

A practical approach to managing type 2 diabetes in the UK south Asian population

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As well as genetic susceptibility, the high prevalence of type 2 diabetes among UK south Asian people may be due to poor knowledge about diabetes, a lack of healthy lifestyle, and language and cultural barriers. Care needs to be tailored to address the unique health needs of south Asian people in order to effectively reduce the burden of diabetes in this population. Understanding the lifestyle habits and cultural beliefs among south Asian people is essential if healthcare professionals are to deliver optimal care to this population. Based on a roundtable meeting of the authors, this article explores a range of specific issues associated with diabetes in south Asian groups and aims to offer practical advice to primary care professionals managing type 2 diabetes in south Asian people.

People of south Asian origin (Indian, Pakistani and Bangladeshi descent) comprise the largest ethnic group in the UK (Khunti et al, 2009). Type 2 diabetes is significantly more common in this minority group compared with in the European population (Barnett et al, 2006; Dreyer et al, 2009), and also presents about a decade earlier (Mather and Keen,

1985). This can be attributed to both genetic and lifestyle factors (Chowdhury and Hitman, 2007). Provision of high-quality care to south Asian people with diabetes involves a community-based approach that incorporates the specific cultural and religious needs of this population. As demonstrated in the UK Asian Diabetes Study, a culturally tailored care package – including

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Article points

1. Type 2 diabetes is more common in the UK south Asian population compared with in the European population.
2. Poor knowledge about diabetes among south Asian people highlights the need for appropriate education.
3. Understanding south Asian people's unique health needs is essential for effective diabetes management in this population.
4. This article is intended to provide practical recommendations to primary care professionals for delivering tailored care to south Asian people.

Key words

- Cultural barriers
- Hypoglycaemia
- Lifestyle optimisation
- South Asian people
- Weight gain

Author details can be found at the end of this article.

additional time with a practice nurse and support from an Asian link worker and a community-based diabetes specialist nurse (DSN) – resulted in additional, although small, benefits when compared with standard care (Bellary et al, 2008).

To further explore this topic, a group of experts, most of whom are committee members of the South Asian Health Foundation (SAHF) or Primary Care Diabetes Society (PCDS), participated in a roundtable meeting. The aim of the meeting was to gather practical advice for primary care professionals managing type 2 diabetes in south Asian people. For a full evidence review, readers are advised to consult the recently published report by Diabetes UK and SAHF (Khunti et al, 2009). The main outcomes of the meeting are summarised below.

General considerations

Engaging with the community

To address the unique needs of south Asian people, healthcare professionals are encouraged to adopt a community approach and build “continuous and meaningful engagement” (Department of Health [DH], 2007) with these groups.

Knowing the population you are serving is the first step. Naming patterns can sometimes

give you an insight into groups who may have similar needs. For example, Kaur and Singh are popular Sikh names; Bibi and Begum are popular Muslim names. More information regarding the local population can be gathered from:

- National statistics.
- PCTs (to be replaced by GP consortia).
- Other local GPs and DSNs.
- Local hospitals.
- Local faith groups.
- Published literature.

Engaging with the community may involve visiting places where south Asian people shop and talking to the public about their lifestyle habits. People may be more willing to adhere to health and medical advice and change their behaviour if they know that their healthcare providers have made an effort to understand their lifestyle.

Providing early, appropriate education

Many south Asian people have a poor understanding of diabetes and may not be aware of its risk factors (Rankin and Bhopal, 2001). In the authors’ view, early education provided by healthcare professionals is particularly invaluable for this population in order to prevent or delay the onset of type 2 diabetes.

For south Asian people newly diagnosed with diabetes, appropriate education is vital in altering their behaviour to help them achieve better control of the condition. The focus of such education should include “why” (Why would someone develop type 2 diabetes? Why is there a need for behaviour change?) as well as “what” (What is diabetes and how is it managed?). In particular, it is important to dispel misconceptions regarding certain diabetes medications early on and advise south Asian people to arrange a counselling appointment before religious rituals if they wish to fast or go on a pilgrimage; these topics are covered in more detail later in the article.

As listed in *Table 1*, healthcare professionals may wish to deliver both negative messages (e.g. seriousness of diabetes) and positive messages (e.g. possibility of managing the condition well) at the same time. There are tools that can be used to provide this

Table 1. Authors’ practical advice for providing education to south Asian people newly diagnosed with type 2 diabetes.

Key messages to give	<ul style="list-style-type: none"> ● It is common to experience negative emotions. ● Diabetes can cause serious complications. ● Type 2 diabetes is strongly associated with obesity. ● Type 2 diabetes can be improved by adopting a healthier lifestyle at the same time as taking appropriate medications. ● Diabetes is mostly self-managed. ● Treatment will change over time.
Tools or methods to use	<ul style="list-style-type: none"> ● Adapt DESMOND programme to use in south Asian people. ● Use audio-visual aids and translated materials when possible. ● Use the internet to communicate remotely. ● Carry out follow-up checks.
<p>DESMOND=Diabetes Education and Self-Management for Ongoing and Newly Diagnosed.</p>	

education (*Table 1*). For example, the DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) programme (Davies et al, 2008) can be adapted for use in south Asian communities, as has been demonstrated by a number of NHS organisations such as Birmingham Community Healthcare (2010) and Leicestershire Diabetes (2010).

Lifestyle optimisation

While it is impossible to alter one's genetic makeup, it is possible to improve one's lifestyle. By understanding the dietary, exercise and smoking habits of south Asian people, healthcare professionals can offer realistic and culturally appropriate advice to help prevent or manage type 2 diabetes in this population. A list of practical recommendations on lifestyle optimisation can be found in *Table 2*.

Dietary habits

There is enormous diversity in cultures, traditions and habits among south Asian communities in the UK, but there are certain common dietary practices that persevere despite the detrimental effect they have on health. In the authors' experience, south Asian meals tend to comprise big portions and contain a large amount of carbohydrate (e.g. rice and bread), fat (e.g. butter or ghee) and salt. It is also common practice in traditional south Asian cooking to over-cook vegetables, which can destroy essential vitamins. When offering cooking advice to south Asian people, healthcare professionals need to be aware that the person with diabetes may not be the person who does the cooking in the household. Educational seminars on dietary habits should involve the family cook as well as the person with diabetes.

Exercise habits

Research has revealed that compared with their European counterparts, south Asian people oxidise less fat during exercise (Hall et al, 2010), which highlights the need for them to exercise harder and longer to burn the same number of calories. However,

Table 2. Practical advice for lifestyle optimisation in south Asian people.

Advice related to diet	<ul style="list-style-type: none"> ● Advise that the key is moderation. ● Advise around foods that are common and familiar to south Asian people. ● Involve the family cook in educational seminars.
Advice related to exercise	<ul style="list-style-type: none"> ● Advise that simple walking can be beneficial. ● Promote exercise at school. ● Explain the importance of exercise to parents. ● Engage with the community to find out effective and culturally appropriate types of exercise.
Advice related to tobacco consumption	<ul style="list-style-type: none"> ● Communicate the health risks of cigarette or shisha smoking and of chewing tobacco.

consistent with other findings in the UK, a recent study has shown that, in general, south Asian people are significantly less physically active than European people (Yates et al, 2010). One explanation may be that south Asian cultural attitudes and values do not encourage participation in physical activity. Both men and women view a large body size as an indicator of "more healthy" and thinness as "less healthy" (Greenhalgh et al, 1998). Indeed, in the Sylheti language that is mainly spoken in north-eastern Bangladesh, no phrase exists to describe physical activity as it is understood in English.

Promoting physical activity among south Asian women may be particularly challenging (Srisantharajah and Kai, 2007). Their participation in exercise may be inhibited by avoidance of mixed-sex activity and fear of going out alone. Some women may only value activity that is consistent with their perceived role as homemakers and as carers of children and other relatives. The notion of "exercise" for oneself may be perceived by some, especially by older women, as a "selfish" activity.

In south Asian children, physical activity is also less frequent than in children of European origin (Khunti et al, 2007). Indeed, British south Asian children have been found to be 13 times more likely to develop type 2 diabetes than European children (Diabetes UK, 2010). As a result, it is important to initiate education early and to promote exercise at school. Healthcare professionals also need to address

Table 3. Practical advice to facilitate communication with south Asian people.

When the person with diabetes speaks limited or no English	<ul style="list-style-type: none"> ● When possible employ an Asian link worker as an interpreter; ensure the interpreter is fluent in the local languages spoken. ● Obtain a translation service from Diabetes UK (visit www.diabetes.org.uk for further information). ● Use a family member as an interpreter.
When the person can communicate in English	<ul style="list-style-type: none"> ● Listen carefully to understand the underlying message the person may be communicating.

the importance of physical exercise to parents as well as children and young people.

Despite the above observations, in the authors' experience, the attitudes towards exercise among south Asian people appear to be changing gradually and are related to which generation the south Asian person is from. Influenced by the western culture, many young UK-born south Asian people now view a slim figure as a desirable body image.

Smoking habits

Smoking rates among some parts of the south Asian community are significantly higher than the general UK population. For example, about half of Bangladeshi men smoke cigarettes compared with just over a quarter of men in the general population (Boreham, 2001; Bush et al, 2003). In addition, most chewing tobacco products in the UK are used by south Asian people (Cancer Research UK, 2009) and their consumption rates are the highest among Bangladeshi people (both men and women) when compared with other south Asian groups (Boreham, 2001).

Bangladeshi and Pakistani men view smoking as a normal part of "being a man" and central to socialising (Bush et al, 2003); in women, smoking was seen as a disrespectful and shameful habit in past times but has now become a common part of social culture. In south Asian young people, smoking is seen as "cool", "stylish" and "in with your friends". They are more likely to smoke than older people because of peer pressure and being rebellious.

In addition, smoking shisha, or herbal tobacco, appears to be fashionable among south Asian women and young people, and shisha

lounges have become popular in cities across the UK, particularly in London, Manchester and Birmingham (Khatkar, 2010). Many south Asian people who smoke shisha consider it a "safer" alternative to cigarettes, despite research findings show that this is not the case (Khatkar, 2010).

Tailoring care in light of language, culture and beliefs

Some south Asian people in the UK are treated for their diabetes using the same management model designed for the general population. To deliver more effective care to south Asian groups, healthcare professionals need to consider various issues specifically associated with this population, such as language barriers, their relationship with healthcare providers and attitudes towards medical treatment.

Language barriers

Many south Asian people speak limited or no English, which appears to be a major barrier for them in accessing primary care services and having their health needs met appropriately.

In areas where there is a large south Asian community, one of the most common methods to facilitate communication is through the use of an Asian link worker as an interpreter (Table 3). In addition to providing comfort to the person with diabetes, a trained interpreter often understands the religious and cultural needs of the person and can explain non-verbal cues. Despite these advantages, healthcare professionals need to be aware that having a local Asian link worker as an interpreter may compromise the confidentiality of the person with diabetes. The person may be reluctant to discuss personal problems in front of an interpreter who is from the same community.

Sometimes, a family member can act as an interpreter. However, it may be inappropriate to have a member of the family translate – for example, having a child translate an adult's problems, such as erectile dysfunction, is not recommended. Additionally, in the authors' experience, translations by family members may be inaccurate due to unfamiliarity with medical terminology. They may unintentionally change the meaning of what is

said or may omit information, not realising the importance of every word. Mistakes may also be intentional to avoid embarrassment.

When the south Asian person with diabetes is able to speak English and an interpreter is not needed, communication may still be ineffective. Some healthcare providers can make the mistake of “listening” but not “hearing”. For example, when someone says “I feel strange” or “flushed”, he or she may be describing having an episode of hypoglycaemia, but the healthcare provider may not recognise the underlying condition.

In addition to one-to-one consultation, in areas where there are large numbers of south Asian people who speak the same language or dialect, group educational courses on diabetes management for these people may also be helpful (Stone et al, 2008). This should be carried out in an informal and relaxed environment that allows participants to freely explore topics and raise questions (Vyas et al, 2003). For example, combined cookery and dance classes on weekday evenings are preferable to daytime classes held in a hospital that has mostly white European staff and patients.

Developing accurately translated health promotion materials appropriate for south Asian people would also be helpful since most educational materials are written in English. Healthcare professionals may, however, wish to find out whether the south Asian person is able to read before giving out printed materials. Healthcare professionals also need to bear in mind that some spoken south Asian languages or dialects (e.g. Mirpuri, Pashto) may have no written form.

Relationship with healthcare providers

South Asian cultures tend to emphasise respect for authority and avoidance of shame. Because south Asian people often view their doctors as authority figures, they may not ask questions or voice reservations about their treatment regimens; instead, they may express their agreement with healthcare professionals’ advice, but with no intention to follow instructions (Tran, 2009). It is thus

important for healthcare professionals to build a trusting and comfortable relationship with south Asian people with diabetes to ensure their willingness to receive care and discuss their concerns.

Attitudes towards treatment

For many south Asian people, it is in their culture not to display any illness (Lawton et al, 2006). For example, some young women may refuse treatment to conceal the diagnosis due to their fear of being considered less desirable for marriage. Some married women may intentionally take less medication and risk having hyperglycaemia to avoid having hypoglycaemic episodes in front of their mothers-in-law.

Adherence to prescribed oral antidiabetes drugs (OADs) is poor among south Asian people compared with the European population (Khunti et al, 2009). A questionnaire-based study asking south Asian people about their views on OADs found that most participants claimed to be fully adherent “only when they felt lethargic or unwell” (Lawton et al, 2005).

Furthermore, many south Asian people are reluctant to use insulin. One of the frequent misunderstandings among south Asian people is that insulin is used as a last resort when all else has failed and a downward spiral is imminent (Ahmed et al, 2010). Indeed, analysis of the DARTS (Diabetes Audit and Research in Tayside, Scotland) database revealed that south Asian people were less likely to receive insulin treatment compared with the general population, despite having higher HbA_{1c} levels (Fischbacher et al, 2009). Another study discovered that the proportion of people with diabetes prescribed insulin was lower in south Asian groups than it was in European people in the UK (Millett et al, 2007). As a result, dispelling myths and removing barriers regarding insulin therapy is an important component of diabetes care.

Healthcare professionals may wish to make it clear to south Asian people newly diagnosed with diabetes that it is likely insulin would be ultimately required in order to achieve optimal glycaemic control. Demonstrating insulin

Page points

1. It is important for healthcare professionals to build a trusting and comfortable relationship with south Asian people with diabetes to ensure their willingness to receive care and discuss their concerns.
2. Adherence to oral antidiabetes drugs is poor among south Asian people compared with the European population.
3. Many south Asian people are reluctant to use insulin and view the therapy as a last resort.
4. The proportion of people with diabetes prescribed insulin has been found to be lower in south Asian groups than in European people in the UK.

Page points

1. In terms of the treatment algorithm used, NICE guidance is felt by the authors to be appropriate for the management of type 2 diabetes in the south Asian population.
2. A full review of individual therapies was outside the scope of the panel's discussion; instead, the authors focused on practical considerations for treating type 2 diabetes in south Asian people (Table 4).
3. Healthcare professionals need to be wary of weight gain associated with some therapies because south Asian people have a higher proportion of body fat compared with the general population for a given BMI.
4. Hypoglycaemia is another important issue to consider, particularly in people who wish to fast during religious rituals.

pen devices at the time of diagnosis to these people may help allay anxiety about insulin injections and improve their understanding of the therapy.

Healthcare professionals should also bear in mind that Muslim people may avoid medications that contain gelatin, which is often derived from non-zabiha animals (i.e. animals not slaughtered in a manner prescribed by Islamic law) and often pigs (Hasnain et al, 2008). It may be helpful to explain the origins and manufacture of drugs to Muslim people with diabetes and point out which medications do not contain gelatin.

**Medical management of blood glucose:
Best practice in south Asian groups**

Medical management can be challenging in south Asian people. Misconceptions that certain medications are ineffective or may have serious side-effects (Skovlund and Peyrot, 2005) may delay initiation of effective medications. Appropriate management of type 2 diabetes in south Asian people may involve encouraging the person to compare his or her own blood glucose levels before and after initiation of the therapy to prove its benefit.

In terms of the treatment algorithm used, NICE (2009a) guidance is felt by the authors to be appropriate for the management of type 2 diabetes in the south Asian population. A full review of individual therapies was outside the scope of the panel's discussion; instead, the authors focused on practical considerations for treating type 2 diabetes in south Asian people (Table 4).

Specifically, healthcare professionals need to be wary of weight gain associated with some therapies because south Asian groups have a higher proportion of body fat than the general population for a given BMI (Ehtisham et al, 2005) and indeed a much lower obesity cut-off for south Asian people has been defined by the World Health Organization's Western Pacific Region (Inoue et al, 2000). Additionally, hypoglycaemia is another important issue to consider, particularly in people who wish to fast during religious rituals (Hui et al, 2010).

Metformin

Metformin does not cause weight gain or hypoglycaemia, and the most common adverse effects associated with its use are gastrointestinal in nature (Nathan et al, 2009). The drug is the most widely prescribed OAD in the world and usually regarded as the first-line blood glucose-lowering therapy (Hughes, 2009).

When prescribing metformin, it is worth asking whether a family member has been previously diagnosed with diabetes. If so, it is likely that he or she has been treated with metformin. Sharing experiences of the drug with this family member may be helpful to the person newly diagnosed with diabetes.

SUs

NICE (2009b) recommends sulphonylureas (SUs) as second-line therapy for people taking first-line metformin. The main adverse effect of SUs is hypoglycaemia, which can be prolonged and life-threatening, and may be a concern during fasting. In addition, weight gain is another major concern regarding the use of SUs in south Asian people for the reasons mentioned earlier (Nathan et al, 2009).

Pioglitazone

In the authors' experience, some south Asian people respond particularly well to pioglitazone. While not associated with hypoglycaemia, weight gain associated with the drug is a primary concern in this population (Nathan et al, 2009).

DPP-4 inhibitors

In 2009, NICE updated its clinical guidelines for type 2 diabetes, addressing the use of two new classes of blood glucose-lowering agents (NICE, 2009b): oral dipeptidyl peptidase-4 (DPP-4) inhibitors and injectable glucagon-like peptide-1 (GLP-1) receptor agonists (see the next section).

DPP-4 inhibitors are well-tolerated and generally regarded as weight neutral, which is particularly useful in south Asian people for the reasons mentioned earlier (Al-Arouj et al, 2010; Nathan et al, 2009). For south Asian people who wish to fast during religious rituals, DPP-4 inhibitors can be useful because they are

Table 4. Authors' practical considerations for medical management of type 2 diabetes in south Asian people.

Agent	Practical considerations
Metformin	<ul style="list-style-type: none"> ● Weight neutral, possibly modest weight loss (Nathan et al, 2009). ● Low risk of hypoglycaemia (Nathan et al, 2009). ● Advise to share experience with a family member who has used metformin.
SUs	<ul style="list-style-type: none"> ● Be wary of weight gain and hypoglycaemia (Nathan et al, 2009). ● Consider the person's occupation (e.g. taxi drivers should not use SUs due to risk of hypoglycaemia).
Pioglitazone	<ul style="list-style-type: none"> ● Be wary of weight gain (Nathan et al, 2009). ● Low risk of hypoglycaemia (Nathan et al, 2009). ● May be useful in people with comorbid non-alcoholic fatty liver disease (Ahmed and Byrne, 2009).
DPP-4 inhibitors	<ul style="list-style-type: none"> ● Generally regarded as weight neutral (Nathan et al, 2009). ● Low risk of hypoglycaemia (Nathan et al, 2009). ● Generally well tolerated (Al-Arouj et al, 2010). ● Recommended to use in people who wish to fast.
GLP-1 receptor agonists	<ul style="list-style-type: none"> ● Generally regarded to cause weight loss (Kyrou and Kumar, 2010). ● Low risk of hypoglycaemia when not used with SUs (Kyrou and Kumar, 2010). ● NICE and SIGN recommendations are dependent on BMI thresholds of 35 and 30 kg/m², respectively (NICE, 2009b; SIGN, 2010); the BMI threshold should be lower in south Asian people.
Insulin	<ul style="list-style-type: none"> ● Associated with weight gain and hypoglycaemia. ● Be aware of different meal times in different south Asian groups when teaching carbohydrate counting, e.g. Bangladeshi families tend to eat late in the evening. ● Pre-mixed insulin preparations may be more effective than basal-bolus or basal-plus regimen for those who do not wish to carbohydrate count. ● Have regular check-ups with insulin users to decide when there is a need for a change in regimen. ● Monitor compliance (e.g. use a computer database to monitor prescription collection).
ACE inhibitor and statins	<ul style="list-style-type: none"> ● Use with caution in women of childbearing age.

ACE=angiotensin-converting enzyme; DPP-4=dipeptidyl peptidase-4; GLP-1=glucagon-like peptide-1; SIGN=Scottish Intercollegiate Guidelines Network; SU=sulphonyurea.

also associated with a low risk of hypoglycaemia (Al-Arouj et al, 2010).

GLP-1 receptor agonists

GLP-1 receptor agonists are associated with weight loss (Kyrou and Kumar, 2010). Recommendations from NICE (2009b) regarding their use are determined by a BMI threshold of 35 kg/m², which for the reasons noted earlier should be tailored in south Asian people.

As with DPP-4 inhibitors, GLP-1 therapies are not independently associated with hypoglycaemia, which is particularly useful during fasting, but the incidence of hypoglycaemia may be increased when combined with SUs (Al-Arouj et al, 2010). The main side-effects are transient nausea and vomiting.

Insulin

Insulin is often initiated too late in clinical practice and, in the authors' experience, this is particularly so in south Asian people due to the misconceptions about insulin as mentioned earlier. Hypoglycaemia and weight gain associated with insulin are concerns in south Asian people, which may also delay the initiation of the therapy.

Once insulin has been initiated, healthcare professionals need to regularly monitor adherence to the therapy and assess the need for a change in regimen. In the authors' experience, some south Asian people seem to lack the knowledge of carbohydrate counting; therefore, it is perhaps more appropriate to offer pre-mixed insulin preparations, instead of a basal-bolus or basal-plus regimen, to this population when insulin intensification is required.

Page points

1. Angiotensin-converting enzyme inhibitors and statins are considered contraindicated during pregnancy; these drugs should be used with caution in women of childbearing age.
2. Some south Asian people are reluctant to take their medications during fasting, therefore the timing and dosage of antidiabetic agents needs to be adjusted.
3. Education on aspects of prolonged periods of travel abroad should be offered in advance, including the need to continue prescribed medication, insulin storage, use of insulin across time zones, foot care and management of hyper- and hypoglycaemia.

ACE inhibitors and statins

Women with type 2 diabetes are likely to be treated with antihypertensive angiotensin-converting enzyme inhibitors and lipid-lowering statins (Murphy et al, 2007). These drugs are considered contraindicated during pregnancy and should be used with caution in women of childbearing age. Many south Asian women will fall into this group because, as mentioned earlier, type 2 diabetes is generally diagnosed earlier in the south Asian people compared with the general population (Mather and Keen, 1985).

Management of blood glucose during religious rituals

A large number of south Asian people in the UK are practising Muslims and choose to fast during Ramadan (Chowdhury et al, 2003). Fasting may lead to hypoglycaemia, hyperglycaemia and dehydration; the risk of such adverse events is compounded by the fact that some people are reluctant to take their medications during the fast, therefore the timing and dosage of antidiabetic agents needs to be adjusted (Karamat et al, 2010). For detailed recommendations for management of diabetes during Ramadan, readers are advised to consult the consensus document produced by the American Diabetes Association (Al-Arouj et al, 2010).

In addition to fasting during Ramadan, pilgrimage during Hajj involves changes in diet and daily activity, which will also

necessitate treatment adjustment and associated educational input from healthcare professionals. Education about fasting or pilgrimage should be carried out at least 1–2 months beforehand. A list of practical advice for the process of education on blood glucose management during Ramadan can be found in *Table 5*. Fasting during other religious rituals or pilgrimage during Hajj can be treated similarly.

Advice for travelling abroad

Many UK south Asian immigrants have close links with their families in Asia and return there for prolonged breaks. While abroad, some south Asian people may take the opportunity to consult a hakim or a healer, who may advise them to stop their prescribed Western medication (Hawthorne et al, 1993). Additionally, some people may also stop their medication because they feel better or believe that the higher temperatures and sweating reduce blood glucose levels. This accounts for raised blood glucose levels in many people upon return to the UK from their home countries.

Healthcare professionals therefore need to ask south Asian people with diabetes whether they plan to travel abroad and arrange follow-up accordingly. Education on aspects of prolonged periods of travel abroad should be offered in advance, including:

- The need to continue prescribed medication.
- Storage of insulin (e.g. use of cool bags).
- Use of insulin across time zones.
- Foot care.
- Management of hyper- and hypoglycaemia.

Healthcare professionals may also wish to make the person aware that a letter allowing carrying insulin needles in hand luggage can be obtained from the GP.

Blood glucose treatment targets

The treatment targets with blood glucose-lowering therapy for the general population defined by NICE (2009a) are, in the authors' view, also appropriate in south Asian groups: HbA_{1c} <6.5% (<48 mmol/mol) with first-line therapy; HbA_{1c} <7.5% (<58 mmol/mol) with dual or triple therapy. Although south Asian people with diabetes are at a higher risk

Table 5. Practical advice on the process of education on blood glucose management during Ramadan.	
For the person with diabetes	<ul style="list-style-type: none"> ● Ensure the person is aware that a pre-Ramadan counselling appointment is needed if he or she wishes to fast. ● Send text messages about appropriate management of blood glucose during Ramadan if pre-Ramadan counselling is restricted by limited resource.
For the person with diabetes and his or her family	<ul style="list-style-type: none"> ● Raise awareness of symptoms of hypo- and hyperglycaemia, using visual aids such as DVDs or support from Asian link workers.
For other GPs and practice nurses	<ul style="list-style-type: none"> ● Send out posters to other GPs and nurses in the locality to let them know the time of Ramadan.

of developing severe chronic kidney disease compared with European people (Dreyer et al, 2009), currently there are no clinical trial data that clearly suggest the benefit of tighter glycaemic control in the south Asian population.

Conclusion

Type 2 diabetes is a serious health concern for UK south Asian groups. To address the unique needs of this population and complex interplay between culture and health risks, healthcare professionals need to engage with the community and offer tailored care. This requires understanding of the lifestyle habits, language barriers and cultural beliefs among south Asian people. In terms of medical intervention in this population, specific issues need to be considered, such as weight gain, hypoglycaemia and management of blood glucose during religious rituals. ■

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“To address the unique needs of this population and complex interplay between culture and health risks, healthcare professionals need to engage with the community and offer tailored care.”