

ACUPUNCTURE

IMPROVES QUALITY OF LIFE FOR PEOPLE WITH DIABETES

This medical therapy causes no side effects and is being used to relieve pain caused by peripheral neuropathy in patients at the Centro Médico Nacional Siglo XXI.

CLAUDIA VILLALOBOS

C ramps or stabbing pain, extreme sensitivity to touch—even the brushing of bed sheets can become unbearable—and foot ulcers are among the symptoms of peripheral neuropathy, a complication that affects individuals with poorly controlled blood sugar levels. Living with this condition can be a major challenge.

Because there is currently no cure for diabetic neuropathy and pharmaceutical treatments often come with side effects, human acupuncture specialists from the Instituto Politécnico Nacional (IPN) are conducting a research protocol aimed at relieving pain, reducing sensitivity, and improving quality of life for patients.

Eduardo Rodríguez Guerrero, lead researcher and coordinator of the Human Acupuncture Specialty at the IPN's Escuela Nacional de Medicina y Homeopatía (ENMH) emphasized the importance of offering therapeutic alternatives that do not harm health. He explained that electroacupuncture treatment is currently being implemented at the Instituto Mexicano del Seguro Social's Centro Médico Nacional Siglo XXI.

INTERESTING FACT

Neuropathy is a complication of diabetes mellitus that can be prevented with proper control of glucose levels, since high concentrations of sugar are the ones that favor nerve damage.

POSITIVE EFFECTS

Acupuncture has long been used to alleviate pain, and patients receiving this treatment have shown notable improvements, reporting less discomfort in their daily activities.

Dr. Rodríguez Guerrero explained that irregular glucose levels gradually damage the myelin sheath that covers the nerves. “Some patients describe the sensation of wearing a tight sock, others feel as if there’s a bump or marble under the ball of the foot that makes walking uncomfortable. Many are unaware they have diabetes until these symptoms prompt a visit to the doctor,” he noted.

Given the high number of diabetics with neuropathy, the IPN specialists designed a robust research protocol to reach more patients.

About 70 candidates were selected to participate in the study from a pool of 400. The research was supported by Dr. José de Jesús Peralta Romero, an IPN graduate in Molecular Biomedicine who is currently based at Centro Médico Nacional Siglo XXI.

Dr. Rodríguez Guerrero leads a multidisciplinary team that includes Dr. Mónica Luz Gómez Esquivel, a medicine researcher; Juan Manuel Ordoñez Rodríguez, a specialist in Human Acupuncture; Daniel Cuauhtémoc Gómez Jiménez, an MSc; and postgraduate students Sharon Cárdenas, Estefanía Rojas, Sofía Romo, Rafael Torres, Denisse Flores, and Ricardo Fierro. The team administers electroacupuncture to relieve sensory symptoms.



Eduardo Rodríguez Guerrero, coordinator of the Specialty in Human Acupuncture of the ENMH.

ELECTROACUPUNCTURE METHOD

Treatment begins with an assessment of the patient's limb sensitivity, followed by an examination of the tongue—an essential diagnostic step in traditional Chinese medicine based on its color, cracks, and papillae.

Regardless of which limb is more affected, both are treated equally. The team selected six specific acupuncture points: Zusanli (ST36), Yinlingquan (SP9), Sanyinjiao (SP6), Taichong (LR3), Fenglong (ST40), and Zulinqi (GB41). Fine needles are inserted and connected to a device via small clamps to deliver electrical stimulation to nerve pathways.

The electrical intensity is adjusted based on each patient's tolerance. The session lasts 25 minutes, during which patients feel as if the needles are moving—an effect caused by the current stimulating the nerves.

CHALLENGES IN TREATMENT

“Neuropathy is difficult to manage, especially in advanced stages, and it tends to progress despite medication. That’s why early intervention is crucial,” said Dr. Rodríguez Guerrero. He noted that the patients treated with electroacupuncture were in the early stages of the condition and showed promising outcomes.

Dr. Gómez Esquivel added, “Neuropathy damages both sensory and motor nerves. Pain is an early symptom linked to sensory nerve damage, while motor nerve damage affects movement and appears in more advanced stages, making it harder to treat with electroacupuncture.”

Dr. Rodríguez Guerrero pointed out that some scientific studies suggest acupuncture can help repair damaged myelin in other conditions. “We aim to evaluate wheter similar



Dr. Eduardo Rodriguez with his work team



Electroacupuncture treatment is currently applied at the Siglo XXI National Medical Center of the Mexican Instituto Mexicano del Seguro Social (Mexican Social Security Institute).

ATTENTION AT THE POLITÉCNICO

Due to the results obtained so far with this research, carried out in collaboration with the Centro Médico Nacional Siglo XXI, the polytechnic experts will extend the benefits to the general public through the Acupuncture Clinic, located in the Escuela Nacional de Medicina y Homeopatía, which provides care every day of the week.

Interested persons can request information by calling 55 57296000 extension 55557, or go to 239 Guillermo Massieu Helguera Street, La Escalera neighborhood, Gustavo A. Madero.

remyelination is occurring in our patients who have shown marked improvement.”

Regardless of the mechanism, the goal remains to improve sensory symptoms and, in doing so, enhance quality of life and prevent further complications due to nerve damage caused by uncontrolled glucose levels.

RANDOMIZED APPLICATION

The IPN researchers maintained the participants’ pharmacological treatments throughout the study and divided them into two clinical trial groups: one received real electroacupuncture therapy, while the other underwent a simulated procedure. The treatment was administered twice a week for a total of 16 sessions, followed by a one-month break and then a repetition of the same schedule.

Upon completing the treatment cycle, the group that received real acupuncture showed a significant reduction in the progression of their condition. A four-month follow-up confirmed that the benefits of the therapy persisted over time.

The coordinator of the Human Acupuncture Specialty Program at ENMH emphasized the importance of comprehensive care. He recommended proper blood glucose management, regular physical activity, maintaining a healthy weight, and a balanced diet, as all are directly linked to reduced complications in diabetic patients.

He also suggested that patients should undergo periodic electroacupuncture sessions to sustain the therapeutic effects over time.

As part of the research protocol and with the support of specialists from Centro Médico Nacional Siglo XXI, several complementary tests were conducted. These included blood chemistry panels to measure glucose, cholesterol, and triglyceride levels before and after treatment—results showed general health improvement in participants.

Additionally, electromyography tests were performed to assess nerve conduction velocity, which further confirmed positive physiological changes following the electroacupuncture therapy.

