For reasons as yet unclear, Type 2 diabetes is far more prevalent among UK South Asian people than white Europeans. Dr Victoria King, Diabetes UK’s Research Manager, highlights the key findings of a new report identifying research priorities in this area.

South Asian people of Indian, Pakistani and Bangladeshi descent who live in the UK are up to six times more likely to have Type 2 diabetes than the white European population. With diabetes prevalence in the UK generally predicted to rise from 2.5 million today to more than four million by 2025, the condition will continue to have a disproportionately large impact on South Asian communities across the UK. Meanwhile, recent estimates put UK prevalence figures for children with Type 2 diabetes at 1,400 and rising. As children of South Asian origin are estimated to be more than 13 times more likely to have Type 2 diabetes than white European children, this can only increase the burden and cost of the condition to the South Asian community.

Despite these clear and alarming statistics, our knowledge of the link between diabetes and people of South Asian descent is still very limited. In an effort, therefore, to review existing knowledge in this field of research, identify gaps in our understanding and make recommendations on the priorities for future diabetes research in this population, Diabetes UK and the South Asian Health Foundation teamed up with leading researchers to produce a report entitled “Minority report.”
Diabetes prevalence rates among South Asian children in the UK are alarmingly high

Diabetes UK and South Asian Health Foundation recommendations on diabetes research priorities for British South Asians.


Two central issues emerge from the report: first, an understanding that South Asian people have varied origins, with different cultures, languages, religions and rates of diabetes, and cannot therefore always be grouped together; and, second, the lack of involvement of South Asian people in health research.

Each chapter in the report ends with recommended priorities for future research, so this second point is worth some immediate attention. As probably seems self-evident, the success and value of future research in all areas, in terms of shaping the best-quality diabetes care for all, is entirely dependent in the first place on the participation of the many ethnic groups that make up the South Asian population.

Unfortunately, however, as spelt out in the report’s first chapter, ‘Participation in research’, the involvement of South Asians and other minority ethnic groups in research is generally low for various reasons, including, on the part of patients, lack of time and motivation, previous unsuccessful experiences and language barriers. Healthcare professionals, meanwhile, cite a lack of support and resources dedicated to involving South Asian people in research. All these problems may also be linked with literacy issues in some communities, making it more difficult to obtain people’s consent, especially when many primary care databases lack the necessary ethnicity and language codes.

The UK Asian Diabetes Study, however, recently found that while the collection of self-management and psychosocial data was challenging, recruiting participants and collecting clinical data were straightforward, possibly because of innovative ways of obtaining consent. Nevertheless, the reasons behind non-participation in research among the South Asian community are far from clear and must be identified in order to increase and improve involvement in future research, which needs to concentrate on the effectiveness and cost-effectiveness of different recruitment strategies, as well as the development and validation of study outcome measures for use among South Asians.

Lifestyle factors

The study of lifestyle factors cuts across several chapters in the report, including ‘Epidemiology’, ‘Treatment and care of people with diabetes’ and ‘Cultural aspects’. Compelling evidence exists for the role of lifestyle intervention, including both diet and physical activity, in the primary prevention of Type 2 diabetes. Despite this, we still don’t know specifically whether South Asian diets adversely influence Type 2 diabetes risk or to what extent physical activity patterns and the effects of physical activity differ between different ethnic groups.

Diet

Most previous epidemiological studies in the UK have not focused on diet and nutrition. Where they have done so, this has tended to be in relation to coronary heart disease or cancer rather than diabetes incidence in the South Asian population. Small studies, such as one conducted in Coventry in 2008, have noted that on average South Asians eat fewer vegetables, less brown rice and more traditional sweets and western snacks than white Europeans. That study also showed that South Asians ate more fruit than white Europeans – an interesting result in light of findings from the Wandsworth Heart and Stroke Study, which reported that plasma vitamin C levels, a marker of fruit and vegetable intake shown to reduce the risk of diabetes developing in the white European population, were lower in South Asians than in white Europeans.

Another survey that analysed the diets of South Asian and white European people, measuring levels of total fat, saturated fat, fibre and calories, did not find any greater coronary risk in the South Asian
diet. Studies looking at the nutritional analysis of common Punjabi and Gujarati dishes revealed considerable variation in the fat and energy content of the different recipes, proving that the dietary preferences of South Asian ethnic groups are diverse and that generalisations should not be made.

The report highlights a need for more research in this area, prioritising the development of validated tools for self-reported diet, such as the food frequency questionnaire for South Asians, and the use and development of nutritional biomarkers, such as plasma vitamin C levels. Understanding the many factors affecting South Asian diets, as well as those that might bring about change in the eating habits of this population, are also essential areas for further research.

**Physical activity**

Given that a lack of regular physical activity is a well-established risk factor for the onset of diabetes and cardiovascular disease, it is surprising that so little is known about how physical activity patterns differ between ethnic groups. There has also been a lack of studies in the South Asian population using modern physical activity research tools such as accelerometers.

The results of those studies that have been carried out, which have concentrated on the children of this population, suggest that generalisations should not be made. Either way, the South Asian population has not been adequately represented in several of the large studies that have been used to inform evidence-based guidelines. This throws into question the practice of merely extrapolating data from a largely white European population to the South Asian one.

**Diabetes-related complications**

While there is a paucity of long-term studies to assess confidently the epidemiology of diabetes-related complications in the South Asian population, there is mounting evidence to suggest that the risk of cardiovascular disease, peripheral vascular disease, stroke, diabetic nephropathy and, potentially, diabetic retinopathy may all be elevated in South Asians compared with white Europeans. Not all studies, however, have confirmed these risk associations. The UK Prospective Diabetes Study (UKPDS), for example, looked at newly diagnosed subjects rather than those with a longer duration of diabetes. Either way, the South Asian population has not been adequately represented in several of the large studies that have been used to inform evidence-based guidelines. This throws into question the practice of merely extrapolating data from a largely white European population to the South Asian one.

**Cardiovascular disease and diabetes**

Coronary heart disease and stroke are both more prevalent, occur at an earlier age and have an increased associated mortality rate in the South Asian population when compared with white Europeans. A higher prevalence of cardiovascular risk factors, including diabetes, a high waist-to-hip ratio and a high apolipoprotein B-to-apolipoprotein A1 ratio, has been shown to be associated with heart attacks in the South Asian population at an earlier age, although there is a lack of data on the risk factors for stroke. It is also unclear whether the aggressive management of conventional risk factors would lower coronary heart disease risk in South Asians. Research is therefore needed in this area, and also to assess the effect of pharmacological treatments aimed at achieving lower than current targets for lipids, blood pressure and other risk factors.

**Diabetic nephropathy**

Microalbuminuria (small amounts of albumin in the urine) is the earliest sign of the progressive kidney damage associated with diabetic nephropathy, and while it is potentially reversible, progression to overt proteinuria (protein in the urine) and subsequent decline in kidney function to end-stage kidney disease is also likely. Comparing the prevalence of microalbuminuria in UK South Asian people with Type 2 diabetes and white European people with Type 2 reveals higher rates in South Asians: 40 per cent versus 33 per cent for men, and 33 per cent versus 19 per cent for women. Various studies, although not all, also indicate a two- to threefold higher prevalence of overt nephropathy in South Asians compared with white Europeans. Another 2009 study suggests that South Asians are also more likely to have chronic kidney disease. Despite these findings, there is still a lack of data surrounding the development of nephropathy and progression to chronic kidney disease in the South Asian population, as well as a lack of evidence around the effect of kidney disease on mortality.

The effective management of the risk factors for diabetic nephropathy, through tight glycaemic and blood pressure control, can mean, to some degree, that it is a reversible complication. However, since the UKPDS and the Action in Diabetes and Vascular Disease study showed this type of control to have benefits for people with diabetes regardless of their ethnicity, there is some confusion over whether any further aggressive management of the risk factors in the South Asian population would be of value. To help clarify our understanding and management of this complication, therefore, further research must look into the benefits of early screening and ethnic-specific treatment for South Asians, along with larger cohorts, to assess the epidemiology of diabetic nephropathy in the South Asian group.

**Diabetic retinopathy**

As with diabetic nephropathy, the report highlights a scarcity of data and the conflicting evidence surrounding the prevalence and effect of retinopathy in South Asians. It recommends, however, that research focus on three key areas: the epidemiology of retinopathy in South Asians

Further information

To access the full review and a summary of research currently being undertaken in this area, visit www.diabetes.org.uk/southasianreport