



# A New Combination of Blood Test and Fibroscan for Accurate Non-Invasive Diagnosis of Liver Fibrosis Stages in Chronic Hepatitis C

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**OBJECTIVES:** Precise evaluation of the level of liver fibrosis is recommended in patients with chronic hepatitis C (CHC). Blood fibrosis tests and Fibroscan are now widely used for the non-invasive diagnosis of liver fibrosis. Detailed fibrosis stage classifications have been developed to provide an estimation of the liver fibrosis stage from the results of these non-invasive tests. Our aim was to develop a new and more accurate fibrosis stage classification by using new scores combining non-invasive fibrosis tests. **METHODS:** In all, 729 patients with CHC (exploratory set: 349; validation set: 380) had liver biopsy for Metavir fibrosis (F) staging, and 6 fibrosis tests: Fibroscan, Fibrotest, FibroMeter, Hepascore, FIB-4, APRI. **RESULTS:** Exploratory set: Fibroscan and FibroMeter were the independent predictors of different diagnostic targets of liver fibrosis. New fibrosis indexes combining FibroMeter and Fibroscan were thus developed for the diagnosis of clinically significant fibrosis (CSF-index) or severe fibrosis (SF-index). The association of CSF- and SF-indexes provided a new fibrosis stage classification (CSF/SF classification): F0/1, F1/2, F2±1, F2/3, F3±1, F4. Validation set: CSF/SF classification had a high diagnostic accuracy (85.8% well-classified patients), significantly higher than the diagnostic accuracies of FibroMeter (69.7%, P<0.001), Fibroscan (63.3%, P<0.001), or Fibrotest (43.9%, P<0.001) classifications. **CONCLUSIONS:** The association of new fibrosis indexes combining FibroMeter and Fibroscan provides a new fibrosis stage classification. This classification is significantly more accurate than Fibrotest, FibroMeter, or Fibroscan classifications, and improves the accuracy of the non-invasive diagnosis of liver fibrosis stages to 86% without any liver biopsy.

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