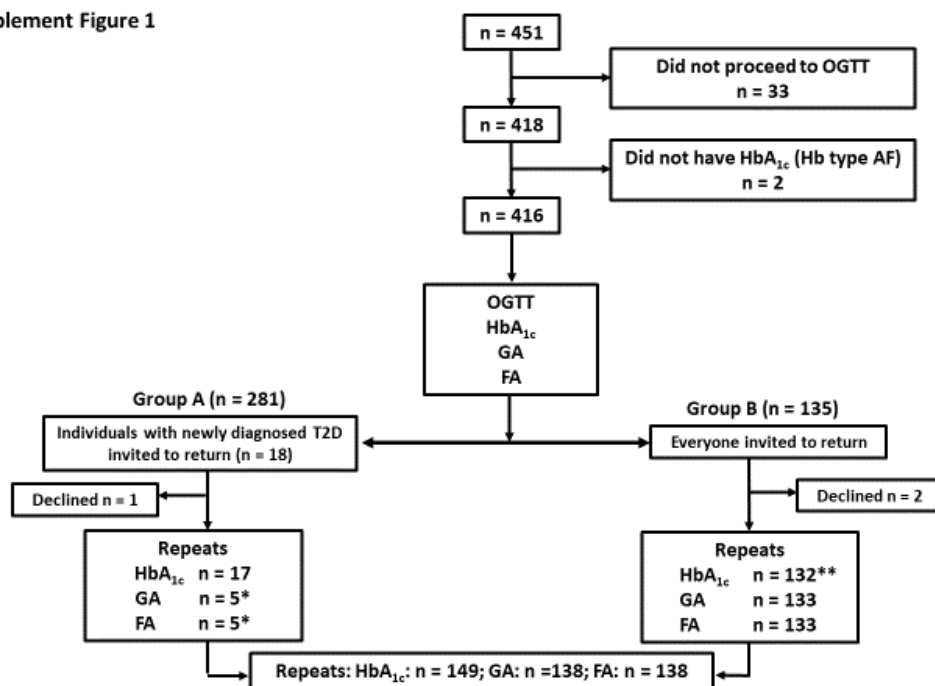


Supplement Figure 1



Supplement Figure 1. Flow diagram for enrollment in overall investigation and duplicate sub-study. Group A: only individuals who met glucose criteria for T2D were invited to return. Group B: independent of glucose tolerance category all participants invited to return. *GA and fructosamine (FA) were obtained in the last 5 consecutively enrolled individuals who met criteria for T2D. **One whole blood sample for HbA_{1c} clotted.

Supplement Table 1: Participant Characteristics by African Region of Origin

Parameter ¹	Total 100% (n=416)	West 53% (n=220)	Central 18% (n=74)	East 29% (n=122)	P-value ²
Sex (% Men)	66% (276/303)	66%(146/220)	73% (54/74)	62% (76/122)	0.308
Age (y)	39±10	39±11	39±11	38±9	0.627
Age at entry to United States (y)	26±11	25±11	29±9	27±11	0.069
Years in the United States (y)	12±10	14±11	10±9	11±9	0.009, a*
Hemoglobin (g/dL)	14.0±1.4	14.0±1.4	14.0±1.3	14.1±1.5	0.540
Hematocrit (%)	41.9±3.9	41.8±4.2	41.6±3.6	42.2±3.7	0.588
Sickle Cell Trait	15% (61/416)	17%(37/220)	19%(14/74)	8%(10/122)	0.002
Hemoglobin C Trait	3% (13/416)	6%(13/220)	0%(0/74)	0%(0/122)	0.002
BMI (kg/m ²)	27.7±4.5	27.8±4.5	28.1±5.0	27.0±4.1	0.166
Waist Circumference (cm) (n=415)	91±12	91±12	90±11	91±11	0.812
VAT (cm ³) (n=406)	99±69	93±65	106±76	106±72	0.154
Abnormal Glucose Tolerance (%)	37% (152/416)	33%(73/220)	43%(32/74)	39%(47/122)	0.258
Prediabetes	30% (124/416)	27%(59/220)	36%(27/74)	31%(38/122)	0.566
Diabetes	7% (28/416)	6%(14/220)	7%(5/74)	7%(9/122)	0.566
Fasting glucose (mmol/L)	5.1±0.8	5.1±0.9	5.1±0.5	5.2±0.5	0.903
Glucose @ 2 hours (mmol/L)	7.3±2.4	7.3±2.6	7.5±1.8	7.3±2.3	0.724
AUC-Glucose (n=414)	544±128	537±139	560±99	546±123	0.428
Insulin Sensitivity Index (n=412)	5.43±3.64	5.45±3.57	5.62±4.62	5.29±3.10	0.827
Insulin Secretion (n=412)	0.54±0.36	0.57±0.37	0.55±0.44	0.49±0.26	0.162

¹ Data presented as mean±SD or percentages

² Comparison by One-Way ANOVA with Bonferroni corrections or Chi-square as appropriate

Comparison between a: West vs. Central; b: West vs. East; c: Central vs. East

*P-value ≤ 0.05; **P-value ≤ 0.01; ***P-value ≤ 0.001

Supplement Table 2: Diagnosis of Abnl-GT in the Nonobese and the Obese

Parameter	Sensitivity (95% CI)	Specificity (95% CI)	P-value ¹
Nonobese (n=303)			
HbA _{1c} ≥ 39 mmol/L	36% (27%, 45%)	80% (74%, 85%)	Reference
GA ≥ 14.2%	37% (28%, 46%)	75% (69%, 81%)	0.529
HbA _{1c} + GA	58% (48%, 67%)	60% (53%, 66%)	<0.001
Obese (n=113)			
HbA _{1c} ≥ 39 mmol/L	60% (46%, 73%)	80% (68%, 88%)	Reference
GA ≥ 14.2%	27% (16%, 42%)	94% (85%, 98%)	<0.001
HbA _{1c} + GA	67% (52%, 79%)	74% (62%, 83%)	0.250
Whole Cohort (n=416)			
HbA _{1c} ≥ 39 mmol/L	43% (36%, 51%)	80% (75%, 85%)	Reference
GA ≥ 14.2%	34% (26%, 42%)	80% (75%, 84%)	0.086
HbA _{1c} + GA	61% (53%, 68%)	63% (57%, 69%)	<0.001

¹ Comparison by McNemar test to the Reference Group (HbA_{1c})

Supplement Table 3: Abnl-GT Detected by HbA_{1c} versus by GA-alone (n=92)

Characteristic ^a	Detected by HbA _{1c} ^b (n=66)	Detected by GA-alone (n=26)	P-value ^b
Age (y)	47±10	41±9	0.015
BMI (kg/m ²)	30.4±4.7	26.8±2.4	<0.001
Waist Circumference (cm)	99±12	91±8	0.001
VAT (cm ³)	154±74	113±66	0.015
Fasting Glucose (g/dL)	59±1.4	5.4±0.6	0.143
2h Glucose (g/dL)	10.0±3.4	9.3±2.3	0.361
Matsuda Index	2.92±2.05	3.22±1.73	0.507
Insulinogenic Index	0.426±0.230	0.418±0.264	0.876
Oral Disposition Index	1.01±0.50	1.01±0.37	0.389
Variant Hb ^f	24% (16/66)	27% (7/26)	0.789
Albumin g/L	40±28	40±25	0.367

^aData presented as mean±SD

^bComparisons were by unpaired t-tests

^cHbS or HbC trait (18 with SCT and 5 with AC)

Supplement Table 4: Net Reclassification Index for Adding GA to the HbA_{1c} for the Prediction of Abnormal Glucose Tolerance

Variable	Net Reclassification Index (NRI)	95% CI	P-value
Nonobese			
HbA _{1c}	Reference		
GA	---		
HbA _{1c} + GA	0.238	0.018, 0.459	0.034
Obese			
HbA _{1c}	Reference		
GA	---		
HbA _{1c} + GA	0.419	0.141, 0.696	0.003
Total Cohort			
HbA _{1c}	Reference		
GA	---		
HbA _{1c} + GA	0.270	0.091, 0.448	0.003