

### Supplementary Material 1. Patient enrollment status.

Institutional review board of each participating center approved retrospective analysis of previous nonalcoholic fatty liver disease (NAFLD) cohort (IRB number: H-2210-139-1373 for Seoul National University Hospital, WKUH 2022-11-012 for Wonkwang University Hospital, ISPAIK 2022-10-006 for Ilsan Paik Hospital, 2210-005-19439 for Chung-Ang University Hospital, 2022-1584 for Asan Medical Center). Among the 132 participants of previous cohort, 105 participants met the inclusion criteria for this study. Among

them, 58 participants were potential living liver donors who underwent liver biopsy to evaluate NAFLD for decision regarding the liver donor eligibility. All of potential liver donors were enrolled from Asan Medical Center. Remaining 47 participants underwent liver biopsy under the clinical suspicion of NAFLD: 14 participants from Seoul national university hospital; 13 participants from Asan medical center; 11 participants from Chung-Ang University Hospital; six participants from Ilsan Paik Hospital; and three participants from Wonkwang University Hospital.

**Supplementary Table 1. Determinant factors for each parameter derived from ultrasound examination**

US parameter	Characteristic	Univariate analysis			Multivariate analysis		
		Coefficient	95% CI	P-value	Coefficient	95% CI	P-value
Attenuation coefficient (dB/cm/MHz) from ATI	Fibrosis	0.039	0.016 to 0.061	0.001	-0.016	-0.053 to 0.001	0.065
	Lobular inflammation activity	0.080	0.056 to 0.103	<0.001	0.015	-0.018 to 0.047	0.373
	Hepatocyte ballooning	0.092	0.059 to 0.125	<0.001	0.025	-0.018 to 0.068	0.246
	Steatosis	0.122	0.105 to 0.139	<0.001	0.121	0.097 to 0.146	<0.001
	Age (year)	0.001	-0.001 to 0.003	0.170			
	Male sex	-0.027	-0.080 to 0.026	0.320			
	Body mass index (kg/m <sup>2</sup> )	0.014	0.007 to 0.020	<0.001	0.003	-0.002 to 0.007	0.267
Liver stiffness (kPa) from 2D-SWE	ALT (IU/L)	0.001	0.001 to 0.001	<0.001	0.000	-0.001 to 0.001	0.483
	AST (IU/L)	0.002	0.001 to 0.002	<0.001	-0.001	-0.002 to 0.001	0.172
	Fibrosis	1.863	1.439 to 2.287	<0.001	0.993	0.242 to 1.744	0.010
	Lobular inflammation activity	1.741	1.168 to 2.315	<0.001	-0.341	-1.292 to 0.610	0.478
	Hepatocyte ballooning	2.899	2.211 to 3.588	<0.001	1.101	-0.146 to 2.349	0.083
	Steatosis	1.724	1.111 to 2.338	<0.001	0.708	-0.016 to 1.432	0.055
	Age (year)	0.095	0.059 to 0.131	<0.001	0.015	-0.024 to 0.053	0.453
Controlled attenuation parameter (dB/m) from TE	Male sex	0.494	-0.770 to 1.757	0.440			
	Body mass index (kg/m <sup>2</sup> )	0.339	0.191 to 0.486	<0.001	0.183	0.051 to 0.314	0.007
	ALT (IU/L)	0.012	0.003 to 0.022	0.012	-0.014	-0.030 to 0.002	0.079
	AST (IU/L)	0.031	0.014 to 0.048	<0.001	0.016	-0.013 to 0.044	0.279
	Fibrosis	26.57	16.69 to 36.45	<0.001	-4.657	-16.47 to 7.16	0.436
	Lobular inflammation activity	37.53	26.44 to 48.62	<0.001	-6.075	-24.03 to 8.875	0.422
	Hepatocyte ballooning	49.75	34.84 to 64.65	<0.001	6.940	-12.68 to 26.56	0.484
Liver stiffness (kPa) from 2TE	Steatosis	56.60	48.18 to 65.01	0.002	53.53	42.15 to 64.91	<0.001
	Age (year)	1.376	0.609 to 2.144	0.001	0.740	0.945 to 5.078	0.016
	Male sex	-3.610	-28.87 to 21.64	0.777			
	Body mass index (kg/m <sup>2</sup> )	7.758	4.925 to 10.59	<0.001	3.012	0.945 to 5.078	0.005
	ALT (IU/L)	0.475	0.305 to 0.645	<0.001	0.116	-0.136 to 0.367	0.364
	AST (IU/L)	0.825	0.512 to 1.138	<0.001	-0.271	-0.722 to 0.181	0.237
	Fibrosis	2.513	1.981 to 3.045	<0.001	1.515	0.579 to 2.451	0.002
Liver stiffness (kPa) from 2TE	Lobular inflammation activity	2.476	1.760 to 3.192	<0.001	-1.067	-2.251 to 0.117	0.077
	Hepatocyte ballooning	4.086	3.251 to 4.920	<0.001	2.066	0.512 to 3.620	0.010
	Steatosis	2.366	1.585 to 3.146	<0.001	0.457	-0.445 to 1.358	0.317
	Age (year)	0.112	0.064 to 0.160	<0.001	0.007	-0.041 to 0.055	0.767
	Male sex	-0.090	-1.733 to 1.552	0.913			
	Body mass index (kg/m <sup>2</sup> )	0.422	0.229 to 0.615	<0.001	0.130	-0.034 to 0.294	0.118
	ALT (IU/L)	0.027	0.016 to 0.039	<0.001	0.004	-0.016 to 0.024	0.667
AST (IU/L)	0.056	0.036 to 0.076	<0.001	0.013	-0.022 to 0.049	0.458	

CI, confidence interval; ATI, attenuation imaging; ALT, alanine aminotransferase; IU, international unit; AST, aspartate aminotransferase; SWE, shear wave elastography; TE, transient elastography.