

Supplemental Table 1. Type 2 diabetes-related SNPs, minor allele frequencies for SHS and SHFS across centers and meta-analyses p-values for eGFR and LACR

SNP	Gene	Alleles		Minor Allele Frequency*			Meta-analyses P-values	
		Minor allele	Major allele	Arizona	Dakota	Oklahoma	eGFR	LACR
rs10010131	<i>WFS1</i>	A	G	0.03	0.15	0.17	0.005	0.009
rs10811661	<i>CDKN2A/CDKN2B</i>	C	T	0.07	0.19	0.11	0.94	0.29
rs10923931	<i>NOTCH2</i>	T	G	0.11	0.07	0.10	0.24	0.27
rs1111875†	<i>HHEX</i>	T	C	0.43	0.45	0.40	0.47	0.22
rs12779790	<i>CAMK1D</i>	G	A	0.14	0.15	0.15	0.88	0.17
rs1801282	<i>PPARG</i>	G	C	0.08	0.08	0.20	0.62	0.03
rs2383208	<i>CDKN2A/CDKN2B</i>	G	A	0.07	0.18	0.10	0.66	0.28
rs4402960	<i>IGF2BP2</i>	T	G	0.18	0.13	0.19	0.13	0.10
rs4607103	<i>ADAMTS9</i>	T	C	0.39	0.34	0.32	0.79	0.27
rs5219	<i>KCNJ11</i>	T	C	0.37	0.31	0.35	0.002	0.92
rs7578597	<i>THADA</i>	C	T	0.00	0.03	0.04	0.05	0.29
rs780094	<i>GCKR</i>	T	C	0.05	0.27	0.25	0.09	0.55
rs7901695	<i>TCF7L2</i>	C	T	0.08	0.11	0.14	0.0008	0.74
rs7903146	<i>TCF7L2</i>	T	C	0.08	0.11	0.13	0.005	0.41
rs7961581	<i>TSPAN8</i>	C	T	0.01	0.09	0.10	0.04	0.58
rs8050136	<i>FTO</i>	A	C	0.12	0.09	0.13	0.002	0.98
rs864745	<i>JAZF1</i>	C	T	0.20	0.36	0.33	0.37	0.02
rs9939609	<i>FTO</i>	A	T	0.12	0.09	0.13	0.003	0.89

* In the family data, estimated in a subset of unrelated individuals in the SHFS: N=185 Arizona, N=205 in Dakotas and N=175 in Oklahoma
 SNP, single nucleotide polymorphism; † minor allele is C in the Arizona center

Supplemental Table 2. Meta-analyses results of age-specific effects of rs10010131 (*WFS1* gene) on eGFR

Age in years	Coded allele	Other allele	β per allele copy	SE	<i>P</i> value	Total No.
Less 45	G	A	0.151	0.0417	0.0003	2249
45-59	G	A	0.0341	0.0392	0.38	2996
60 or more	G	A	0.0044	0.0514	0.94	1587
Total			0.1506	0.0445	0.0007	6832

Supplemental Table 3. Association results from diabetes-specific strata

SNP	Gene	Alleles		eGFR		UACR		eGFR	UACR
		Coded allele	Other allele	T2D (2,251)	Non-T2D (4,601)	T2D (2,221)	Non-T2D (4,569)	Adjusting for T2D	Adjusting for T2D
rs10010131	<i>WFS1</i>	A	G	0.19	0.20	0.004	0.99	0.08	0.28
rs5219	<i>KCNJ11</i>	T	C	0.09	0.04	-	-	0.72	-
rs7901695	<i>TCF7L2</i>	C	T	0.06	0.02	-	-	0.004	-
rs8050136	<i>FTO</i>	A	C	0.70	0.007	-	-	0.03	-

eGFR, estimated glomerular filtration rate using MDRD equation; UACR, urine albumin-to-creatinine ratio; T2D, type 2 diabetes

Supplemental Table 4. Center-specific and meta-analyses of SNP associations with incident chronic kidney disease for SHS participants

SNP (gene) Center	No. total	No. of events	β per allele copy	SE	P value*	OR	95% CI	Heterogeneity I ²
rs10010131 (<i>WFS1</i>)								
Arizona	1027	174	-0.0328	0.3703	0.93	0.97	0.47-2.00	
Oklahoma	1024	165	0.0363	0.1587	0.82	1.04	0.76-1.42	
Dakotas	1109	137	-0.1423	0.1880	0.45	0.87	0.60-1.25	
Meta-analysis	3160	476				1.04	0.83-1.30	0.0%
rs7901695 (<i>TCF7L2</i>)								
Arizona	1027	174	0.0213	0.2124	0.92	1.02	0.67-1.55	
Oklahoma	1027	166	0.0216	0.1870	0.91	1.02	0.71-1.47	
Dakotas	1104	137	-0.0578	0.2167	0.79	0.94	0.62-1.44	
Meta-analysis	3158	477				1.00	0.79-1.26	0.0%
rs8050136 (<i>FTO</i>)								
Arizona	1023	173	-0.2403	0.1946	0.22	0.79	0.54-1.15	
Oklahoma	1025	164	-0.0015	0.1908	0.99	1.00	0.69-1.45	
Dakotas	1110	138	0.5645	0.2030	0.01	1.76	1.18-2.62	
Meta-analysis	3158	475				1.10	0.88-1.37	76.0%
rs9939609 (<i>FTO</i>)								
Arizona	1021	170	-0.2748	0.1998	0.17	0.76	0.51-1.12	
Oklahoma	1012	166	0.0425	0.1882	0.82	1.04	0.72-1.51	
Dakotas	1107	137	0.5758	0.2031	0.005	1.78	1.20-2.65	
Meta-analysis	3140	473				1.11	0.89-1.39	78.0%

* Adjustment for baseline age, gender and BMI.

SNP, single nucleotide polymorphism; SE, standard error; OR, odds ratio; CI, confidence interval

Supplemental Table 5. Center-specific and meta-analyses results of SNP associations with incident microalbuminuria for SHS participants

SNP (gene) Center	No. total	No. of events	β per allele copy	SE	P value*	OR	95% CI	Heterogeneity I ²
rs10010131 (<i>WFS1</i>)								
Arizona	574	178	-0.4439	0.4586	0.33	0.64	0.26-1.58	
Oklahoma	795	141	-0.2251	0.1756	0.20	0.80	0.57-1.13	
Dakotas	893	178	0.0422	0.1626	0.80	1.04	0.76-1.43	
Meta-analysis	2262	497			0.37	0.90	0.72-1.13	0.0%
rs7901695 (<i>TCF7L2</i>)								
Arizona	574	178	0.0200	0.2296	0.93	1.02	0.65-1.60	
Oklahoma	798	143	-0.3893	0.2173	0.07	0.68	0.44-1.04	
Dakotas	888	177	-0.1268	0.1956	0.52	0.88	0.60-1.29	
Meta-analysis	2260	498			0.17	0.85	0.66-1.08	0.0%
rs8050136 (<i>FTO</i>)								
Arizona	571	176	-0.1460	0.2011	0.47	0.86	0.58-1.28	
Oklahoma	797	144	-0.1093	0.2021	0.59	0.90	0.60-1.33	
Dakotas	894	179	-0.3517	0.2257	0.12	0.70	0.45-1.10	
Meta-analysis	2262	499			0.11	0.83	0.65-1.05	
rs9939609 (<i>FTO</i>)								
Arizona	573	177	-0.0862	0.2011	0.67	0.92	0.62-1.36	0.0%
Oklahoma	786	141	-0.0836	0.2035	0.68	0.92	0.62-1.37	
Dakotas	891	178	-0.3372	0.2257	0.14	0.71	0.46-1.11	
Meta-analysis	2250	496			0.19	0.86	0.67-1.08	0.0%

* Adjustment for baseline age, gender and BMI.

SNP, single nucleotide polymorphism; SE, standard error; OR, odds ratio; CI, confidence interval