Kazakhstan.
- ¹⁰⁴ Kazakh Association for the Study of the Liver.
- ¹⁰⁵ Founder/CEO Trinity Healthcare Foundation, Abuja, Nigeria.
- ¹⁰⁶ Internal Medicine Department, Al-Bashir Hospital, Amman, Jordan.
- ¹⁰⁷ The Jordanian Society of Gastroenterology and Hepatology
- ¹⁰⁸ LiveWell Initiative, Yesuf Abiodun Street, Victoria Island, Lagos, Nigeria.
- ¹⁰⁹ Women in Hepatitis Africa, Womens Wellness Center for Hepatitis, Isale Ajoke, Iwaya-Makoko, Lagos State, Nigeria.
- ¹¹⁰ Liver Unit, Hospital Universitari de Bellvitge, Barcelona, Spain.
- ¹¹¹ Asociación Catalana de Pacientes Hepáticos (ASSCAT), Barcelona, Spain.
- ¹¹² Department of Medical Laboratory Science, Faculty of Allied Health Science, College of Medicine and Health Science, Baze University, Abuja, Nigeria.
- ¹¹³ Medical Laboratory Science, Baze University, Abuja, Nigeria.
- ¹¹⁴ University of Puerto Rico, School of Medicine, San Juan, Puerto Rico
- ¹¹⁵ Asociación Puertorriqueña de Gastroenterología (Puerto Rican Gastroenterology Association)
- ¹¹⁶ Department of Gastroenterology and Hepatology, University Clinical Hospital Mostar, Bijeli Brijeg bb, Mostar, Bosnia and Herzegovina.
- ¹¹⁷ Association of Gastroenterologists and Hepatologists of Bosnia and Herzegovina
- ¹¹⁸ Department of Medical Sciences, the Academy of Sciences and Arts of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina.
- ¹¹⁹ Euroasian Gastroenterological Association
- ¹²⁰ Gastroenterohepatology Association of Bosnia and Herzegovina
- ¹²¹ Department of Gastroenterology, "Nicolae Testemitanu" State University of Medicine and Pharmacy, Republic of Moldova.
- ¹²² Gastroenterology and Hepatology Society from Republic of Moldova
- ¹²³ Institute of Clinical Medicine Faculty of Medicine Vilnius University, Vilnius, Lithuania.
- ¹²⁴ Lithuanian society of oncologists
- ¹²⁵ Research Laboratory of Gastroenterology, "Nicolae Testemitanu" State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.
- ¹²⁶ Medical Association of Gastroenterology And Hepatology "HEPATEG"
- ¹²⁷ Department of Gastroenterology, State University of Medicine and Pharmacy "Nicolae Testemitanu" Chişinău, Republic of Moldova.
- ¹²⁸ Romanian Association for the Study of the Liver
- ¹²⁹ Faculty of Medicine and Pharmaceutical Sciences of Douala, University of Douala, Douala, Cameroon.
- ¹³⁰ Société Camerounaise de Gastro-Entérologie
- ¹³¹ Département d'Hépatogastroentérologie, CHU Yalgado Ouédraogo, Ouagadougou, Burkina Faso.
- ¹³² Society of Hepatology-Gastroenterology and Digestive endoscopy (SOBUHGEED)
- ¹³³ Department of internal medicine, Kharkiv national medical university, Ukraine.
- ¹³⁴ Ukrainian Gastroenterological Association
- ¹³⁵ Department of Internal Medicine and Geriatrics, Shupic National Healthcare University of Ukraine Kyiv, Ukraine.
- ¹³⁶ Department of Medicine, University of Health and Allied Sciences, Ho, Ghana.
- ¹³⁷ Hepatitis Society of Ghana.
- ¹³⁸ HEPYAŞAM ASSOCIATION- TÜRKIYE
- ¹³⁹ Centre for Initiatives and Development (CFID) Taraba Nigeria
- ¹⁴⁰ Pediatric department, Cairo University.
- ¹⁴¹ International society of tropical pediatrics
- ¹⁴² Department of Pediatrics and Pediatric Hepatology, Kasralainy Faculty of Medicine, Cairo University, Egypt.
- ¹⁴³ Consultant Pediatric Gastroenterologist, Alhada Armed Forces Hospital, Saudi Arabia. Department of Pediatric Hepatology, Kasralainy Faculty of Medicine, Cairo University, Egypt.
- ¹⁴⁴ The International Society of Medical Specialties (ISMS)
- ¹⁴⁵ Storr Liver Centre, Westmead Institute for Medical Research, Westmead Hospital and University of Sydney, Sydney, New South Wales, Australia.
- ¹⁴⁶ Discipline of Gastroenterology, Department of Internal Medicine State University of Medicine and Pharmacy "Nicolae Testemitanu" Educational program in digestive and metabolic disease. Republic of Moldova
- ¹⁴⁷ The Association of Liver Patients Care (ALPC).
- ¹⁴⁸ Service de Gastroentérologie, Centre Hospitalier Universitaire, Befelatanana, Antananarivo, Madagascar.
- ¹⁴⁹ Société Médico-Chirurgicale de Gastroentérologie de Madagascar
- ¹⁵⁰ Suez General Hospital.
- ¹⁵¹ The International Society of Medical Specialites
- ¹⁵² Tropical Medicine Department, Faculty of Medicine, Port Said University, Port Said, Egypt.
- ¹⁵³ Ibn Rochd University Center. Societe Marocaine Des Maladies De L'appareil Digestif
- ¹⁵⁴ Romanian Association for Patients With Liver Disease (APAH-RO)
- ¹⁵⁵ Department of Medicine, Komfo Anokye Teaching Hospital, Kumasi, Ghana
- ¹⁵⁶ Ghana Association for the Study of Liver and Digestive Diseases (GASLIDD)
- ¹⁵⁷ Hepatology and Gastroenterology Unit, Internal Medicine Department, Faculty of Medicine, Mansoura University, Egypt, Egyptian Liver Research Institute and Hospital (ELRIAH), Sherbin, El Mansoura, Egypt.
- ¹⁵⁸ The Association of Liver Patients Care (ALPC).
- ¹⁵⁹ Department of Gastroenterology, Hepatology and Endemic Medicine, Faculty of Medicine, Minia University, Cairo, Egypt.
- ¹⁶⁰ Egyptian MAFLD research group (EMRG).

We, the undersigned, are a group of over 80 professional societies representing multiple stakeholders from more than 75 countries; we hereby reaffirm our endorsement of the name metabolic (dysfunction)- associated fatty liver disease (MAFLD) as an appropriate term and its corresponding definition for fatty liver diseases associated with metabolic dysregulation [1-3].

This open letter represents the views of individuals and societies across the global liver health community. We are putting

forth this letter in response to the overwhelming evidence that supports the practicality and usefulness of the MAFLD definition for patient awareness and management, with several studies indicating that it achieves an optimal balance between sensitivity and specificity when compared to other proposed definitions [4]. This aspect is supposed to have substantial implications beyond the change of nomenclature, including cost-effectiveness and health policy.

Additionally, the term MAFLD strikes the right balance between lack of stigma and easy communication without medicalizing the disease names. It takes into account the global perspective, aligning it well with other diseases across the metabolic dysregulation spectrum. The name is easier to communicate with various stakeholders, including non-hepatology healthcare providers, primary care providers, patients, and policymakers [5–9]. In fact, studies have demonstrated that the transition to MAFLD has positive consequences in raising awareness about this condition among patients and their health-care professionals. It also increases attention and flow of knowledge about disease among health systems in various regions of the world [10].

By avoiding unjustified abrupt changes in the nomenclature and definition of fatty liver disease, we can achieve greater standardization across the spectrum of disease and move towards a more coherent, logical, and cogent framework to understand, diagnose, and treat this prevalent disease.

Authors contributions

All authors contributed and approved the final draft of the manuscript.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of interests

None.

References

- [1] Eslam M, et al. Defining paediatric metabolic (dysfunction)-associated fatty liver disease: an international expert consensus statement. *The Lancet Gastroenterology & Hepatology* 2021;6(10):864–73.
- [2] Eslam M, et al. A new definition for metabolic dysfunction-associated fatty liver disease: An international expert consensus statement. *Journal of hepatology* 2020;73(1):202–9.
- [3] Eslam M, et al. MAFLD: a consensus-driven proposed nomenclature for metabolic associated fatty liver disease. *Gastroenterology* 2020;158(7):1999–2014.e1.
- [4] Alharthi J, et al. Metabolic dysfunction-associated fatty liver disease: a year in review. *Current Opinion in Gastroenterology* 2022;38(3):251–60.
- [5] Méndez-Sánchez N, et al. Global multi-stakeholder endorsement of the MAFLD definition. *The lancet Gastroenterology & hepatology* 2022;7(5):388–90.
- [6] Ramírez-Mejía MM, et al. Breaking new ground: MASLD vs. MAFLD—which holds the key for risk stratification? *Hepatology International* 2024;18(1):168–78.
- [7] Pan Z, et al. MAFLD predicts cardiovascular disease risk better than MASLD. *Liver International* 2024.
- [8] Pan Z, et al. MAFLD identifies patients with significant hepatic fibrosis better than MASLD. *Hepatology International* 2024;18(3):964–72.
- [9] Pan Z, et al. MAFLD criteria are better than MASLD criteria at predicting the risk of chronic kidney disease. *Annals of Hepatology* 2024;29(5):101512.
- [10] Fouad Y, et al. Change from NAFLD to MAFLD increases the awareness of fatty liver disease in primary care physicians and specialists. *Journal of hepatology* 2021;74(5):1254–6.