

Mirrors ease Cambodian amputees' phantom pain

27 February 2012, by Michelle Fitzpatrick

Pov Sopheak lost his left leg in a landmine blast in 1990. Yet some nights the pain in his "left foot" is so bad he cannot sleep. Like many amputees, he suffers from phantom pain.

Now, after two decades of agony, the Cambodian is embracing an innovative technique that promises relief simply by using a mirror to trick the brain into "moving" the missing limb, allowing the [pain](#) to subside.

Sitting in a chair and holding a full-length mirror against his leg, Sopheak, 50, smiles self-consciously as some two dozen [physical therapists](#) gather around him.

It is their first mirror therapy training session at the Cambodia Trust, a rehabilitation charity for [amputees](#) in the central province of Kampong Chhnang.

But Sopheak visibly relaxes as he follows the instructions of visiting Canadian trainer Stephen Sumner to wriggle his right toes and keep his eyes on his foot's reflected image, super-imposed on the missing one.

"It's a new sensation. It's strange but in a good way," the former soldier, who now works as a security guard, told AFP. "I see my leg in the mirror and I feel happy, like my mind is at ease."

Sumner explains that the reflection of the intact limb can fool the brain into "seeing" two healthy legs, allowing it to once again send command signals to the phantom leg -- signals that would previously come back distressed because the limb was missing.

"Looking in the mirror, the brain suddenly enables you to move your phantom foot and do everything the real foot is doing," said Sumner, 51, who lost his left leg in a hit-and-run motorbike accident eight years ago.

"The brain just wants to be tricked. It's dying for release."

The theory, which also works to ease phantom arms out of painful or cramped positions, was developed in 1995 by neuroscientist Vilayanur S. Ramachandran from the University of California, San Diego, named as one of the world's most influential people by Time magazine in 2011.

But it only started taking off in the United States, Canada and Europe in the last few years -- its use boosted by soldiers returning from Iraq and Afghanistan with missing limbs, neuroscientist Eric Altschuler, a mirror therapy expert who works with Ramachandran, told AFP.

At the Walter Reed Army Medical Center in Washington, mirror therapy is now routinely offered to amputees.

The neurological trickery also reached a wider audience after it featured in a 2009 episode of "House", a popular US medical drama.

But it is still largely unknown in Cambodia, a small country with tens of thousands of amputees as a result of traffic accidents, disease and, in most cases, landmines left over from decades of civil war.

Sumner, who says his own bouts of [phantom pain](#) felt like "lightning bolts through my foot", is determined to spread the message.

Backed by the Canadian non-profit End The Pain Project, he is training dozens of physicians and amputees across Cambodia and, crucially in this impoverished nation, handing out free mirrors -- full-length ones for legs, half-length ones for arms.

Phantom pain is thought to affect around 80 percent of all amputees and there are no drugs that can cure it, but Sumner stressed that the mirror

method was not a quick fix.

"Mirror therapy won't cure you immediately. You have to keep at it for at least four weeks," he told the Cambodia Trust therapists, recommending two 10-minute sessions a day of flexing one's hand or foot.

It could even help double amputees.

"Even a simple prosthesis on one limb can work in the mirror. Even that's enough. The brain wants to be healed so much," Sumner said.

Sopheak said he hoped to keep up the routine and finally ease his suffering, which he said "feels like my leg is shaking" followed by a sharp pain in his phantom little toe and big toe.

Until now, he has tried to deal with his pain with diversions such as drumming or singing, by massaging his stump or by taking the occasional pain killer, to little effect.

While experts say mirror therapy can be a useful tool for many amputees, Altschuler, an associate professor of physical medicine and rehabilitation at the New Jersey Medical School, said it was important not to give "false hope".

"Nothing works for everybody," he said by telephone from the United States.

"The mirror is very helpful for movement-type problems like spasms or a clenched fist. It does not work for burning pain, for instance."

Still, Altschuler, who has just returned from training physical therapists in Haiti, said he was pleased the technique had reached Cambodia.

"It has the potential to have tremendous utility," he said. "Mirror therapy is inexpensive and easy. Patients can do it by themselves, allowing them to take control of their own health. Any mirror will do."

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