Table S1. Participant characteristics according to prevalent insulin resistance

	WOMEN		MEN	
	No prevalent IR (n=3286)	**Prevalent IR** (n=624)	**No prevalent IR** (n=2973)	**Prevalent IR** (n=915)
Clinical characteristics				
Age, years	45.7 (37.6, 55.0)	53.2 (43.6, 63.9)	48.1 (38.9, 60.7)	53.2 (44.3, 63.2)
White individuals, n (%)	3147 (96.4)	575 (93.6)	2827 (95.9)	866 (95.3)
Smoking, n (%)	1294 (39.4)	179 (28.7)	1182 (39.8)	292 (31.9)
Hypertension, n (%)	730 (22.2)	320 (51.3)	964 (32.4)	543 (59.3)
SBP, mm Hg	116 (108, 131)	133 (120, 149)	128 (118, 140)	139 (127, 152)
DBP, mm Hg	70 (64, 76)	74 (68, 80)	75 (69, 81)	80 (74, 86)
Diabetes (family history), n (%)	474 (14.4)	143 (22.9)	378 (12.7)	175 (19.1)
HOMA-IR (continuous)	1.4 (1.0, 1.8)	4.0 (3.3, 5.3)	1.5 (1.0, 2.0)	4.1 (3.3, 5.4)
Glucose, mmol/L	4.5 (4.2, 4.8)	5.1 (4.8, 5.6)	4.7 (4.4, 5.0)	5.3 (4.8, 5.7)
Insulin, mU/L	6.9 (5.0, 9.0)	17.8 (14.7, 23.1)	7.1 (5.1, 9.3)	17.7 (14.6, 22.9)
Total cholesterol, mmol/L	5.4 (4.7, 6.2)	5.9 (5.2, 6.6)	5.5 (4.9, 6.3)	5.8 (5.2, 6.5)
HDL-cholesterol, mmol/L	1.5 (1.2, 1.8)	1.2 (1.0, 1.4)	1.2 (1.0, 1.4)	1.0 (0.8, 1.2)
Triglycerides, mmol/L	1.0 (0.8, 1.3)	1.6 (1.1, 2.2)	1.1 (0.8, 1.6)	1.8 (1.3, 2.5)
CRP > 2mg/L, n (%)	1030 (32.3)	393 (65.9)	846 (29.7)	387 (44.4)
CRP, mg/L	1.1 (0.5, 2.6)	3.1 (1.5, 6.4)	1.0 (0.5, 2.4)	1.7 (0.9, 3.4)
UAE, mg/24h	8.0 (5.7, 12.9)	10.8 (6.7, 20.6)	9.6 (6.6, 17.9)	14.3 (8.3, 34.7)
Anthropometric measures				
RFM	33.7 (29.6, 37.8)	41.3 (38.3, 44.3)	24.4 (21.2, 27.3)	28.8 (26.4, 30.9)
BMI, kg/m^2	24.4 (22.2, 27.0)	30.1 (27.4, 33.7)	25.2 (23.2, 27.3)	28.7 (26.4, 31.0)
WC, cm	79.0 (72.5, 87.0)	95.0 (87.0, 104.0)	91.0 (84.5, 97.0)	101.0 (95.0, 108.0)
WHR	0.81 (0.76, 0.85)	0.87 (0.82, 0.92)	0.92 (0.88, 0.97)	0.98 (0.94, 1.02)
Incident Outcome				
Type-2 Diabetes, n (%)	88 (2.7)	111 (17.8)	139 (4.7)	171 (18.7)

Continuous variables are presented as medians (P25, P75) and categorical variables as n (%). Abbreviations: SBP, systolic blood pressure; DBP, diastolic blood pressure; HOMA-IR, Homeostatic Model Assessment for Insulin Resistance; HDL, high-density lipoprotein; CRP, C-reactive protein; UAE, urinary albumin excretion; RFM, relative fat mass, BMI, body mass index; WC, waist circumference; WHR, waist-hip ratio.

Table S2. Participant characteristics according to incident type-2 diabetes status

	WOMEN		MEN	
	No incident DM (n=3788)	**Incident DM** (n=202)	**No incident DM** (n=3651)	**Incident DM** (n=320)
Clinical characteristics				
Age, years	46.3 (37.9, 56.1)	54.2 (48.3, 63.2)	48.5 (39.3, 61.4)	54.5 (47.8, 63.1)
White individuals, n (%)	3616 (96.1)	183 (92.9)	3471 (95.7)	301 (95.6)
Smoking, n (%)	1433 (37.8)	71 (35.1)	1389 (38.0)	119 (37.2)
Hypertension, n (%)	956 (25.2)	115 (56.9)	1336 (36.6)	198 (61.9)
SBP, mm Hg	118 (109, 133)	136 (120, 149)	130 (119, 142)	140 (128, 153)
DBP, mm Hg	70 (64, 76)	75 (69, 80)	75 (70, 82)	81 (75, 87)
Diabetes (family history), n (%)	575 (15.2)	54 (26.7)	491 (13.4)	77 (24.1)
HOMA-IR > 2.9, n (%)	513 (13.8)	111 (55.8)	744 (20.8)	171 (55.2)
HOMA-IR (continuous)	1.5 (1.0, 2.2)	3.1 (2.1, 5.0)	1.7 (1.2, 2.6)	3.1 (2.1, 4.9)
Glucose, mmol/L	4.6 (4.2, 4.9)	5.5 (4.9, 6.1)	4.8 (4.4, 5.1)	5.5 (5.1, 6.0)
Insulin, mU/L	7.4 (5.3, 10.6)	12. 5 (8.9, 19.3)	8.1 (5.6, 12.2)	12.9 (8.6, 18.9)
Total cholesterol, mmol/L	5.5 (4.8, 6.3)	5.9 (5.5, 6.8)	5.5 (4.9, 6.3)	5.9 (5.2, 6.5)
HDL-cholesterol, mmol/L	1.5 (1.2, 1.8)	1.2 (1.0, 1.5)	1.1 (0.9, 1.4)	1.0 (0.9, 1.1)
Triglycerides, mmol/L	1.0 (0.8, 1.4)	1.6 (1.2, 2.3)	1.2 (0.9, 1.8)	1.7 (1.2, 2.5)
CRP > 2mg/L, n (%)	1319 (36.3)	119 (62.3)	1110 (32.0)	135 (45.3)
C-reactive protein, mg/L	1.3 (0.5, 3.0)	2.9 (1.4, 6.1)	1.1 (0.5, 2.5)	1.7 (0.9, 3.6)
UAE, mg/24h	8.3 (5.8, 13.6)	12. 5 (7.2, 23.5)	10.1 (6.7. 19.6)	15.2 (8.8, 36.3)
Anthropometric measures				
RFM	34.5 (30.1, 38.9)	41.2 (38.0, 44.7)	25.2 (21.8, 28.3)	28.4 (25.9, 30.9)
BMI, kg/m^2	24.9 (22.5, 27.8)	29.7 (26.6, 34.0)	25.7 (23.6, 28.1)	28.0 (25.9, 30.6)
WC, cm	80.5 (73.0, 89.5)	94.5 (85.0, 103.0)	92.5 (85.5, 100.0)	100.0 (93.3, 107.0)
WHR	0.81 (0.77, 0.86)	0.87 (0.82, 0.93)	0.93 (0.89, 0.98)	0.98 (0.94, 1.02)

Continuous variables are presented as medians (P25, P75) and categorical variables as n (%). Abbreviations same as in Table S1.

Table S3. Associations of standardized adiposity indices with incident type-2 diabetes after additionally adjusting for insulin resistance, inflammation and urinary albumin excretion

	Base model + **HOMA-IR**		Base model + **CRP**		Base model + **UAE**		Base model + **HOMA-IR + CRP + UAE**	
	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
RFM	1.52 (1.34, 1.71)	<0.001	2.11 (1.88, 2.38)	<0.001	2.15 (1.93, 2.40)	<0.001	1.51 (1.33, 1.72)	<0.001
BMI	1.28 (1.18, 1.39)	<0.001	1.63 (1.51, 1.76)	<0.001	1.65 (1.54, 1.77)	<0.001	1.27 (1.16, 1.39)	<0.001
WC	1.29 (1.18, 1.42)	<0.001	1.71 (1.57, 1.87)	<0.001	1.74 (1.61, 1.89)	<0.001	1.28 (1.16, 1.42)	<0.001
WHR	1.28 (1.16, 1.41)	<0.001	1.55 (1.41, 1.70)	<0.001	1.58 (1.45, 1.73)	<0.001	1.27 (1.14, 1.40)	<0.001

Models were adjusted for age, sex, smoking, prevalent hypertension, and additionally for HOMA-IR, CRP and UAE. Abbreviations: HR, hazard ratio per standard deviation change in adiposity index; CI, confidence interval; HOMA-IR, Homeostatic Model Assessment for Insulin Resistance; CRP, high-sensitivity C-reactive protein; UAE, urinary albumin excretion; RFM, relative fat mass; BMI, body-mass index; WC, waist circumference; WHR, waist-hip ratio.

Table S4. Performance metrics of individual anthropometric indices when added to a diabetes risk prediction model

	C-statistic	**ΔC-statistic**	**AIC**	**ΔAIC**	**P-value**
Base Model	0.7064	-	8865	-	-
Base Model + RFM	0.7700	0.0636	8659	-206	<0.001
Base Model + BMI	0.7677	0.0613	8689	-176	<0.001
Base Model + WC	0.7667	0.0603	8694	-171	<0.001
Base Model + WHR	0.7437	0.0373	8758	-107	<0.001

Base model included age, sex, smoking, prevalent hypertension and family history of diabetes. AIC represents Akaike information criterion. P-values are based on likelihood ratio test. Other abbreviations same as in Table S3.

Table S5. Performance metrics of individual anthropometric indices when added to a diabetes risk prediction model including insulin resistance (HOMA-IR), C-reactive protein (CRP) and 24-h urinary albumin excretion (UAE)

	C-statistic	**ΔC-statistic**	**AIC**	**ΔAIC**	**P-value**
Base Model	0.8064	-	7709	-	-
Base Model + RFM	0.8115	0.0051	7671	-38	<0.001
Base Model + BMI	0.8108	0.0044	7684	-25	<0.001
Base Model + WC	0.8105	0.0041	7688	-21	<0.001
Base Model + WHR	0.8087	0.0023	7691	-18	<0.001

Base model included age, sex, smoking, prevalent hypertension, family history of diabetes, HOMA-IR, CRP and UAE. AIC represents Akaike information criterion. P-values are based on likelihood ratio test. Other abbreviations same as in Table S3.

Table S6. Comparing effect sizes of relative fat mass, waist circumference and waist-hip ratio with body-mass index for incident type-2 diabetes

	HR (95% CI)	P-value	$P_{difference}$
RFM	1.81 (1.48, 2.21)	<0.001	0.009
BMI	1.17 (1.02, 1.35)	0.027	
WC	1.32 (1.13, 1.56)	0.001	0.900
BMI	1.35 (1.17, 1.56)	<0.001	
WHR	1.29 (1.17, 1.43)	<0.001	0.039
BMI	1.52 (1.41, 1.65)	<0.001	

Models were adjusted for age, sex, smoking, prevalent hypertension and family history of diabetes. BMI was included in all models. P-value for difference ($P_{difference}$) was estimated by performing a Wald test comparing effect sizes of RFM, WC and WHR with BMI for incident type-2 diabetes. A significant $P_{difference}$ indicates that effect sizes of adiposity indices (i.e., WC, WHR and RFM) were significantly different from BMI. Abbreviations same as in Table S3.

Table S7. Associations of standardized adiposity indices with incident type-2 diabetes across body-mass index categories

	Lean (BMI 18.5-25 kg/m^2)		Overweight (BMI 25-30 kg/m^2)		Obese (BMI ≥ 30 kg/m^2)	
	HR (95% CI)	**P-value**	**HR (95% CI)**	**P-value**	**HR (95% CI)**	**P-value**
RFM	1.81 (1.24, 2.63)	0.002	1.61 (1.25, 2.09)	<0.001	1.80 (1.36, 2.37)	<0.001
WC	1.94 (1.32, 2.87)	0.001	1.31 (1.06, 1.62)	0.012	1.36 (1.15, 1.61)	<0.001
WHR	1.48 (1.14, 1.90)	0.003	1.34 (1.15, 1.56)	<0.001	1.24 (1.06, 1.45)	0.006

Models were adjusted for age, sex, smoking, prevalent hypertension and family history of diabetes. Abbreviations same as in Table S3.

Table S8. Risk of incident type-2 diabetes across sex-specific quintiles of adiposity indices

	WOMEN			MEN	
	HR (95% CI)	**P-value**		**HR (95% CI)**	**P-value**
RFM					
Q1 (26.5)	Referent		Q1 (18.2)	Referent	
Q2 (31.2)	3.55 (1.18, 10.63)	0.024	Q2 (22.9)	3.11 (1.59, 6.11)	0.001
Q3 (34.9)	3.84 (1.30, 11.33)	0.015	Q3 (25.5)	4.03 (2.08, 7.80)	<0.001
Q4 (38.5)	7.53 (2.66, 21.34)	<0.001	Q4 (27.9)	6.24 (3.37, 11.92)	<0.001
Q5 (43.5)	22.28 (8.05, 61.66)	<0.001	Q5 (31.4)	9.38 (4.94, 17.82)	<0.001
BMI (kg/m^2)					
Q1 (21.5)	Referent		Q1 (22.4)	Referent	
Q2 (23.3)	1.36 (0.61, 3.02)	0.457	Q2 (24.5)	1.70 (0.95, 3.06)	0.076
Q3 (25.2)	1.56 (0.73, 3.35)	0.255	Q3 (25.9)	3.31 (1.94, 5.68)	<0.001
Q4 (27.5)	3.57 (1.78, 7.13)	<0.001	Q4 (27.6)	2.99 (1.73, 5.14)	<0.001
Q5 (31.9)	7.23 (3.70, 14.13)	<0.001	Q5 (30.8)	6.00 (3.57, 10.08)	<0.001
WC (cm)					
Q1 (68.4)	Referent		Q1 (79.4)	Referent	
Q2 (75.4)	2.34 (0.83, 6.56)	0.107	Q2 (87.7)	1.80 (1.00, 3.25)	0.049
Q3 (81.4)	4.96 (1.91, 12.89)	0.001	Q3 (93.4)	2.84 (1.64, 4.90)	<0.001
Q4 (88.5)	6.64 (2.61, 16.88)	<0.001	Q4 (99.3)	4.15 (2.42, 7.13)	<0.001
Q5 (102.2)	16.54 (6.64, 41.19)	<0.001	Q5 (109.6)	6.09 (3.59, 10.32)	<0.001
WHR					
Q1 (0.75)	Referent		Q1 (0.85)	Referent	
Q2 (0.79)	1.61 (0.72, 3.62)	0.248	Q2 (0.91)	1.47 (0.83. 2.60)	0.184
Q3 (0.82)	2.75 (1.31, 5.78)	0.007	Q3 (0.94)	2.79 (1.66, 4.70)	<0.001
Q4 (0.85)	4.67 (2.30, 9.51)	<0.001	Q4 (0.97)	3.04 (1.81, 5.12)	<0.001
Q5 (0.91)	6.2 (3.07, 12.51)	<0.001	Q5 (1.02)	5.00 (3.00, 8.33)	0.146

Models were adjusted for age, smoking, prevalent hypertension and family history of diabetes. Abbreviations same as in Table S3.

Table S9. Participant characteristics according to pre-specified age categories in women

	Age < 40 years (n = 1223)	**Age: 40-50 years** (n = 1149)	**Age: 50-60 years** (n = 803)	**Age: 60-70 years** (n = 595)	**Age ≥ 70 years** (n = 220)
Clinical characteristics					
Age, years	34.9 (32.2, 37.5)	45.0 (42.7, 47.6)	53.8 (51.8, 56.4)	64.7 (62.4, 67.2)	72.4 (71.1, 73.6)
White individuals, n (%)	1137 (93.8)	1086 (95.0)	783 (98.4)	577 (98.0)	216 (98.2)
Smoking, n (%)	501 (41.0)	497 (43.3)	300 (37.4)	171 (28.7)	35 (15.9)
Hypertension, n (%)	79 (6.5)	196 (17.1)	280 (34.9)	352 (59.2)	164 (74.5)
SBP, mm Hg	112 (106, 120)	115 (107, 128)	123 (112, 139)	139 (123, 153)	146 (132, 161)
DBP, mm Hg	66 (62, 71)	70 (64, 76)	72 (67, 78)	75 (69, 81)	76 (70, 82)
Diabetes (family history), n (%)	147 (12.0)	197 (17.1)	158 (19.7)	91 (15.3)	36 (16.4)
HOMA-IR > 2.9, n (%)	111 (9.3)	138 (12.3)	152 (19.2)	160 (27.3)	63 (28.9)
HOMA-IR (continuous)	1.3 (1.0, 1.9)	1.4 (1.0, 2.1)	1.7 (1.1, 2.5)	2.0 (1.3, 3.0)	2.1 (1.4, 3.2)
Glucose, mmol/L	4.4 (4.1, 4.7)	4.5 (4.2, 4.9)	4.8 (4.4, 5.1)	4.9 (4.5, 5.3)	4.9 (4.5, 5.3)
Insulin, mU/L	6.9 (5.2, 9.8)	7.2 (5.0, 10.0)	7.8 (5.4, 11.2)	9.1 (6.2, 13.2)	10.0 (7.0, 14.0)
Total cholesterol, mmol/L	4.9 (4.3, 5.5)	5.3 (4.7, 6.0)	6.0 (5.4, 6.7)	6.2 (5.6, 6.9)	6.3 (5.7, 6.9)
HDL-cholesterol, mmol/L	1.5 (1.2, 1.8)	1.5 (1.2, 1.7)	1.4 (1.2, 1.8)	1.4 (1.2, 1.6)	1.4 (1.1, 1.7)
Triglycerides, mmol/L	0.9 (0.7, 1.2)	1.0 (0.8, 1.4)	1.2 (0.9, 1.6)	1.3 (1.0, 1.8)	1.4 (1.0, 1.8)
CRP > 2mg/L, n (%)	390 (33.1)	370 (33.9)	298 (38.6)	271 (47.7)	109 (50.9)
CRP, mg/L	1.1 (0.4, 2.8)	1.1 (0.5, 2.8)	1.4 (0.7, 3.1)	1.9 (0.9, 3.8)	2.1 (0.9, 4.2)
UAE, mg/24h	7.6 (5.6, 12.0)	8.1 (5.7, 13.0)	8.9 (6.0, 15.7)	9.6 (6.3, 18.2)	10.2 (6.7, 21.8)
Anthropometric measures					
RFM	30.9 (27.5, 35.1)	34.0 (30.1, 38.2)	36.5 (32.5, 40.2)	39.1 (35.6, 42.2)	40.2 (37.2, 43.3)
BMI, kg/m^2	23.3 (21.6, 26.1)	24.5 (22.3, 27.6)	26.0 (23.7, 29.1)	27.1 (24.9, 30.1)	27.8 (25.7, 30.9)
WC, cm	75.5 (70.0, 83.0)	80.0 (73.5, 88.5)	84.0 (76.5, 92.5)	89.0 (81.0, 97.5)	91.0 (84.0, 98.0)
WHR	0.78 (0.74, 0.83)	0.81 (0.77, 0.86)	0.83 (0.78, 0.88)	0.85 (0.81, 0.90)	0.87 (0.81, 0.92)
Incident Outcome					
Type-2 Diabetes, n (%)	24 (2.0)	41 (3.6)	69 (8.6)	53 (8.9)	15 (6.8)

Continuous variables are presented as medians (P25, P75) and categorical variables as n (%). Abbreviations same as in Table S1.

Table S10. Participant characteristics according to pre-specified age categories in men

	Age < 40 years (n = 1006)	**Age: 40-50 years** (n = 1078)	**Age: 50-60 years** (n = 793)	**Age: 60-70 years** (n = 760)	**Age ≥ 70 years** (n = 334)
Clinical characteristics					
Age, years	34.6 (31.7, 37.4)	45.1 (42.8, 47.7)	54.5 (51.9, 57.2)	65.1 (62.8, 67.3)	72.6 (71.4, 74.0)
White individuals, n (%)	939 (93.9)	1000 (93.6)	767 (97.3)	737 (98.0)	329 (98.8)
Smoking, n (%)	401 (39.9)	460 (42.7)	325 (41.0)	256 (33.7)	66 (19.8)
Hypertension, n (%)	137 (13.6)	284 (26.3)	346 (43.6)	507 (66.7)	260 (77.8)
SBP, mm Hg	124 (116, 134)	127 (118, 137)	133 (121, 147)	141 (128, 155)	147 (130, 161)
DBP, mm Hg	70 (65, 74)	76 (71, 81)	80 (74, 86)	81 (74, 87)	79 (73, 85)
Diabetes (family history), n (%)	116 (11.5)	171 (15.9)	141 (17.8)	93 (12.2)	47 (14.1)
HOMA-IR > 2.9, n (%)	146 (14.9)	226 (21.4)	240 (30.8)	211 (28.3)	92 (28.0)
HOMA-IR (continuous)	1.5 (1.0, 2.3)	1.7 (1.1, 2.6)	2.0 (1.4, 3.1)	2.0 (1.4, 3.1)	2.0 (1.4, 3.1)
Glucose, mmol/L	4.6 (4.3, 4.9)	4.7 (4.4, 5.1)	5.0 (4.6, 5.4)	5.0 (4.6, 5.4)	5.0 (4.6, 5.4)
Insulin, mU/L	7.5 (5.3, 10.9)	7.9 (5.4, 12.4)	9.2 (6.5, 13.8)	9.2 (6.2, 13.2)	8.9 (6.2, 13.3)
Total cholesterol, mmol/L	5.1 (4.5, 5.8)	5.6 (4.9, 6.4)	5.9 (5.3, 6.6)	5.8 (5.2, 6.5)	5.7 (5.1, 6.3)
HDL-cholesterol, mmol/L	1.1 (1.0, 1.4)	1.1 (0.9, 1.3)	1.1 (0.9, 1.3)	1.1. (1.0, 1.4)	1.1 (0.9, 1.4)
Triglycerides, mmol/L	1.1 (0.8, 1.6)	1.3 (0.9, 2.0)	1.4 (1.0, 2.1)	1.3 (1.0, 1.9)	1.2 (0.9, 1.6)
CRP > 2mg/L, n (%)	186 (19.6)	269 (26.2)	291 (38.5)	335 (46.7)	164 (51.2)
CRP, mg/L	0.7 (0.3, 1.6)	1.0 (0.5, 2.1)	1.5 (0.7, 3.0)	1.9 (0.9, 3.7)	2.1 (1.0, 4.0)
UAE, mg/24h	8.2 (6.3, 11.9)	9.3 (6.5, 16.3)	11.3 (7.0, 23.2)	15.0 (8.3, 37.2)	20.8 (10.5, 52.0)
Anthropometric measures					
RFM	22.0 (18.9, 24.7)	24.7 (21.7, 27.6)	26.9 (24.2, 29.2)	27.7 (25.3, 30.3)	28.5 (25.9, 30.4)
BMI, kg/m^2	24.5 (22.5, 26.6)	25.7 (23.5, 28.3)	26.7 (24.7, 29.2)	26.7 (24.8, 29.0)	26.7 (24.9, 28.7)
WC, cm	86.9 (81.0, 93.0)	91.5 (85.0, 99.5)	96.0 (89.5, 103.0)	97.0 (91.5, 104.5)	98.0 (92.5, 105.0)
WHR	0.89 (0.85, 0.93)	0.93 (0.89, 0.97)	0.96 (0.91, 1.00)	0.97 (0.93, 1.01)	0.97 (0.93, 1.01)
Incident Outcome					
Type-2 Diabetes, n (%)	23 (2.3)	78 (7.2)	115 (14.5)	79 (10.4)	25 (7.5)

Continuous variables are presented as medians (P25, P75) and categorical variables as n (%). Abbreviations same as in Table S1.

Table S11. Participant characteristics of Lifelines and Rotterdam cohorts

	LIFELINES COHORT		ROTTERDAM COHORT	
	Women (n = 55426)	Men (n = 38444)	Women (n = 3016)	Men (n = 2263)
Clinical characteristics				
Age, years	45 (37, 53)	46 (38, 55)	68 (63, 75)	68 (62, 74)
Smoking, n (%)	9829 (18)	7990 (21)	514 (17)	536 (24)
Hypertension, n (%)	11790 (21)	12255 (32)	1959 (65)	1504 (67)
SBP, mm Hg	120 (112, 131)	129 (121, 139)	140 (127, 155)	141 (128, 155)
DBP, mm Hg	71 (66, 77)	76 (70, 83)	75 (68, 82)	78 (70, 85)
Diabetes (family history), n (%)	13630 (25)	10258 (27)	-	-
HOMA-IR > 2.9, n (%)	-	-	1246 (42.8)	958 (44.0)
HOMA-IR (continuous)	-	-	2.6 (1.9, 3.9)	2.7 (1.8, 3.8)
Glucose, mmol/L	4.8 (4.5, 5.1)	5.0 (4.7, 5.3)	5.4 (5.1, 5.8)	5.6 (5.2, 6.0)
Insulin, mU/L	-	-	66 (48, 93)	65 (46, 90)
Total cholesterol, mmol/L	5.0 (4.4, 5.7)	5.1 (4.5, 5.8)	6.0 (5.4, 6.6)	5.6 (5.0, 6.2)
HDL-cholesterol, mmol/L	1.5 (1.4, 1.9)	1.3 (1.1, 1.5)	1.5 (1.3, 1.8)	1.2 (1.0, 1.4)
Triglycerides, mmol/L	0.9 (0.7, 1.2)	1.1 (0.8, 1.6)	1.3 (1.0, 1.7)	1.3 (1.0, 1.8)
CRP > 2 mg/L, n (%)	-	-	1290 (45.6)	946 (44.5)
CRP, mg/L	-	-	1.8 (0.7, 3.6)	1.7 (0.7, 3.7)
UAE, mg/24h	-	-	-	-
Anthropometric measures				
RFM	36.2 (32.5, 39.9)	25.3 (22.3, 28.0)	39.6 (36.3, 42.8)	28.0 (25.6, 30.2)
BMI, kg/m^2	24.8 (22.6, 27.9)	25.9 (23.9, 28.1)	26.5 (24.0, 29.5)	26.1 (24.3, 28.2)
WC, cm	85.0 (78.0, 93.0)	94.0 (88.0, 101.0)	88.5 (81.3, 96.7)	96.8 (91.3, 103.0)
WHR	0.87 (0.82, 0.91)	0.96 (0.92, 1.00)	0.86 (0.81, 0.92)	0.97 (0.92, 1.01)
Incident outcome				
Type-2 Diabetes, n (%)	922 (1.7)	969 (2.5)	431 (14.3)	327 (14.4)

Continuous variables are presented as medians (P25, P75) and categorical variables as n (%). Abbreviations same as in Table S1.

Table S12. Associations of standardized adiposity indices with incident type-2 diabetes across age categories in the total population (Lifelines and Rotterdam cohorts)

	Age < 40 years		**Age: 40-50 years**		**Age: 50-60 years**		**Age: 60-70 years**		**Age ≥ 70 years**	
	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
LIFELINES										
RFM	2.60 (2.25-3.01)	<0.001	2.74 (2.49-3.01)	<0.001	2.33 (2.09-2.59)	<0.001	2.25 (2.01-2.52)	<0.001	2.01 (1.64-2.46)	<0.001
BMI	1.71 (1.61-1.82)	<0.001	1.81 (1.72-1.91)	<0.001	1.71 (1.60-1.83)	<0.001	1.68 (1.56-1.81)	<0.001	1.65 (1.43-1.90)	<0.001
WC	2.04 (1.83-2.26)	<0.001	2.03 (1.90-2.16)	<0.001	1.83 (1.70-1.97)	<0.001	1.89 (1.74-2.05)	<0.001	1.82 (1.56-2.12)	<0.001
WHR	1.67 (1.47-1.91)	<0.001	1.75 (1.64-1.87)	<0.001	1.66 (1.52-1.81)	<0.001	1.75 (1.59-1.93)	<0.001	1.40 (1.23-1.60)	<0.001
ROTTERDAM										
RFM	N/A	N/A	N/A	N/A	1.72 (1.38, 2.16)	<0.001	1.51 (1.27, 1.68)	<0.001	1.29 (1.13, 1.46)	<0.001
BMI	N/A	N/A	N/A	N/A	1.44 (1.22, 1.71)	<0.001	1.46 (1.33, 1.60)	<0.001	1.28 (1.13, 1.43)	<0.001
WC	N/A	N/A	N/A	N/A	1.55 (1.29, 1.85)	<0.001	1.32 (1.23, 1.42)	<0.001	1.26 (1.13, 1.42)	<0.001
WHR	N/A	N/A	N/A	N/A	1.72 (1.34, 2.21)	<0.001	1.19 (1.11, 1.27)	<0.001	1.09 (0.98, 1.21)	0.115

Models were adjusted for age, sex, smoking, prevalent hypertension and family history of diabetes in the Lifelines cohort and for age, sex, smoking and prevalent hypertension in the Rotterdam cohort. Abbreviations same as in Table S3.