Figure S1 Performance of the full prediction models for DM in the training cohort. (A) Calibration plot comparing predicted and actual probability of DM in the full prediction model. (B) Receiver operating characteristic curve for DM of the full prediction model. AUC, area under the curve; DM, diabetes mellitus.
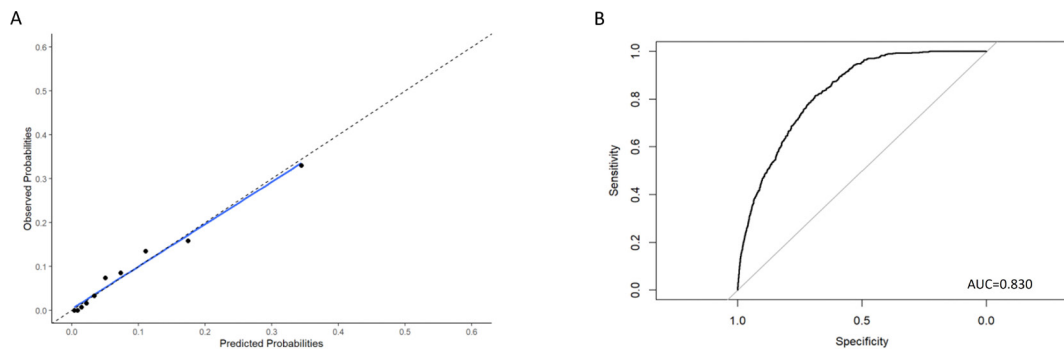

Figure S2 Performance of the simplified prediction models for DM in the training cohort. (A) Calibration plot comparing predicted and actual probability of DM in the simplified prediction model. (B) Receiver operating characteristic curve for DM of the simplified prediction model. AUC, area under the curve; DM, diabetes mellitus.

Figure S3 Performance of the full prediction models for DM in the validation cohort using the NRS index. (A) Calibration plot comparing predicted and actual probability of DM in the full prediction model. (B) Receiver operating characteristic curve for DM of the full prediction model. AUC, area under the curve; DM, diabetes mellitus; NRS, NAFLD Ridge Score; NAFLD, nonalcoholic fatty liver disease.

Figure S4 Performance of the simplified prediction models for DM in the validation cohort using the NRS index. (A) Calibration plot comparing predicted and actual probability of DM in the simplified prediction model. (B) Receiver operating characteristic curve for DM of the simplified predic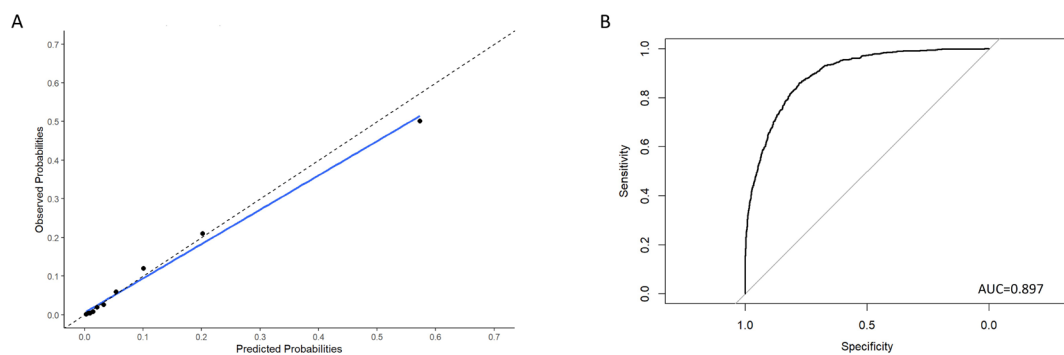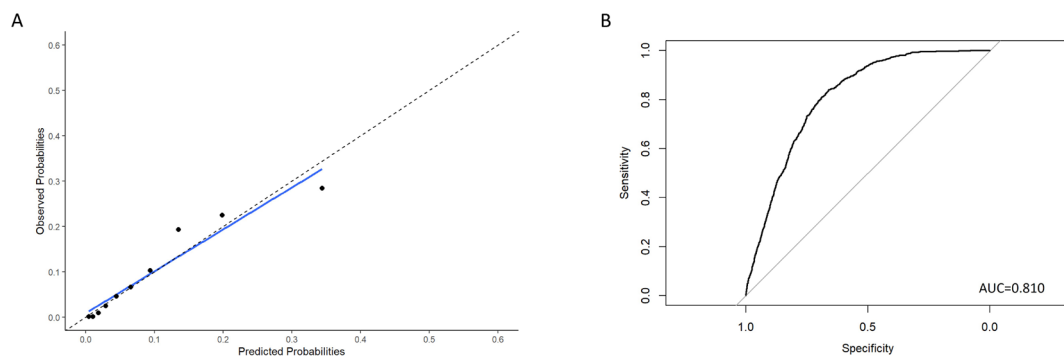tion model. AUC, area under the curve; DM, diabetes mellitus; NRS, NAFLD Ridge Score; NAFLD, nonalcoholic fatty liver disease.

Table S1 Univariable analysis of factors involved in the health examination

Variable	Estimate	OR (95% CI)	P value	C-index
Age, years	0.073	1.075 (1.068–1.083)	<0.001	0.776
Sex, female (*vs.* male)	−0.377	0.686 (0.583–0.808)	<0.001	0.295
Measurement				
Body mass index, kg/m^2	0.101	1.106 (1.083–1.129)	<0.001	0.626
Waist circumference, cm	0.062	1.064 (1.055–1.072)	<0.001	0.692
Blood pressure				
Systolic blood pressure, mmHg	0.024	1.025 (1.020–1.029)	<0.001	0.640
Diastolic blood pressure, mmHg	−0.031	0.970 (0.961–0.978)	<0.001	0.562
Dyslipidemia test				
Total cholesterol, mg/dL	−0.025	0.975 (0.973–0.978)	<0.001	0.725
Triglyceride, mg/dL	0.002	1.002 (1.002–1.003)	<0.001	0.611
Liver function test				
Aspartate aminotransferase, IU/L	0.019	1.019 (1.013–1.026)	<0.001	0.568
Alanine aminotransferase, IU/L	0.010	1.010 (1.006–1.013)	<0.001	0.614
Kidney function test				
Blood urea nitrogen, mg/dL	0.104	1.109 (1.092–1.127)	<0.001	0.617
Creatinine, mg/dL	1.228	3.415 (2.476–4.710)	<0.001	0.558
Urine test				
Urinary protein	0.579	1.785 (1.583–2.013)	<0.001	0.214
Urinary glucose	1.011	2.747 (2.498–3.022)	<0.001	0.289
Urinary pH	−0.131	0.878 (0.792–0.973)	0.013	0.424
NAFLD, yes (*vs.* no)	1.579	4.852 (4.040–5.814)	<0.001	0.320

OR calculated using logistic regression. All variables are continuous, unless indicated otherwise. OR, odd ratio; CI, confidence interval; NAFLD, nonalcoholic fatty liver disease.

Table S2 Multivariable analysis of all significant predictors for diabetes

Covariate	Estimate	OR (95% CI)	P value
Intercept	−3.731	–	<0.001
Age, years	0.071	1.074 (1.064–1.084)	<0.001
Sex, female (*vs.* male)	0.327	1.387 (1.114–1.727)	0.003
Waist circumference, cm	0.025	1.025 (1.013–1.038)	<0.001
Systolic blood pressure, mmHg	−0.008	0.992 (0.986–0.999)	0.017
Total cholesterol, mg/dL	−0.024	0.976 (0.973–0.979)	<0.001
Triglyceride, mg/dL	0.002	1.002 (1.001–1.003)	0.002
Aspartate aminotransferase, IU/L	−0.022	0.978 (0.962–0.995)	0.012
Alanine aminotransferase, IU/L	0.008	1.008 (0.996–1.020)	0.204
Blood urea nitrogen, mg/dL	0.025	1.026 (1.005–1.047)	0.013
Urinary protein	0.216	1.241 (1.054–1.462)	0.010
Urinary glucose	0.903	2.466 (2.205–2.759)	<0.001
Urinary pH	−0.103	0.902 (0.799–1.018)	0.094
NAFLD, yes (*vs.* no)	1.017	2.765 (1.940–3.942)	<0.001

OR calculated using logistic regression. All variables are continuous, unless indicated otherwise. OR, odd ratio; CI, confidence interval; NAFLD, nonalcoholic fatty liver disease.

Table S3 Multivariable analysis of independent predictors for diabetes

Covariate	Estimate	OR (95% CI)	P value
Intercept	−4.304	–	<0.001
Age, years	0.069	1.072 (1.062–1.081)	<0.001
Sex, female (*vs.* male)	0.300	1.350 (1.089–1.674)	0.006
Waist circumference, cm	0.026	1.026 (1.014–1.039)	<0.001
Systolic blood pressure, mmHg	−0.008	0.992 (0.986–0.998)	0.013
Total cholesterol, mg/dL	−0.024	0.976 (0.973–0.979)	<0.001
Triglyceride, mg/dL	0.002	1.002 (1.001–1.003)	0.002
Aspartate aminotransferase, IU/L	−0.014	0.986 (0.975–0.997)	0.017
Blood urea nitrogen, mg/dL	0.027	1.028 (1.007–1.048)	0.007
Urinary protein	0.213	1.238 (1.051–1.458)	0.011
Urinary glucose	0.907	2.478 (2.215–2.772)	<0.001
NAFLD, yes (*vs.* no)	1.119	3.063 (2.210–4.244)	<0.001

OR calculated using logistic regression. All variables are continuous, unless indicated otherwise. OR, odd ratio; CI, confidence interval; NAFLD, nonalcoholic fatty liver disease.

Table S4 Multivariable analysis of independent predictors for diabetes (NRS-defined NAFLD)

Covariate	Estimate	OR (95% CI)	P value
Intercept	−5.900		<0.001
Age, years	0.064	1.066 (1.057–1.075)	<0.001
Sex, female (*vs.* male)	0.394	1.483 (1.200–1.834)	<0.001
Waist circumference, cm	0.039	1.040 (1.028–1.052)	<0.001
Systolic blood pressure, mmHg	−0.004	0.996 (0.990–1.002)	0.181
Total cholesterol, mg/dL	−0.024	0.976 (0.973–0.979)	<0.001
Triglyceride, mg/dL	0.002	1.002 (1.000–1.003)	0.007
Aspartate aminotransferase, IU/L	0.002	1.002 (0.992–1.012)	0.660
Blood urea nitrogen, mg/dL	0.026	1.027 (1.007–1.047)	0.009
Urinary protein	0.237	1.267 (1.078–1.490)	0.004
Urinary glucose	0.991	2.694 (2.414–3.005)	<0.001
NAFLD by NRS, yes (*vs.* no)	0.330	1.392 (1.052–1.841)	0.021

OR calculated using logistic regression. All variables are continuous, unless indicated otherwise. NRS, NAFLD Ridge Score; NAFLD, nonalcoholic fatty liver disease; OR, odd ratio; CI, confidence interval.

Table S5 Multivariable analysis of hospital visit-free independent predictors for diabetes (NRS-defined NAFLD)

Covariate	Estimate	OR (95% CI)	P value
Intercept	−10.322	–	<0.001
Age, years	0.070	1.073 (1.065–1.080)	<0.001
Sex, female (*vs.* male)	−0.054	0.947 (0.790–1.135)	0.556
Waist circumference, cm	0.050	1.052 (1.041–1.062)	<0.001
Systolic blood pressure, mmHg	−0.004	0.996 (0.991–1.002)	0.174
NAFLD by NRS, yes (*vs.* no)	0.404	1.498 (1.234–1.818)	<0.001

OR calculated using logistic regression. All variables are continuous, unless indicated otherwise. NRS, NAFLD Ridge Score; NAFLD, nonalcoholic fatty liver disease; OR, odd ratio; CI, confidence interval.