**SUPPLEMENTARY DATA**

**Table s1: NASH CRN and Metavir scoring systems**

***Table s1a: Metavir scoring system (Hepatology 1994;20:15-20)***

| F stage | Liver fibrosis pattern |
|---|---|
| 0 | No fibrosis |
| 1 | Portal fibrosis without septa |
| 2 | Portal fibrosis and few septa |
| 3 | Numerous septa without cirrhosis |
| 4 | Cirrhosis |

***Table s1b: NASH CRN scoring system (Hepatology 2005;41:1313-1321)***

| F stage | Liver fibrosis pattern |
|---|---|
| 0 | No fibrosis |
| 1 | Perisinusoidal or portal/periportal fibrosis |
| 2 | Perisinusoidal and portal/periportal fibrosis |
| 3 | Bridging fibrosis (i.e., with septa) |
| 4 | Cirrhosis |

***Table s1c: Correspondence between the NASH CRN and the Metavir systems***

<table>
<tr><th>Metavir</th><th>NASH CRN</th><th colspan="2">Present study</th></tr>
<tr><td>F0</td><td>F0 or F1 (isolated perisinusoidal fibrosis)</td><td colspan="2" rowspan="2">No/mild fibrosis</td></tr>
<tr><td>F1</td><td>F1 (isolated periportal fibrosis) or F2</td></tr>
<tr><td>F2</td><td>F3</td><td rowspan="2">Septal fibrosis</td><td rowspan="3">Advanced fibrosis</td></tr>
<tr><td>F3</td><td>F3</td></tr>
<tr><td>F4</td><td>F4</td><td>Cirrhosis</td></tr>
</table>

**Table s2: Comparison between paired M and XL probe results as a function of the liver fibrosis level**

| | All | No/mild fibrosis | Septal fibrosis | Cirrhosis |
|---|---|---|---|---|
| Patients (n) | 382 | 219 | 110 | 53 |
| M probe (kPa) | 9.5 (6.7 – 14.6) | 7.6 (5.7 – 10.5) | 11.8 (8.7 – 14.8) | 23.5 (15.5 – 33.0) |
| XL probe (kPa) | 7.9 (5.6 – 11.7) | 6.1 (4.9 – 8.5) | 9.0 (7.1 – 11.7) | 19.1 (12.4 – 26.9) |
| p | <0.001 | <0.001 | <0.001 | <0.001 |

Results are expressed as median with first and third quartiles.

**Table s3: Characteristics of patients matched according to age, sex, liver fibrosis on liver biopsy, and serum transaminases in the SCD (skin-liver capsule distance) <25mm and SCD ≥25mm groups**

| | Skin-liver capsule distance | | | |
|---|---|---|---|---|
| | **All (n=230)** | **<25 mm (n=115)** | **≥25 mm (n=115)** | **p** |
| Age (years) | 56.6 ± 11.8 | 56.7 ± 12.0 | 56.4 ± 11.6 | 0.944 |
| Male sex (%) | 53.9 | 53.9 | 53.9 | 1.000 |
| BMI (kg/m$^2$) | 31.9 ± 6.1 | 28.5 ± 4.1 | 35.3 ± 5.8 | <0.001 |
| Diabetes (%) | 50.9 | 40.0 | 61.7 | 0.001 |
| Cause of chronic liver disease (%): | | | | <0.001 |
| - NAFLD | 81.7 | 71.3 | 92.2 | |
| - Virus | 5.2 | 9.6 | 0.9 | |
| - Alcohol | 7.0 | 9.6 | 4.3 | |
| - Others | 6.1 | 9.6 | 2.6 | |
| Biopsy length (mm) | 26 ± 9 | 26 ± 9 | 26 ± 10 | 0.768 |
| Advanced fibrosis | 44.3 | 44.3 | 44.3 | 1.000 |
| Cirrhosis | 11.3 | 11.3 | 11.3 | 1.000 |
| AST (IU/l) | 41 (31 – 60) | 40 (33 – 60) | 42 (30 – 60) | 0.890 |
| ALT (IU/l) | 55 (38 – 79) | 53 (37 – 80) | 57 (39 – 79) | 0.960 |
| GGT (IU/l) | 75 (44 – 148) | 80 (43 – 151) | 70 (44 – 147) | 0.903 |
| Bilirubin (µmol/l) | 11 (8 – 15) | 11 (9 – 16) | 10 (8 – 13) | 0.113 |
| Albumin (g/l) | 42.0 ± 3.6 | 41.8 ± 4.2 | 42.1 ± 2.9 | 0.716 |
| Platelets (G/l) | 215 ± 66 | 213 ± 71 | 216 ± 60 | 0.314 |
| Prothrombin time (%) | 96 ± 17 | 97 ± 16 | 96 ± 17 | 0.715 |
| FibroScan M probe: | | | | |
| - Result (kPa) | 10.1 (7.2 – 14.7) | 8.8 (6.0 – 12.0) | 11.9 (8.7 – 16.3) | <0.001 |
| - IQR/M | 0.18 (0.12 – 0.24) | 0.16 (0.11 – 0.24) | 0.20 (0.12 – 0.25) | 0.221 |
| FibroScan XL probe: | | | | |
| - Result (kPa) | 8.0 (5.9 – 12.1) | 6.9 (5.1 – 10.9) | 9.1 (6.7 – 12.8) | <0.001 |
| - IQR/M | 0.16 (0.11 – 0.23) | 0.17 (0.12 – 0.23) | 0.16 (0.11 – 0.23) | 0.489 |

Quantitative variables are expressed as mean ± standard deviation or median with first and third quartiles.
BMI: body mass index; NAFLD: non-alcoholic fatty liver disease; IQR/M: interquartile range/median ratio

**Table s4: Diagnostic accuracy of M and XL probes used according to the manufacturer recommendation in the 230 matched patients in the SCD <25mm and SCD ≥25mm groups**

| Target | Cut-off | Probe | SCD | AUROC | DA | Se | Spe | NPV | PPV | -LR | +LR | OR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Advanced | 7.3 kPa [a] | M probe | <25 mm | 0.812 ± 0.039 | 73.9 | 88.2 | 62.5 | 87.0 | 65.2 | 0.19 | 2.4 | 12.5 |
| Fibrosis | | XL probe | ≥25 mm | 0.755 ± 0.045 | 68.7 | 92.2 | 50.0 | 88.9 | 59.5 | 0.16 | 1.8 | 11.8 |
| | | p | - | 0.338 | 0.466 | 0.741 | 0.212 | - | - | - | - | - |
| Cirrhosis | 15.0 kPa [a] | M probe | <25 mm | 0.906 ± 0.040 | 88.7 | 69.2 | 91.2 | 95.9 | 50.0 | 0.34 | 7.8 | 23.3 |
| | | XL probe | ≥25 mm | 0.855 ± 0.046 | 82.6 | 61.5 | 85.3 | 94.6 | 34.8 | 0.45 | 4.2 | 9.3 |
| | | p | - | 0.403 | 0.259 | 1.000 | 0.277 | - | - | - | - | - |

[a] Diagnostic cut-offs from the Tsochatzis et al meta-analysis (12)

SCD: skin-liver capsule distance; DA: diagnostic accuracy (rate of well-classified patients, %); Se: sensitivity (%); Spe: specificity (%); NPV: negative predictive value (%); PPV: positive predictive value (%); -LR: negative likelihood ratio; +LR: positive likelihood ratio; OR: odds ratio

**Table s5: Diagnostic accuracy of liver stiffness measurement (LSM) obtained by choosing the probe according to the skin-liver capsule distance as measured by ultrasonography ($LSM_{SCD}$: M probe if SCD <25mm, XL probe if SCD ≥25mm) or according to the study algorithm ($LSM_{ALGO}$)**

| Target | Cut-off | LSM | AUROC | DA | Se | Spe | NPV | PPV | -LR | +LR | OR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Advanced | 7.3 kPa [a] | $LSM_{SCD}$ | 0.815 ± 0.029 | 70.6 | 88.4 | 58.4 | 88.0 | 59.4 | 0.20 | 2.1 | 10.7 |
| Fibrosis | | $LSM_{ALGO}$ | 0.832 ± 0.028 | 71.6 | 88.4 | 60.0 | 88.2 | 60.3 | 0.19 | 2.2 | 11.4 |
| | | p | 0.025 | 0.625 | 1.000 | 0.625 | - | - | - | - | - |
| Cirrhosis | 15.0 kPa [a] | $LSM_{SCD}$ | 0.902 ± 0.025 | 86.3 | 81.3 | 86.7 | 98.3 | 33.3 | 0.22 | 6.1 | 28.2 |
| | | $LSM_{ALGO}$ | 0.909 ± 0.024 | 86.7 | 81.3 | 87.2 | 98.3 | 34.2 | 0.22 | 6.3 | 29.5 |
| | | p | 0.135 | 1.000 | 1.000 | 1.000 | - | - | - | - | - |

[a] Diagnostic cut-offs from the Tsochatzis et al meta-analysis (12)

SCD: skin-liver capsule distance; DA: diagnostic accuracy (rate of well-classified patients, %); Se: sensitivity (%); Spe: specificity (%); NPV: negative predictive value (%); PPV: positive predictive value (%); -LR: negative likelihood ratio; +LR: positive likelihood ratio; OR: odds ratio

**Figure s1: Automated Probe Selection tool included in the FibroScan device**

The latest versions of the FibroScan device include the Automatic Probe Selection tool that automatically measures the skin-liver capsule distance and indicates which probe to use for LSM. In practice, the indication “M” or “XL” appears highlighted on the FibroScan screen when the probe is applied on the skin.

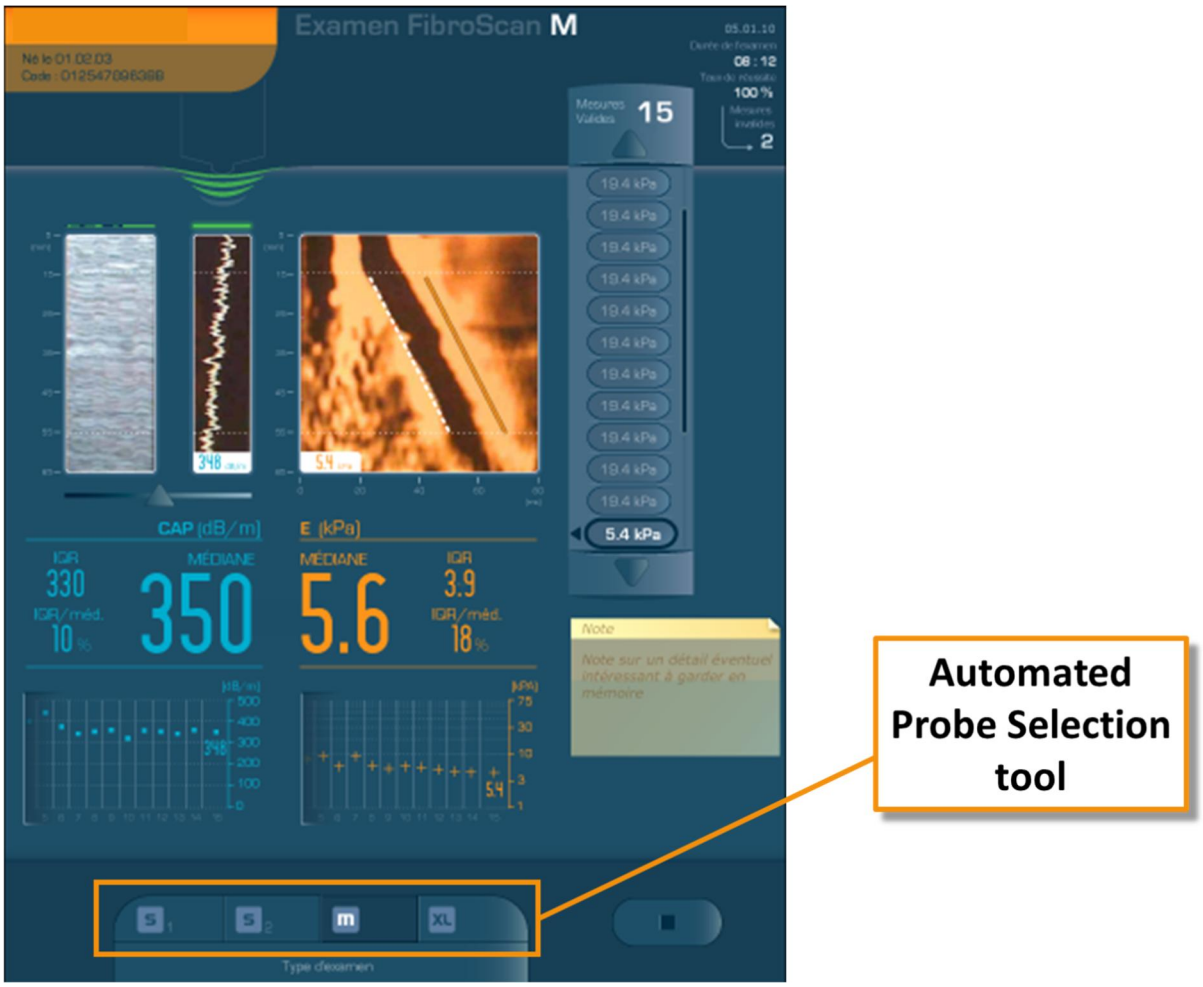
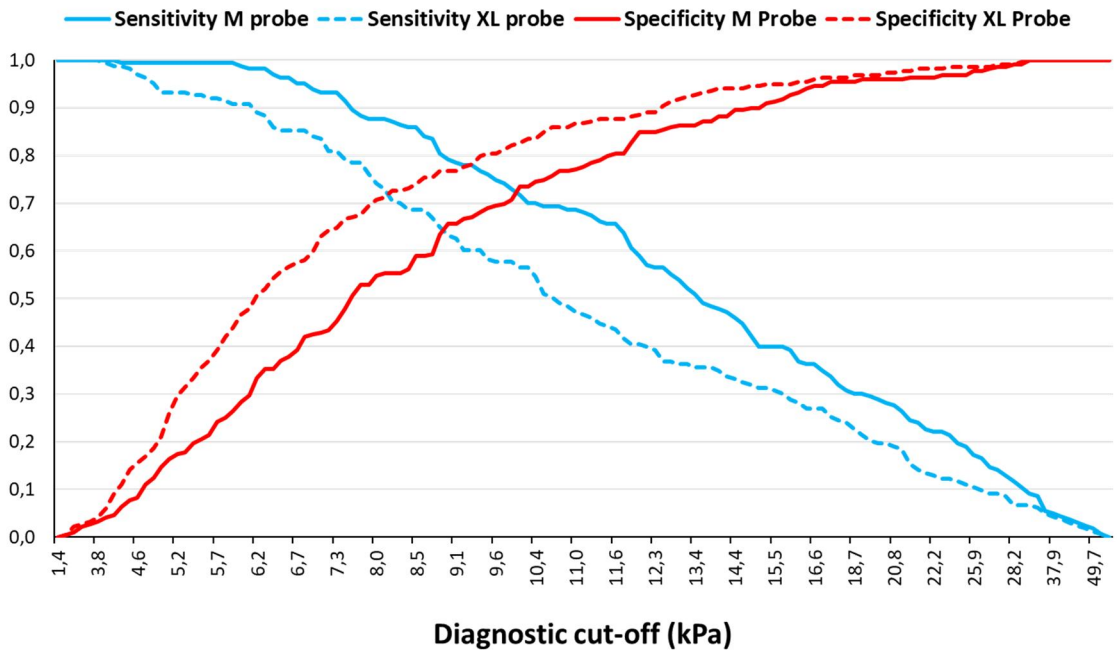


**Figure s2: Sensitivity and specificity curves of the M and XL probes for the diagnosis of advanced fibrosis (*Figure s2a*) and the diagnosis of cirrhosis (*Figure s2b*)**

**a**




**b**

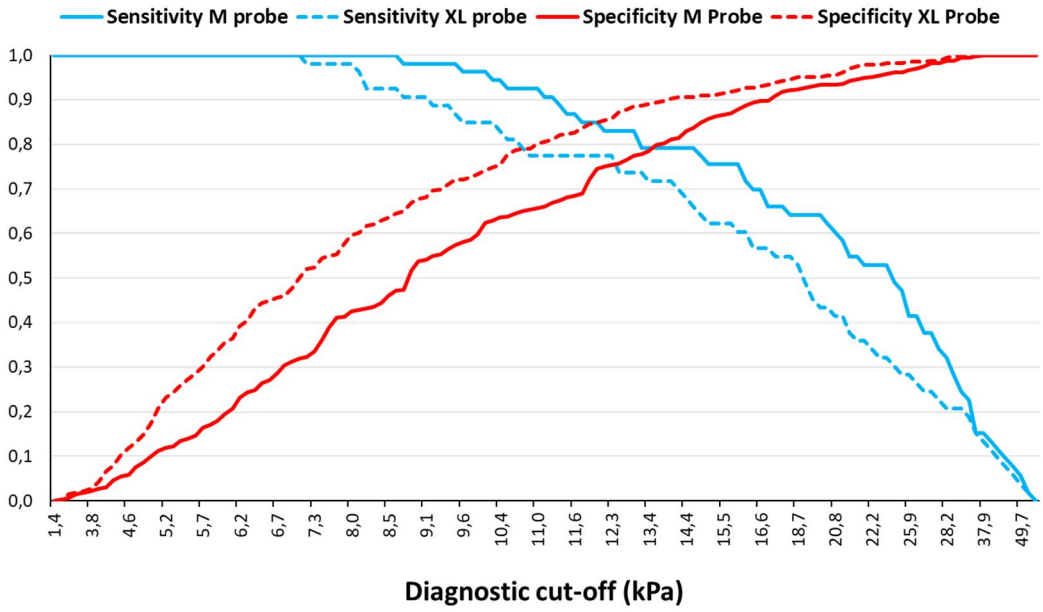
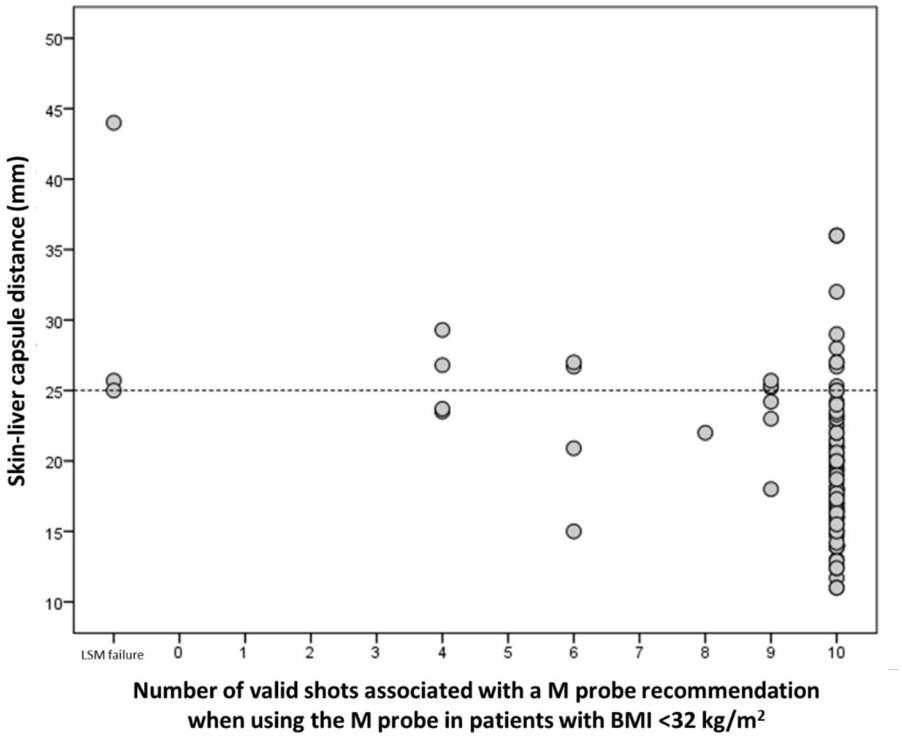


**Figure s3: Skin-liver capsule distance as a function of the number of valid shots associated with a M probe recommendation by the Automated Probe Selection tool. Results were obtained using the M probe in patients with BMI <32 kg/m$^2$.**



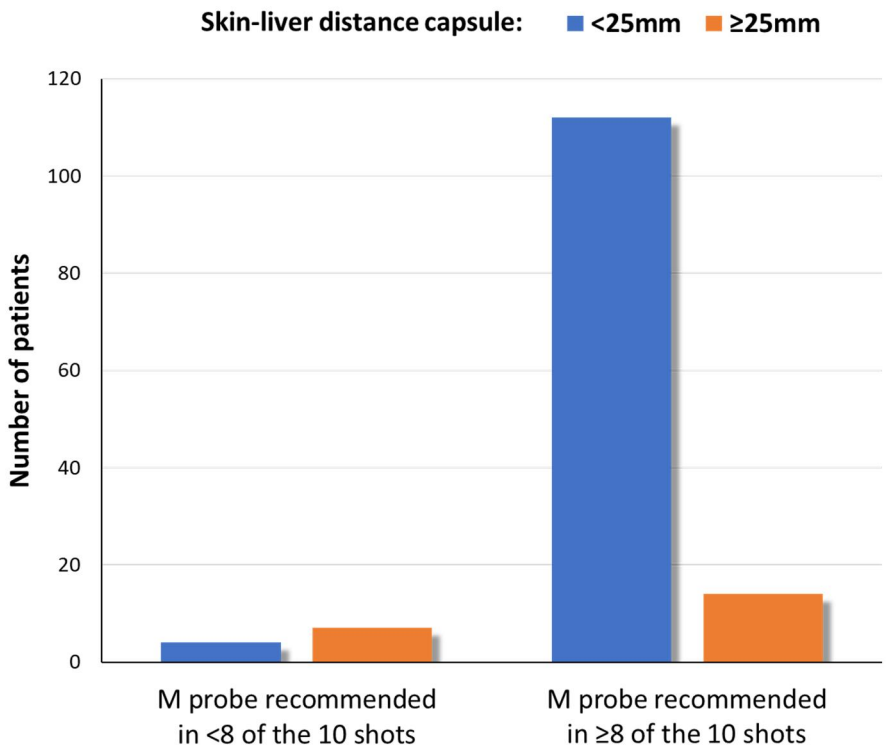



**Figure s4: Skin-liver capsule distance as a function of the number of valid shots associated with a XL probe recommendation by the Automated Probe Selection tool. Results were obtained using the XL probe in patients with BMI ≥32 kg/m².**