**ESM Methods 1. Additional Subjects/Methods:**
*Type 1 diabetes*: Data on 92 patients were obtained from the Exeter Research Alliance for Diabetes (EXTRA) study, a community-based research project set up to collect clinical data, DNA and blood test results on patients within the Exeter region of the UK in order to investigate common genetic and environmental influences on diabetes. Data on 97 patients were taken from a similar dataset, the Diabetes Alliance for Research in England (DARE) project, which was similar to EXTRA but extended to other regions throughout the UK. Both of these studies had a minimum age at recruitment of 18. These data were supplemented with 89 Type 1 patients under the age of 16 taken from a Spanish cohort examining clinical characteristics of patients from diagnosis in a paediatric clinic.

*Type 2 diabetes*: Data on 43 patients were obtained from the EXTRA and DARE datasets, as described above. A further 80 patients were identified from the Young Type 2 diabetes (YT2D) project[1], and 196 patients from the Warren 2 Diabetes in Families study[2]. These cohorts consist of patients with either young-onset Type 2 diabetes (YT2D and Warren 2 cases), or had Type 2 diabetes with both parents alive (Warren 2 trios), which are used for identifying susceptibility genes for Type 2 diabetes.

Validation dataset: Data on 91 patients with Type 1 diabetes, and 40 young-onset type 2 diabetic patients were all obtained from community based research studies – either other DARE centres throughout the UK, or the UNITED project (a community-based research project aiming to recruit all patients with diabetes diagnosed under the age of 30, currently aged under 50, in the Royal Devon and Exeter Hospital catchment area).

**References:**

[1] Owen KR, Stride A, Ellard S, Hattersley AT (2003) Etiological investigation of diabetes in young adults presenting with apparent type 2 diabetes. Diabetes Care 26: 2088-2093
[2] Frayling TM, Walker M, McCarthy MI, et al. (1999) Parent-offspring trios: a resource to facilitate the identification of type 2 diabetes genes. Diabetes 48: 2475-2479