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Global Liver Institute’s International NASH Day 2020 was transformed into an engaging multi-platform experience, convening 80 partner organizations and 25 remarkable international speakers to declare the urgency of combating the parallel epidemics of liver disease and COVID-19.

Held annually on June 12th since 2018, IND in 2020 gathered together more than 80 partners from around the world to draw attention to the most pressing topics in the fight against nonalcoholic steatohepatitis (NASH). This advanced form of chronic, progressive fatty liver disease affects more than 115 million people and is expected to double by 2030.

For the first time, International NASH Day (IND) has been endorsed by the major hepatology organizations in the United States and Europe - the American Association for the Study of Liver Diseases (AASLD) and the European Association for the Study of Liver Diseases (EASL).

GLI’s International NASH Day Social Media Campaign started on June 5th and culminated on June 12th when we hosted six cutting edge, multi-platform virtual panels. We featured well known clinical, research, and patient international experts in liver disease, immunology, nutrition, transplantation, oncology, and public health. They highlighted current challenges and collaborated on innovative cross-disciplinary solutions to prevent, identify, treat, and improve the lives of people living with NASH.

Partners created and amplified messages on social media, conducting radio media tours, and holding complementary panels, podcasts, and educational workshops in the days surrounding June 12th.

Currently there are no FDA or EMA approved drug therapies for NASH patients, although excitingly, on March 5, one was approved by Indian regulators, demonstrating the possibilities for successful drug development. While prevention and weight loss management can be effective earlier, it is difficult, and less effective at later stages. Treatment options need to be tailored to the distinct needs of patients at earlier and later/more advanced stages of disease.. It is important to be cognizant of the unique issues, burdens, and expenses at each stage of the disease for patients, families, and communities when painting a complete impact picture for NASH and considering other potential benefits offered by the intervention.

Mobilizing the global community on International NASH Day was even more important this year! Fatty liver disease, NASH, & liver cancers didn’t stop endangering millions because of COVID-19 and our advocacy cannot either.

Donna Cryer, JD
President and CEO
Global Liver Institute
INTERNATIONAL NASH DAY
JUNE 12, 2020

KEY NUMBERS

80 PARTNERS

6 VIRTUAL NASH EDUCATION PANELS

15M #NASHDAY IMPRESSIONS

11.4M CUMULATIVE RADIO AIRINGS

25 EXPERT INTERNATIONAL SPEAKERS

18,034 TOTAL NASH VIRTUAL EDUCATION PANELS VIEWS

4,524 #NASHDAY POSTS

3.4M #NASHDAY REACH

44M PRESS RELEASE POTENTIAL REACH

293.7M UNIQUE VISITORS OF THE MAT RELEASE

2 INTERNATIONAL ENDORSEMENTS

IN

26 COUNTRIES
The Global Liver Institute is privileged to lead International NASH Day globally and is committed to its success and the safety and well being of patients and partners during this pandemic. For this reason, this year, GLI has transformed International NASH Day into a virtual multi-platform experience to increase awareness about nonalcoholic fatty liver disease (NAFLD), nonalcoholic steatohepatitis (NASH) and the actions people can take to prevent and treat these diseases globally.

On June 12th, GLI hosted live the following six NASH Virtual Educational Panels featuring well known, international, clinical, research, and patient experts in liver disease, immunology, nutrition, transplantation, oncology, and public health.

### NASH AS A GLOBAL PUBLIC HEALTH CHALLENGE

**MODERATOR**
Donna Cryer, JD
President and CEO, Global Liver Institute
Washington, DC, USA

**SPEAKERS**
Pavel Bogomolov, MD, PhD
Head, Hepatology Department, Regional Hepatology Center, Moscow Regional Research and Clinical Institute
Moscow, Russian Federation

Raymond T. Chung, MD, FAASLD
Director of Hepatology and Liver Center, Massachusetts General Hospital;
Associate Professor of Medicine, Harvard Medical School,
Harvard University
AASLD President-Elect
Boston, MA, USA

Marko Korenjak, MA, PhD
President, European Liver Patients Association
Brussels, Belgium

Zobair Younossi, MD, MPH, FACP, FACG, AGAF, FAASLD
Professor and Chairman of the Department of Medicine at Inova Fairfax Hospital
Falls Church, Virginia, USA
PEDIATRIC NASH

MODERATOR
Jeff McIntyre, MA
NASH Program Director, Global Liver Institute
Washington, DC, USA

SPEAKERS
Gina Madison
CEO, NASH kNOWledge
Pittsburgh, PA, USA

Diana Mager, PhD, MSc, RD
Associate Professor, Clinical Nutrition, Department of Agricultural, Food, and Nutritional Science and the Department of Pediatrics, University of Alberta; Li Ka Shing Centre for Health Research Innovation, University of Alberta; Member, Board of Directors, Canadian Liver Foundation
Edmonton, Alberta, Canada

Jake Mann, MD
Pediatric Gastroenterologist, University of Cambridge
Cambridge, United Kingdom

Jennifer Panganiban, MD
Pediatric Gastroenterologist, Children’s Hospital of Philadelphia; Assistant Professor of Clinical Pediatrics, University of Pennsylvania
Philadelphia, PA, USA

NASH AND LIVER CANCER

MODERATOR
Donna Cryer, JD
President and CEO, Global Liver Institute
Washington, DC, USA

SPEAKERS
Jacqueline Daley
Board Member, European Cancer Patient Coalition
Brussels, Belgium

Noelle LoConte, MD
Associate Professor of Medicine, University of Wisconsin; Co-leader, Carbone Cancer Center Gastrointestinal Disease Oriented Group; Member, American Society of Clinical Oncology (ASCO)
Madison, WI, USA

Scott Friedman, MD
Dean for Therapeutic Discovery and Chief of the Division of Liver Diseases, Icahn School of Medicine at Mount Sinai
New York, NY, USA

Vlad Ratziu, MD, PhD
Professor of Hepatology, Sorbonne University; Hepatologist, Pitié-Salpêtrière Hospital, Paris, France; Co-Editor, Journal of Hepatology
Paris, France

Maria Reig, MD, PhD
Head of the Liver Cancer Unit, ICMDiM, Hospital Clinic; BCLC group - IDIBAPS, CIBEREHD
Barcelona, Spain
BEYOND THE BIOPSY: THE ROLE OF NON-INVASIVE TECHNOLOGIES IN NASH

MODERATOR
Donna Cryer, JD
President and CEO, Global Liver Institute
Washington, DC, USA

SPEAKERS
Hannes Hagström, MD
Consultant in Hepatology, Karolinska University Hospital
Stockholm, Sweden

Vanessa Hebditch
Director of Communications and Policy, British Liver Trust
Bournemouth, United Kingdom

Mary E. Rinella, MD, FAASLD
Professor of Medicine, Gastroenterology and Hepatology,
Northwestern University
NASH Task Force Chair, AASLD
Chicago, Illinois, USA

Emmanouil Tsochatzis MD, MSc, FEBTM, FRCP, PhD
Associate Professor and Honorary Consultant in Hepatology, UCL Institute for Liver and Digestive Health,
Royal Free Hospital
Member, EASL Scientific Committee
London, United Kingdom

Julia Wattacheril, MD, MPH
Associate Professor of Medicine, Director of the Nonalcoholic Fatty Liver Disease Program,
Center for Liver Disease and Transplantation;
Columbia University Irving Medical Center
New York, NY, USA

NASH AND OBESITY

MODERATOR
Donna Cryer, JD
President and CEO, Global Liver Institute
Washington, DC, USA

SPEAKERS
Helena Cortez-Pinto MD, PhD
Vice President, UEG - United European Gastroenterology; Director of Clínica Universitaria de Gastroenterología, Universidade de Lisboa; Director, Laboratário de Nutrição da FML
Lisboa, Portugal

George Kalamitsis
President, Liver Patients International
Brussels, Belgium
Joe Nadglowski, BS
CEO and President, Obesity Action Coalition
Tampa, FL, USA

Jude Oben, MD, BMCh, FRCP, FRCPE
Associate Professor of Hepatology, Institute for Liver and Digestive Diseases, University College London; Consultant Gastroenterologist/Hepatologist, Guy’s and St Thomas’ Hospital, London; Obesity Action
London, United Kingdom

Arun J Sanyal, MD, MBBS
Professor, Department of Internal Medicine, Gastroenterology, Hepatology and Nutrition, Virginia Commonwealth University
Richmond, VA, USA
NASH AND METABOLIC SYNDROME

MODERATOR

Dennis R. Cryer, MD, FAHA
Board of Directors, Global Liver Institute;
Chief Medical Officer, CryerHealth, LLC;
Board of Directors, Association of Black Cardiologists;
Asthma and Allergy Foundation of America;
Treasurer, Friends of the National Library of Medicine
Washington, DC, USA

SPEAKERS

Pavel Bogomolov, MD, PhD
Head, Hepatology Department, Regional Hepatology
Center, Moscow Regional Research and Clinical Institute
Moscow, Russian Federation

Raymond T. Chung, MD, FAASLD
Director of Hepatology and Liver Center, Massachusetts
General Hospital;
Associate Professor of Medicine, Harvard Medical School,
Harvard University
AASLD President-Elect
Boston, MA, USA

Marko Korenjak, MA, PhD
President, European Liver Patients Association
Brussels, Belgium

Zobair Younossi, MD, MPH, FACP, FACG, AGAF,
FAASLD
Professor and Chairman of the Department of Medicine at
Inova Fairfax Hospital
Falls Church, Virginia, USA
80 PARTNERS

2 International Endorsements (AASLD - EASL)
26 Countries
16 International Non-Governmental Organizations
21 National Patients’ Organizations and Foundations
25 Universities, Hospitals and Research Centers
5 Additional Institutional Partners

26 COUNTRIES

Argentina  France  Italy  Spain
Austria  Germany  Macedonia  Sweden
Bangladesh  Ghana  Mexico  Switzerland
Belgium  Greece  Netherlands  United Kingdom
Brazil  India  Nigeria  United States
Canada  Ireland  Portugal
Croatia  Israel  Russian Federation
ENDORSEMENTS
For the first time, a patient-led organization event, Global Liver Institute’s International NASH Day, was formally endorsed by the 2 major liver scientific societies in hepatology: AASLD and EASL, and supported by several others.

INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS

AASLD - American Association for the Study of Liver Disease
AMH - Mexican Hepatology Association
ASCO - American Society of Clinical Oncology
EASL - European Association for the Study of the Liver
ECPC - European Cancer Patient Coalition
ELPA - European Liver Patients’ Association
ESOT - European Society for Organ Transplant
ILCA - International Liver Cancer Association
INASL - Indian National Association for Study of the Liver
LPI - Liver Patients International
NCD - Non Communicable Diseases Alliance
NN - NASH Net
OAC - Obesity Action Coalition
PBC - Primary Biliary Cholangitis Foundation
SAASL - South Asian Association for the Study of the Liver
UEG - United European Gastroenterology
NATIONAL PATIENTS’ ORGANIZATIONS AND FOUNDATIONS

• American Liver Foundation (USA)
• Arizona Liver Health (USA)
• British Liver Trust (United Kingdom)
• Canadian Liver Foundation (Canada)
• Children’s Liver Disease Foundation (UK)
• Deutsche Leberhilfe (Germany)
• Empowerment for Sustainable Livelihood (Ghana)
• Evidence-based Medicine Support and Development Foundation (Russian Federation)
• Fatty Liver Foundation (USA)
• Fondazione Epatocentro Ticino (Switzerland)
• Foundation for National Institutes of Health (USA)
• Hepas Prometheus (Greece)
• Hepatitis Hilfe (Austria)
• Hepatos (Croatia)
• Israel Association for the Health of the Liver (Israel)
• Lafiya Wealth Initiative (Nigeria)
• NASH kNOWledge (USA)
• Nederlandse Leverpatiënten Vereniging (Netherlands)
• Save Liver Association of Patients (Macedonia)
• Sayani Foundation for the Liver Diseases & Liver Transplant (Argentina)
• Swiss NASH Foundation (Switzerland)

UNIVERSITIES, HOSPITALS AND RESEARCH CENTERS

• Antwerp University Hospital (Belgium)
• Columbia University (Center for Liver Disease and Transplantation) (USA)
• Children’s Hospital of Philadelphia (USA)
• Duke University Medical Center NAFLD Clinical Research Program (USA)
• Forum for the Study of the Liver (Bangladesh)
• Harvard University (USA)
• Hospitales Angeles Clínica Londres (Mexico)
• Hospital Clinic de Barcelona - University Hospital (Spain)
• Hospital Israelita Albert Einstein (Brazil)
• Hospital Quironsalud Barcelona (Spain)
• Icahn School of Medicine at Mount Sinai (USA)
• Inova Fairfax Medical Campus (USA)
• Italian Institute for Planetary Health - IIPH c/o Mario Negri Research Institute (Italy)
• Karolinska Institutet (Sweden)
• Kings College Hospital (United Kingdom)
• La Sorbonne University (France)
• NorthWest University (USA)
• Institute for Liver and Digestive Health - UCL (UK)
• Universidade de Lisboa (Portugal)
• UC Berkeley School of Public Health (USA)
• University of Alberta - Li Ka Shing Institute for Virology (Canada)
• University of Cambridge - Institute of Metabolic Science (UK)
• University of Wisconsin - Carbone Cancer Center (USA)
• Virginia Commonwealth University (USA)
• Yale University School of Medicine (USA)

ADDITIONAL INSTITUTIONAL PARTNERS

• The Health Policy Partnership
• The Liver Forum
• The Washington Post
• The Mexican Consulate
• U.S. Senator Bill Cassidy (Louisiana)
• The Russian Gazette
• The Russian Healthcare Deputy Minister, Oleg Salagay, PhD
TRADITIONAL MEDIA

PRESS RELEASE
A press release highlighting International NASH Day and the epidemic of nonalcoholic steatohepatitis was released on June 12, 2020. A press release for use by international partners was translated into 3 languages.

- Picked up by 344 News Outlets
- Potential Reach: 44 Million

RADIO TOUR
A radio tour of local, regional, and national radio shows featured GLI’s President and CEO Donna Cryer and the Fatty Liver Foundation’s Wayne Eskridge on June 12.

- 11,410,060 Cumulative Radio Airings
- 562,318 Online Audience
- 753 Audio News Release Airings

MAT RELEASE
GLI wrote and distributed a MAT article, which appears as promoted content in both online and print publications.

- 2,512 Mat Release Postings
- 293,764,030 Unique Visitors
SOCIAL MEDIA CAMPAIGN

OBJECTIVES
1. Educate about NASH/NAFLD globally
2. Create awareness about NASH/NAFLD
3. Highlight issues important to liver patients
4. Illustrate new research and non-invasive diagnostic technologies

TOP #NASHDAY USERS

<table>
<thead>
<tr>
<th>USER</th>
<th>POTENTIAL IMPRESSIONS</th>
<th>POTENTIAL EXPOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GlobalLiverInstitute</td>
<td>Auth</td>
<td>548,465</td>
</tr>
<tr>
<td>Livia Alimena LREUT</td>
<td></td>
<td>21,231</td>
</tr>
<tr>
<td>Centro de Investigación y Gastr.</td>
<td></td>
<td>3,648</td>
</tr>
<tr>
<td>Lafiya Wealth Initiative</td>
<td></td>
<td>1,175</td>
</tr>
<tr>
<td>Loz Ude Eze</td>
<td></td>
<td>153,952</td>
</tr>
<tr>
<td>ELPA evvn</td>
<td></td>
<td>122,020</td>
</tr>
<tr>
<td>Deutsche Leberhilfe</td>
<td></td>
<td>2,506</td>
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<tr>
<td>EASL_iif</td>
<td></td>
<td>12,844</td>
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<tr>
<td>IvyAhmed, MPH</td>
<td></td>
<td>2,880</td>
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<tr>
<td>Dr Chioma Nwakanma-Akanno</td>
<td></td>
<td>516,410</td>
</tr>
<tr>
<td>Fundación Sayani</td>
<td></td>
<td>6,111</td>
</tr>
<tr>
<td>Esomichi Henry</td>
<td></td>
<td>8,505</td>
</tr>
<tr>
<td>Paola Andreacci</td>
<td></td>
<td>4,185</td>
</tr>
</tbody>
</table>

#NASHDAY

PERFORMANCE ACROSS ALL SOCIAL MEDIA PLATFORMS

4,524 POSTS
785 USERS
18,758 ENGAGEMENTS
3,422,327 REACH
15,087,159 IMPRESSIONS
## Social Media Impact Over Time

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likes</td>
<td>750 Facebook Likes</td>
<td>1,072 Facebook Likes</td>
<td>2,667 Facebook Likes</td>
</tr>
<tr>
<td></td>
<td>761 Twitter Followers</td>
<td>1,215 Twitter Followers</td>
<td>2,952 Twitter Followers</td>
</tr>
<tr>
<td></td>
<td>357 Followers Used #NASHDAY</td>
<td>598 Followers Used #NASHDAY</td>
<td>785 Followers Used #NASHDAY</td>
</tr>
<tr>
<td></td>
<td>1.3 M #NASHDAY Impressions</td>
<td>2.79M #NASHDAY Impressions</td>
<td>15M #NASHDAY Impressions</td>
</tr>
<tr>
<td></td>
<td>503 Tweets Tagged #NASHDAY</td>
<td>1,513 Tweets Tagged #NASHDAY</td>
<td>4,524 Tweets Tagged #NASHDAY</td>
</tr>
</tbody>
</table>
During International NASH Day, GLI released 3 educational brochures on specific areas of the NAFLD/NASH journey.

These brochures - NAFLD/NASH: Am I At Risk, NAFLD/NASH: Have You Been Diagnosed, and Pediatric NAFLD/NASH - are designed to educate about NAFLD/NASH, what is it, who is most at risk, and best methods for detection and diagnosis, and issues specific to children.

As NAFLD/NASH is progressive, chronic, life-threatening, AND global - these brochures are available in 12 different languages for patients and stakeholders throughout the world: English, German, Macedonian, Italian, Arabic, Greek, Hebrew, Russian, French, Portuguese, Spanish, and Croatian.

This year Global Liver Institute launched a new International NASH Day website www.international-nash-day.com

The website includes a world map with partner events, the Virtual NASH Educational Panel videos, patient brochures available in 12 languages, and more.
This year GLI led the first Virtual International NASH Hill Day. Due to continued COVID-19 health concerns, the in-person event transitioned into a Virtual Hill Day to allow those who support our shared policy priorities—including elevating liver public policy to its proper place on the global public health agenda consistent with its prevalence and incidence—to educate elected officials about the importance of key initiatives and how they are making a difference.

GLI encouraged its peers to urge lawmakers on Capitol Hill to support the LIVER Act and ask for its inclusion in the next COVID-19 response package.

Over the past several decades, liver diseases have relentlessly risen to become one of the leading causes of death and illness worldwide. The Liver Illness Visibility, Education and Research (LIVER) Act of 2019 (HR3016, S3074) is a public health initiative that will help people of all ages, ethnic backgrounds, and lifestyles reduce their risk for liver cancer and related liver diseases like NASH by enhancing the federal government’s research and public health initiatives while empowering local entities to promote treatment and raise awareness.

Pairing the rise of health modulating factors like over nutrition with the risks COVID-19 poses for the liver and for people with suppressed immune systems, the need for the LIVER Act has only increased in recent months. Capitol Hill Days are an invaluable opportunity to connect with United States Members of Congress in Washington, DC to emphasize this point.

GLI also created several resources to help advocates engage, including template emails, liver policy background information, informational messaging techniques, phone call talking points, and template tweets.

**IMPACT**

More than 15 Congressional offices in the United States House of Representatives and Senate were contacted. The actions of liver disease advocates who participated in this Virtual Hill Day demonstrated the groundswell of support that the LIVER Act and liver policy has across the United States.
HIGHLIGHTS OF PARTNER VIRTUAL EVENTS IN NORTH AMERICA

AASLD - AMERICAN ASSOCIATION FOR THE STUDY OF THE LIVER (USA)

June 12 - For the first time, AASLD endorsed International NASH Day and actively engaged in the social media campaign. President elect, Prof. Raymond T. Chung, was one of the panelists in the panel organized by GLI: NASH as a Global Public Health Challenge. Other AASLD members that participated in GLI NASH Virtual Educational Panels include: Prof. Mary Rinella, Prof. Arun Sanyal, and Prof. Zobair Younossi.

American Liver Foundation (USA)

June 12 - The American Liver Foundation created a text messaging programme dedicated to people affected by NAFLD and NASH. ALF also organized a NASH Day Web Conference followed by a Q&A session: “Ask the Experts on NASH” in partnership with Arizona Liver Health. Speakers include Dr. Naim Alkourhi and Anita Kohli. ALF is a GLI IND grassroots grant recipient.
CANADIAN LIVER FOUNDATION (CANADA)

June 11 - 12 - The Canadian Liver Foundation organized several activities to mark International NASH Day: a Live Fatty Liver Disease Event on Facebook presented by Prof. Mark Swain (University of Calgary) and Prof. Diana Mager (University of Alberta). Dr. Diana Mager was also one of the speakers in the NASH Virtual Educational Panel organized by GLI: Pediatric NAFLD/NASH.

The Canadian Liver Foundation created and launched NAFLD/NASH Educational (animated) Videos on the following topics: What is Non-Alcoholic Fatty Liver Disease (NAFLD)? What is Non-Alcoholic Steatohepatitis (NASH)? What can I do if I have NAFLD or NASH?.

CHILDREN’S HOSPITAL OF PHILADELPHIA (USA)

June 12 - The Children’s Hospital of Philadelphia organized a disease awareness campaign both virtual and in the premises. Dr. Jennifer Panganiban and the hospital created a pediatric NAFLD Video launched during the International NASH Day to raise awareness on pediatric nonalcoholic fatty liver disease. Dr. Panganiban was one of the speakers in the NASH Virtual Educational Panel hosted by GLI on Pediatric NASH.
FATTY LIVER FOUNDATION AND GLI (USA)

June 12 - The Fatty Liver Foundation, together with GLI, organized a Radio Media Tour to mark International NASH Day across the USA focusing on NAFLD/NASH awareness and its relation with the pandemic. Interviews of FLF CEO, Wayne Eskridge, and GLI President and CEO, Donna Cryer were aired at various times throughout the day in many US cities reaching an impressive cumulative audience of 11,410,060. Fatty Liver Foundation is a GLI IND grassroots grant recipient.

NASDAQ TOWER - INTERNATIONAL NASH DAY BILLBOARD (USA)

June 12 - Enanta Pharmaceuticals elevated Intenational NASH Day to new heights with an 8-story billboard on the Nasdaq Tower in Times Square in New York City.
**NASH - NET (USA AND CANADA)**

June 12 - NASH-NET released a podcast miniseries to promote NASH awareness and provider/patient education via social media. The series, hosted by Dr. Dinani, Hepatologist (Icahn School of Medicine, Mount Sinai), featured several hepatologists across the country. The discussion was focused on various aspects of the NASH care continuum, including: Episode 1: Burden of disease and the importance of early identification. Episode 2: Diagnostics. Episode 3: Existing and emerging treatments. Episode 4: The patient perspective on the disease.

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**NASH KNOWLEDGE (USA)**

June 15 - NASH kNOWledge, based in Pittsburg, PA, organized several activities to mark International NASH Day. Their 2019 NASH Documentary was re-aired by the local PBS Station; a pediatric NASH coloring book was created by founding GLI Board Member Thelma Theil to raise disease awareness among children, and a press release was issued. NASH Knowledge CEO, Gina Madison, participated in the NASH Virtual Educational Panel hosted by GLI on Pediatric NASH.
THE LIVER FORUM - BERKELEY SCHOOL OF PUBLIC HEALTH (USA)

June 12 - The Liver Forum strongly supported Global Liver Institute during IND with a social media campaign and with their newsletter. In addition, they created a dedicated page on their website featuring the International NASH Day press release and information about the NASH Virtual Educational Panels hosted by GLI and the international social media campaign.

TAWAZUN HEALTH (INTERNATIONAL)

June 6 to 12 - Marking International NASH Day in both the United States and in Europe, Louise Campbell from Tawazun Health was a guest speaker in an episode of the weekly online podcast series: Surfing the NASH Tsunami. In episode number nine, Stephen Harrison, Peter Traber, and Louise Campbell discussed International NASH Day and patient contribution in liver diseases with GLI President and CEO, Donna Cryer. This episode was broadcast on June 11 and supported GLI’s global social media campaign. Surfing the NASH Tsunami, produced by HEP Dynamics, has 1000 subscribers in 17 countries over 5 continents and is focused on the clinical research and patient advocacy in NAFLD/NASH and liver disease.
HIGHLIGHTS OF PARTNER VIRTUAL EVENTS IN CENTRAL AND SOUTH AMERICA

AMH - MEXICAN HEPATOLOGY ASSOCIATION (MEXICO)

June 9 - The President of the Mexican Hepatology Association, Dr. Graciela Castro Narro and Dr. Eira Cerda Reyes organized a national press conference to announce their IND event (webinar) to the press. The IND webinar took place on June 9 and was focused on prevention of NAFLD and NASH during COVID-19 pandemic. It featured speeches from: Dr. Graciela Castro and Dr. Eria Cerda and from gastroenterology, nutrition and pediatric experts.

HOSPITALES ANGELES CLÍNICA LONDRES (MEXICO)

June 8 to 13 - The Centro de Investigación y Gastroenterología of the Hospital led by Dr. Laura Ladron De Guevara organized an important social media campaign to raise awareness among the mexican population on NASH and fatty liver. The program included: patient testimonials, interviews with several experts, patient information on nutrition and exercise, and videos. The Gastroenterology Center of Hospitales Angeles Clinica Londres is a GLI IND grassroots grant recipient.
HOSPITAL ISRAELITA ALBERT EINSTEIN (BRAZIL)

June 12 - In Brazil, International NASH Day was marked by Hospital Israelita Albert Einstein that organized an important social media and awareness campaign for the general public and health workers. The Hospital created a website dedicated to NAFLD and NASH, hosting the video and patients' leaflets created for the social media campaign. The campaign was very successful with a total reach of 360,048.

SAYANI FOUNDATION (ARGENTINA)

June 12 - In Argentina, International NASH Day was celebrated by the Sayani Foundation that organized an important and extensive social media and awareness campaign. The Foundation hosted five webinars with healthcare specialists to discuss and learn more about NASH: Dr. Fernando Gruz (Hepatologist), Dr. Barbara Cavallo (Endocrinologist), Dr. Jorge Mendez (Cardiologist), Gaston Ortiz (healthcare journalist) and Paola Andrenacci (Nutritionist). The Foundation also organized a special activity - a “virtual coffee” with the experts to learn more about NAFLD-NASH.
HIGHLIGHTS OF PARTNER VIRTUAL EVENTS IN EUROPE

BRITISH LIVER TRUST (UNITED KINGDOM)

June 12 - To mark International NASH Day in the United Kingdom, the British Liver Trust (BLT) organized a social media campaign and added an IND dedicated page on their website including patients materials and the press release. BLT Director of Communications and Policy, Vanessa Hebditch, participated in the NASH Virtual Educational Panel hosted by GLI on Beyond the Biopsy: the Role of NITs in NASH.

CHILDREN’S LIVER DISEASES FOUNDATION (UNITED KINGDOM)

June 12 - The Children’s Liver Diseases Foundation organized an important social media campaign and created a dedicated webpage on their website to mark International NASH Day in the United Kingdom. Their IND webpage includes patient materials and the press release. The Childrens’ liver Diseases Foundation is a GLI IND grassroots grant recipient.
DEUTSCHE LEBERHILFE E. V. (GERMANY)

June 12 - To celebrate International NASH Day in Germany, Deutsche Leberhilfe e.V. created a dedicated IND webpage where the IND brochures were published as well as the German IND press release. An updated presentation and additional information about NAFLD and NASH in Germany (also in relation with COVID-19) was added. Finally, the German patients’ organization hosted a local IND social media campaign. Deutsche Leberhilfe is a GLI IND grassroots grant recipient.

EASL - EUROPEAN SOCIETY FOR THE STUDY OF THE LIVER (EUROPE)

June 12 - For the first time, EASL endorsed International NASH Day and actively engaged and supported the IND social media campaign. The following EASL members participated as panelists in the NASH Educational Panels hosted by GLI: Prof. Sven Francque, Dr. Jake Mann, Prof. Emmanuoiil Tsochatzis and Dr. Maria Reig. EASL also created a dedicated IND webpage on their website posting the press release and providing extensive information about IND, the NASH Virtual Educational Panels, and GLI.
ELPA - EUROPEAN LIVER PATIENTS’ ASSOCIATION (EUROPE)

June 5 to June 12 - To mark International NASH Day in several European Countries, ELPA joined GLI in the IND week-long social media campaign and published several posts regarding their own extensive aligned campaign. The ELPA President was invited to take part in the NASH Virtual Educational Panel hosted by GLI: NASH as a Global Public Health Challenge. ELPA is a GLI IND grassroots grant recipient.

Evidence Based Medicine Support and Development Foundation (Russian Federation)

June 12 - The Evidence Based Medicine Support and Development Foundation President, Prof. Pavel Bogomolov (Hepatologist and Director of Moscow Regional Hepatology Center), participated in the NASH Virtual Educational Panel hosted by GLI: NASH as a Global Public Health Challenge. The Foundation CEO, Maria Rozhok, is disseminating all six NASH Virtual Educational Panels hosted by GLI with Russian captions.
HEPATITIS HILFE - HHO (AUSTRIA)

June 12 - The Austrian Liver Patients Association, Hepatitis Hilfe, and its President, Angelika Windham, organized several activities to mark International NASH Day. A virtual live press conference was transformed into a 7 minute long movie for ORF-TV, one of the major Austrian television channels. The German version of the press release was published on the Association website. The virtual press conference gained very good media coverage. The Austrian Patients Association is a GLI IND grassroots grant recipient.

HEPAS PROMETHEUS (GREECE)

June 12 - The Greek liver patient organization, Hepas Prometheus, had an holistic approach to mark IND in Greece. The organization created a dedicated NASH section on the website. This section includes GLI patient brochures in the Greek version and the video. Prometheus created a video for the campaign filmed in a music studio, where a young man provides information about NASH and its challenges in a captivating, playful way. Additionally a powerful social media campaign was organized disseminating GLI International NASH Day materials. Hepas Prometheus is a GLI IND grassroots grant recipient.
HEPATOS (CROATIA)

June 9 - The Croatian Association for the Liver Diseases, Hepatos, and its President, Tatjana Reic, organized the high level event: “HCC – An Avoidable Fate” endorsed by the Croatian Presidency of the Council of the EU. The event was virtually attended by representatives from global organizations such as WHO, EASL-ILF, ACHIEVE, VHPB with its second part dedicated to fatty liver with a debate led by prof. Ivica Grgurević, Head of the Department of Gastroenterology, Hepatology, and Clinical Nutrition, University Hospital Dubrava. The event was organized in collaboration with the Croatian Academy of sciences and arts - Department of Medical Sciences, WHO Office in Croatia, Croatian Society for Internal Medicine Oncology, Croatian Oncological Society, Croatian Society for Gastroenterology, and Croatian National Reference Centre for Diagnostics and Treatment of Viral Hepatitis of the Ministry of Health.

On June 10, Hepatos members and local health professionals organized an awareness day distributing patient materials to the general population with the Hepatos Mobile Van, InfoHep, in Zagreb. The event was covered by the local and national media and the major Croatian TV networks. Hepatos is a GLI IND grassroots grant recipient.

KING’S COLLEGE UNIVERSITY (UNITED KINGDOM)

June 30 - Dr. Saima Ajaz (Liver Research, Institute of Liver Studies, Kings College Hospital, NHS Foundation, Honorary Sr. Clinical Lecturer, School of Immunology and Microbial sciences,

King’s College and Founder of patient support group for NAFLD-LIVFIT) organized and moderated a remarkable webinar on the Role of Lifestyle Modification in NAFLD: Myth or Reality? The outstanding panel of speakers included Prof. Michael Trenell (Professor of Metabolism & Lifestyle Medicine, Newcastle University, UK), Prof. Shira Zelber-Sagi (Associate Professor, Head of School of Public Health, Faculty of Social Welfare and Health Sciences, University of Haifa The Tel-Aviv Medical Center, Department of Gastroenterology and Hepatology) and Dr. Kate Hallsworth (Expert on physical activity and exercise as a clinical therapy with particular focus on non-alcoholic fatty liver disease). The webinar was endorsed by: the British Association for the Study of the Liver (BASL), the British Society of Gastroenterology (BSG) and South London CRN. King’s College Hospital is a GLI IND grassroots grant recipient.
LPI - LIVER PATIENTS INTERNATIONAL (EUROPE)

June 12 - In order to mark the International NASH Day, Liver Patients International made a video dedicated to NASH, nutrition, and liver health and organized an important social media campaign including online website publication (social media outreach 500,000). Participants in the campaign included the LPI network and 11 well-established liver patient-led European organizations, patients, clinicians, general population, and journalists. LPI President, George Kalamitis, participated also in the NASH Virtual Educational Panel hosted by GLI: NASH and Obesity. LPI is a GLI IND grassroots grant recipient.

NCD - ALLIANCE (INTERNATIONAL)

June 12 - To support GLI to mark the International NASH Day globally, the Non Communicable Diseases Alliance organized an international social media campaign and added an IND dedicated page on their website - including patient materials and the press release. This well known and widespread organization also informed its hundreds members and network about the IND publishing a detailed article on the newsletter.
PBC FOUNDATION (INTERNATIONAL)

June 12 - The PBC Foundation Head of Education and Development, Robert Mitchell-Thain, hosted a webinar dedicated to patients affected by both PBC and NASH or with PBC and NAFLD with Prof. James Neuberger (Queen Elizabeth Hospital, Birmingham) as main guest and Dr. Andrew Yeoman. The webinar explored the latest news and new specialised medical information relative to PBC, NAFLD, and NASH as well as coping strategies relating to physical and emotional well being. In addition, a special number of the Foundation Magazine, Bear Facts, was dedicated to NASH focusing on: medical advisors, updates on treatments, symptoms, healthy lifestyle, and the results of medical research. PBC Foundation is a GLI IND grassroots grant recipient.

PHARMASTAR (ITALY)

June 5 to 12 - One of the main Italian healthcare newspapers and online platforms, Pharmastar, realized important virtual initiatives in joining GLI to increase disease awareness on NASH in Italy. Dr. Emilia Vaccaro interviewed GLI International NASH Day and EU Office Director, Livia Alimena, about International NASH Day and GLI projects in a 10 minute podcast. IND posters, banners, extensive information about the NASH Virtual Educational Panels, and the IND press release (translated in Italian) were published on the website. Pharmastar also joined GLI in the week-long social media campaign.
SLAP - SAVE LIVER ASSOCIATION OF PATIENTS (MACEDONIA)

June 5 to 12 - The President of Save Liver Association of Patients, Biljana Mircheska, organized the first remarkable IND campaign in Macedonia including: a virtual press conference with representatives from NGOs with doctors and scientific associations that was covered by national and local TV stations and journals. SLAP joined GLI in the week-long social media campaign translating GLI social media tiles into Macedonian and disseminating GLI International NASH Day brochures (in Macedonian). In addition, the Association organized a walk in the nearby forest to raise awareness about healthy lifestyles. SLAP is a GLI IND grassroots grant recipient.

SWISS NASH FOUNDATION (SWITZERLAND)

June 12 - The Swiss NASH Foundation, directed by Prof. Jean-François Dufour developed six NASH videos from doctor and patient perspective to raise awareness on NAFLD and NASH in the general public. The videos, together with GLI patient brochures (in German, in French and in Italian) are hosted on a newly created IND page on the Foundation website.
HIGHLIGHTS OF PARTNER VIRTUAL EVENTS IN AFRICA AND ASIA

EMPOWERMENT FOR SUSTAINABLE LIVELIHOOD (GHANA)

June 12 - The International NASH Day in Ghana was successfully organized by the Empowerment for Sustainable Livelihood organization in the Sunyani, Bono Region (Accra). In the Service Training Centre, Mr. William Jacob Ocran organized a full training day on NAFLD-NASH, focusing on pediatric NASH, general NAFLD-NASH awareness, NASH diagnosis, and options for NASH treatment. The training was held by Dr. Henry Andoh, Dr. Isaiah Leweh, Dr. Lilian Bentuma Bondzie Micah, and Dr. Clara Appiah. NASH screening tests were also performed before the training. This training day and social media campaign was so successful that neighbouring villages asked for information about NAFLD, NASH, and International NASH Day. Empowerment for Sustainable Livelihood is a GLI IND grassroots grant recipient.
LAFIYA WEALTH INITIATIVE (NIGERIA)

June 12 - Lafiya Wealth Initiative successfully conducted the first IND edition in Nigeria. The main goal of the advocacy and social media awareness campaign was to highlight NASH risk factors and define health service needs in Nigeria. Several activities took place: a public awareness march was carried out at two shopping malls and at a market (in Abuja) with the distribution of the three IND patient brochures. A live stream talk show was conducted by the Executive Director of Lafiya Wealth Initiative, Dr. Laz Ude Eze, to educate the public on NASH and its prevention. The campaign included the distribution of NASH information pamphlets among journalists at a dedicated media event in Abuja. In the social media campaign, Dr. Chioma Nwakamma, focused on NASH prevention and management.

The Executive Director, Dr. Laz Ude Eze, was also one of the panelists in the NASH Virtual Educational Panel hosted by GLI on NASH and Metabolic Syndrome. Lafiya Wealth Initiative is a GLI IND grassroots grant recipient.
June 12 - The Israeli Association for the Health of the Liver, led by Julio Bauman and Sindee Weinbaum, organized an important IND awareness campaign dedicated to NASH and fatty liver in children. It included an extensive social media campaign, dedicated patient information on their website, educational animated videos (in Hebrew and in English) and GLI NASH educational brochures (in Hebrew, English, Russian, and Arabic) and a presentation about fatty liver. All the mentioned materials were distributed virtually to school teachers and sent to the schools to be used in an awareness campaign on pediatric NASH to educate children and their families. HETZ is a GLI IND grassroots grant recipient.
FORUM FOR THE STUDY OF THE LIVER (BANGLADESH)

June 12 - In Bangladesh, International NASH Day was dedicated to the father of the country: Mr. Bangabandhu. Prof. Mamun Al Mahtab (Chairman of the Forum for the Study of the Liver) organized an International NASH Day webinar with Prof. Ajay Duseja (Hepatologist, India), Dr. Sheik Mohammad Fazle Akbar (Researcher, Japan), Prof. Chitta Ranjan Debnath (Head of Hepatology, Bangladesh), and Prof. K.M.J. Zaki (Bangladesh).

Prof. Mamun Al Mahtab wrote two awareness articles highlighting the 3rd International NASH Day dedicated to Bangabandhu in Daily Prothom Alo and Daily Ittefaq. These two Bengali newspapers have more than 6 million subscriptions across the world. A television show dedicated to NAFLD and NASH one the national TV channel took place. Prof. Mamun Al Mahtab (President, & Secretary General, South Asian Association for the Study of the Liver & Vice President, Euroasian Gastroenterological Association) participated in the panel commission organized by The Economist. Forum for the Study of the Liver is a GLI IND grassroots grant recipient.

INASL - INDIAN NATIONAL ASSOCIATION FOR THE STUDY OF THE LIVER (INDIA)

June 12 - The Indian National Association for the Study of the Liver organized the important NASH Virtual Symposium: “NAFLD the XXI Century Pandemic - Current Update” and an extensive social media campaign. The following leading Indian and international experts took part in it: Prof. Zobair Younossi (Chairman Dept. of Medicine, Inova, USA), Prof. Rakesh Aggarwall (INASL President), Dr. Kaushal Madan (INASL Secr. General), Prof. Subrat K. Acharya (Gastroenterologist, President AIIMS), Prof. Yogesh Chawla (Chairman KIIT University), Prof. Anil Anora (Chairman, Institute of Liver Gastroenterology) and Prof. Ajay Duseya (Head of Hep Department).
2020 SPONSORS

Global Liver Institute is grateful for the leadership and generous contributions of our corporate sponsors whose support makes International NASH Day possible and effective.

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Zydus
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We look forward to International NASH Day 2021
For more information contact NASHday@globalliver.org

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Operations Manager

Global Liver Institute Team

We are grateful to Ivy Ahmed, Jen DelGrande, Richard Gelula and Andrew Scott for their important contribution and support.
# APPENDIX A

## FULL LIST OF PARTNERS

<table>
<thead>
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<th>PARTNER</th>
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<td>Virtual IND Educational Panel and Panel translations into Russian</td>
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<td>Social Media and Online Campaigns, Patient Education Videos, Testimonials and Information</td>
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<td>Awareness, Education and Screening via the Community NASH Health Screening Outreach Project</td>
<td>Ghana</td>
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<td>Forum for the Study of the Liver</td>
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<td>IND Webinar broadcasted on the national TV to celebrate: Bangabandhu 3rd International NASH Day. Several IND articles published on the major national newspapers. TV show dedicated to IND</td>
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<td><a href="https://helpa-prometheus.gr/">https://helpa-prometheus.gr/</a></td>
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<td>Virtual Conference, Social Media Campaign and Testing</td>
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<td>HETZ - Israel Association for the Health of the Liver</td>
<td><a href="https://www.worldhepatitisalliance.org/member/hetz-israel-association-health-liver">https://www.worldhepatitisalliance.org/member/hetz-israel-association-health-liver</a></td>
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PRESS RELEASE (ENGLISH VERSION)

Global Liver Institute’s International NASH Day Convenes 80 Partner Organizations and 30 Speakers to Declare Urgency of Combatting Parallel Epidemics of Liver Disease and COVID-19

Obesity, type II diabetes, and high blood pressure increase the risk of NASH and negatively affect outcomes for COVID-19 patients

View in Spanish | French | German

Washington, DC - June 12, 2020 - For the first time, International NASH Day (IND), a global awareness and action initiative of the Global Liver Institute (GLI), is endorsed by the major hepatology organizations in both the United States and Europe, the American Association for the Study of Liver Diseases (AASLD) and the European Association for the Study of Liver Diseases (EASL). Held annually on June 12 since 2018, IND in 2020 will convene more than 80 partners from around the world to draw attention to the most pressing topics in the fight against nonalcoholic steatohepatitis (NASH), the advanced form of chronic, progressive fatty liver disease, which affects more than 115 million people and expected to double by 2030.

Today, GLI hosts six cutting edge, multi-platform virtual panels featuring clinical, research, and patient experts in liver disease, immunology, nutrition, transplantation, oncology, and public health from the U.S., Belgium, Canada, France, Germany, Italy, Portugal, Nigeria, Spain, Sweden, Russia, and the United Kingdom to describe current challenges and collaborate on innovative cross-disciplinary solutions to prevent, identify, treat, and improve the lives of people living with NASH. In addition, partners are creating and amplifying messages on social media, conducting radio media tours, and holding complementary panels, podcasts, and educational workshops in the days surrounding June 12th.

The virtual panels are scheduled to air starting at 7 am EDT through 4:15 pm EDT and will offer diverse perspectives from 30 speakers that will address:

- NASH as a Global Public Health Challenge Panel
- Pediatric NASH
- NASH and Liver Cancer
- Beyond the Biopsy: The Role of Non-invasive Technologies (NITs) in NASH
- NASH and Obesity
- NASH and Metabolic Syndrome

NAFLD (nonalcoholic fatty liver disease) and NASH (nonalcoholic steatohepatitis) occur when fat continues to accumulate in liver cells leading to inflammation and injury to the cells. Symptoms of NASH can be difficult to recognize but can include fatigue and pain in the upper right abdomen. For this reason, people with NASH are often unaware of their liver condition until the disease progresses. NASH is the second leading cause of liver transplant in the US and is predicted to become the leading cause. However, early screening and lifestyle changes can have an impact on NASH progression and potentially reverse the disease in early stages.
Millions of people worldwide are at risk for the potentially fatal liver diseases of NAFLD and its more severe form, NASH. NASH is a major risk factor for many other health conditions. People living with NASH usually have one or more metabolic disorders (such as obesity, type II diabetes, and cardiovascular disease). Thirty-seven percent of people with obesity have NASH, similarly 37% of people with type 2 diabetes also have NASH. Under identified and untreated, NASH may result in serious outcomes including cirrhosis, liver cancer, liver transplant, or death. Now more than ever, the COVID-19 pandemic adds additional risks for those with NASH.

“With the global prevalence of fatty liver disease at 25%, there is an urgent need to accelerate the adoption of the noninvasive technologies which are revolutionizing the field of NASH to more safely and effectively identify, stage, and determine treatment response in this growing number of patients,” stated Zobair Younossi, MD, MPH, President of Inova Medicine and Chairman of Department of Medicine, Inova Fairfax Medical Campus. “The Global Liver Institute’s International NASH Day plays a significant role in building awareness of screening, NASH education and advocacy, and taking actions that will significantly impact this global epidemic.”

“International NASH Day unites, and inspires a collective call to action, which is never more urgent than in 2020 when we are set to yield the harvest of years of diligence and investment in drug and diagnostic technology development and momentum in awareness and policy,” says Donna R. Cryer, JD, Founder and CEO of the Global Liver Institute. “We must make the most of this moment together.”

Get Involved

- For additional information on International NASH Day, visit www.international-nash-day.com
- Support the IND social media campaign using hashtag #NASHday and Twitter @GlobalLiver.
- International NASH Day and its logo is a registered trademark of Global Liver Institute.

About GLI

The Global Liver Institute is a 501(c)(3) tax-exempt not-for-profit organization, headquartered in Washington, D.C., United States. GLI, the only liver health non-for-profit to operate in the US and Europe, is advocating for liver health to take its place on the global public health agenda commensurate with its prevalence and impact. GLI’s mission is to improve the impact of the liver community by promoting innovation and collaboration and scaling optimal approaches to eradicating liver diseases.

For more information on GLI visit www.GlobalLiver.org, follow us on Twitter @GlobalLiver, Facebook @ GlobalLiver, and Instagram @globalliverinstitute.
International NASH Day Draws Attention to Severe Liver Disease

(NU) - An advanced form of liver disease known as nonalcoholic steatohepatitis (NASH) affects more than 115 million people worldwide and is expected to double by 2030. If left untreated, NASH may result in serious outcomes, including cirrhosis, liver cancer, liver transplant, or death. NASH is the advanced form of a chronic, progressive fatty liver disease called NAFLD (nonalcoholic fatty liver disease). NASH and NAFLD occur when fat accumulates in liver cells and causes cell inflammation and injury. Symptoms of NASH can be difficult to recognize and many people are unaware that they have the condition until it has progressed. NASH is the second leading cause of liver transplant in the US, and is predicted to become the leading cause. However, the early screening by a healthcare provider and the adoption of lifestyle changes can slow disease progression and may even reverse the condition if it is identified in early stages.

To raise awareness of NASH and NAFLD, the Global Liver Institute, a non-profit organization dedicated to advocating for greater awareness of liver health issues, hosts International NASH Day on June 12, convening more than 80 partners from around the world to draw attention to the most pressing topics in the fight against NASH. This year the event is endorsed by the major hepatology organizations in both the United States and Europe: the American Association for the Study of Liver Diseases and the European Association for the Study of Liver Diseases.

“International NASH Day unites and inspires a collective call to action, which is never more urgent than
in 2020 when we are set to yield the harvest of years of diligence and investment in drug and diagnostic technology development and momentum in awareness and policy,” says Donna R. Cryer, JD, founder and CEO of the Global Liver Institute. “We must make the most of this moment together.” Millions of people worldwide are at risk for the potentially fatal liver disease of NAFLD and its more severe form, NASH, which is expected to double by 2030. NASH is a major risk factor for many other health conditions. People living with NASH usually have one or more metabolic disorders (such as obesity, type II diabetes, or cardiovascular disease). Thirty seven percent of people with obesity have NASH. Similarly, 37% of people with type 2 diabetes also have NASH. Under-identified and untreated, NASH may result in serious outcomes including cirrhosis, liver cancer, liver transplant, or death. Now more than ever, the COVID-19 pandemic adds additional risks for those with NASH.

This year’s event includes virtual panels featuring 30 experts from around the world who will describe current challenges and collaborate on innovative cross-disciplinary solutions to prevent, identify, treat, and improve the lives of people living with NASH. The virtual panels are scheduled for 7 am - 4:15 pm EDT on June 12. The event will also be posted on GLI’S YouTube channel.

Topics include NASH as a global health crisis, as well as NASH in special populations, such as children and cancer patients. In addition, medical experts emphasize how factors that increase the risk of NASH, namely obesity, type II diabetes, and high blood pressure, also increase the risk of serious illness for individuals infected with the COVID-19 virus.

Find out more about International NASH Day at international-nash-day.com.

For more information on preventing and managing all types of liver disease, visit GlobalLiver.org and follow the Global Liver Institute on Twitter @GlobalLiver, Facebook @GlobalLiver, and Instagram @globalliverinstitute.
What is NAFLD/NASH?

Nonalcoholic fatty liver disease (NAFLD)
NAFLD, nonalcoholic fatty liver disease, is a condition where there is too much fat builds up in the liver. If left untreated, it can lead to serious liver problems.

Nonalcoholic steatohepatitis (NASH)
NASH is caused when that extra fat turns into inflammation (swelling in the liver) and fibrosis (scarring) of the liver. If severe enough, that can lead to cirrhosis or liver cancer.

Who is at risk for pediatric NAFLD/NASH?

Children with obesity are at the greatest risk for developing pediatric NAFLD and NASH. Other factors such as type-2 diabetes, insulin resistance, metabolic syndrome, or high cholesterol can increase a child’s risk.

Pediatric NAFLD and NASH are more common in older children than in younger children and more common in boys than girls. For children with pediatric NAFLD, girls and boys are equally likely to get NASH.

While pediatric NAFLD/NASH occurs in all children, it is more common in Hispanic, Asian, and White children than African-American children. Further research supports that Hispanic children of Mexican origin have one of the highest incidences of NAFLD.

Pediatric NAFLD is the most common cause of liver disease in children in the United States

Researchers estimate that upwards of 10% of American children between 2 and 18 have fatty liver

Globally, 41 million children under the age of 5 have been found to be overweight or obese

More than 340 million children and adolescents ages 5–18 are overweight or obese

If these trends continue, more children and adolescents will be obese than underweight by 2022, according to the Imperial College London and the World Health Organization.

www.international-nash-day.com
How is pediatric NAFLD/NASH diagnosed?
Fatty liver and pediatric NASH can have very few observable symptoms in the early stages. There are, however, several tests to diagnose pediatric NAFLD/NASH in children. These tests include:

1. General clinical history/exam
2. Blood tests
3. Imaging tests (e.g., ultrasound, MRI)
4. Liver biopsy

What are the signs and symptoms to look for in children?
Many children do not display symptoms in the early stages. Once prominent damage to the liver has occurred, signs of pediatric NAFLD/NASH may become more obvious.

Children can report:
- Fatigue
- Changes to skin color
- Abdominal pain

Cirrhosis is advanced liver disease and may be caused by NASH. If it develops in children, these symptoms may be observed:
- Jaundice (yellowing of the skin and whites of eyes)
- Itchy skin
- Swelling of the tummy
- Dark urine

How is pediatric NAFLD/NASH diagnosed?
Fatty liver and pediatric NASH can have very few observable symptoms in the early stages. There are, however, several tests to diagnose pediatric NAFLD/NASH in children. These tests include:

1. General clinical history/exam
2. Blood tests
3. Imaging tests (e.g., ultrasound, MRI)
4. Liver biopsy

What happens if my child is diagnosed?
Currently, there are no approved medications for pediatric NAFLD/NASH. However, in early stages, it is possible to stop it from progressing to liver damage or pediatric NASH through lifestyle change with a focus on physical activity and nutrition.

If left untreated and the liver becomes so damaged to the point of failure, a liver transplant may be required for the child.
How can pediatric NAFLD/NASH be treated?

The amount of fat in the liver can be reduced through diet, physical activity, maintaining a healthy weight, and adequate sleep. This can help treat and prevent pediatric NAFLD and NASH in children.

**Nutrition**

- Switch sugary drinks and sodas for water or low-calories beverages
- Don’t use sugary sweets/foods as a reward
- Read the nutrition labels to look for hidden fat, sugar, and sodium
- Avoid oversized portions for children. Consider using child sized plates
- Have a goal of 5 portions of fruit and vegetables a day
- Stay away from fast food and fried food
- Try not to eat processed foods

**Activity**

- Aim for 60 minutes of physical activity a day. It does not have to be all at the same time. Walk more, exercise, take the stairs whenever possible.
- Sleep matters. Have a regular bedtime for your child to ensure enough sleep. Ask your child's doctor for the amount of sleep they require each night.
- Reduce screen time by limiting media use and device type. Avoid screen time while eating and making sure screen time does not interfere with sleep and physical activity
What about clinical trials and my child?

Clinical trials are research studies, involving all ages, that look at novel ways to prevent, detect, treat disease, or improve quality of life. Research involving children helps scientists:

- identify care that is best for a child
- find the best dosage for medicines
- find treatments for conditions that affect children
- treat conditions that behave differently in children
- understand how treatment affects a growing child’s body

Sources


NASPGHAN Clinical Practice Guideline for the Diagnosis and Treatment of Nonalcoholic Fatty Liver Disease in Children: Recommendations from the Expert Committee on NAFLD and the North American Society of Pediatric Gastroenterology, Hepatology and Nutrition; Miriam B. Vos, et al.


Clinical Trials for NAFLD & NASH in Children, NIDDK, NIH https://www.niddk.nih.gov/health-information/liver-disease/nafld-nash-children/clinical-trials
What is NAFLD/NASH?

Nonalcoholic fatty liver disease (NAFLD)
NAFLD, nonalcoholic fatty liver disease, is a condition where there is too much fat built up in the liver. If left untreated, it can lead to serious liver problems.

Nonalcoholic steatohepatitis (NASH)
NASH is caused when that extra fat turns into inflammation (swelling in the liver) and fibrosis (scarring) of the liver. If severe enough, that can lead to cirrhosis or liver cancer, potentially requiring a liver transplant.

Could I have NAFLD or NASH?

NAFLD and NASH can affect people of any age, including children. It is more common in people who live with certain conditions, including obesity (BMI >30) and conditions that may be related to obesity, such as type 2 diabetes, high blood pressure, or high cholesterol.

While NAFLD/NASH occurs in all populations, it is more common in Hispanic, Asian, and White populations than African-American. Further research supports that Hispanic individuals of Mexican origin have one of the highest incidences. In Europe, NAFLD affects 1 in 4 people with some differences according to geography and different socio-economic and ethnic groups.

Research estimates that about 25% of people worldwide have NAFLD. With the highest rates in South America, the Middle East, Asia, the United States, and Europe. Yet these conditions are under-identified and undertreated.

NAFLD and NASH are under-diagnosed due to a lack of disease awareness, symptoms that are difficult to identify, current screening procedures, and limited treatment and management options. NAFLD is increasing at approximately the same rate as obesity. Worldwide, NAFLD is estimated to occur in 25% of the population.

As global overweight and obesity rates have nearly tripled since 1975 with more than 1.9 billion adults overweight or obese, NAFLD is one of the most prevalent causes of liver disease in adults and children worldwide. NASH is expected to become the leading cause of liver transplant in the United States between 2020-2025.

Talk to your doctor about these factors
What are the signs and symptoms of NASH?

Many individuals do not display symptoms in the early stages. Once prominent damage to the liver has occurred, signs of NASH may become more obvious.

Individuals with NASH can report:
- Fatigue (tiredness that does not resolve with rest)
- Changes to skin color (yellowing)
- Abdominal pain

Cirrhosis is advanced liver disease and can be caused by NASH. If it develops, these symptoms may be observed:
- Jaundice (yellowing of the skin and whites of eyes)
- Itchy skin
- Swelling of the abdomen
- Dark urine

How is NAFLD/NASH diagnosed?

NAFLD and NASH can have very few observable symptoms in the early stages. There are several tests to diagnose NAFLD/NASH. These tests include:

1. General clinical history/exam
2. Blood tests
3. Imaging tests (e.g., ultrasound, MRI)
4. Liver biopsy

What happens if I am diagnosed with NASH?

Currently, there are no approved medications for NAFLD/NASH. However, there are several medications in clinical trials being tested for approval. In early stages, it is possible to stop it from progressing to severe liver damage through lifestyle change by focusing on physical activity and nutrition.

People with NASH are at a higher risk of developing other conditions such as metabolic disorders and cardiovascular disease. Cardiac-related deaths are one of the leading causes of mortality for people living with NASH or non-alcoholic fatty liver disease.

If left untreated and the liver becomes damaged to the point of failure, a liver transplant may be required. NASH can progress into cirrhosis, liver cancer, or result in death and is expected to become the leading cause of liver transplant in the United States.
How can I reduce my risk for NAFLD/NASH?

The amount of fat in the liver can be reduced through nutrition (similar to a Mediterranean diet), physical activity, maintaining a healthy weight, and adequate sleep. This can help prevent and treat NAFLD and NASH.

**Nutrition**

- Read the nutrition labels to look for hidden fat, sugar, and sodium
- Have a goal of 5 portions of fruit and vegetables a day
- Eat foods high in fiber including whole grains
- Use extra virgin olive oil as main added fat
- Consume fish 2-3 times per week

- Switch sugary drinks and sodas for water or low-calorie beverages
- Avoid oversized portions. Different products have different serving sizes
- Avoid processed food and fast food
- Avoid saturated fatty acid

**Activity**

- Aim for 60 minutes of physical activity a day. It does not have to be all at the same time. Walk more, exercise, take the stairs whenever possible
- Sleep matters. Have a regular bedtime to ensure enough sleep. Ask your health care provider about your suggested amount of sleep
- Reduce screen time by limiting media use and device type. Avoid screen time while eating and making sure screen time does not interfere with sleep and physical activity

www.international-nash-day.com
Are clinical trials for me?
If you are at risk or diagnosed with NAFLD or NASH, you may consider being a part of a clinical trial. Clinical trials are research studies that look at different, new ways to prevent, detect, treat disease, or improve quality of life. This research helps scientists:

- Identify care that is best
- Find the best dosage for medicines
- Find treatments for conditions
- Treat conditions that behave differently in different people
- Understand how treatment affects the individual or other conditions

Sources
NAFLD OR NASH: HAVE YOU BEEN DIAGNOSED?

What is NAFLD/NASH?

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NAFLD, nonalcoholic fatty liver disease, is a condition where there is too much fat built up in the liver. If left untreated, it can lead to serious liver problems.

**Nonalcoholic Steatohepatitis (NASH)**
NASH is caused when that extra fat turns into inflammation (swelling in the liver) and fibrosis (scarring) of the liver. If severe enough, that can lead to cirrhosis or liver cancer, potentially requiring a liver transplant.

How is NAFLD/NASH diagnosed?

NAFLD and NASH can have very few observable symptoms in the early stages. There are several tests to diagnose NAFLD/NASH. These tests include:

1. **General clinical history/exam**
2. **Blood tests**
3. **Imaging tests** (e.g., ultrasound, MRI)
4. **Liver biopsy**

What is the difference between a diagnosis for NAFLD and NASH?

If diagnosed, you may be at an early stage or late stage of liver disease. Here is how your health care provider determines the difference:

- If you have fat but no inflammation or tissue damage, the diagnosis is NAFLD
- If you have fat, inflammation, and liver damage, the diagnosis is NASH
- If you have a type of scar tissue in your liver called fibrosis, you may be developing cirrhosis

www.international-nash-day.com
What happens if I am diagnosed with NASH?

Currently, there are no approved medications for NAFLD/NASH. However, it is possible to stop it from progressing to severe liver damage through lifestyle change by focusing on physical activity and nutrition.

People with NASH are at a higher risk of developing other conditions such as metabolic disorders and cardiovascular disease. Cardiac-related deaths are one of the leading causes of mortality for people living with NASH or non-alcoholic fatty liver disease.

If left untreated and the liver becomes damaged to the point of failure, a liver transplant may be required. NASH can progress into cirrhosis, liver cancer, or result in death and is expected to become the leading cause of liver transplant.

What are options for treatment of NAFLD/NASH?

The more serious NASH becomes, the more difficult it is to manage. The amount of fat in the liver can be reduced through nutrition, physical activity, and adequate sleep. This can help NAFLD and NASH at all stages.

While there are no approved therapies, lifestyle modification through nutrition and physical activity are recommended. This can be done through:

1. Healthy food choices
2. Limiting portion sizes
3. Being physically active

- Read the nutrition labels to look for hidden fat, sugar, and sodium
- Have a goal of 5 portions of fruit and vegetables a day
- Eat foods high in fiber including whole grains
- Use extra virgin olive oil as main added fat
- Consume fish 2-3 times per week
- Switch sugary drinks and sodas for water or low-calorie beverages
- Avoid processed food and fast food
- Avoid saturated fats

Aim for 60 minutes of physical activity a day. It does not have to be all at the same time. Walk more, exercise, take the stairs whenever possible
What are the next steps with my health care provider?

Your health care provider will schedule you for regular evaluations to determine severity and provide consultation on treatment.

This may include:

- scheduled blood tests and/or imaging of your liver (e.g., ultrasound, MRI)
- working with a nutritionist or recommended trainer for lifestyle changes

For individuals with NASH, health care providers can provide a variety of options to treat the problems caused by inflammation and cirrhosis. These include:

**Lifestyle**

Lifestyle modification through nutrition and physical activity

**Medication**

No medication is available to reverse the fat buildup in your liver. However, there are several medications in clinical trials being tested for approval. If you have NASH, work with your health care provider on possible medications for diabetes, high blood pressure, or other conditions that may complicate NASH.

**Transplant**

If cirrhosis leads to liver failure, you may need a liver transplant.

Research shows that some individuals may need to lose up to 7 to 10 percent of body weight to reduce liver inflammation. If your BMI is over 40, you may be a candidate for weight loss procedures, such as gastric balloons or bariatric surgery.

Are clinical trials for me?

If you are at risk or diagnosed with NAFLD or NASH, you may consider being a part of a clinical trial. Clinical trials are research studies that look at different, new ways to prevent, detect, treat disease, or improve quality of life. This research helps scientists:

- Identify care that is best
- Find the best dosage for medicines
- Find treatments for conditions
- Treat conditions that behave differently in different people
- Understand how treatment affects the individual or other conditions
The Global Liver Institute is a 501(c)(3) tax exempt not-for-profit organization, headquartered in Washington, D.C., United States. Our Mission is to improve the effectiveness of the liver community by promoting innovation, collaboration, and scaling optimal approaches to eradicating liver disease. International NASH Day and its logo is a registered trademark of the Global Liver Institute.

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Sources

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