



Figure 2. Electric current reduces severity of palmar sweating. Patients were asked to quantify the severity of sweating on a visual analog scale (VAS) (0, no sweating; 100, extreme sweating) before and after treatment. Error bars represent SEM ($P < .001$ by *t* test).

nificantly diminishes during cutaneous current application and rapidly returns on removal of current. The electrochemical forces that drive sweat production and the mechanism of iontophoresis are not understood. Our data support a rapid temporary interference with ion pumps and/or the innervation of eccrine sweat glands as at least partly explaining the mode of action of iontophoresis in hyperhidrosis.

Our results complement those of another study⁵ in which the repeated use of dry iontophoresis reduced sweating over time, although direct comparisons with tap-water iontophoresis are thus far lacking. These results imply that tap water, in traditional iontophoresis, may play no part other than acting as a conductor for current. This suggests that far less bulky iontophoresis machines requiring less space and resources could also be effective, although further studies are required to verify this proposition.

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Spanish-Speaking Patient Health Educational Preferences

Language barriers have been found to adversely affect health care in multiple ways, including access to care, quality of care, medical errors, and reduced patient satisfaction.¹ Oral communication barriers are only one aspect of a multifaceted problem when there is physician-patient language discordance.² Efforts to improve office efficiency, reduce demands on physician time, and provide patient reminders often rely on written educational materials. Handouts are often translated directly from English to another language despite the possible limited health literacy of the patient. We examined Spanish-speaking adult preferences regarding health instruction materials.

Methods. This study was approved by the University of Illinois at Chicago institutional review board.

Spanish-speaking Hispanic adults (age, >18 years) requiring an interpreter during their office visit to an academic dermatology center were invited to participate in the study during a 4-month period (May through August) in 2009. Patients excluded were individuals with decisional and/or cognitive impairment, physical disabilities that would prevent effective communication, or the ability to speak, read, and/or understand English without the aid of an interpreter.

All new patients visiting our clinic are asked to complete the "Patient Education Self-Assessment" questionnaire (**Figure**), as mandated by the Joint Commission on Accreditation of Healthcare Organizations. This survey instrument has been in use at the University of Illinois Medical Center since 2000 and is designed to elicit patient information regarding language abilities, educational background, disabilities, and preferred learning methods. For the present study, completed questionnaires were reviewed by the research assistant for clarification and completion of items, as needed. The patients then reviewed 4 types of educational materials regarding nevi: (1) handouts of plain text only; (2) handouts combining text and color pictures; (3) oral explanations aided by pictures (no text handouts); and (4) oral

1. Do you Speak English?	Yes	No	
If no, language spoken			
2. Do you understand English?	Yes	No	
3. Are you able to read English?	Yes	No	
4. What was the highest grade in school completed?			
5. Are your reading skills ...	Excellent	Average	Not so good
6. Do you have any problems with the following?			
Vision	Speaking		
Memory	Following and understanding instructions		
Hearing	None of the above		
7. Do you have any religious or cultural practices that may affect your health education needs?			
Yes, please specify	No		
8. Do you need any of the following aids?			
Glasses/contacts	Hearing aid	Sign language interpreter	
Language interpreter	Other	None of the above	
9. How do you prefer to learn?			
Reading materials	Someone showing you with pictures		
Someone explaining to you	Handouts with pictures		
Demonstrate to teacher	Other		

Figure. Patient Education Self-Assessment questionnaire.

explanations without pictures (no handouts of any kind). Patients were also asked if they had a DVD player, and if they did, they were asked if they would like to view an educational DVD at home. Similarly, patients were asked if they had access to a computer, and if they did, they were asked if they would like to view materials on the Web on their computer. Finally, patients were invited to make their own suggestions, and the responses were recorded by the research assistant.

Results. The 54 adults interviewed were primarily of Mexican heritage (50 Mexican, 2 Puerto Rican, 1 Columbian, and 1 from the Dominican Republic), with an average age of 47 years. Of the 54 adults interviewed, 3 had no formal education; 11 had a maximum education level between grades 1 and 5; 22, between grades 6 and 8; 12, between grades 9 and 12; and 6 reported an associate's degree or beyond. All individuals without formal education felt that they had no or poor Spanish language reading skills; approximately 54% of the individuals educated to a grade 1 to 5 level felt that they had poor reading skills (6 of 11); only 1 individual educated to grade 6 to 8 self-reported poor reading skills, while most claimed average Spanish-language reading skills (63%, 14 of 22). Two with high school level education felt that they had weak reading skills, and no patients educated at the college level felt that they had weaknesses in reading skills.

One individual had no intention to examine any handouts in the future. Only 25% felt comfortable reviewing handouts (14 of 54), and all of these were educated to the sixth grade level or higher. Most Hispanic patients (56%, 30 of 54), regardless of their education level, wanted the materials explained to them by their physician (oral explanation) prior to completion of their visit. The ad-

dition of photographs to materials did not have any effect: only 2 individuals expressed a preference for this type of educational material. Technology-driven educational materials such as DVDs and Web-based materials were the least preferred choice: not a single individual chose a Web-based review, and only 4 chose DVDs.

Comment. Individuals in the United States who speak only Spanish are predominantly first-generation immigrants and elderly Hispanic people.^{3,4} Educational levels attained by immigrants are lower than those attained by US-born Hispanics. According to 2003 Pew Hispanic Center³ data, more than 50% of immigrants lacked a high school diploma. Valdez et al⁵ found that 5.2% of Hispanics 65 years or older reported no formal schooling; 61% of Hispanics aged 65 to 74 years reported only some elementary education; and only 68% of Hispanics 75 years or older reported some elementary education. Although educational levels vary widely, lower educational levels among first-generation immigrants and elderly Hispanics means many of these individuals cannot read well in either English or Spanish.⁵

While a minimum of a sixth grade reading level is recommended for patient education materials, this recommendation fails to recognize that educational levels do not accurately reflect health literacy. Some investigators report that reading levels average 4 grade levels below the number of years of education, and self-report of education is not always reliable.⁶ Frequently, Spanish-language health education materials are directly translated from English-language handouts. Our data suggest that even materials produced in Spanish at a sixth grade reading level may prove challenging to comprehend for 30% of those we interviewed. This study suggests that materials used for English-speaking populations, when directly translated without modifications, are written at a higher literacy level than many of the Spanish-speaking adult patients in this survey. Literacy levels must be considered in older or first-generation immigrants and may in part explain the desire to have materials orally explained. For physicians to successfully fulfill their role as health educators, we must have knowledge of health literacy levels and realize that a "one size fits all" mentality is not meaningful in terms of health education, especially as our nation becomes more linguistically and culturally diverse.

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PRACTICE GAPS

Providing Appropriate Patient Education Materials for Non-English-Speaking Patients

Many dermatologists are seeing an increasingly diverse patient population, including non-English-speaking patients from a wide variety of cultures. Communicating with and providing appropriate patient educational materials for these patients can be challenging. Even though a sixth to eighth grade reading level is recommended, most health information (oral and written) is presented at much higher grade levels. In this article, Hernandez et al point out that medical information is often not understandable for many patients, even with translation available. This is especially true for first-generation immigrants and Hispanic elders. As our population becomes more diverse, this challenge is likely to grow.

A key finding by Hernandez et al is that 56% of non-English-speaking patients prefer that doctors

explain materials to them prior to completion of their visit. This places a premium on the relationship between the dermatologist and the interpreter. Untrained interpreters such as family members, friends, and children are all prone to errors. Errors of omission, addition, volunteered opinions, and substitutions can jeopardize the outcome of the patient's visit. High-quality medical interpreter services should be used whenever possible and are critical to improving communication. The interpreters themselves can play an important role in making physicians aware of potential misunderstandings, provide some insights into the culture and norms of the patient's country of origin, and help physicians adapt to the communication styles of patients.¹

Dermatologists can also use good basic communication strategies such as slowing down, using plain language, actively listening, and displaying curiosity. Evidence-based health literacy techniques such as "teach back," which involves asking the patient to explain the diagnosis and treatment plan back to the physician, can help to ensure understanding. Finally, materials are needed that are culturally and linguistically appropriate and developed at a level that the patient can understand. Special training programs in health literacy and cultural competency are increasingly available for physicians. New Joint Commission standards on health literacy and cross cultural communication may lead to improvements in availability of cross-cultural patient educational materials and training opportunities for health professionals.

A principal barrier to effective cross-cultural communication may be access to effective medical interpretation. Only about half of those who need professional medical interpretation can obtain it.² There are a number of reasons for this. These services can be expensive and, in a climate where medical costs are increasing, making the case for expenditures on translation and interpretation services may be difficult. Time is often a barrier as well. It takes longer to see a patient with an interpreter, and detailed explanations may be cut short. In addition, few state health care programs provide coverage for interpreter services. Finally, there are few standards for medical interpreting, and the quality of interpreter services can vary greatly.

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