MRI measurement of liver fat content predicts the metabolic syndrome

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Résumé en anglais	**BACKGROUND AND AIMS:** The prevalence of non-alcoholic fatty liver disease among cardiometabolic patients is not completely known because liver biopsy cannot be routinely performed. However, as magnetic resonance imaging (MRI) allows accurate and safe measurement of the hepatic fat fraction (HFF), the aim of this study was to quantify liver fat content in a dysmetabolic adult population. **METHODS:** A total of 156 adults were included in this cross-sectional study. Liver and visceral fat were assessed by MRI in these subjects, who presented with zero to five metabolic components of the metabolic syndrome (MetS). Arterial stiffness was recorded by ultrasonography, and the maximum Youden index was used to set the optimal HFF cutoff value predictive of the presence of the MetS. **RESULTS:** Overall, 72% of participants displayed three or more MetS components. HFF ranged from 0.3% to 52% (mean 13.4%). Age- and gender-adjusted HFF was positively correlated with BMI (r=0.44), blood pressure (r=0.19), triglyceridaemia (r=0.22) and glycaemia (r=0.31). MRI-measured visceral adipose tissue did not influence the relationship of steatosis with glycaemia, HOMA-IR and carotid stiffness, but there was a dose-response relationship between the number of MetS components and mean HFF. The optimal HFF for predicting the MetS was found to be 5.2% according to the maximum Youden index point. **CONCLUSION:** This study highlighted the impact of liver steatosis on cardiometabolic abnormalities with an optimal cutoff value of 5.2% for defining increased metabolic risk.
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