

## Screening and diagnosis of metabolic dysfunction-associated steatotic liver disease in children with obesity in public healthcare

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### Abstract

Childhood obesity and related metabolic dysfunction-associated steatotic liver disease (MASLD) have emerged as major global challenges. Guidelines recommend screening for MASLD from children with overweight/obesity, but it remains unclear how this is actually realized. We investigated the implementation of screening and diagnosis of pediatric MASLD in healthcare.

Medical data of 926 children investigated due to overweight or obesity in primary (n=350) and tertiary (n=576) healthcare in 2002-2020 were collected. Particular emphasis was paid to the methods used for screening and diagnosing MASLD and possible temporal changes.

Median age of the patients was 11.6 years, 43% were girls and 87% obese. The screening included alanine aminotransferase (ALT) measurement in 83%, ultrasound imaging in 9% and no screening in 8%. It was more frequent among obese children and in specialized care. Altogether 81% underwent differential diagnostics for MASLD and 88% screening of metabolic comorbidities. There was no change in screening rates over time. ALT 2x upper limit was seen in 45% and steatosis in 64% of those studied. Altogether, MASLD was diagnosed by clinician for 7%, while 14% met the criteria retrospectively. There was a trend towards increasing number of children receiving diagnoses by clinician and fulfilling MASLD criteria over time, but these were nonsignificant. Liver biopsy was performed in four cases, with three showing steatohepatitis and early-stage fibrosis.

The implementation of MASLD screening was mostly in line with the recommendations. However, many affected children may remain unrecognized, often due to asymptomatic presentation, indicating a need for more efficient diagnostic algorithms.