

SUPPLEMENTARY DATA

**Supplementary Table S1. Pairwise Spearman Correlations of HbA1c with Fasting Plasma Glucose and 2-hour Plasma Glucose in child and adult cohorts.**

	<b>Boys/Men</b>			<b>Girls/Women</b>		
<b>Children</b>	<b>HbA1c</b>	<b>FPG</b>	<b>2hPG</b>	<b>HbA1c</b>	<b>FPG</b>	<b>2hPG</b>
<b>HbA1c</b>	1	0.13	0.12	1	0.16	0.17
<b>FPG</b>		1	0.37		1	0.45
<b>2hPG</b>			1			1
<b>Adults</b>	<b>HbA1c</b>	<b>FPG</b>	<b>2hPG</b>	<b>HbA1c</b>	<b>FPG</b>	<b>2hPG</b>
<b>HbA1c</b>	1	0.28	0.22	1	0.27	0.21
<b>FPG</b>		1	0.41		1	0.43
<b>2hPG</b>			1			1

All correlations were significant with  $p < 0.0001$

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**Supplementary Table S2. Areas under the ROC curve (AUCs) for prediction of diabetes (time-to-event analysis).** P-values indicate significance of the difference of the AUC from that of HbA1c.

	TEST	MALES	FEMALES
<b>CHILDREN</b> (227 cases/ 13,528 person years)	HbA1c	0.65 --	0.72 --
	FPG	0.58 <i>p</i> = 0.15	0.67 <i>p</i> = 0.13
	2hPG	0.68 <i>p</i> = 0.48	0.75 <i>p</i> = 0.33
<b>ADULTS</b> (536 cases/ 11,520 person years)	HbA1c	0.66 --	0.63 --
	FPG	0.64 <i>p</i> = 0.31	0.66 <i>p</i> = 0.11
	2hPG	0.65 <i>p</i> = 0.52	0.70 <i>p</i> = <b>0.0012</b>

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**Supplementary Table S3. Sensitivities and Specificities at HbA1c, FPG, and 2hPG thresholds, within age-sex cohorts.**

**Boys (n=941)**

HbA1c			FPG			2-hPG		
Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity
3.4	1.00	0.00	64	1.00	0.00	45	1.00	0.00
3.5	1.00	0.00	66	1.00	0.00	50	0.99	0.00
3.6	1.00	0.00	68	1.00	0.00	55	0.98	0.01
3.7	1.00	0.00	70	1.00	0.00	60	0.96	0.02
3.8	1.00	0.00	72	1.00	0.00	65	0.97	0.05
3.9	1.00	0.01	74	1.00	0.01	70	0.96	0.07
4.0	1.00	0.01	76	1.00	0.01	75	0.95	0.13
4.1	1.00	0.02	78	0.98	0.02	80	0.91	0.18
4.2	0.99	0.03	80	0.96	0.04	85	0.88	0.25
4.3	0.98	0.07	82	0.93	0.08	90	0.82	0.35
4.4	0.98	0.10	84	0.89	0.14	95	0.74	0.44
4.5	0.93	0.14	86	0.81	0.23	100	0.67	0.54
4.6	0.86	0.18	88	0.74	0.32	105	0.58	0.63
4.7	0.84	0.25	90	0.60	0.43	110	0.52	0.71
4.8	0.79	0.34	92	0.54	0.57	115	0.40	0.78
4.9	0.70	0.42	94	0.44	0.69	120	0.30	0.84
5.0	0.69	0.55	96	0.36	0.77	125	0.24	0.89
5.1	0.62	0.65	98	0.26	0.84	130	0.17	0.91
5.2	0.51	0.76	100	0.14	0.89	135	0.14	0.94
5.3	0.33	0.84	102	0.14	0.93	140	0.13	0.96
5.4	0.28	0.91	104	0.09	0.95	145	0.11	0.97
5.5	0.21	0.94	106	0.06	0.97	150	0.10	0.99
5.6	0.12	0.98	108	0.05	0.98	155	0.07	0.99
5.7	0.08	1.00	110	0.02	0.99	160	0.06	0.99
5.8	0.06	1.00	112	0.02	0.99	165	0.05	0.99
5.9	0.04	1.00	114	0.01	1.00	170	0.05	1.00
6.0	0.00	1.00	116	0.01	1.00	175	0.02	1.00
6.1	0.00	1.00	118	0.00	1.00	180	0.00	1.00
6.2	0.00	1.00	120	0.00	1.00	185	0.00	1.00
6.3	0.00	1.00	122	0.00	1.00	190	0.00	1.00
6.4	0.00	1.00	124	0.00	1.00	195	0.00	1.00

**Girls (n=1154)**

HbA1c			FPG			2-hPG		
Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity
3.4	1.00	0.00	64	1.00	0.00	45	1.00	0.00
3.5	1.00	0.00	66	1.00	0.00	50	1.00	0.00
3.6	1.00	0.00	68	1.00	0.00	55	1.00	0.01
3.7	1.00	0.00	70	1.00	0.00	60	0.99	0.02
3.8	1.00	0.01	72	1.00	0.00	65	0.99	0.02
3.9	1.00	0.01	74	0.99	0.01	70	0.99	0.04
4.0	0.99	0.01	76	0.97	0.02	75	0.99	0.08
4.1	0.99	0.02	78	0.98	0.05	80	0.96	0.13
4.2	0.97	0.04	80	0.96	0.11	85	0.93	0.20
4.3	0.96	0.06	82	0.93	0.16	90	0.91	0.26
4.4	0.94	0.09	84	0.85	0.26	95	0.90	0.37
4.5	0.93	0.13	86	0.82	0.36	100	0.86	0.46
4.6	0.89	0.18	88	0.75	0.49	105	0.80	0.54
4.7	0.86	0.26	90	0.65	0.58	110	0.72	0.64
4.8	0.80	0.34	92	0.53	0.69	115	0.60	0.72
4.9	0.77	0.44	94	0.41	0.79	120	0.53	0.78
5.0	0.68	0.55	96	0.34	0.86	125	0.45	0.83

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5.1	0.64	0.64	98	0.27	0.91	130	0.42	0.87
5.2	0.55	0.74	100	0.19	0.95	135	0.35	0.91
5.3	0.52	0.84	102	0.13	0.97	140	0.32	0.93
5.4	0.46	0.90	104	0.09	0.98	145	0.28	0.95
5.5	0.36	0.94	106	0.09	1.00	150	0.25	0.96
5.6	0.26	0.97	108	0.05	1.00	155	0.21	0.98
5.7	0.19	0.99	110	0.05	1.00	160	0.17	0.98
5.8	0.10	1.00	112	0.03	1.00	165	0.15	0.98
5.9	0.04	1.00	114	0.02	1.00	170	0.12	0.99
6.0	0.01	1.00	116	0.01	1.00	175	0.08	0.99
6.1	0.00	1.00	118	0.01	1.00	180	0.06	1.00
6.2	0.00	1.00	120	0.00	1.00	185	0.05	1.00
6.3	0.00	1.00	122	0.00	1.00	190	0.03	1.00
6.4	0.00	1.00	124	0.00	1.00	195	0.01	1.00

Men (n=797)

HbA1c			FPG			2-hPG		
Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity
3.4	1.00	0.00	64	1.00	0.00	45	1.00	0.01
3.5	1.00	0.00	66	0.99	0.00	50	0.99	0.01
3.6	1.00	0.00	68	0.99	0.00	55	0.99	0.04
3.7	1.00	0.00	70	0.99	0.00	60	0.98	0.06
3.8	1.00	0.00	72	0.99	0.01	65	0.93	0.12
3.9	1.00	0.01	74	0.99	0.02	70	0.90	0.15
4.0	1.00	0.01	76	0.99	0.02	75	0.87	0.21
4.1	0.99	0.02	78	0.98	0.03	80	0.82	0.25
4.2	0.99	0.02	80	0.97	0.05	85	0.76	0.31
4.3	0.98	0.03	82	0.93	0.08	90	0.74	0.39
4.4	0.96	0.06	84	0.91	0.13	95	0.68	0.47
4.5	0.95	0.10	86	0.86	0.19	100	0.64	0.56
4.6	0.91	0.14	88	0.82	0.28	105	0.58	0.64
4.7	0.90	0.21	90	0.74	0.37	110	0.54	0.70
4.8	0.85	0.30	92	0.67	0.46	115	0.48	0.73
4.9	0.78	0.40	94	0.61	0.57	120	0.42	0.80
5.0	0.72	0.51	96	0.55	0.65	125	0.39	0.85
5.1	0.68	0.60	98	0.45	0.75	130	0.32	0.89
5.2	0.62	0.70	100	0.34	0.82	135	0.28	0.92
5.3	0.54	0.78	102	0.25	0.88	140	0.24	0.94
5.4	0.43	0.85	104	0.21	0.90	145	0.19	0.96
5.5	0.34	0.90	106	0.15	0.92	150	0.15	0.97
5.6	0.23	0.94	108	0.13	0.95	155	0.12	0.98
5.7	0.17	0.97	110	0.10	0.97	160	0.09	0.98
5.8	0.12	0.99	112	0.08	0.98	165	0.08	0.99
5.9	0.08	0.99	114	0.06	0.98	170	0.06	0.99
6.0	0.05	1.00	116	0.05	0.99	175	0.04	0.99
6.1	0.03	1.00	118	0.04	0.99	180	0.03	1.00
6.2	0.02	1.00	120	0.02	0.99	185	0.02	1.00
6.3	0.01	1.00	122	0.01	0.99	190	0.01	1.00
6.4	0.00	1.00	124	0.00	1.00	195	0.00	1.00

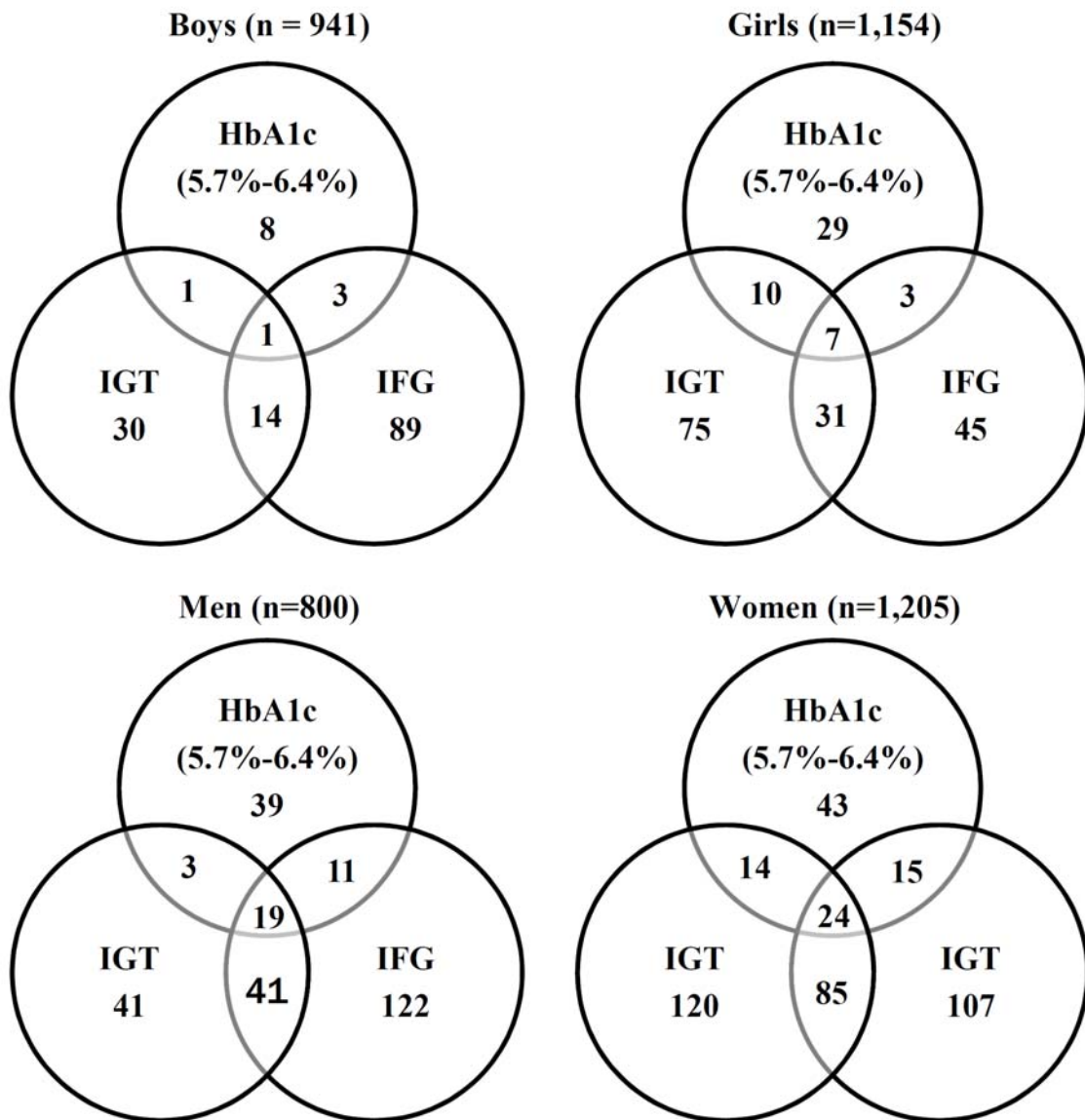
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Women (n=1198)

HbA1c			FPG			2-hPG		
Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity	Threshold	Sensitivity	Specificity
3.4	1.00	0.00	64	1.00	0.00	45	1.00	0.00
3.5	1.00	0.00	66	1.00	0.00	50	1.00	0.00
3.6	1.00	0.00	68	1.00	0.00	55	1.00	0.01
3.7	1.00	0.01	70	1.00	0.00	60	1.00	0.02
3.8	1.00	0.01	72	0.99	0.01	65	1.00	0.03
3.9	1.00	0.02	74	0.99	0.01	70	1.00	0.05
4.0	1.00	0.02	76	0.98	0.03	75	0.99	0.09
4.1	1.00	0.03	78	0.97	0.05	80	0.99	0.13
4.2	0.99	0.04	80	0.96	0.10	85	0.94	0.19
4.3	0.97	0.07	82	0.92	0.16	90	0.92	0.26
4.4	0.96	0.10	84	0.89	0.24	95	0.87	0.33
4.5	0.95	0.15	86	0.86	0.34	100	0.83	0.40
4.6	0.92	0.19	88	0.79	0.44	105	0.78	0.48
4.7	0.89	0.25	90	0.70	0.55	110	0.72	0.58
4.8	0.83	0.31	92	0.61	0.65	115	0.64	0.67
4.9	0.77	0.41	94	0.54	0.73	120	0.56	0.75
5.0	0.70	0.50	96	0.47	0.79	125	0.51	0.82
5.1	0.62	0.61	98	0.38	0.85	130	0.45	0.85
5.2	0.55	0.70	100	0.32	0.90	135	0.40	0.89
5.3	0.48	0.77	102	0.25	0.93	140	0.37	0.91
5.4	0.40	0.83	104	0.20	0.95	145	0.31	0.93
5.5	0.31	0.89	106	0.16	0.97	150	0.25	0.95
5.6	0.22	0.94	108	0.12	0.98	155	0.21	0.96
5.7	0.15	0.97	110	0.09	0.99	160	0.17	0.98
5.8	0.10	0.99	112	0.06	1.00	165	0.13	0.98
5.9	0.07	1.00	114	0.05	1.00	170	0.10	0.98
6.0	0.04	1.00	116	0.03	1.00	175	0.08	0.99
6.1	0.02	1.00	118	0.02	1.00	180	0.07	0.99
6.2	0.01	1.00	120	0.01	1.00	185	0.06	0.99
6.3	0.01	1.00	122	0.00	1.00	190	0.03	1.00
6.4	0.00	1.00	124	0.00	1.00	195	0.01	1.00

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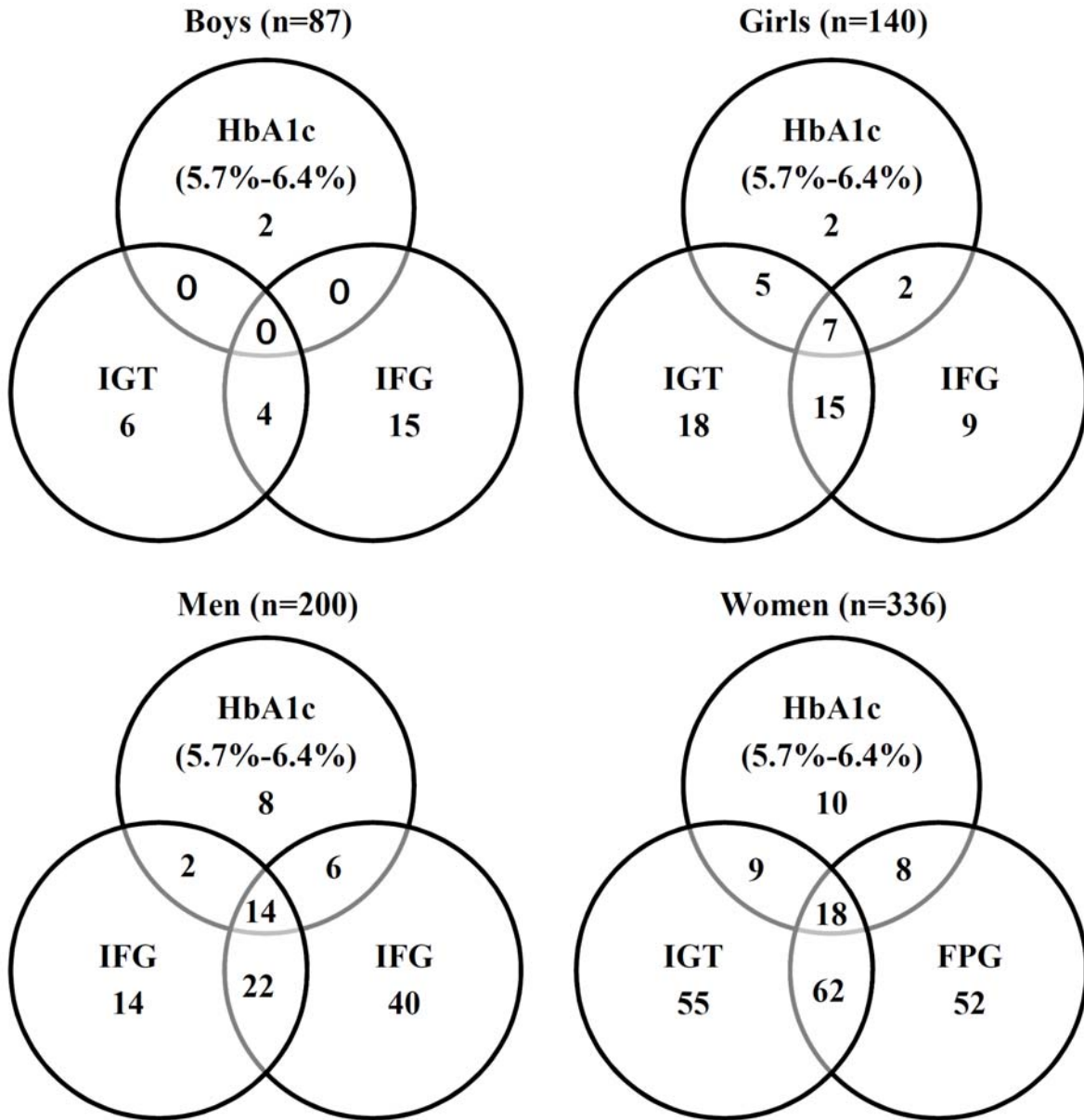
**Supplementary Figure S1. Agreement of prediabetes definitions at baseline, in all individuals.** Individuals age-sex stratified into four groups: boys ages 10-19 (A), girls ages 10-19 (B), men ages 20-39 (C), and women ages 20-39 (D).



*IFG: Impaired Fasting Glucose; IGT: Impaired Glucose Tolerance*

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**Supplementary Figure S2. Agreement of prediabetes definitions at baseline, in individuals who subsequently developed T2DM.** Individuals age-sex stratified into four groups: boys ages 10-19 (A), girls ages 10-19 (B), men ages 20-39 (C), and women ages 20-39 (D).



*IFG: Impaired Fasting Glucose; IGT: Impaired Glucose Tolerance*