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A Public Health Initiative from the American Liver Foundation Demonstrates the Feasibility of a Screening Program for Metabolic Dysfunction-Associated Steatotic Liver Disease

AMERICAN LIVER FOUNDATION

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INTRODUCTION

Metabolic dysfunction-associated steatotic liver disease (MASLD) (formerly known as nonalcoholic fatty liver disease or NAFLD) is a chronic liver disease in which excess fat builds up in the liver in the absence of excessive alcohol consumption or viral etiology.

MASLD is believed to affect 80-100 million people in the United States, and an estimated 20-25% of individuals with MASLD will progress to metabolic dysfunction-associated steatohepatitis (MASH) (formerly known as nonalcoholic steatohepatitis or NASH). There is a lack of awareness and education about MASLD/MASH in the general public and even medical professionals other than hepatologists. Consequently, **screening for MASLD is not offered as part of routine medical care,** which has resulted in severe under-diagnosis and/or delayed diagnosis of MASLD and continued disease progression **(Figure 1).**

To address this gap, the American Liver Foundation (ALF) piloted the MASLD Screening Program. The goal was to provide a "first screen" program in federally-qualified health centers and community clinics serving populations at high-risk for MASLD, followed by education and connection to care (Figure 1). Additionally, another objective of our pilot program was to demonstrate the feasibility and need for widespread screening of MASLD in the primary care setting.

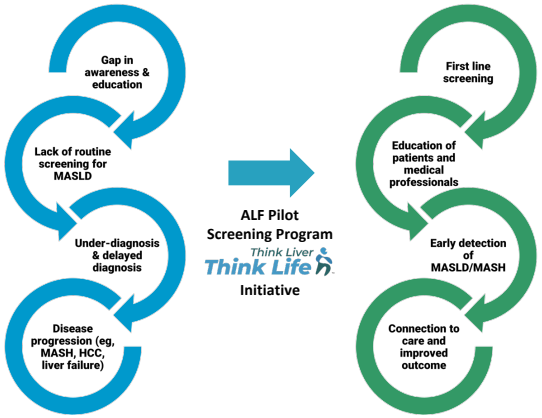
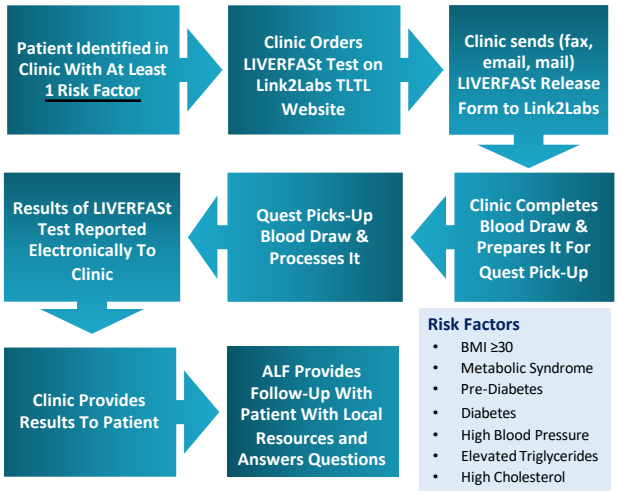


Figure 1: Premise and goal of study



LIVERFASt Blood Test and Demographics Components

• Alpha-2 Macroglobulin	• Alanine Transaminase (ALT)	• Age
• Haptoglobin	• Aspartate Aminotransferase (AST)	• Gender
• Apolipoprotein A1	• Fasting Glucose	• Weight
• Total Bilirubin	• Triglyceride	• Height
• Gamma-Glutamyl Transferase (GGT	• Total Cholesterol	

Figure 2: MASLD screening program's clinic workflow

CONCLUSION

MASLD/MASH is an emerging healthcare crisis in the U.S. **Our pilot program demonstrates the feasibility of widespread screening for MASLD/MASH in high-risk individuals**. ALF plans to expand the Think Liver Think Life campaign (https://thinkliverthinklife.org/) to all 50 states within 5 years, with the goal of improving education, early diagnosis, and access to care for people with liver disease.

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METHODS

Implementation of the pilot screening program included the following steps:

- **Identification of partner organization:** ALF consulted public health professionals in Houston, TX to identify a non-profit community-based clinic (Fundación Latinoamericana De Acción Social) with a long history of providing essential services to disenfranchised patients and filling gaps in healthcare.
- **Testing site development:** With the support of ALF, the clinic completed steps necessary to become a testing site, which included creating a Quest Diagnostics account and ordering phlebotomy supplies to administer LIVERFASt tests (Fibronostics, FL), a blood test that measures 10 biomarkers for steatosis, fibrosis and/or inflammation of the liver (Figure 2, bottom inset).
- **Staff training:** Clinic staff were trained on how to screen patients using the LIVERFASt tests and how to educate patients about MASLD/MASH, weight loss, lifestyle changes and more.
- **Implementation and screening:** ALF and the community clinic collaborated to develop the clinical workflow (Figure 2). Screening tests were performed on at-risk individuals (eg, BMI > 30 or type 2 diabetes) (see Figure 2, right inset, for full list of risk factors), and results were analyzed for evidence of steatosis and fibrosis.
- **Follow-up with participants:** Participants with scores ≥S1 were given educational resources on MASLD and healthy lifestyle choices and linked to healthcare providers or community resources for follow-up care.

RESULTS

- A total of **448 individuals participated in the MASLD screening program** (62% females and 38% males, mean age = 43 years).
- We found that **63% of participants had a steatosis score of S1 or higher, with moderate to severe steatosis (S2-S3) in 32% of individuals screened**. Importantly, most participants with S2-S3 had little evidence of fibrosis, an indicator of reduced blood flow throughout the liver and build-up of scar tissue, signaling an opportunity to potentially halt or reverse disease in these individuals.
- Participants with scores ≥S1 were given educational resources on MASLD and healthy lifestyle choices and linked to healthcare providers for follow-up care.
- After the pilot program concluded in 2021, the established processes were sustained to continue screening at the clinic. Based on lessons learned, ALF has expanded screening through ALF's National Public Health Campaign, Think Liver Think Life, in Federally Qualified Health Centers and Community Clinics in 21 states.

FIBRONOSTICS