

## diagnosed with metabolic fatty liver disease

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### Background

With childhood obesity rates increasing, metabolic associated fatty liver disease (MAFLD) has become the most common liver disease among children worldwide. MAFLD may progress from simple steatosis (SS) to metabolic associated steatohepatitis (MASH), subsequently leading to fibrosis/cirrhosis. Depending on the diagnostic tool used, the prevalence of MAFLD in the pediatric population ranges from 7 to 12% in the general pediatric population to 34-80% in obese children.

### Method

Children diagnosed with any of the following: Overweight/ Obesity (Overweight- BMI > 85<sup>th</sup> percentile / Obese- BMI > 95<sup>th</sup> percentile), diabetes, presence of fat on ultrasounds or elevated liver function tests were referred to the Liver Disease and Hepatitis Program (LDHP) by their primary care provider. They were screened for MAFLD using non-invasive vibration controlled transient elastography (VCTE) with controlled attenuation parameter (CAP) software to measure liver fat and stiffness.

### Purpose

Although simple hepatic steatosis usually has a “benign” finding, MASH may progress into end-stage liver disease. Liver scarring in children can progress faster than adults. The aim of this study is to investigate the characteristics of Alaska Native children diagnosed with MAFLD.

### Results

18 children were referred, and 16 were enrolled. The study participants were aged 5-17 years (median age 11.5 years). The majority of the participants were male (n=13). The highest body mass index (BMI) ranged from 24-46, with a median BMI of 34 kg/m<sup>2</sup>. Waist circumference (WC) ranged from 31-53, with a median WC of 44 inches. MAFLD was confirmed in 15 participants with a CAP score greater than 274 dB/meter (279-378). Fourteen of the 16 participants had no or minimal fibrosis, VCTE <8.4 kPa (F0-F1). One participant had a fibrosis score of 8.7 kPa, indicating moderate scarring in the liver. The participants' A1C level ranged from 4.8-6.9 mg/dL; five participants were considered pre-diabetic based on the A1C level.

### Conclusion

This study provides important preliminary data regarding MAFLD in children. We plan to recruit from 30 to 50 more children this year to participate in this study.

Fibrosis and CAP Score by Age and Sex

