Name	**Hoorn Study**
Description	The Hoorn study studies the course of development and progression of Diabetes. The Hoorn study aims to determine the psychological, social, biological and genetic factors that influence the development and progression of Diabetes.
Location	Region West-Friesland
Lead Institute	AUMC
Cohort size	2484 participants
Start Cohort	1989
Follow-up	5 times over the past 25 years: 1990 (subgroup) 1996 2000 (subgroup) 2005 (subgroup) 2007 (subgroup) The whole group is still being followed for mortality and morbidity through registration
Variables and Measurement methods	Variables General demographics • Age and sex • Education level • Family history Diabetes • Smoking status • Weight, Height and BMI • Waist and hip circumference • Blood pressure • Medication use • Medical history Diabetes-related markers from blood • Fasting glucose and HbA1c levels • 2h glucose levels after OGTT • Specific and Nonspecific Insulin levels • Pro insulin level • Gad65a antibody level • Serum Creatinine level • Serum Albumin level Other biomarkers from blood • Cholesterol and Triglycerides levels • Free Fatty Acid (FFA) levels • Fatty Acid levels • Apolipoprotein CIII (APOC3) level • Apolipoprotein B100 (APOB100) level • Leptin level • Adiponectin level - • Conjugated Diene Production (oxidation LDL) • C Reactive Protein level • Intercellular adhesion molecule-1 (ICAM-1) level • Vascular cell adhesion molecule-1 (Vcam-1) level • Semicarbazide sensitive amine oxidase (SSAO) level • Ratio Methyl cytosine/total cytosine

	• Myeloperoxidase (MPO) level • Oxidized low-density lipoprotein (OXLDL) level • Asymmetric dimethylarginine (ADMA) levels • Homocysteine level S: • Homocysteine metabolism (SAM, SAH, cysteine, cystathionine) • Methionine level • Total Glutathione level • Vitamin B6 and B12 • Parathyriod hormone level • 25-hydroxyvitamin D level • Folate level • Hematocrit level • Urea level • Hemoglobin level • Potassium and sodium levels • Alanin-aminotransferase (ALAT) level • B-type Natriuretic Peptide (BNP) level Biomarkers from urine • Albumin level • Creatinine level • Leukocyte level • Nitrite level Physical tests • Ankle-brachial pressure index • Cognitive testing (including processing speed, memory, attention and executive functioning) • Electrocardiogram (ECG) • Echocardiogram • Pulse wave velocity • Intima-media thickness (IMT) • Retinal photography • Body fat distribution by DXA • Neurological examination Genetics • SNPs, including rs2028139 MTIF2, rs511744 SIRT3 • GWAS • DNA Methylation Questionnaires • Physical activity, hours per day • Food Frequency Questionnaire • Cardiovascular disease via Rose Questionnaire • Depressive symptoms via CES-D • Stressful life events • Health survey via the SF12 • Diabetes Symptom Checklist • Diabetes/Disease specific knowledge
Availability and Type of -omic data	GWAS n=~581

Design paper	Mooy et al., 1996
Website	www.hoornstudies.com/