**S1 Appendix**

As described in detail previously[1], the following is a summary of funding sources and study characteristics for each of the T2D study cohorts.

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The following four parent studies have contributed parent study data, ancillary study data, and DNA samples through the Massachusetts Institute of Technology-Broad Institute (N01-HC-65226) to create this genotype/phenotype database for wide dissemination to the biomedical research community:

ARIC, CARDIA, JHS, and MESA.

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**Descriptions of the T2D study cohorts**

**ARIC**

The ARIC study is a prospective population-based study of atherosclerosis and cardiovascular disease that included 15792 participants (27% African American) aged 45-64 years at baseline visit (1987-89, visit 1) from four US communities [2]. Participants completed follow-up visits in 1990-92 (visit 2), 1993-95 (visit 3), 1996-98 (visit 4), and 2011-13 (visit 5). In this study, 955 T2D subjects diagnosed at any of the first four visits (visits 1-4) and 414 subjects with normal glucose tolerance (NGT) at visits 1-4 were included. All subjects were self-reported African American recruited from two communities (Jackson, MS and Forsyth, NC).

**CARDIA**

The CARDIA study is a prospective multi-center investigation of the natural history and etiology of cardiovascular disease that included 5115 participants (52% African American) aged 18-30 years at baseline visit from four US communities (Birmingham, AL; Chicago, IL; Minneapolis, MN and Oakland, CA) [3]. Follow-up examinations occurred at years 2, 5, 7, 10, 15 and 20. In this study, 94 T2D subjects diagnosed at any visits and 654 subjects with NGT in all visits were included. All subjects were self-reported African American.

**JHS**

JHS is a prospective population-based study to examine the risk factors of cardiovascular diseases among 5301 African American from two cohorts of unrelated (aged 35-84 years) and nested family-based (aged ≥21 years) subjects in the Jackson, Mississippi metropolitan area [4]. The mean family size was 1.4±1.5 subjects per family. In this study, 333 T2D and 1450 NGT subjects at baseline visit who were not enrolled in the ARIC study were included. The respective mean family size was 1.3±1.4 subjects per family, and 88% of families are singletons. Family relationship was not accounted during association analysis due to the low degree of relatedness.

**MESA**

MESA is a prospective community-based study of the characteristics of subclinical cardiovascular disease and included 6,814 individuals (28% African American) free from known cardiovascular disease between 45–84 years old at baseline [5]. Subjects were recruited from six field centers (Wake Forest School of Medicine, Columbia University, Johns Hopkins University, University of Minnesota, Northwestern University and University of California - Los Angeles). Data from up to the fifth visit are available for analyses (Exam 1 2000-02, Exam 2 2002-04, Exam 3 2004-05, Exam 4 2005-07, Exam 5 2010-12). In this study, 411 T2D subjects diagnosed in any visit up to Exam 4 and 793 subjects with NGT in all visits up to Exam 4 who were self-reported African American were included.

**WFSM**

The WFSM study is a cross-sectional case-control study designed to examine the genetics of T2D and end-stage renal disease (ESRD) in African American [6,7]. In this study, the cases included 932 subjects with both T2D and ESRD recruited from dialysis facilities. In addition, cases had at least one of the following inclusion criteria: a) T2D diagnosed at least 5 years before initiating renal replacement therapy, b) background or greater diabetic retinopathy and/or c) ≥100 mg/dl proteinuria on urinalysis in the absence of other causes of nephropathy. The controls included 856 African American subjects without a current diagnosis of diabetes or renal disease recruited from the community and internal medicine clinics. All subjects were recruited in North Carolina, South Carolina, Georgia, Tennessee or Virginia.

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