

Supplementary Table 1

Change in anthropometric and biochemical variables between baseline and follow up according to resolution or persistence of fatty liver and change in BMI (men) (n = 30,991)

	Resolution fatty liver		Persistent fatty liver		<i>p</i> ANOVA
	BMI change <0 (n = 4,331, 13.98%)	BMI change ≥0 (n = 1,139, 3.68%)	BMI change <0 (n = 10,865, 35.06%)	BMI change ≥0 (n = 14,656, 47.29%)	
Age at baseline (years)	37.06±6.93	36.76±7.28	37.11±6.74	35.71±6.34	<0.001
Age (years)	5.50±3.47	4.73±3.42	4.91±3.44	4.95±3.44	<0.001
BMI (kg/m ²)	-1.46±1.20	0.64±0.65	-0.82±0.74	0.94±0.82	<0.001
Systolic BP (mmHg)	-3.75±11.73	-1.21±11.53	-2.17±11.99	0.35±11.57	<0.001
Diastolic BP (mmHg)	-2.15±9.12	0.63±8.95	-0.81±9.26	1.21±9.18	<0.001
Alcohol intake (g/day)	-0.34±6.95	0.38±6.90	-0.55±6.78	-0.15±6.83	<0.001
Insulin (IU/mL)	-0.56±3.43	1.23±3.51	0.08±4.12	2.59±4.82	<0.001
Glucose (mg/dl)	0.91±13.40	1.87±9.34	3.25±17.11	3.87±11.35	<0.001
Total cholesterol (mg/dl)	-8.12±27.28	2.74±23.38	-3.53±25.40	4.95±24.84	<0.001
LDL-C (mg/dl)	-0.38±25.57	6.15±22.85	3.33±24.44	8.33±23.35	<0.001

HDL-C (mg/dl)	3.56±8.93	0.19±8.32	0.26±7.52	-1.75±7.24	<0.001
Triglycerides (mg/dl)	-37.43±78.85	12.54±72.25	-19.67±89.59	20.48±86.21	<0.001
Apolipoprotein (A)	7.65±19.33	4.84±18.74	4.41±18.28	3.39±17.42	<0.001
Apolipoprotein (B)	-3.01±17.83	7.15±15.79	1.61±16.47	8.81±16.38	<0.001
HOMA IR	-0.15±0.89	0.31±0.93	0.05±1.21	0.68±1.40	<0.001
Hs-CRP (mg/L)	0.00±0.49	0.03±0.81	-0.01±0.36	0.01±0.42	0.074
Exercise (baseline) (≥1 times per week)	2,099(48.46)	535(46.97)	5,093(46.88)	6,742(46.00)	0.037
Exercise (follow up) (≥1 times per week)	2,492(57.54)	568(49.87)	5,066(46.63)	6,118(41.74)	<0.001

Change = Follow up data minus baseline data. BMI < 0 = decrease in BMI. BMI change ≥0 = no change in BMI or increase in BMI.

BMI, body mass index; BP, blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; HOMA-IR, homeostatic model assessment-insulin resistance; Hs-CRP, high-sensitivity C-reactive protein.

Supplementary Table 2

Change in anthropometric and biochemical variables between baseline and follow up according to resolution or persistence of fatty liver and change in BMI (women) (n = 5,204)

	Resolution fatty liver		Persistant fatty liver		<i>p</i> ANOVA
	BMI change<0 (n = 1,205, 23.16%)	BMI change ≥0 (n = 411, 7.9%)	BMI change<0 (n = 1,508, 28.98%)	BMI change ≥0 (n = 2,080, 39.97%)	
Age at baseline (years)	37.32±7.73	37.12±7.83	41.18±9.15	38.71±8.22	<0.001
Age (years)	4.78±3.24	4.38±3.06	4.20±2.97	4.51±3.12	<0.001
BMI (kg/m ²)	-1.75±1.44	0.75±0.71	-0.93±0.92	1.19±1.11	<0.001
Systolic BP (mmHg)	-4.10±12.80	-1.26±11.21	-2.12±12.99	1.32±12.80	<0.001
Diastolic BP (mmHg)	-2.29±9.68	-1.16±8.97	-1.21±10.00	0.71±9.76	<0.001
Alcohol intake (g/day)	0.35±3.41	0.55±3.21	0.05±2.97	0.25±3.16	0.014
Insulin (IU/mL)	-1.34±4.03	0.88±5.05	-0.77±4.47	2.46±5.56	<0.001
Glucose (mg/dl)	-1.56±10.33	0.67±8.39	3.67±21.07	4.09±15.24	<0.001
Total cholesterol (mg/dl)	-6.55±29.23	4.88±27.60	0.49±29.54	5.94±27.16	<0.001
LDL-C (mg/dl)	-3.17±25.97	7.76±24.09	4.11±27.62	8.86±24.88	<0.001

HDL-C (mg/dl)	4.83±11.32	0.38±10.77	0.68±9.53	-1.52±9.07	<0.001
Triglycerides (mg/dl)	-27.85±64.00	5.61±50.27	-13.97±78.61	14.92±77.22	<0.001
Apolipoprotein (A)	9.46±22.50	6.23±25.59	4.28±21.35	2.62±21.02	<0.001
Apolipoprotein (B)	-3.59±18.17	6.20±15.54	2.17±18.66	8.73±17.19	<0.001
HOMA IR	-0.37±1.09	0.20±1.35	-0.11±1.35	0.70±1.63	<0.001
Hs-CRP (mg/L)	-0.05±0.22	-0.01±0.41	-0.02±0.41	0.02±0.41	<0.001
Exercise (baseline) (≥1 times per week)	387(32.12)	133(32.36)	502(33.29)	703(33.80)	0.776
Exercise (follow up) (≥1 times per week)	485(40.25)	147(35.77)	573(38.00)	682(32.79)	<0.001

Change = Follow up data minus baseline data. BMI < 0 = decrease in BMI. BMI change ≥0 = no change in BMI or increase in BMI.

BMI, body mass index; BP, blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; HOMA-IR, homeostatic model assessment-insulin resistance; Hs-CRP, high-sensitivity C-reactive protein.

Supplementary Table 3

Baseline and follow up data for men according BMI change (men) (n = 30,991)

	BMI change<0			BMI change≥0		
	Baseline (n = 15,196)	Follow up (n = 15,196)	<i>P</i>	Baseline (n = 15,795)	Follow up (n = 15,795)	<i>P</i>
Age (years)	39.47±8.76	43.92±8.64	<0.001	38.45±8.18	42.94±8.00	<0.001
BMI (kg/m ²)	25.66±3.25	24.36±3.10	<0.001	25.20±3.31	26.32±3.66	<0.001
Systolic BP (mmHg)	112.30±13.23	109.29±14.10	<0.001	110.38±13.14	111.27±14.69	<0.001
Diastolic BP (mmHg)	71.88±9.42	70.19±9.86	<0.001	70.69±9.24	71.09±10.38	0.041
Education			0.012			0.148
≤high school	753(27.76)	811(29.89)		602(24.17)	632(25.37)	
Higher education (>High school)	1,081(39.85)	1,402(51.68)		1,074(43.12)	1,438(57.73)	
Unknown	879(32.4)	500(18.43)		815(32.72)	421(16.9)	
Smoking			0.012			0.052
Never/former	2,532(93.33)	2,487(91.67)		2,325(93.34)	2,292(92.01)	
Current	75(2.76)	69(2.54)		64(2.57)	55(2.21)	
Unknown	106(3.91)	157(5.79)		102(4.09)	144(5.78)	

Alcohol intake (g/day)	1.79±3.34	1.98±3.23	0.002	1.79±3.38	2.09±3.30	<0.001
Insulin (IU/mL)	9.02±5.22	7.99±4.58	<0.001	8.50±4.69	10.67±6.49	<0.001
Glucose (mg/dl)	97.58±18.75	98.93±24.94	<0.001	94.75±12.00	98.28±14.88	<0.001
Total cholesterol (mg/dl)	204.43±36.52	201.79±35.75	<0.001	199.17±34.75	204.94±35.02	<0.001
LDL-C (mg/dl)	124.60±31.00	125.46±31.77	0.103	121.13±30.50	129.81±30.95	<0.001
HDL-C (mg/dl)	53.81±11.61	56.33±13.25	<0.001	53.78±11.63	52.57±12.26	<0.001
Triglycerides (mg/dl)	141.33±84.36	121.19±69.27	<0.001	129.66±82.21	143.04±90.63	<0.001
Apolipoprotein (A)	139.61±23.25	146.24±23.84	<0.001	140.37±21.76	143.63±21.73	<0.001
Apolipoprotein (B)	99.62±23.44	99.19±24.36	0.359	96.18±22.63	104.46±23.20	<0.001
HOMA IR	2.20±1.47	1.97±1.48	<0.001	2.03±1.27	2.64±1.90	<0.001
Hs-CRP (mg/L)	0.16±0.25	0.12±0.26	<0.001	0.16±0.27	0.18±0.37	0.106
Exercise (≥1 times per week)	889(32.77)	1,058(39)	<0.001	836(33.56)	829(33.28)	0.813

BMI, body mass index; BP, blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; HOMA-IR, homeostatic model assessment-insulin resistance; Hs-CRP, high-sensitivity C-reactive protein.

Supplementary Table 4

Baseline and follow up data for men according BMI change (women) (n = 5,204)

	BMI change<0			BMI change≥0		
	Baseline (n = 2,713)	Follow up (n = 2,713)	<i>p</i>	Baseline (n = 2,491)	Follow up (n = 2,491)	<i>p</i>
Age (years)	39.47±8.76	43.92±8.64	<0.001	38.45±8.18	42.94±8.00	<0.001
BMI (kg/m ²)	25.66±3.25	24.36±3.10	<0.001	25.20±3.31	26.32±3.66	<0.001
Systolic BP (mmHg)	112.30±13.23	109.29±14.10	<0.001	110.38±13.14	111.27±14.69	<0.001
Diastolic BP (mmHg)	71.88±9.42	70.19±9.86	<0.001	70.69±9.24	71.09±10.38	0.041
Education			0.012			0.148
≤high school	753(27.76)	811(29.89)		602(24.17)	632(25.37)	
Higher education (%)(>High school)	1,081(39.85)	1,402(51.68)		1,074(43.12)	1,438(57.73)	
Unknown	879(32.4)	500(18.43)		815(32.72)	421(16.9)	
Smoking			0.012			0.052
Never/former	2,532(93.33)	2,487(91.67)		2,325(93.34)	2,292(92.01)	
Current	75(2.76)	69(2.54)		64(2.57)	55(2.21)	
Unknown	106(3.91)	157(5.79)		102(4.09)	144(5.78)	

Alcohol intake (g/day)	1.79±3.34	1.98±3.23	0.002	1.79±3.38	2.09±3.30	<0.001
Insulin (IU/mL)	9.02±5.22	7.99±4.58	<0.001	8.50±4.69	10.67±6.49	<0.001
Glucose (mg/dl)	97.58±18.75	98.93±24.94	<0.001	94.75±12.00	98.28±14.88	<0.001
Total cholesterol (mg/dl)	204.43±36.52	201.79±35.75	<0.001	199.17±34.75	204.94±35.02	<0.001
LDL-C (mg/dl)	124.60±31.00	125.46±31.77	0.103	121.13±30.50	129.81±30.95	<0.001
HDL-C (mg/dl)	53.81±11.61	56.33±13.25	<0.001	53.78±11.63	52.57±12.26	<0.001
Triglycerides (mg/dl)	141.33±84.36	121.19±69.27	<0.001	129.66±82.21	143.04±90.63	<0.001
Apolipoprotein (A)	139.61±23.25	146.24±23.84	<0.001	140.37±21.76	143.63±21.73	<0.001
Apolipoprotein (B)	99.62±23.44	99.19±24.36	0.359	96.18±22.63	104.46±23.20	<0.001
HOMA IR	2.20±1.47	1.97±1.48	<0.001	2.03±1.27	2.64±1.90	<0.001
Hs-CRP (mg/L)	0.16±0.25	0.12±0.26	<0.001	0.16±0.27	0.18±0.37	0.106
Exercise (≥1 times per week)	889(32.77)	1,058(39)	<0.001	836(33.56)	829(33.28)	0.813

Abbreviations: BMI, body mass index; BP, blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol;

HOMA-IR, homeostatic model assessment-insulin resistance; Hs-CRP, high-sensitivity C-reactive protein.

Supplementary Table 5

Multiple linear regression showing the change (between baseline and follow up) in lipid variables with persistent vs. resolution in fatty liver in men and women

	Men					Women				
	B Coefficients	SE	t	<i>p</i>	95% CIs	B Coefficients	SE	t	<i>p</i>	95% CIs
D-LDL cholesterol	2.67	0.36	7.39	<0.001	1.96 3.38	6.09	0.81	7.53	<0.001	4.50 7.68
D-HDL cholesterol	-2.34	0.12	-20.15	<0.001	-2.57 -2.11	-2.67	0.31	-8.56	<0.001	-3.29 -2.06
D-Triglyceride	13.61	1.26	10.77	<0.001	11.13 16.08	19.17	2.16	8.89	<0.001	14.94 23.39
D- Apolipoprotein (A)	-2.70	0.35	-7.77	<0.001	-3.39 -2.02	-4.58	0.84	-5.42	<0.001	-6.23 -2.92
D- Apolipoprotein (B)	2.69	0.33	8.12	<0.001	2.04 3.34	5.41	0.73	7.45	<0.001	3.99 6.84

Persistent fatty liver vs. resolution of fatty liver between baseline and follow up, is a dichotomous exposure variable in the models. D = change in variable i.e. follow up minus baseline measurement. Adjustments; Age, alcohol, smoking, education, exercise, BMI, each lipid level at baseline, decreased exercise, change in alcohol amount, change in BMI.

Abbreviations: LDL, low-density lipoprotein; HDL, high-density lipoprotein; SE, standard error; CIs, confidence intervals.

Supplementary Table 6

Multiple Linear Regression Showing the Change (Between Baseline and Follow Up) in Lipid Variables by Unit Change in BMI (kg/m²) in Men and Women

	Men					Women				
	B Coefficients	SE	t	p	95% CIs	B Coefficients	SE	t	p	95% CIs
D-LDL cholesterol	2.76	0.11	25.85	<0.001	2.55 2.97	2.14	0.22	9.75	<0.001	1.71 2.57
D-HDL cholesterol	-1.27	0.03	-36.86	<0.001	-1.34 -1.20	-1.48	0.08	-17.60	<0.001	-1.65 -1.32
D-Triglyceride	16.81	0.38	44.82	<0.001	16.07 17.54	8.59	0.58	14.73	<0.001	7.45 9.73
D- Apolipoprotein (A)	-0.66	0.10	-6.39	<0.001	-0.86 -0.45	-1.10	0.23	-4.75	<0.001	-1.55 -0.64
D- Apolipoprotein (B)	3.67	0.10	37.54	<0.001	3.48 3.86	2.52	0.20	12.77	<0.001	2.13 2.91

Adjustments; Age, alcohol, smoking, education, exercise, baseline BMI, decreased exercise, change in alcohol amount and resolution of fatty liver and each lipid level at baseline.

Abbreviations: LDL, low-density lipoprotein; HDL, high-density lipoprotein; SE, standard error; CIs, confidence intervals.

Supplementary Table 7 Multiple linear regression showing the change (between baseline and follow up) in lipid variables with persistent vs. resolution in fatty liver in men and women

	Men					Women				
	B Coefficients	SE	t	<i>p</i>	95% CIs	B Coefficients	SE	t	<i>p</i>	95% CIs
D-LDL cholesterol	2.86	0.66	4.37	<0.001	1.58 4.15	3.24	1.29	2.51	0.012	0.70 5.78
D-HDL cholesterol	-2.25	0.21	-10.85	<0.001	-2.66 -1.85	-3.31	0.53	-6.23	<0.001	-4.36 -2.27
D-Triglyceride	14.27	2.47	5.78	<0.001	9.43 19.12	10.38	3.62	2.87	0.004	3.27 17.49
D- Apolipoprotein (A)	-3.35	0.54	-6.26	<0.001	-4.40 -2.30	-6.18	1.2	-5.14	<0.001	-8.54 -3.82
D- Apolipoprotein (B)	2.24	0.53	4.25	<0.001	1.20 3.27	5.05	1.1	4.58	<0.001	2.89 7.22

Persistent fatty liver vs resolution of fatty liver between baseline and follow up, is a dichotomous exposure variable in the models. D = change in variable i.e. follow up minus baseline measurement. Adjustments; Age, alcohol, smoking, education, exercise, waist circumference, each lipid level at baseline, decreased exercise, change in alcohol amount, change in waist circumference and change in HOMA-IR

LDL, low-density lipoprotein; HDL, high-density lipoprotein; SE, standard error; CIs, confidence intervals.

Supplementary Table 8

Multiple linear regression showing the change (between baseline and follow up) in lipid variables by unit change in waist circumference

(kg/m²) in men and women

	Men					Women				
	B Coefficients	SE	t	p	95% CIs	B Coefficients	SE	t	p	95% CIs
D-LDL cholesterol	1.14	0.06	18.69	<0.001	1.02 1.26	0.77	0.13	6.1	<0.001	0.52 1.02
D-HDL cholesterol	-0.36	0.02	-18.78	<0.001	-0.40 -0.33	-0.26	0.05	-4.99	<0.001	-0.36 -0.16
D-Triglyceride	2.71	0.23	11.8	<0.001	2.26 3.16	1.38	0.35	3.93	<0.001	0.69 2.06
D- Apolipoprotein (A)	-0.30	0.05	-6.17	<0.001	-0.4 -0.21	-0.21	0.12	-1.81	0.07	-0.45 0.02
D- Apolipoprotein (B)	1.09	0.05	22.57	<0.001	0.99 1.18	0.68	0.11	6.36	<0.001	0.47 0.90

Adjustments; Age, alcohol, smoking, education, exercise, baseline BMI, decreased exercise, change in alcohol amount and resolution of fatty liver and each lipid level at baseline and change in HOMA-IR.

LDL, low-density lipoprotein; HDL, high-density lipoprotein; SE, standard error; CIs, confidence intervals.

