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# The presence of fatty liver has a differential impact on the development of diabetes according to the persistence of fatty liver

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Objective: The aim of our study was to evaluate whether variable fatty liver status over time influence the risk of type 2 diabetes differently.
Methods: We analyzed the data from 7,849 subjects without type 2 diabetes who underwent comprehensive health check-ups annually for 5 years. All subjects had an abdominal ultrasonography annually. The risk of incident diabetes was assessed in individuals with sustained non-alcoholic fatty liver disease (NAFLD), individuals with changed fatty liver status (intermittent NAFLD group), and individuals who did not have NAFLD (never NAFLD group) during the study period. A subgroup analysis was done of subjects in the intermittent NAFLD group. Incident diabetes was compared according to the number of time diagnosed as NAFLD by annual ultrasonography.
Results: During the mean follow-up of 4 years, subjects in the sustained NAFLD group had a HR of 1.55 (95% CI 1.16– 2.01) for the development of diabetes compared with those in the never NAFLD group, whereas the risk was not higher in the intermittent NAFLD group (HR 0.98, 95% CI 0.74-1.29). When compared with the intermittent NAFLD group, multivariable adjusted HR for incident diabetes was 1.58 (95% CI 1.25-1.99) in the sustained NAFLD group. As the number of times diagnosed as NAFLD increased, the proportion of subjects who developed diabetes also increased (p=0.002).
Conclusions: The presence of fatty liver was differentially associated with incident diabetes based on its duration. The persistence of fatty liver status is an important factor for an independent association between NAFLD and incident diabetes.