

## Appendix 2: Quality Assessment

Study	Design	Grading of study design	Intervention	Recruitment of study participants	Differences at baseline	Analytical method	Follow up and measurement bias	Assessment of confounders	Additional notes
Brarupan et al <sup>9</sup>	Cross-sectional retrospective study	Selection: 1/5 stars Comparability: 0/2 stars Outcome: 2/3 stars	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Subjects with T1DM diagnosed below 35 years of age from a London diabetes clinic. From white European, Afro-Caribbean or South Asian ancestry.	Not applicable	<b>Type of analysis and power calculation</b> Not reported	<b>Outcome</b> Same outcome measures in both groups. No methodology given so unclear if bias in the way outcomes measured in both groups.	<b>Effect of differences at baseline</b> Groups not matched for age and gender.	1. Abstract only so full methodology and results not available 2. Groups not matched for age and gender
Sarwar et al <sup>10</sup>	Retrospective case-controlled study	Selection: 0/5 stars Comparability: 2/2 stars Outcome: 2/3 stars	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Patients with T1DM in 2 centres in the West Midlands	Patients matched for age and gender	<b>Type of analysis and power calculation</b> Not reported	<b>Outcome</b> Same outcome measures in both groups. No methodology given so unclear if bias in the way outcomes measured in both groups.	<b>Factors not included in the study</b> Methodology not given so bias may be introduced with the two centres	1. Abstract only
Shenoy et al <sup>11</sup>	Retrospective Observational Study	Selection: 1/5 stars Comparability: 0/2 stars Outcome: 2/3 stars	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Children with T1DM between the ages of 2 and 18 years and who had been diagnosed more than a year ago.	Not reported	<b>Type of analysis and power calculation</b> Not reported	<b>Outcome</b> Obesity assessed in both groups. No methodology given so unclear if bias in between two groups.	<b>Effect of differences at baseline</b> Possibly multiple characteristics not described	1. No methodology given 2. No description of statistical analysis used 3. No data on South Asians vs. non-South Asians given in the results
Asmal et al <sup>12</sup>	Cross-sectional study	Selection: 0/5 stars Comparability: 0/2 stars Outcome: 2/3 stars	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Clinic patients who fulfilled the following criteria: age of diagnosis of diabetes <35 years, development of symptoms +/- ketosis in the absence of insulin therapy, and duration of diabetes of at least 12 months. Patients with known alcoholic pancreatic diabetes were not included.	Current age (2.9 years) Age of onset (3.8 years)	<b>Type of analysis and power calculation</b> Not reported	<b>Outcome</b> Same outcome measures in 2 groups, however details not given as to when measurements were taken and by whom and if standardised for both groups.	<b>Effect of differences at baseline</b> Younger age and age of onset in South Asians may have led to a misrepresentation of biochemical data in this group	1. No statistical methods were used to compare the two groups

Ismail et al <sup>13</sup>	Cross Sectional study	Selection: 2/5 stars Comparability: 0/2 stars Outcome: 3/3 stars	<b>South Asian Ethnicity</b> Identified by their appearance, language and religion	<b>Inclusion Criteria</b> T1DM defined as acute symptoms associated with heavy ketonuria (>3+) or ketoacidosis at diagnosis, or continuous treatment with insulin within 1 year of diagnosis. All diagnosed < 40 years	Similar baseline characteristics	<b>Type of analysis</b> Documented  <b>Power calculation</b> Not reported	<b>Outcome</b> Same outcome measures in 2 groups	<b>Effect of differences at baseline</b> No differences	1.Clinic-based and not a population-based study. Those attending hospital may have more severe diabetes. 2.Conducted in public hospital where majority of patients cannot afford lipid-lowering therapy.
Omar et al <sup>14</sup>	Cross-sectional study	Selection: 0/5 stars Comparability: 0/2 stars Outcome: 2/3 stars	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Patients with onset of IDDM <35 years at King Edward Hospital in Durban. Diagnosis of IDDM based on the criteria recommended by WHO.	Age at onset (6.5 years) Duration of diabetes (1.6 years)	<b>Type of analysis and power calculation</b> Not reported	<b>Outcome</b> Same outcome measures in 2 groups, however details not given as to when measurements were taken and by whom and if standardised for both groups.	<b>Effect of differences at baseline</b> Older age of onset and longer duration of diabetes in South Asians may have led to over-representation of complications in this group.	1.No statistical methods were used to compare the two groups
Swerdlow et al <sup>15</sup>	Prospective Cohort Study	Selection: 4/4 stars Comparability: 0/2 stars Outcome: 3/3 stars	<b>South Asian Ethnicity</b> Identified by computer algorithm (SANGRA) followed by a clerical check by an individual with expertise in this area. Sensitivity of 89-96% and specificity of 94-98%.	<b>Inclusion Criteria</b> Age at diagnosis of diabetes <30 years. Some identified in a national register of childhood cases assembled by the BDA from 1972-1986 and remainder from various geographical registers for parts of the UK during 1972-1993. Ages at diagnosis varied. Total cohort of 23, 752 with T1DM.	Age distributions of person-years were similar between the 2 groups	<b>Type of analysis</b> Standardised mortality ratios compared using chi squared test.  <b>Power calculation</b> Not reported	<b>Follow up</b> Till 31 <sup>st</sup> December 1999, or the date of death, 85 <sup>th</sup> birthday, emigration or other loss of follow up.  <b>Lost to Follow up</b> 1 South Asian and 151 non South Asians lost to follow up through emigration. 50 non South Asians lost to follow up in other ways.  <b>Outcome</b> Mortality assessed in the same way in both groups.	<b>Effect of differences at baseline</b> No differences in age distributions. However, differences in comorbidities not reported. May be significant in mortality rates.	1. Assumption that people diagnosed <30 years had T1DM and those diagnosed >30 years had T2DM. 2. Ethnic makeup of the non- South Asian group not reported (assumed Caucasian). 3. Small number of deaths in South Asian group.
Mehta et al <sup>16</sup>	Cross-sectional study	Selection: 1/5 stars Comparability:	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Diabetes patients attending a specialist	Age (3.4 years) Duration of diabetes (5.9)	<b>Type of analysis</b> Documented	<b>Outcome</b> Baseline data and comorbidities data collected in the same way in both	<b>Effect of differences at baseline</b>	1.Cross sectional design so causation cannot

		lity: 2/2 stars Outcome: 3/3 stars	identified based on that given in the patient's record or by use of name recognition software 'Nam Pechan' supplemented by a visual inspection of surnames and forenames.	outpatient diabetes clinic in Leicestershire, UK, between 2003 and 2005.  Methodology of patients being classified as T1DM or T2DM not reported.	years) Smoking (13.7%)	<b>Power calculation</b> Not reported	groups. Classification the same in both groups.	Younger age of onset and shorter duration of diabetes in South Asians may have led to under-representation of comorbidities in South Asians with T1DM.	be established 2.Data from one hospital, not generalizable 3.Did not comment on frequency of attendance for blood glucose monitoring so relationship between HbA1c and comorbidity not clear
Sivaprasad et al <sup>17</sup>	Cross-sectional study	Selection: 1/5 stars Comparability: 1/2 stars Outcome: 3/3 stars	<b>South Asian Ethnicity</b> Self-reported ethnicity recorded at the time of screening according to the codes used in the Census 2001.	<b>Inclusion Criteria</b> All subjects in the diabetic screening register of West Yorkshire and South East London programmes were included in this study. Coverage of diabetic people in the respective regions: 95% in West Yorkshire and 81% in South East London	Not reported	<b>Type of analysis</b> Documented  <b>Power calculation</b> Not reported	<b>Outcome</b> Diabetic screening and retinopathy assessment same in both groups.	<b>Effect of differences at baseline</b> Possibly multiple considering characteristics not described	1.Records of patients that were not obtainable or exempt from diabetic screening (12%) did not have ethnicity data so South Asians may have been under-represented 2.Did not assess factors like BP, glycaemic control
Thomas et al <sup>18</sup>	Retrospective observational study	Selection: 1/5 stars Comparability: 2/2 stars Outcome: 3/3 stars	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Subjects classified as having T1DM or T2DM on clinical assessment according to the American Diabetes Association classification of diabetes.	Age (4.1 years) Duration of diabetes (4 years)	<b>Type of analysis</b> Documented  <b>Power calculation</b> Not reported	<b>Period of study</b> 2001-2010 with baseline characteristics being obtained at the time of initial presentation.  <b>Outcome</b> Same outcome measures in 2 groups but data collected from 2001-2010 so may be discrepancies between people being screened at the beginning and the end of the study.  <b>Drop out or withdrawals</b> None reported	<b>Effect of differences at baseline</b> Younger age of onset and shorter duration of diabetes in South Asians may have led to under-representation of retinopathy in South Asians with T1DM.	1.Study carried out in private hospital whereas most of diabetic South Africans use public health system so not generalizable 2.Lack of dilation prior to obtaining images may have led to underreporting of retinopathy
Omar et al <sup>19</sup>	Cross sectional study	Selection: 0/5 stars Comparability:	<b>South Asian Ethnicity</b>	<b>Inclusion Criteria</b> Onset of diabetes mellitus <35 years. Classification	Duration of diabetes (1.6 years)	<b>Type of analysis</b> Documented	<b>Outcome</b> Same outcome measures in 2 groups	<b>Effect of differences at baseline</b>	1. No outcomes apart from age of onset, duration of

		lity: 0/2 stars Outcome: 2/3 stars		of IDDM and NIDDM based on the criteria recommended by the National Diabetes Data Group and WHO Expert Committee on Diabetes Mellitus. IDDM patients had always depended on insulin for control of symptoms and prevention of basal ketosis		<b>Power calculation</b> Not reported		Not relevant as this is a purely descriptive analysis	disease and body weight. Limited information provided by study
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