# 6.25 CME CREDITS



This supplement to THE JOURNAL OF FAMILY PRACTICE is sponsored by the Primary Care Education Consortium and is supported by an educational grant from Novo Nordisk, Inc. It has been edited and peer-reviewed by THE JOURNAL OF FAMILY PRACTICE.





# Building Cultural Competency for Improved Diabetes Care

# **Asian Americans and Diabetes**

- William C. Hsu, MD
- Henry H. Yoon, MD

# **African Americans and Diabetes**

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# Latino Americans and Diabetes

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# Asian Americans and Diabetes S7

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#### LEARNING OBJECTIVES

#### Asian Americans and Diabetes

#### William C. Hsu, MD, and Henry H. Yoon, MD

After reading this section, the reader should be better able to:

- · List specific strategies for showing and receiving respect in culturally specific ways • Review some of the differences within and between Asian ethnic groups regarding
- presentation patterns, complications, and risk factors of type 2 diabetes mellitus (T2DM) · Describe some of the common characteristics of successful prevention and treatment
- programs for T2DM in Asian Americans
- Establish a specific strategy (not just when, but why and how) to achieve a glycosylated hemoglobin level below 7% for patients with T2DM
- · Discuss culture-specific barriers to insulin initiation and strategies to address those barriers • Describe challenges associated with a new diagnosis of T2DM

#### African Americans and Diabetes

James R. Gavin III, MD, PhD, and Eugene Edward Wright Jr, MD

- After reading this section, the reader should be better able to: · List some of the differences within and between ethnic groups regarding pathophysiology, complications, and risk factors of T2DM
- · Describe some of the common characteristics of successful prevention and treatment programs for T2DM in African Americans
- Establish a specific strategy (not just when, but why and how) to achieve a glycosylated hemoglobin level below 7% for patients with T2DM
- Discuss culture-specific barriers to insulin initiation and strategies to address those barriers Select the specific insulin formulations and insulin delivery systems that will meet patients' individual needs

#### Latino Americans and Diabetes

A. Enrique Caballero, MD, and Penny Tenzer, MD

After reading this section, the reader should be better able to:

- List specific strategies for showing respect in culturally specific ways
  Demonstrate methods to improve communication between the physician and Latino American patients
- · Describe some of the common characteristics of successful prevention and treatment programs for T2DM in Latino Americans
- Establish a specific strategy (not just when, but why and how) to achieve a glycosylated hemoglobin level below 7% for patients with T2DM
- · Discuss culture-specific barriers to insulin initiation and strategies to address those barriers · Describe issues specific to intensification of T2DM treatment

#### FACULTY DISCLOSURE STATEMENTS

Dr Hsu receives consulting fees from Eli Lilly and Company, Novo Nordisk, Inc., and LifeScan, Inc. He also serves on speaker bureaus for Takeda Pharmaceuticals North America, Inc., GlaxoSmithKline, Eli Lilly and Company, Novo Nordisk, Inc., and sanofi-aventis.

Dr Yoon has no real or apparent conflicts of interest to report.

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Dr Tenzer has no real or apparent conflicts of interest to report.

#### SPONSOR DISCLOSURE STATEMENT

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#### STATEMENT OF SUPPORT

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# FAMILY PRACTICE

# **Introduction and Overview**

iabetes affects about 7% of the US population<sup>1</sup> with more than 90% of cases being type 2 diabetes mellitus (T2DM). In 2005, this translated into nearly 21 million Americans with diabetes.<sup>1</sup> Whereas Americans from all ethnic and cultural groups are affected, minority populations are disproportionately affected.<sup>1</sup> In fact, diabetes prevalence is 2 to 6 times higher among Latino Americans, African Americans, Native Americans (American Indians and Native Alaskans), and Asian Americans than among white Americans.<sup>2</sup> The National Institutes of Health reports that American Indians and Native Alaskans are 2.2 times more likely to have the disease than are non-Hispanic whites.<sup>3</sup> Furthermore, studies using glycosylated hemoglobin (A1C) as a marker have shown that Latino Americans, African Americans, and Asian Americans have poorer control of their diabetes. In a study by Brown and colleagues, mean A1C levels were higher among Latino Americans, African Americans, and Asian Americans/Pacific Islanders than among white Americans (FIGURE).<sup>4</sup>

Perhaps as a direct consequence, diabetes complication rates are higher among patients from ethnic minorities,<sup>5</sup> and the mortality rates in these populations are 2 to 5 times higher than the rates among white patients.<sup>2</sup> End-stage renal disease is higher among Latino Americans and African Americans than among whites. At least 4 studies have shown higher risks of lower extremity amputations among ethnic minorities.<sup>5</sup> Thus, all patients with diabetes but especially patients from ethnic minorities—need more assistance in controlling this chronic and progressive disease. A more culturally appropriate approach to these patients will increase the effectiveness of available treatments.

The trends of immigration suggest that the number of Americans of Latino, African, and Asian ethnicities will rise over time. Currently, Latino Americans make up 12.5% of the population, followed by African Americans at 12.3%, and Asian Americans at 3.6%.<sup>6</sup> It is estimated that by the year 2050, minority populations will comprise 47% of the total US population,<sup>6</sup> with projected increases in diabetes diagnoses of 165% in the overall population and at least this high in minority subpopulations.7 Many health care initiatives, including Healthy People 2010, have acknowledged the importance of improving care across America and have set goals to eliminate racial disparities in health and health care.8 However, barriers abound in the current health care environment even as we attempt to improve care.

# **Cultural Obstacles**

Minority populations face many cultural obstacles to the acquisition of health care. Although some assume that the American system of health care is universally accepted and accessible, for a variety of reasons, many ethnic minorities receive suboptimal care in the United States. Barriers to care include patients' and providers' cultural beliefs and misalignment between the American health care system and ethnic health assumptions. Furthermore, our approach to treating medical conditions in the United States, combined with the lack of health insurance for many individuals, contributes to these barriers and disparities. In



Variation in percent mean A1C level for patients of white American, African American, Latino American, and Asian American/Pacific Islander ethnicity. Brown AF, et al. *Diabetes Care.* 2005;28:2864-2870.

addition, immigration is adding more diversity to socioeconomic groups. Therefore, diversity within various cultural groups, as well as the cultural obstacles described here, must be understood and overcome to achieve superior cross-cultural health care.

In some cultures, seeking health care may be considered a "self-indulgent luxury."<sup>2</sup> To seek care before the emergence of evident physical impairment may suggest egocentric conduct. Because diabetes, particularly T2DM, is a disease with a typically prolonged asymptomatic period, patients who wait for physical impairment may lose years of potential treatment for the disease. Without early treatment, residual pancreatic beta-islet cells diminish and complication rates rise. Patients with T2DM often present with complications such as neuropathy, vision changes, or nephropathy at the time of diagnosis.

Many patients fail to seek medical care because they believe there is an association between illness and an imbalance of excess and deficiency.<sup>2</sup> Some cultures believe that diabetes indicates a failure to live properly, represents a lack of spiritual strength, or is a punishment for immoral behavior.<sup>2</sup> Again, patients who resist seeking health care because they associate illness with a morally inferior lifestyle deny themselves timely access to care.

For some groups, cultural ideals may be violated by American health care attitudes. In diabetes care, much emphasis is placed on healthy diet and lifestyle

as well as on limiting a patient's weight to achieve glycemic control. For some cultures, however, a heavier physique is indicative of health.<sup>2</sup> Although much evidence links obesity and T2DM, patients who consider weight control measures to be contrary to their cultural ideals may devalue the advice of their physician. Thus, US providers must exercise care in offering health care advice to their patients to avoid conflicts between their patients' cultural beliefs and any pre-existing notions of the superiority of the traditional American approach to medical care. Refuting engrained cultural health care standards before a relationship of mutual trust and respect between patient and health care provider has been developed will likely lead to rejection of any plan for treatment.

With these and other cultural factors in mind, American health care providers might easily consider patients from unfamiliar cultures and ethnicities to be "problem patients."<sup>2</sup> But American health care providers and the American health care system may be at least partly responsible for the barriers to caring for our ethnically diverse population. Instead of viewing beliefs that are different as foreign, we need to educate ourselves and modernize our health care system to accommodate these different approaches to illness. In order to lessen the burden of disease, we need to recognize the differing opinions about provision of care and treatments. To optimally care for Americans across ethnic and cultural boundaries, a crosscultural understanding of medicine is paramount.

# **Cultural Competency**

Cultural competency is "awareness of and sensitivity to cultural differences; knowledge of cultural values, beliefs, and behaviors; and skill in working with culturally diverse populations."<sup>2</sup> Although the definition is succinct, the challenge is to identify an individual patient's culture. It is vital for providers to comprehend the distinction between race (populations characterized by physical traits), ethnicity (social groups with shared history and cultural roots regardless of race), and culture (members of a society with shared beliefs, values, customs, and behaviors).



Instead of stereotyping, culturally competent providers can first gain a general awareness of a culture's norms; they can then explore a patient's beliefs and values, remembering that each patient is different, even within his or her own cultural context.<sup>6</sup> Whether the issue is achieving an understanding of the Latino or Asian belief that a balance of hot and cold is necessary for health,<sup>6</sup> or the African American belief that the use of bitter foods and herbs can neutralize the blood,<sup>2</sup> an appreciation of varied cultural convictions is critical to caring for the individual patient.

Although achieving cultural competency can be time-consuming and challenging, it has the potential to lead to greatly improved outcomes. The history-taking interview is the best opportunity to establish open communication with the patient. From this history taking, the physician will be able to establish a solid basis for appropriate management of the patient. Throughout the patient cases discussed here, there are a number of recommended questions and techniques that physicians can use with patients. Interview questions must be tailored to elicit the patient's perceived cause of illness, information about complications related to the illness, the severity of the illness, and the patient's fears about the illness.<sup>6</sup> Questions must also be nonjudgmental (TABLE 1).<sup>9</sup>

Health care providers must be skilled in intercultural communication, understanding the various perceptions and attitudes toward personal space, the appropriateness of certain gestures, and the meaning of direct and indirect communication.<sup>2,6</sup> For example, some Asian American populations consider indirect eye contact a sign of respect and so will avoid direct eye contact with a physician. Interpreters can be helpful in reducing language barriers, but they must also be chosen carefully to ensure proficient translation of sensitive topics. To provide culturally competent care, providers must compile a new knowledge set, including cultural awareness (to appreciate and accept differences), cultural knowledge (to comprehend different world views of illness), and cultural skill (to assess and explain issues to a person who has different beliefs),

#### TABLE 1

#### **Nonjudgmental Questions for Patients With Diabetes**

• What do you think caused your problem?
• Why did this occur at this time?
• What do you think can be done to treat this?
• Where do you find support during times of stress or illness?
AMSA. http://www.amsa.org/programs/gpit/cultural.cfm. Accessed May 14, 2007; Juckett G. Am Fam Physician, 2005;72:2267-2274.

and then providers must amass an abundance of cultural encounters.<sup>9</sup> Cultural competency enables a provider to tailor care to the individual needs of the patient, and it has the potential to revolutionize diabetes care in America.

As important as cultural competency is, we must also remember to focus on what so many patients with diabetes share—the inability to achieve target glycemic goals. All patients with diabetes face long-term challenges that will affect their lifestyle. Diabetes is a progressive disease, and the treatment modality must match not only the patient's lifestyle but also the amount of endogenous insulin being produced by the body at any one time. All glucoselowering agents are limited in their ability to lower A1C levels; therefore, it is unrealistic to expect any one medication to be successful, particularly if that medication's effects may be limited by the amount of endogenous insulin available.

# **Case Studies**

To further explore the similarities and differences in treating Americans with diabetes, case-based scenarios are presented for Asian American, African American, and Latino American patients with T2DM. These 3 cases describe a variety of patients: one who is newly diagnosed, one who must now initiate insulin therapy, and one who has had the disease for a few years and now needs the treatment plan to be intensified (TABLE 2). Each patient is treated as an individual, with his or her own ethnic and cultural beliefs. However, because many of the challenges are similar, each case highlights a different cultural competency issue and management discussion.

#### TABLE 2

<b>Case-Based Scenarios Presented</b>			
Patient	Cultural Issue	Management Discussion	
Asian American	Family/cultural beliefs	New diagnosis	
African American	Effective communication	Initiation of insulin	
Latino American	Heterogeneity of the culture	Intensification of treatment	

Diabetes is a disease with a variety of presentations, treatment options, and complications. By better understanding the patient as an individual, within the context of his or her cultural beliefs, the health care provider can better tailor the patient's overall care and, particularly, his or her diabetes care. The implica-

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tions are of great consequence. A culturally competent physician can not only identify the disease but also recognize the challenges to incorporating treatment into a life filled with family and cultural influence. Failing to understand the importance of cultural beliefs, lifestyle, family responsibilities, or the way the patient expresses himself or herself fails the patient. Therefore, providers are now charged with a new task: the implementation of culturally competent care. In the case of diabetes, the provider and all members of the health care team are responsible for understanding the disease beyond pancreatic dysfunction and treatment options. Understanding not only the disease of T2DM but also the patient with the disease is paramount in achieving optimal outcomes. Cultural competence is an ongoing journey and a lifelong learning process.

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# FAMILY PRACTICE

# **Building Cultural Competency for Improved Diabetes Care:** Asian Americans and Diabetes

William C. Hsu, MD • Henry H. Yoon, MD

ype 2 diabetes mellitus (T2DM) is an everincreasing cause of significant morbidity and mortality worldwide. As one of the most common chronic diseases our nation is facing today, it is also a major contributor to rising health care costs. Complications from uncontrolled T2DM result in significantly higher per-patient health care costs for patients with diabetes compared to health care costs for nondiabetic patients.<sup>1</sup>

Genetic factors play an important role in the development of T2DM, with prevalence among some ethnic groups—including certain Asian American groups—considerably higher than among white Americans.<sup>1</sup> Studies have shown that glucose control is also significantly poorer in this subgroup of patients.<sup>2</sup>

The need to address these ethnic disparities has led to the growing interest in cultural competency in medical care. While patient-centered care has tended to focus on the patient as a unique person, cultural competency recognizes that the individual is a product of his or her culture.<sup>3</sup> The degree of disparity also varies, depending on how long the individuals have been living in the United States and how Americanized these individuals are. Patients whose health care providers may need a higher level of cultural competency include those who have recently emigrated from their home countries and those who have been residing in the United States for a long time but have not acculturated to the mainstream society, a scenario highlighted in the following case study.

# **CASE STUDY**

Mrs Hu is a 54-year-old Chinese American woman who immigrated to the United States with her husband several decades ago. Her husband had worked for many years in the dry cleaning business, and they enjoyed a modest but comfortable lifestyle. Mrs Hu has associated mainly with other families who immigrated from nearby regions of her homeland.

Mrs Hu was recently widowed, and she has moved in with her son and his family. Her son is concerned that his mother did not take care of herself while caring for her dying husband. He brings her to Dr Smith for a checkup. He reports to Dr Smith that it has been several years since his mother has seen a Western health care provider, preferring instead to visit the neighborhood Chinese healer.

# **Asian American Demographics**

Asian Americans are a very diverse and rapidly growing segment of the American population. Between 1990 and 2000, the Asian American population grew by 48%, far above the national growth rate of 13%.<sup>4</sup> By 2000, Asian Americans made up 4.2% of the US population, and it has been projected that this figure will increase to 10.7% by the year 2050.<sup>5</sup>

To address the cultural issues in this ever-growing group, it is important to understand the diversity within the Asian American population. Included in this group are Chinese, East Indians, Filipinos, Vietnamese, Koreans, Japanese, and Pacific Islanders, among others. There are at least 49 ethnic groups speaking more than 100 languages and dialects.<sup>6</sup>

Despite the considerable diversity within the Asian American population, certain factors are common to many groups. A 1985 survey found that Asian Americans were more likely than white Americans to be without health insurance,<sup>2</sup> which limits their access to health care. Although the median family income is higher for Asian Americans as a group compared with the general population, socioeconomic status tends to be lower in certain groups,<sup>7</sup> which is an independent risk factor for poor health.<sup>2</sup> Although the degree of language barriers as well as the immigration experiences among the different Asian American ethnic groups and individuals vary, the overall pattern contributes to the disparities in care received by various ethnic populations in the US health care system.

It is important to recognize that some of these issues can only be addressed on a system-wide level. However, others can be improved by the efforts of individual health care providers. It is through the careful study of the cultural beliefs, family relationships, views of illness, and styles of communication of Asian Americans that a provider can develop the appropriate approaches and skills to provide crosscultural care.

# CASE STUDY...continued

During her visit with Dr Smith, Mrs Hu prefers to sit in the chair in the examination room rather than on the examination table. She tends to be quiet and brief with her responses and does not elaborate much in response to open-ended questions. Her son helps with translation, as she speaks limited English.

Dr Smith learns that Mrs Hu has been relatively healthy and has had no major health issues in the past. Her son does note, however, that over the last 6 months his mother has mentioned being very thirsty, and he has noticed that she needs to urinate quite often, which has disturbed her sleep. Mrs Hu has lost some weight despite having a good appetite, and her son reports that she has had several urinary tract infections that she has treated with herbal remedies. She fatigues easily and recently has been unable to perform her usual household activities.

During the physical examination, Mrs Hu appears fatigued but not in acute distress. Mrs Hu is 5 feet 3 inches tall and weighs 126 pounds. Her body mass index (BMI) is 22.3 kg/m<sup>2</sup>. Vital signs show a pulse rate of 74, blood pressure levels of 134/88 mm Hg, respiratory rate of 14, and body temperature of 97.8°F. Her physical examination is unremarkable. A routine in-office urinalysis reveals the presence of both glucose and protein. A finger stick blood glucose test reveals a glucose level of 212 mg/dL. Her son reports that they last ate several hours ago and planned to have dinner upon their return home from today's visit.

Dr Smith orders blood work, including a CBC, a chemistry panel with liver function, glycosylated hemoglobin (A1C), lipid profile, and microalbumin tests. He instructs Mrs Hu and her son that she cannot eat or drink anything after midnight that night. Mrs Hu's son will bring his mother to the laboratory the following morning. Dr Smith asks that Mrs Hu return with her son at the end of the week to review the results and determine any appropriate follow-up care that may be needed.

When Mrs Hu and her son return to the office, Dr Smith reviews Mrs Hu's laboratory results. Although the CBC and liver function tests are normal, Mrs Hu's fasting plasma glucose (FPG) is 202 mg/dL and her A1C level is 9.3%. Her total cholesterol level is 238 mg/dL. The high-density lipoprotein (HDL) level is 46 mg/dL, the low-density lipoprotein (LDL) level is 165 mg/dL, and the triglyceride level is 345 mg/dL. Mrs Hu's creatinine is normal at 0.8 mg/dL. Her urinary albumin to creatinine ratio is 89 mcg/mg. On recheck, Mrs Hu's blood pressure is 134/82 mm Hg.

Dr Smith explains to Mrs Hu and her son that Mrs Hu has type 2 diabetes and recommends initiating oral therapy with metformin and glipizide. Dr Smith also provides a referral to a certified diabetes educator (CDE) for a review of dietary choices and for Mrs Hu to learn glucose self-monitoring. Mrs Hu's son agrees to accompany his mother to the visit with the CDE.

Dr Smith recommends that Mrs Hu begin taking an angiotensin-converting enzyme (ACE) inhibitor to lower her blood pressure and as a renal protective measure, as well as a statin to help lower her cholesterol level. He also prescribes a daily aspirin.

Before Mrs Hu leaves with her prescriptions, Dr Smith inquires about any alternative therapies Mrs Hu is taking on a regular or intermittent basis. She acknowledges that she is taking an herbal tea daily that is believed to balance glucose



levels and help with digestion. Dr Smith does some research and finds that, although there is no proven benefit, there are also no known adverse effects or interactions with the medications he has prescribed.

Mrs Hu accepts the prescriptions for the medications without question, listening closely as her son explains the plans. They agree to return in 1 month for a follow-up visit.

# **Discussion Points**

The interview with Mrs Hu brings out several aspects of certain traditional Asian cultural values. For example, patients may not proactively ask questions and may not openly disagree with the health care provider about medical regimens. These behaviors stem from the belief system that such actions are disrespectful and are to be avoided. Health care providers can put their patients at ease by encouraging them to ask questions and eliciting their opinions on the prescribed medical regimen.

In addition, Asian culture is generally considered to be a "low-touch" society.8 Therefore, an explanation of what the health care provider will be doing during the examination can often diffuse a patient's discomfort. Health care providers may find that the interview process tends to be unidirectional, with the provider led to ask more closedended questions. Much of the issue has to do with lack of linguistic proficiency. Techniques that may be helpful include using shorter and more simple sentences and speaking more slowly. The approach of asking more closed-ended questions is in contrast with what physicians are typically taught during training, which is to focus on more open-ended questions. This traditional open-ended questioning approach, although still valuable and appropriate in many patient encounters, may not always be the best for those patients who have limited English proficiency. Care must also be taken to extend the invitation for questions multiple times during the interview. This may facilitate greater information exchange during the visit.

Whenever a family member is acting as an interpreter, it is important to consider the capability of the family member to accurately convey the medical information being communicated. Studies show that the use of trained interpreters leads to higher-quality communication than translation by family members or untrained staff.<sup>9</sup>

Family obligations in Asian American culture generally are given higher priority than personal needs and wants.<sup>4</sup> This is illustrated both in Mrs Hu's dedication to her husband's needs despite her own health issues and in her son's concern for providing care for her after the death of his father. Indeed, Mrs Hu agreed to see Dr Smith only because she is concerned that her health is affecting her ability to perform her household duties.

# **Asian Americans and Diabetes**

Several important aspects of the risk of diabetes in the Asian American population have become more apparent in recent years. For example, although first-generation Asian Americans tend to have lower body weight and BMI measurements, they have a greater prevalence of T2DM than the general population. Therefore, in this population, providers must be more aware of the need to screen patients even at a weight or BMI lower than one that would usually trigger suspicion.<sup>2</sup> In contrast, second- and later-generation Asian Americans tend to have higher body weight and are prone to developing T2DM at younger ages. Finally, Asian Americans have higher rates of certain complications such as endstage renal disease.<sup>10</sup>

Some studies have shown that Asian Americans can tend to have lower levels of physical activity,<sup>11</sup> which increases their T2DM risk. In addition, as Asian Americans adapt to the American culture, dietary changes that occur (otherwise referred to as the Americanization of the typical Asian diet) likely have a dramatic impact on their risk of developing T2DM and cardiovascular disease, among other conditions.

Perspectives on factors influencing health and resulting in disease are quite different in the Asian American culture than in the American culture. There is a strong belief in the role of environmental factors, food choices, mental balance, and family harmony in the development of disease. One of the key aspects of the Asian American view on health is that of balance. Commonly known as yin and yang, Asian Americans typically seek balance in all aspects of their lives. The concept of balance includes viewing foods, illness, and treatments as being hot or cold.<sup>12</sup> These beliefs affect food choices, the willingness to take medicines, and the use of alternative therapies, including herbal remedies, acupuncture, and other traditional Asian physical therapies—a distinction that is often more true for Oriental than for East Indian cultures.

To achieve compliance with recommended therapies, health care providers must understand how medical recommendations interact with their patients' beliefs. Only in this way can they provide care that is harmonious with the belief system of Asian American patients and facilitate improved health outcomes.

# CASE STUDY...continued

Mrs Hu returns in 1 month. Her physical examination is unchanged. Her FPG is now 208 mg/dL. Urinalysis continues to show protein and glucose, and her A1C level is only slightly decreased to 9.1%. Mrs Hu's son reports that she has been feeling better and sometimes skips some of her medication as a result.

Dr Smith reviews Mrs Hu's glucose diary, as well as the food diary that the CDE has asked her to keep. Dr Smith notes that there is significant carbohydrate intake. Her meals tend to consist of rice or noodles, with several side dishes made from fresh vegetables, meat, or poultry. Fruit is often consumed as a dessert dish.

Dr Smith asks Mrs Hu about her eating patterns. She explains that she prepares the meals with her daughterin-law for the whole family to enjoy. She believes that her selections provide balance among the various types of foods, and she does not feel that she should deprive the family of any part of the meal because she is supposed to restrict her food choices.

Dr Smith, aware of the importance of food to Mrs Hu's cultural and family values, decides that insulin will be the most effective way to provide adequate control of her glucose levels, while allowing her the flexibility to continue participating in family meals. Dr Smith decides to continue the metformin but discontinue the glipizide and initiate neutral protamine Hagedorn (NPH) insulin because Mrs Hu cannot reach an A1C level of less than 7% with other medications. She is instructed to begin with a twice-daily injection of 10 units, with dosing to be adjusted weekly as needed.

Mrs Hu expresses concern that the insulin will be too strong for her. In addition, she is concerned that having to take shots and the accompanying risk of hypoglycemia will be too disturbing to her family.

Dr Smith acknowledges her concerns, explaining that the insulin will restore the balance in her body. He further explains that the insulin is a replacement for the substance her body is no longer making. Dr Smith also enlists Mrs Hu's son to address his mother's concerns about her family. Her son explains how important it is to the family that she take care of herself so she can be healthy and continue to help care for them.

Mrs Hu agrees to start the insulin therapy that Dr Smith has recommended. She seems quite pleased with the permission to continue family meals in her usual tradition while reducing her own carbohydrate intake and increasing her intake of fruits and vegetables. Dr Smith advises Mrs Hu and her son on the use of insulin and the importance of regularly monitoring her blood glucose levels. Mrs Hu and her son agree to return in 1 week with her glucose diary.

One week later, Mrs Hu and her son return and Dr Smith reviews Mrs Hu's glucose diary. Although the FPG is 123 mg/dL, the postprandial values—especially after dinner—remain high. This prompts Dr Smith to initiate bolus therapy with a rapid-acting insulin analog (4 units of insulin aspart) with the main meal, in addition to increasing the dose of NPH insulin by 2 units. Another follow-up visit is arranged for 1 week later, at which time Mrs Hu's glucose levels seem stable. There have been no episodes of hypoglycemia. Mrs Hu and her son agree to return in 2 months.

# **Discussion Points**

This conversation illustrates a key aspect of the culture of many Asian Americans. Food is essential to harmony and family relationships. The focus is on balancing yin and yang foods, texture, color, and aroma in addition to the nutritional quality of the food.<sup>13</sup> Having meals together is an important means of relating within the family and, for Chinese



Americans, protecting the quality and taste of meals for the family is often more important than managing personal health issues.<sup>4</sup>

In addition, providing food is often a means of expressing care for an individual. Family members often provide food aimed at restoring balance. For example, special teas or soups prepared with herbal supplements may be given to restore health and vitality.<sup>13</sup> This arises from the belief that a lack of balance can be the cause of illness and that restoring that balance is essential to treating it.<sup>4,13</sup>

Many Asian Americans are often reluctant to take medications, believing that dietary changes can restore balance and that Western medications will be too strong.<sup>12,13</sup> Dr Smith skillfully allayed this fear by relating the need to take insulin to Mrs Hu's view of disease and treatment. However, in the case of T2DM, the provider must be sure to explain that the medications, including insulin, must be continued to maintain balance, as Asian Americans often believe that medications can be discontinued once balance is restored.<sup>12</sup>

Involving family members in encouraging patients to participate in treatment recommendations and reminding patients of their social or family responsibilities can be essential to good management of diabetes in the Asian American population. In fact, the need to maintain social and family responsibilities can be a major motivator for complying with recommended care.<sup>4</sup> However, providers must be cognizant of relationships within families. In Asian American families, age, gender, and the family member's relationship to the patient may determine who can participate or even have knowledge of medical issues.<sup>4</sup>

In this case, Dr Smith takes care to explain to Mrs Hu that her body is out of balance and that this is affecting her ability to do the things she cares about. Dr Smith also explains that this imbalance could cause more health problems and affect her abilities even further in the future if it is not treated properly.

# CASE STUDY...continued

At the 2-month checkup, Mrs Hu's A1C level is down to 7.0%. Dr Smith performs a thorough foot examination and educates both Mrs Hu and her son on the importance of regular foot care and self-examination. Mrs Hu also receives pneumococcal and influenza vaccinations, and an ophthalmology appointment is arranged. Mrs Hu and her son agree to return in 3 months for a follow-up visit.

## **Principles of Diabetes Management**

Effective management of T2DM has clearly been shown to delay or prevent the development of complications.<sup>14</sup> National guidelines recommend a team approach to the management of diabetes in order to focus on all aspects of care.<sup>15</sup> Important aspects to address with the diabetic patient include nutrition and dietary counseling, physical activity, treatment selection, glucose self-monitoring, psychosocial aspects of the disease, managing concurrent illnesses, and immunization needs.<sup>15</sup>

Decisions about medication selection are vital and are growing more complicated with the development of new treatment options. Vast amounts of literature have been published to help guide the provider through the various choices, with the focus being on achieving targeted glycemic control.

Recommended management also includes regular screening for complications, which includes monitoring lipid profiles, renal function, and blood pressure, as well as routine dilated eye examination, foot examination, and assessment for neuropathy.<sup>15</sup>

## CASE STUDY...continued

Mrs Hu returns in 3 months. Her physical examination is still unremarkable. Her blood pressure is now 120/72 mm Hg. She no longer has protein or glucose on urinalysis. Her FPG is 112 mg/dL, and her A1C level is 6.9%. She states that she is feeling much better and has significantly more energy. She has had a few episodes of hypoglycemia, but she is aware of the signs and was able to take some food to counteract them. Because of these bouts of hypoglycemia, Dr Smith decides to change Mrs Hu's NPH insulin to insulin glargine, 16 units once daily, to be injected at bedtime.

Mrs Hu's son informs Dr Smith that his wife has started walking daily with his mother as a way to increase Mrs Hu's activity level. By doing this together, Mrs Hu feels she is also helping her daughter-in-law to increase her activity level and optimize her health as well. Dr Smith provides some resources for the family so they can become involved with other Asian Americans in the area who are dealing with diabetes. The community leaders have started a support group, and Mrs Hu seems interested in participating and sharing her experiences with others.

# **Discussion Points**

Mrs Hu has had great improvement in her T2DM through the use of insulin analogs. The enhanced control of a basal-bolus regimen enabled her to reach her A1C goal of less than 7% with a minimum of side effects. By presenting the need for insulin in the correct manner, Dr Smith was able to achieve compliance and enhance patient satisfaction. And by enlisting her family in providing direct and indirect encouragement, Dr Smith was able to help Mrs Hu overcome her fears of the medications and improve her physical activity status.

The use of complementary and alternative therapies is very common among Asian Americans.<sup>5</sup> It is imperative, therefore, that the health care provider specifically inquire about the use of such treatments, as some of these remedies may interact with

#### Resources

American Academy of Family Physicianswww.aafp.orgAmerican Association of Physicians of Indian Originwww.aapiusa.orgAsian American Diabetes Initiative (AADI), Joslin Diabetes Centerhttp://aadi.joslin.harvard.eduAsian and Pacific Island American Health Forumwww.apiahf.org/

Association of Asian Pacific Community Health Organizations www.aapcho.org

EthnoMed (University of Washington Harborview Medical Center) www.ethnomed.org

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standard medications or result in adverse effects.

The use of community resources is very helpful in providing comprehensive and relevant care to Asian Americans with diabetes.<sup>16,17</sup> From the provision of translators, to the education of clinicians, to the sense of community support provided for the patient, these resources can help to erase the disparities in health care for Asian Americans with T2DM.

#### Summary

General Asian Culture

www.Asian-Nation.org

www.omhrc.gov/CLAS

www.nawho.org

National Asian Women's Health Organization

Services Office of Minority Health Resource Center)

http://asianamericanhealth.nlm.nih.gov/

National Library of Medicine - National Institutes of Health

National Standards for Culturally and Linguistically Appropriate

Services in Health Care (US Department of Health and Human

The United States has long been known as a melting pot of cultures. The current growth of various ethnic groups within the population ensures that this tradition will continue. Although all ethnic groups tend to assume some characteristics typical of the American culture, most also retain very distinct aspects of their native culture. Effective delivery of medical care requires that health care providers be educated about and respectful of these beliefs and traditions. Health care providers' continued focus on attaining cultural competency will enable all ethnic groups to obtain equal access to quality medical care.

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# THE JOURNAL OF FAMILY PRACTICE

# **Building Cultural Competency for Improved Diabetes Care:** African Americans and Diabetes

James R. Gavin III, MD, PhD • Eugene Edward Wright Jr, MD

or decades, it has been assumed that the nature and art of medicine automatically embrace an unbiased approach to maintaining health and life. Current data show this is not the case. An estimated 3.2 million African Americans—comprising 13.3% of the African American population in the United States—aged 20 years and older currently have type 2 diabetes mellitus (T2DM). Among this group, a third are undiagnosed.<sup>1</sup>

# **The Problem of Disconnection**

To start addressing the "why and how," we must examine and address the underlying problem of *disconnection*. This is a repurposed word used to introduce the concept of "barrier." As it relates to the African American patient and T2DM, a disconnection exists on several levels, including health beliefs, nutritional practices, religious beliefs and practices, interactions with the health care system, and socioeconomic issues. Being aware of these factors and being prepared to assess and treat the African American patient with respect and compassion is the best way to make a positive impact on the devastating epidemic of T2DM.

A survey done at Emory University to determine any racial or ethnic disparities in the management of T2DM found that while African Americans and Latino Americans reported more frequent health care visits over a year than did whites, they also demonstrated significantly lower utilization of preventive health services.<sup>2</sup> In a study of 56 African American patients admitted to the hospital for diabetic ketoacidosis (DKA),3 50% of the patients had stopped insulin therapy for economic reasons, and 14% had done so because they were unaware of insulin dosing strategies for days that they were ill and needed adjustments to their insulin. The authors of the study concluded that two thirds of the episodes of DKA may be preventable with improved patient education and access to care. These factors are extrinsic and are more difficult to study from an evidence-based perspective; however, intrinsic biological factors and their relationship to T2DM outcomes are currently under active investigation. Findings from the Diabetes Prevention Program indicate that no apparent ethnic disparity was evident in the risk of developing T2DM.<sup>4</sup> Nonetheless, current data show that African Americans are 1.8 times more likely than non-Hispanic whites of similar age to have T2DM.1

# **Insulin Resistance in Ethnic Populations**

There is evidence to suggest that insulin resistance is higher among African American and Hispanic American populations as compared with white Americans.<sup>5-7</sup> However, once insulin resistance progresses to impaired glucose tolerance, genetics no longer seems to be a factor in the risk of developing T2DM.<sup>7</sup> Impaired glucose tolerance is characterized by insulin resistance coupled with hyperinsulinemia and mild postprandial hyperglycemia (**FIGURE 1**).<sup>7</sup>

# **The Role of External Influences**

External influences may play a significant role in T2DM development and outcomes for African American patients. We can qualify but not accurately quantify cultural factors that significantly influence patient care, patient participation, and patient outcomes. There is an abundance of information in various studies that looks at perceptions of African Americans and socioeconomic factors as they relate to T2DM outcomes. Some research has shown that African Americans have a strong sense of living in the present, willingly accept obesity as the norm, and express the view that T2DM is hereditary and therefore cannot be prevented. In addition, socioeconomic barriers such as cost of medications and supplies can be a big hurdle for many African Americans, particularly when health insurance or Medicare/Medicaid coverage is lacking or reimbursement is inadequate. High out-of-pocket expenses for such items as glucose monitoring strips can be problematic.8 High treatment costs and the perceived high costs of a "diabetic diet" are also negative effects of low socioeconomic status.9,10 Numerous respondents in a community-centered approach to diabetes survey in East Harlem reported that finances were a key challenge (TABLE 1).<sup>9</sup>

No readily available studies are able to categorize barriers that are distinct or specific to African Americans, but at least one report has gathered data that can be helpful to physicians in becoming more aware of some challenges that are both real and perceived.<sup>11</sup> One example is a health care provider's tendency to manage the numbers related to glycosylated hemoglobin (A1C) and fasting plasma glucose (FPG) rather than attempting to understand the patient's concept of the disease and his or her goals.<sup>11</sup>

The most successful approach to effectively caring for patients with T2DM is an individualized approach. The best start for individualized care is the development of good rapport with the patient. This is by far the most useful tool that a health care provider has in improving diabetes outcomes in African American patients.

#### FIGURE 1



The prediabetic state of impaired glucose tolerance is characterized by increasing insulin resistance, compensatory hyperinsulinemia, and mild postprandial hyperglycemia. Initially, fasting blood glucose levels are maintained in nearnormal ranges. The beta cell then begins to fail, resulting in higher postprandial glucose levels and, with further loss of insulin secretory capacity and impaired glucorecognition, fasting blood glucose and hepatic glucose production increase.

Adapted from *Primary Care: Clinics in Office Practice*, Vol 26, Ramlo-Halstead BA, Edelman SV. The natural history of type 2 diabetes: implications for clinical practice, pages 771-789, Copyright 1999, with permission from Elsevier.

# **CASE STUDY**

Mr Jackson is a 53-year-old African American man who has been diagnosed with and treated for T2DM for 6 years. He is 5 feet 10 inches tall and weighs 190 pounds, with a body mass index (BMI) of 27.3 kg/m<sup>2</sup>. His blood pressure is well controlled, at 122/76 mm Hg. He is currently on maximal doses of metformin and a thiazolidinedione (TZD), but over the last 9 months he has had a steady increase in his A1C level. Today, Mr Jackson's A1C is 9.5%. Dr Jones explains to Mr Jackson that his diabetes is "poorly controlled," and Mr Jackson defensively explains that a lot of people in his family have "sugar" and some of them have died from it. He goes on to say that he has tried to go on a diet but he "couldn't eat that mess long" and he is back to eating what his wife cooks for everyone else. He tells Dr Jones that he is taking his pills every day to help keep his "sugar" down.

Mr Jackson is also taking an angiotensin-converting enzyme (ACE) inhibitor, a statin for his cholesterol, and an aspirin.

# **Discussion Points**

In this case, the patient uses the word "sugar" instead of "diabetes" when referring to his disease.

#### TABLE 1

Barriers to Diabetes Care in 939 Patients in East Harlem

Barriers	n/N	%
No insurance that pays all prescription costs	633/897	71
Did not see health care provider due to money concerns	144/898	16
Took less medicine than prescribed due to money concerns	145/900	16
Skipped taking medicine due to money concerns	183/899	20
Skipped checking blood sugar due to money concerns	210/899	23
Skipped meals due to money concerns	251/899	28
Did not keep diabetic diet due to money concerns	357/899	40
Language prevented getting the best diabetes care	174/902	19
Transportation needs prevented getting the best diabetes care	196/905	22
Medication costs prevented getting the best diabetes care	188/905	21

Adapted from Horowitz CR, et al. A community-centered approach to diabetes in East Harlem. *J Gen Intern Med.* 2003;18:542-548, with permission from Blackwell Publishing.

Language and terminology usage barriers often exist in parts of the African American population even though the primary language for the vast majority of African Americans is English. Whether the reason for the communication barrier is a result of education challenges or a preference for using one's own vernacular is not as important as being compassionate and respectful in determining how to discuss information on a level that is understandable and acceptable to the patient.

# **Building Trust**

As a general rule, for the African American patient, eye contact is very important during both the listening phase and the talking phase of any discussion. In the African American community, it is important to establish eye contact at the patient's level. For example, if you enter the examination room and the patient is sitting on the examination table, sit on the stool to maintain an even level of eye contact while talking with the patient and before you begin the examination.

Trust may be a little more challenging to establish with African Americans as a result of past experiences that may have been negative or viewed as discriminatory. This is especially true of patients in older age groups. Historically, unethical research projects such as the Tuskegee experiment<sup>12</sup> may make African Americans suspicious initially until the provider proves that he or she can be trusted. Other reasons that African American patients may be distrustful in this setting include negative health care experiences their friends or family members have had, receiving bad news about their own health, embarrassment about their lack of medical knowledge, or financial concerns.

Some religious beliefs about diabetes may further promote the reluctance of many of these patients to access proper treatment. Many African Americans believe spiritual faith has more curative potential than prescribed therapies, and they may indicate that they are "not claiming" diabetes. They may believe that praying for a cure along with their religious leader and church congregation will rid the body of T2DM; therefore, to acknowledge it will undo the healing. Matters of faith are never to be regarded lightly, regardless of cultural setting. Churches are starting to partner with health care providers to educate their members on diabetes care and the complications of poorly controlled diabetes. One way to connect with highly religious patients is to respond to any requests that they may initiate to join them in prayer, but it is important for this to be comfortable for both the patient and the provider, and it must be perceived by the patient as a sincere act. This gesture can show the patient that his or her religious beliefs are respected as an integral part of personal well-being. In other cases, where religious affiliation and/or inclination is not known, a physician might ask an open-ended question, such as "Where do you find support during times of stress or illness?" Then the response needs to be honored, supported, encouraged, and integrated into the care management plan.



Common myths are also responsible for what may appear to be poor attitudes and noncompliance. There is a long-held myth that the highs and lows of blood glucose can be readily identified by the patient as a nondescript "bad feeling" and that this feeling negates the need for monitoring glucose levels with a glucose meter. Another common misconception is that glucose levels only go up if sweet-tasting foods are consumed; this has sabotaged many efforts by patients with diabetes to diet.

A thorough history is paramount in discovering patients' beliefs about T2DM, their basic knowledge of the disease, how they monitor the disease, and the treatment options they are using. This information will help identify knowledge deficits and personal beliefs that can guide patient education efforts. However, in gathering this information, it is important that the patient not feel as though he or she is being interrogated. In addition, while trying to elicit a detailed patient history or provide information about T2DM, it is helpful to use analogies. For example, explaining tissue damage that results from microvascular and macrovascular disease can be likened to a lawn that gets no water due to a kink in the garden hose or the damage done to a car engine if you put sugar in the gas tank. Very often, cultural sensitivity is best displayed by the nature of the stories one uses to illustrate concepts.

Showing concern for the patient by performing a thorough history and by taking the time to teach may not adequately motivate patients to reach management goals. Many patients are involved in caring for older or younger family members, or both, and working one or more jobs "to make ends meet." Acknowledging these responsibilities when developing a treatment plan would be more likely to motivate patients to adhere to treatment and self-monitoring than would the provider's well-intentioned goal of avoiding disease complications.

Another way of showing concern and establishing trust is to proactively discuss issues that, although important to patients, may be uncomfortable for patients to discuss with a provider. For example, erectile dysfunction and stroke are two common concerns of male patients with T2DM. By initiating conversation about these very personal concerns, a high degree of trust can often be established, thereby helping to build a long-term patient-provider relationship that is essential for successful diabetes management.

Nutrition and exercise are universal challenges when dealing with T2DM, but some African Americans do not believe nutrition or exercise has any impact on the disease.<sup>13</sup> This demonstrates the need for patient education materials that are directed more appropriately to specific audiences; patients must also be made aware of the availability of these materials. It is also necessary to inquire about a patient's financial and access barriers when trying to help plan nutritional and exercise treatment strategies.

# CASE STUDY...continued

Dr Jones had asked Mr Jackson to bring in all of his medications. The doctor asks if he can look at all of the pills, and Mr Jackson hands him a plastic grocery sack full of pill bottles, some of which are in food storage bags. Dr Jones notices that there are several bottles of each of the medications and that some of them are out of date. Mr Jackson volunteers that he is not checking his blood sugar every day because the strips cost too much, and he is also tired of sticking himself.

Because Mr Jackson's A1C level is 9.5%, Dr Jones decides to introduce the idea of insulin therapy, but Mr Jackson quickly interrupts him to say that he had an uncle who "lost his leg" after he started "the needle." Dr Jones explains that his uncle's loss of his leg was the result of the diabetes progression and is an example of what can happen if control of the disease is not maintained. He explains that insulin had nothing to do with the loss of the leg and in fact might have prevented it if the insulin had been started earlier. Dr Jones provides some literature showing revised treatment guidelines from professional associations describing the use of insulin and the advantages of optimal glycemic control in preventing complications. He points out where Mr Jackson's current A1C level is, compared to where it should be.

Dr Jones then asks Mr Jackson to go home and think about how he wants to manage his diabetes; he also advises him to review the materials and discuss these issues with his family. He asks Mr Jackson to think about the goals he

#### FIGURE 2

# Time Action Curves of Selected Commercial Insulin Formulations



NPH, neutral protamine Hagedorn.

Adapted with permission from Brunton S. Insulin regimens for type 2 diabetes mellitus. J Fam Pract. 2006;55(12 suppl):S10-S17.

has for the next 10 years and what family events he is looking forward to experiencing. He suggests that at the next visit, in 2 to 4 weeks, Mr Jackson bring his wife and that they be prepared to discuss a revised diabetes management plan. After explaining various options for insulin administration, he asks Mr Jackson to consider which type of insulin might fit his lifestyle best. Dr Jones again emphasizes that insulin is necessary to prevent future complications such as amputation. Mr Jackson agrees to take his medications as instructed, review the handouts and discuss them with his family, and return with his wife in 4 weeks.

# **Discussion Points**

The barriers to insulin use are certainly not specific to African Americans. Many people do not feel that they can self-administer insulin. Taking an incorrect dose, using the incorrect type, or administering it at the incorrect time interval are all worrisome thoughts for many people. The ability to inject in a discreet and clean fashion is also a priority. Although the insulin pens and new insulin formulations that are now available help solve many of these problems, compliance is still an issue. Multiple doses are required with many types of insulin, and there is the concern about pain associated with injection. However, modern needles are coated and smaller (30-32G) and thus less painful than a glucose stick. Furthermore, insulin pens are more discreet and easier to use compared with vials and syringes. Physicians and other health care providers should be prepared to explain these options clearly to patients.

The progressive nature of the disease should be discussed with the patient early in his or her treatment. The physician should also prepare the patient for the eventuality of insulin therapy. These steps should be established as a routine part of diabetes management because oral agents can only lower A1C levels by  $\sim 0.5\%$  to 1.5%. This factor is highlighted by this patient's current A1C level of 9.5%. It is also helpful to tell the patient that as the disease progresses, different types of oral medications may be added and that doses of these medications may change to keep pace with the progression of the disease. (Indeed, one could argue that a patient under active treatment should not be allowed to "drift" to an A1C level as high as 9.5% prior to initiating insulin therapy.) In fact, this is an opportune time to alert the patient that when the treatment plan can no longer maintain the treatment goals (ie, A1C <7%), a change in therapy will be required, and that this change will likely entail insulin use.

Insulin should not be presented as the "the last step" or "the last resort," but rather as a natural next step. Physicians should educate patients about the gradual decline in pancreatic function and the resulting decrease in the amount of insulin produced. This may help the patient understand that insulin injections replace what the body can no longer produce; they are not the result of anything the patient may have done wrong.

Taking the time to learn more about the individual needs of patients with diabetes and teaching them about the disease sets a course for a rewarding patient-provider experience. Analogies and stories can help patients to better understand important medical information that may help them become actively involved in self-management strategies. The current role of patient education is to enable the patient to make informed and self-directed decisions.<sup>14-17</sup> Encouraging dialogue about major concerns—from the patient's perspective and in a culturally appropriate fashion—will open a path of opportunity that can help patients have better selfmanagement, less fear, and better outcomes.



# CASE STUDY...continued

Mr Jackson returns to the office 4 weeks later, accompanied by his wife. Dr Jones enters the exam room and greets the patient as "Deacon Jackson." He has learned from a staff member that the patient is an active participant and respected leader in a local church. Dr Jones asks about Mr Jackson's goals and asks specifically about his role as a deacon in the church. Mr Jackson appreciates the recognition of his stature in the church community. Getting to the matter at hand, however, Mrs Jackson voices her concern about the potential for insulin to cause her husband to gain weight. She also worries that his "blood sugar" may drop too low, which is what happened to her sister's husband. She reports that her brother-in-law was taken to the emergency room and had to be admitted to the hospital to get his "sugar right." Dr Jones tells Mrs Jackson that she can play a very important role in preventing this from happening to her husband by helping him follow his prescribed diet plan, monitor his blood glucose levels regularly, and take his insulin injections. He goes on to explain that all of these steps can minimize the occurrence of weight gain and hypoglycemia (which he tells her is the name for low "blood sugar") while her husband is adjusting to insulin therapy.

Mr and Mrs Jackson agree that this type of partnership is the best approach for them to take to ensure that Mr Jackson's diabetes is better controlled. They also admit that they are now more comfortable about starting "the needle." Dr Jones suggests that they use the term "replacement insulin therapy" rather than "the needle." He starts Mr Jackson on a basal detemir formulation using the FlexPen<sup>™</sup> device and continues the oral antidiabetic drugs (OADs). This choice is based on Mr Jackson's irregular meals and the low incidence of hypoglycemia with insulin detemir as well as its favorable profile on weight gain. Dr Jones chooses a starting dose of 10 units daily and instructs Mr Jackson to return in 1 week with his glucose diary. Dr Jones also explains that the dose may need to be adjusted based on his blood glucose readings.

# **Diabetes Management and Insulin Therapy**

Lifestyle interventions, OADs (eg, sulfonylureas, alpha-glucosidase inhibitors, biguanides, meglitinides, and TZDs), and insulin therapy are the standard approaches to maintaining good control of T2DM and preventing complications. Detailed reviews of insulin therapy are available in the literature (see, for example, the December 2006 JOURNAL OF FAMILY PRACTICE supplement, *Practical Insulin Strategies for Family Physicians*), but key points to remember when choosing insulin therapy include the following:

- To better determine which regimen is simplest to start and least likely to cause hypoglycemia, review the various types of insulin available with respect to their time action curves (**FIGURE 2**).<sup>18</sup>
- Match the type of insulin with the patient's lifestyle in terms of ease of use, timing, and possible impact on compliance.
- Consider the use of pen devices, which provide a convenient, accurate, and patient-friendly method of insulin delivery.

The following points may also be helpful when initiating insulin therapy:

- Basal insulin therapy may be better for patients with hectic or more erratic daily schedules, assuming postprandial glucose levels are not elevated.
- Premixed insulin may be better for patients with established, stable daily schedules who require both basal and prandial insulin.
- Smaller doses of insulin should be prescribed initially and titrated carefully to avoid hypoglycemia.
- Patients should be reminded to monitor their blood glucose levels 2 hours after an injection to help determine dosing adjustments.
- Patients should be informed that when using insulin, snacks are not usually necessary to prevent hypoglycemia.
- Patients should be informed that insulin and other medications will be titrated or adjusted regularly toward the stated targets for fasting and/or postprandial glycemia.

# CASE STUDY...continued

Mr Jackson returns for his follow-up appointment 1 week later and hands Dr Jones the blood glucose readings his wife has recorded. He is happy to report that his "sugar" has not dropped low enough to make him feel bad and that he has not gained weight. However, he has avoided the yard work he enjoys doing because he has been afraid his glucose levels would become too low.

Mr Jackson's FPG has been averaging about 140 mg/dL. Dr Jones tells Mr Jackson that he is pleased, but he also reminds him that he has to continue taking all of his medications or his glucose levels may become unpredictable. He also tells Mr Jackson that resuming his yard work can be helpful to his overall health, if done in moderation and with careful monitoring of his glucose levels. Dr Jones also advises his patient that any time there is a change in diet or exercise habits, a change in glucose levels should be expected and planned for.

Mr Jackson returns 6 weeks later and has no further complaints. His FPG levels have been in the 90-120 mg/dL range. At a follow-up visit 3 months later, Mr Jackson has an A1C level of 6.8%, and both patient and provider celebrate this terrific achievement and are satisfied with this progress under the new therapeutic regimen. Dr Jones asks Mr Jackson to return again in 3 months so they can again check his status and consider any additional treatment measures if his A1C level is any higher.

# Summary

Cultural competency can be a polarized topic for many people because at its core lie real and perceived discrimination, which are still woven into the fabric of ethnic disparities. Health care is one of the few remaining arenas where these disparities can exist because some diseases have different expressions in different ethnic populations and others are present only in certain ethnic populations. The development of T2DM, however, has recently been shown to be more highly influenced by lifestyle and socioeconomic factors than by ethnicity. Yet there are real cultural differences in approaches to the concept and treatment of disease using common modalities of therapy such as insulin administration. More research is needed to understand the differences and similarities in both the disease and the approaches to care among ethnic populations. This research should offer tools to enable health care providers and patients to unite in the struggle to change T2DM outcomes for future generations.

#### Resources

HRSA Care ACTION: Mitigating Health Disparities Through Cultural Competence (August 2002) http://hab.hrsa.gov/publications/august2002.htm National Center for Cultural Competence www11.georgetown.edu/research/gucchd/nccc/

The Office of Minority Health www.omhrc.gov

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# FAMILY PRACTICE

# Building Cultural Competency for Improved Diabetes Care: Latino Americans and Diabetes

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he incidence of type 2 diabetes (T2DM) has reached epidemic proportions in the Latino American community,<sup>1,2</sup> contributing to substantial morbidity, mortality, and health care costs. In fact, 2.5 million Latino Americans are affected by T2DM.<sup>3</sup> Compared with the general population, Latino Americans suffer a higher burden of disease: 14% of Latino Americans have T2DM compared with 12% of African Americans and 7% of non-Hispanic whites.<sup>4</sup> Further, using glycosylated hemoglobin (A1C) as a marker indicates that Latino Americans have poorer disease control; higher rates of complications, including diabetic retinopathy, nephropathy, and amputations; and increased mortality.<sup>4,5</sup> According to a recent survey, Mexican Americans are less likely to achieve glycemic control than are non-Hispanic whites.<sup>6</sup> Peripheral vascular disease is 80% more common among Mexican Americans than among whites with diabetes,<sup>7</sup> and mortality rates due to diabetes are twice as high among Mexican Americans and Puerto Ricans as among non-Hispanic whites.8

Despite greater understanding of the etiology of T2DM and the development of novel treatment strategies, T2DM is on the rise among Latino American populations. While the prevalence of T2DM is projected to increase in the general population by 44% by 2020, it is projected to increase by 107% in the Latino American population.<sup>3</sup> Latino American children born today have a 50% chance of developing T2DM in their lifetime.<sup>9</sup> These startling statistics underscore the need for the health care community to focus on the prevention and treatment of T2DM among Latino Americans, and, indeed, research has shown that effective communication directly affects physician-patient interaction and subsequent outcomes.<sup>10</sup>

# **CASE STUDY**

Mrs Garcia is a 36-year-old Mexican American woman who presents to Dr Green with complaints of fatigue and frequent urination. Aided by a trained interpreter, Dr Green learns that Mrs Garcia and her family came from Mexico 4 years ago, joining several extended family members who were already established in America. She has a family history of diabetes. When Dr Green asks Mrs Garcia about her pregnancies, she states that each of her 3 children weighed more than 9 pounds at birth.

On examination, Mrs Garcia is a well-appearing, obese female. She is 5 feet 4 inches tall and weighs 200 pounds. Her body mass index (BMI) is 34.3 kg/m<sup>2</sup> and her waist circumference is 36 inches. Mrs Garcia's blood pressure is 146/88 mm Hg. She hands Dr Green a copy of her blood test results from 1 month earlier, which indicate that her lowdensity lipoprotein (LDL) cholesterol was then 178 mg/dL. Her retinas appear normal and her monofilament examination is normal. The rest of her physical examination is unremarkable. Mrs Garcia takes a finger stick blood glucose test, which indicates that her blood glucose level is 198 mg/dL.

Dr Green believes that Mrs Garcia has T2DM with hypertension and hypercholesterolemia. He advises Mrs Garcia of his speculations and suggests that she return 1 week later for a confirmatory fasting plasma glucose (FPG) test, a lipid panel, and a repeat blood pressure check. At that time, Dr Green can also discuss with Mrs Garcia the results of her blood tests.

# **Discussion Points**

Latino (or Hispanic) Americans are a heterogeneous group. The term Latino American refers to individuals of Mexican, Puerto Rican, Cuban, Central and South American, and Spanish descent, among others. Although they have the Spanish language in common, their history, dialects, cultural beliefs, traditions, and values vary widely. Although discussion of some uniting cultural principles may be helpful in equipping physicians to better care for Latino American patients, it is important to recognize this cultural diversity and avoid viewing Latino Americans as a single group.

Physicians must also understand that Latino Americans vary in their degree of acculturation and in the values and beliefs to which they subscribe. New immigrants and those residing in communities with strong ties to the home culture are more likely to hold to traditional values. Second- and third-generation immigrants and those with more time spent in the American education system may be more inclined to assume the values of the dominant American culture. Physicians can assess their patients' degree of acculturation by inquiring about their background, asking whether they were born in the United States or are recent immigrants, their language preference, the type of community in which they reside, and the level of education they have received in the United States.

# **Understanding the Cultural Framework**

Since effective communication is the foundation of the patient-physician relationship, physicians should understand that the communication styles of their Latino American patients may differ from their own.<sup>11</sup> For example, in Latino culture, communication between the patient and physician tends to be more formal. Greetings may be more ceremonious, with the use of proper names rather than first names, as is more common during American medical encounters. In addition, polite small talk may be expected before discussing intimate medical issues. Nonverbal communication is also important.<sup>11</sup> For example, a patient's indirect eye contact is a show of respect for the physician. The physician can show respect by sitting or standing in close proximity to the patient.

Latino American attitudes toward medicine and treatment may also differ from the Western medical model. Latino culture places a high value on herbal remedies and other natural treatments. A small study of 22 individuals with T2DM living in El Paso County, Texas, on the Texas/Mexico border revealed that Latino American patients frequently mix herbal and Western treatments but often do not disclose this information to their physicians because they fear being "scolded."12 The patients withhold this information because they believe their physicians do not share their beliefs about herbal remedies. Physicians who are able to establish an open and nonjudgmental dialogue with their patients about medical beliefs will help to foster trust and mutual understanding.

It is also important for physicians to understand the cultural framework of health and wellness that informs the Latino concept of disease. Since T2DM is so common among Latinos, many groups actually have a good understanding of the disease. A survey of Latino patients with T2DM in such diverse locations as Connecticut, Texas, Guatemala, and Mexico indicated that Latino beliefs about T2DM are generally concordant with the biomedical model.<sup>8</sup> In addition, in communities with higher disease prevalence, there was greater consistency among the populations in their beliefs about T2DM, and those beliefs tended to be biomedically accurate.<sup>8</sup>

However, Mexican American participants tended to believe the traditional cultural view that T2DM was caused by fright or "susto," anger, and strong emotions.<sup>8</sup> In the Latino culture, the emotional life is intertwined with the physical; therefore, emotions can affect health. Susto is thought to be an episode



of severe fright or a terrifying emotional experience that can predispose the body to developing diabetes rather than being the cause of diabetes per se.<sup>12</sup>

When faced with differing cultural views on the etiology of disease, physicians can seek to build trust by listening to their patients and asking questions in a nonjudgmental manner. An example of this approach is the question "Can you tell me a little more about that?" Rather than discounting their patients' beliefs, physicians can build on their patients' understanding of T2DM by educating them about the biomedical model of the disease and finding common ground between the two, for example, by discussing the link between stress and disease.

# CASE STUDY...continued

Mrs Garcia returns for a follow-up visit 1 week later. Dr Green discusses the results of her tests with her, confirming that she has type 2 diabetes, hypercholesterolemia, and hypertension. Mrs Garcia's FPG was 212, her A1C level was 9.4%, and her blood pressure was 148/92 mm Hg (>140/90 mm Hg on 3 readings). The lipid panel confirmed her earlier high LDL, with a current level of 182 mg/dL. Dr Green asks Mrs Garcia about her experiences with diabetes. She says that she is not surprised by her diagnosis since, she explains, "Everyone in my family has diabetes." Nonetheless, she is concerned. She has seen her mother suffer considerably from diabetes, requiring a lower extremity amputation last year. Dr Green spends some time explaining to Mrs Garcia what diabetes is and its typical course. He tells her that, although it is a progressive disease that often requires higher doses of medications and insulin as replacement therapy, it can be managed and complications can be minimized.

Dr Green discusses the medications Mrs Garcia can take to manage her diabetes, including those to treat her high LDL and blood pressure, and he asks her how she feels about this. Mrs Garcia explains that she tries to avoid medications because she has had bad reactions in the past. With more discussion, Dr Green determines that she likely had an allergic reaction to an antibiotic she took for a sinus infection. Mrs Garcia agrees to try metformin, and Dr Green explains the potential side effects, such as gastrointestinal intolerance. He also explains that metformin will not cure her diabetes but that it is part of a plan to manage it. Dr Green refers Mrs Garcia to diabetes nutrition classes conducted in Spanish at a local church, and together they formulate a plan to help her start incorporating physical activity into her daily routine. He also prescribes a statin, an angiotensin-converting enzyme (ACE) inhibitor, and an aspirin. Dr Green asks Mrs Garcia to make an appointment to return in 1 month.

# **Discussion Points**

Because of the association between overweight/ obesity and T2DM, it is important that physicians understand Latino views of body image and nutrition. The prevalence of overweight and obesity among Latino Americans has been estimated to be 73%,<sup>13</sup> and cultural values may underlie this tendency. In the Latino culture, a degree of excess weight may be tolerated or even celebrated, effectively lessening social pressure to lose weight. Especially among children, being slightly overweight or plump is equated with being well cared for and healthy, whereas being thin may be associated with being undernourished or even neglected. "Gorda," translated as "Fat One," is a common Spanish term of endearment that a husband might use affectionately with his wife. Another term of endearment is "Gordito" or "Little Fat One" for a young son.

The traditional Latino cuisine is rich in legumes, rice, and fresh fruits. It is nutrient-rich, high in fiber, and low in fat. However, as Latinos become acculturated into American society, the content of their diet becomes lower in nutrients and higher in fat.<sup>13,14</sup> They may exchange traditional corn tortillas for refined flour tortillas, which are easier to use. Those living in economically disadvantaged areas may have difficulty finding affordable fresh fruits and vegetables. Convenience foods, which are typically higher in fat, may be preferred because they are easy to prepare and are generally affordable. These dietary changes, along with the increasingly sedentary lifestyle that characterizes American life, undoubtedly contribute to the epidemic of overweight and obesity and their associated health problems, such as T2DM.

As is true in many cultures, mealtime is an especially social activity in the Latino culture. Meals are often shared and are less individualized than in Western culture. For many immigrants, traditional cuisine also serves as an important link with their homelands. The process of immigration and acculturation involves a significant sacrifice of culture, and with this in mind, physicians should realize that expecting patients to replace their diet with unfamiliar, "healthier" foods is asking them to make a further sacrifice, giving up one of the few remaining ties to their homeland. This type of intervention is not likely to be effective. Dietary changes that are easy to incorporate into the traditional diet, such as pouring off excess grease after cooking meat or substituting healthier oils for lard, are more culturally acceptable options and, therefore, are more likely to be successful.

# **Barrier to Health Care: Access**

Sociocultural barriers are complex and involve an interplay of patient-related barriers, physician-related barriers, and systemic barriers. Clearly, the need to access good health care is a primary issue. In the current national climate of underinsurance, Latino Americans are especially vulnerable. Latino Americans are less likely than members of the general population to have health insurance, and among people with T2DM, Mexican Americans are 23% more likely to lack insurance than are white Americans.<sup>5</sup> Immigrants in particular are at high risk of being uninsured. Many new immigrants work as unskilled laborers, in the types of jobs that often do not provide health insurance.

Lower socioeconomic status also creates a multitude of barriers to a patient's ability to maximize his or her health status. These barriers include:

- Lack of reliable transportation
- Unpaid time off from work for doctor visits
- Need for child care during doctor visits
- Costs of medications and nutritious foods
- Difficulty finding affordable and safe places to exercise

Although improving access to health care and increasing the availability of health insurance for Latino Americans are important and necessary steps, other problems remain. Even among insured Latino Americans, for whom access to care is theoretically more equitable, the situation is troubling. A recent study showed lower rates of glucose self-monitoring and worse glycemic control for Latino Americans in managed care organizations (MCOs) than for nonminority populations.<sup>5</sup> The administrative complexity of MCOs, together with cultural differences and language barriers between patients and physicians, may put Latino Americans at an increased risk of underuse of services, poor quality of care, and worse outcomes than white Americans.<sup>5</sup>

Cultural barriers and attitudes undoubtedly affect the care that Latino Americans with T2DM receive. With an attitude of fatalism, many of these patients-who often have family members with diabetes-may believe that they are destined to have the disease and that there is nothing that can be done about it.13 Along similar lines, Latino Americans are typically more focused on the "here and now" and thus may "leave the future in God's hands."11 The many preventive features that comprise good diabetes care (eg, monitoring and controlling glucose levels, taking medications to lower cardiovascular risks, and scheduling regular eye and foot examinations) simply may not be seen as a high priority. The strategy of discussing future diabetes complications, such as blindness and amputations, to scare patients into adherence may not be effective in this population. Instead, it may be more advantageous to focus on the present-on why patients will feel better if they lose weight or exercise, for example. It may also be helpful to focus on the positive effects that successfully managing their diabetes may have on their families. For example, improving one's own diet as well as that of family members may lessen the likelihood that one's children will be overweight or more prone to T2DM.

# CASE STUDY...continued

Mrs Garcia returns for her follow-up visit 1 month later. She says she is feeling better overall, although she is frustrated that she has not lost weight. Her FPG is 176 mg/dL, her A1C level is 9.1%, and her blood pressure is 130/82 mm Hg. Dr Green asks Mrs Garcia about any dietary and physical activity changes she has made. Mrs Garcia replies that she



has been reluctant to make any changes and is too busy for physical activity. She cooks for the whole family and feels guilty about changing their diets and essentially forcing them to eat a "diabetic diet." Dr Green discusses the fact that the proposed lifestyle changes are healthy for everyone, not just for people with diabetes. He adds that the way that she can best take care of her family is to pay attention to her own health so that she will be better able to care for them and be an advocate for their health.

# **Cultural Views on Medication**

The way that various cultures view medication can also be a barrier to maximizing health status. Some patients may view medications with suspicion and prefer natural treatments; others may overvalue what Western treatments can accomplish. A survey designed to evaluate disease self-management techniques among Mexican Americans with T2DM found that medications are considered a "safety valve."15 Many patients do not take their medications regularly, but instead save them for days when they are unable to eat healthfully, thinking that the medication can counteract a particular dietary indiscretion. Recognizing that living with diabetes involves numerous daily self-management decisions, physicians should seek to understand the daily barriers patients face and together with the patient develop strategies to effectively deal with those barriers.

Another barrier to good diabetes care is cultural beliefs about insulin. The initiation of insulin may be a difficult passage for patients in any clinical setting; therefore, it is important for physicians to speak openly with their patients about their beliefs regarding insulin, so that fears and misconceptions can be addressed. Common misconceptions include the belief that the need for insulin indicates a patient's personal failure to manage his or her disease, and that if insulin is needed, the patient must indeed be very sick. However, research continues to suggest that early insulin use and aggressive management of hyperglycemia may preserve beta-cell function.<sup>16</sup> By initiating a discussion with patients early on about the progressive nature of diabetes and by explaining that escalating doses of oral medications and the use of insulin as replacement therapy should be expected, physicians can begin to allay some of their patients' fears long before the need for insulin becomes apparent.

Some patients have even greater fears about insulin. The survey of Latino Americans with T2DM in El Paso County, Texas,12 discussed earlier, found that some participants believed insulin caused blindness, and several patients related stories about relatives who became blind shortly after beginning insulin therapy. Others were concerned that continued insulin use would lead to dependence.<sup>12</sup> Health care providers can do much to build trusting relationships with their patients by taking the time to inquire about their views and fears and by providing culturally appropriate education about the use, effects, and goals of insulin therapy. Myths about adverse effects resulting from insulin therapy must be dispelled through culturally appropriate education.

# **Communication Affects Outcomes**

Communication is the most basic aspect of the patient-physician relationship, and research has shown that the communication between patient and clinician directly affects patient satisfaction, treatment plan adherence, and outcomes.<sup>10</sup> Data show that Latino Americans with limited English proficiency are less satisfied with the care they receive in primary care settings<sup>17</sup> and are more likely to avoid taking medications and to miss office visits than are English-speaking Latino Americans.<sup>10</sup> Similarly, Spanish-speaking patients discharged from emergency rooms are less likely to understand their diagnosis, how to take prescribed medications, and the plans for follow-up, and they report lower satisfaction with the patient-physician relationship.<sup>10</sup> Although having Spanish-speaking physicians is ideal, it is not always possible. In this case, the use of high-quality translation is critical. Studies show that the use of trained interpreters leads to higher-quality communication than does translation by family members or untrained staff.<sup>10</sup>

During medical visits, a trained interpreter can assist the physician in explaining the diagnosis, any necessary preparation for laboratory tests, administration of medications, follow-up appointments, etc. Interpreters can also convey to the physician any questions or comments the patient may have. At the end of the visit, interpreters can also ask patients to describe the information they have received in their own words to help ensure that communication has been effective.

However, even when interpreters are used, Spanish-speaking Latino Americans report being less satisfied with their care and less likely to rate their physician as respectful and concerned about them than do English-speaking Latino Americans.<sup>17</sup> This suggests that something beyond language comprehension affects the patient-physician relationship. A recent study showed an independent association between patients' reports about the interpersonal process of care and physicians' self-reported level of cultural competency,17 suggesting that cultural competency affects the clinical encounter. Health literacy-a patient's capacity to receive and understand health interventions-is a vital part of effective communication. Without this, even the best and most well-intentioned care is bound to fail. Therefore, physicians must strive to develop their own cultural competency to optimize their clinical encounters with patients of all cultures.

# Successful Interventions Consider Differences

Culturally competent physicians are aware of their own personal and medical cultures, and they understand how these cultures shape their own beliefs, ideals, and values. They realize that the patient also has a unique set of beliefs, ideals, and values based on his or her own culture, background, and experience. The most effective communication occurs when cultural differences are acknowledged, explored, and accepted. On the other hand, physicians who are unaware of the ways in which culture affects communication are likely to miss opportunities to help their patients. These physicians may become frustrated and may even blame their patients when their treatment recommendations are not followed.

The types of interventions most successful in bringing about desired end points are those that take sociocultural issues into account, are community-oriented, and intervene at multiple levels and with multiple strategies.<sup>18</sup> The least effective strategies are those that use didactic formats alone and focus only on diabetes knowledge.<sup>18</sup>

The Starr County Border Health Initiative<sup>19</sup> is a well-designed diabetes intervention that exemplifies key aspects of a successful program. The initiative, focused on a Texas-Mexico border community, involved culturally appropriate interventions on multiple levels. Using cultural references to educate participants about diabetes, the program designers enlisted the help of trusted community leaders. Dietary change was encouraged by demonstrating healthy adaptations of favorite Mexican American recipes and by visiting local grocery stores to help individuals apply that dietary information. Interventions were held in easily accessible community locations, such as schools, churches, and community health clinics. The program promoted group problem-solving as a way to address individual concerns. In biweekly support group sessions, participants could ask questions in a non-threatening environment, discuss their concerns and problems, and obtain community support. This 12-month initiative demonstrated that culturally competent diabetes self-management education is effectiveeven in one of the poorest counties in the countryin improving A1C (11.66% to 10.64%, P = .011) and FPG levels (211.74 mg/dL to 193.72 mg/dL, P = .019) as well as diabetes knowledge scores (40.78 to 43.15, *P* < .001).

# **Diabetes Management**

The traditional approach to T2DM treatment involves the slow, step-by-step progression of lifestyle changes, followed by the addition and upward titration of oral agents, with insulin saved as the "last resort." However, this approach may miss the window of time during which loss of beta-cell function can



be reversed.<sup>16</sup> The progressive worsening of glycemia that characterizes diabetes is presumed to be caused by declining pancreatic beta-cell function.<sup>16</sup> Research suggests that early, aggressive restoration of normoglycemia not only reduces the risk of long-term complications but may also reverse beta-cell dysfunction and restore endogenous insulin secretion.<sup>16</sup>

The oral agents that are used to lower blood glucose levels have varying mechanisms of action. They can increase insulin secretion (insulin secretagogues), increase insulin action in the tissues (insulin sensitizers), decrease the need for glucose (inhibitors of glucose absorption), or enhance incretin function (dipeptidyl peptidase-4 [DDP-4] inhibitors).<sup>20</sup> Most oral agents can be expected to lower A1C levels by ~0.5% to 1.5% as monotherapy.<sup>21</sup>

Insulin secretagogues include the sulfonylureas (eg, glipizide, glyburide) and the glitinides (eg, repaglinide, nateglinide).

Insulin sensitizers include metformin, which acts primarily by decreasing hepatic gluconeogenesis but can also increase peripheral insulin sensitivity. It is often used as initial therapy because of its association with weight loss and its favorable effect on endothelial function and cardiovascular event rates.<sup>20</sup> Recent American Diabetes Association guidelines recommend that metformin be used as initial therapy in combination with diet and exercise rather than starting treatment with a trial of diet and exercise alone.<sup>22</sup>

The thiazolidinediones (TZDs) (eg, rosiglitazone and pioglitazone) are also insulin sensitizers with primarily peripheral effects. Some data suggest that when used as monotherapy, these agents may preserve beta-cell function and control glycemia longer than do sulfonylureas and metformin.<sup>23</sup> However, recent studies suggest that rosiglitazone may increase cardiovascular risk.<sup>24</sup> The FDA was recently provided with a meta-analysis of clinical trials in which rosiglitazone was compared with either placebo or other diabetes therapies in patients with T2DM. The results suggested that patients receiving rosiglitazone may have a 30% to 40% greater risk of heart attack and other cardiovascular events than patients treated with placebo or other antidiabetic therapies. These results must be confirmed; however, patients currently taking or considering taking rosiglitazone are advised to discuss this new information with their physicians.<sup>25</sup> Both rosiglitazone and pioglitazone can increase the risk of extremity fractures.<sup>26</sup> Furthermore, the FDA has recommended that TZD labeling include black box warnings regarding increased risk of congestive heart failure. Therefore, TZDs should be used with caution.

DPP-4 inhibitors represent a new class of medications. These compounds block the enzyme, DPP-4, that inactivates glucagon-like peptide 1 (GLP-1), the most important naturally occurring incretin hormone, which is known to stimulate insulin production in beta cells. GLP-1 also decreases glucagon secretion.<sup>27</sup> Patients with T2DM have a deficiency in the production of GLP-1. All of the DPP-4 inhibitors are approved for use as monotherapy and in combination with certain other agents for the treatment of diabetes (see package inserts).

Another recent medication for T2DM is exenatide, an exendin-4 analog originally isolated from lizard (Gila monster) saliva that is related to GLP-1. This medication is not available as an oral formulation but as an injection. In addition to stimulating insulin secretion from pancreatic beta cells, it may lead to weight loss by suppressing appetite and inducing satiety in the central nervous system.<sup>27</sup>

# CASE STUDY...continued

Mrs Garcia's glucose levels have been generally well controlled for the first year of treatment on metformin monotherapy and her better diet and physical activity program. However, despite escalating doses, starting at 500 mg and now at 2000 mg per day, her A1C level has drifted upward. With the last A1C level of 7.5%, Dr Green recommends adding another drug. Mrs Garcia wonders what she has done wrong. Dr Green tells her that she has done nothing wrong and reminds her that this is the natural course of the disease, that it typically worsens over time, and that she should not feel as though she has failed in her diabetes self-management. Dr Green decides to add glipizide, 5 mg once a day, to her treatment plan and warns Mrs Garcia about the possibility of hypoglycemia. He also instructs her on how to manage hypoglycemic events.

Mrs Garcia returns the following week, complaining of several spells during which she felt dizzy, lightheaded, and sweaty. She had checked her glucose level during those spells and found that it was 54 mg/dL. She felt better after drinking juice, but these episodes were unpleasant enough that she no longer wanted to take the glipizide. Dr Green decides to discontinue the glipizide and to prescribe pioglitazone (30 mg once daily). Mrs Garcia tolerates this change in her treatment very well, and her A1C level at her next visit is 6.6%. Her blood pressure continues to be under good control with the ACE inhibitor, and since her LDL levels have improved but not yet reached the goal of less than 100 mg/dL, Dr Green increases her statin dose. Mrs Garcia also has been getting regular eye and foot examinations.

Over the next year, despite an upward titration of her medication doses, Mrs Garcia's A1C level slowly drifts up. When it reaches 8.6% over several visits, Dr Green suggests that it is time to start insulin therapy because the glycemic goals can no longer be reached with standard therapy.

# **Insulin Formulations**

A variety of insulin formulations are available, including rapid-acting (aspart, glulisine, lispro), short-acting (regular insulin), intermediate-acting (neutral protamine Hagedorn [NPH), and longacting (detemir, glargine) formulations, as well as premixed analogs and premixed combinations. Deciding which insulin regimen to use depends on the patient's clinical status and lifestyle characteristics. A basal-bolus combination (such as once-daily detemir or glargine with a rapid-acting analog taken at each meal) most closely resembles normal physiology and provides the best glycemic control. Many patients are reluctant to begin with this type of intensive therapy but can make the transition after becoming accustomed to less rigorous regimens. The new, inhaled insulin may be an option. It is a pre-meal insulin that would mainly target postprandial hyperglycemia. It is a new medication, and although clearly effective, data about longterm safety are needed. It is also contraindicated in smokers and patients with pulmonary disease.

# CASE STUDY...continued

Mrs Garcia is reluctant to start insulin therapy, so Dr Green spends a few minutes discussing what she knows about insulin. She mentions that she is afraid of needles and that she associates insulin use with being very sick. She remembers that right after her mother started taking insulin, she required a lower extremity amputation. Dr Green explains that Mrs Garcia needs insulin to get her diabetes under better control so that such complications can be prevented. He also explains that insulin injections are generally much less painful than the finger sticks she is already accustomed to doing. Furthermore, an insulin pen is much more discreet and simplifies insulin delivery compared with a vial and syringe. Dr Green discusses the various insulin regimens and delivery devices that are available. Mrs Garcia is particularly opposed to injecting insulin more than a couple of times a day, despite Dr Green's explaining that the ideal regimen for full insulin coverage is basal insulin once or twice a day with a rapid analog before each meal (basal-bolus concept).

Based on Mrs Garcia's regular meal schedule, her willingness to follow a regimen that involves few injections, and the desire to control her postprandial glucose (particularly after dinner time), Mrs Garcia and Dr Green decide to begin with a premixed insulin analog. She will start with 10 units with dinner, which is her largest meal. She is also instructed to continue taking metformin and pioglitazone and to monitor her glucose level (before bedtime and before breakfast). Dr Green's staff instructs Mrs Garcia on proper injection technique and observes as Mrs Garcia gives herself an injection in the office. This helps Mrs Garcia realize the process is much less difficult than anticipated and boosts her confidence in her ability to use proper technique.

Dr Green and his staff also recommend to Mrs Garcia that she find ways to incorporate more exercise into her daily routine. Their suggestions include walking daily for at least 20 to 30 minutes. Mrs Garcia agrees that this is a realistic expectation and says that she can start walking her children to and from school each day, since it is actually quite close to their home and there are sidewalks, which make it easier to do. Other suggestions they offer for increasing activity levels naturally throughout the day include taking the stairs instead of the elevator, parking in the farthest parking spot at the mall and grocery store, and choosing more active leisure pursuits on the weekends with her family (eg, playing softball or other sports rather than watching television or playing computer games).



Dr Green and his staff also provide nutritional recommendations, including tips such as planning the week's menu in advance and packing lunches to bring to work to minimize temptations. Dr Green reassures Mrs Garcia that they will continue to work together to find a regimen that fits her lifestyle and that she finds tolerable.

Mrs Garcia returns to the office 3 months later and is feeling very well. Dr Green is pleased to note that her A1C level is now 6.8% and that her glucose diary shows good glucose pattern control. Mrs Garcia's blood pressure and LDL have also normalized. Dr Green explains to Mrs Garcia that her diabetes control is adequate for the time being. However, he explains clearly that the natural history of T2DM is associated with an unavoidable decline in beta-cell function and that it is very likely that she will need a more intensive insulin regimen as time goes by. Nevertheless, he adds, she should be very proud of the changes that she has established with the combination of lifestyle modification and a more comprehensive pharmacologic program.

#### Resources

American Diabetes Association www.diabetes.org/type-2-diabetes.jsp

Joslin Diabetes Center www.joslin.org

National Alliance for Hispanic Health www.hispanichealth.org

National Diabetes Education Program http://ndep.nih.gov

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## Summary

There is a high incidence of T2DM in Latino American populations that is likely due to a combination of genetic susceptibility and lifestyle and cultural factors. Given the poorer disease control and worse outcomes Latino Americans experience compared with non-minority populations, it is imperative that physicians become culturally competent. They must understand the importance of culture and its impact on the patient-physician relationship so that they can recognize and overcome cultural barriers. Studies confirm that interventions that address social and cultural issues are generally more effective. Since Latino Americans are among the fastest-growing minority groups in the United States, the culturally appropriate prevention and treatment of T2DM in this population is a task of high priority.

National Institute of Diabetes and Digestive and Kidney Diseases www2.niddk.nih.gov

National Institutes of Health http://health.nih.gov/result.asp/187

US Centers for Disease Control and Prevention www.cdc.gov/diabetes

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#### Clinical Practice Recommendations for AAFP EB CME Designation

**1) Practice Recommendation:** [Diabetes] Testing should be considered at a younger age [<45 years] or be carried out more frequently in individuals who are overweight (BMI >25 kg/m<sup>2\*</sup>) and have additional risk factors:

• Are members of a high-risk ethnic population (eg, African American, Latino American, Native American, Asian American, Pacific Islander) \*May not be correct for all ethnic groups.

Evidence-Based Source: National Guideline Clearinghouse

Website of Supporting Evidence: http://www.guideline.gov/summary /summary.aspx?ss=15&doc\_id=8617&nbr=004797&string=ethnic Strength of Evidence: Expert consensus or clinical experience

**2) Practice Recommendation:** Good Practice Point (GPP). Be aware that language is a barrier. When English is a second language, colloquial English may be excellent. Encourage a bilingual family member or practice nurse to assist with translation.

Evidence-Based Source: National Guideline Clearinghouse Website of Supporting Evidence: http://www.guideline.gov/summary /summary.aspx?ss=15&doc\_id=4562&nbr=003363&string=ethnic Strength of Evidence: Good Practice Point (GPP). Recommended practice based on the clinical experience of the Guideline Development Team

**3) Practice Recommendation:** Health care interventions that take into consideration cultural and population-specific characteristics can reduce the prevalence and severity of diabetes and its resulting complications. Key strategies include cultural tailoring of the intervention, community educators or lay people leading the intervention, one-on-one interventions with individualized assessment and reassessment, incorporating

treatment algorithms, focusing on behavior-related tasks, providing feedback, and high-intensity interventions (>10 contact times) delivered over a long duration (>6 months).

Evidence-Based Source: Diabetes Care

**Source of Supporting Evidence:** *Diabetes Care*; year: 2006; volume 29; issue 7; page 1687; column 2, paragraph 4, column 3, paragraph 1. **Strength of Evidence:** Systematic review of electronic databases (Medline, Embase, Cinahl, HealthSTAR, Cochrane Library, Sociological Abstracts, Social Science Citation Index, and International Pharmaceutical Abstracts). Databases were searched for relevant studies from articles published in any language between January 1986 and December 2004. The references of review articles included original publications and were also screened for potentially relevant studies. Data extraction of relevant study information for articles meeting the inclusion criteria was performed independently by two reviewers. A total of 16,750 citations were initially identified; all but 17 intervention studies were excluded.

**4) Practice Recommendation:** Optimal treatment for type 2 diabetes incorporates a multiple risk factor approach, including self-management; counseling; medical nutrition therapy; physical activity; weight reduction, if appropriate; and the use of oral glucose-lowering agents or insulin, if necessary. If, despite the use of oral agent combination therapy, glycemic control is not achieved or maintained, insulin must be used, either alone or in combination with an indicated oral drug regimen.

**Evidence-Based Source:** National Guideline Clearinghouse: Massachusetts guidelines for adult diabetes care

Website of Supporting Evidence: http://www.guideline.gov/summary /summary.aspx?doc\_id=8196&nbr=004571&string=Dia

**Strength of Evidence:** Good Practice Point (GPP). Recommended practice based on the clinical experience of the Guideline Development Team





Building Cultural Competency for Improved Diabetes Care