

More Brain, More Gain

“Get a second opinion.” It’s common advice when it comes to health care. Since every health practitioner has a somewhat different toolkit and approach based on their training, personal preferences and experience, getting another perspective often yields positive results.

One option for that second opinion for people in the Ottawa and Hamilton, Ontario, areas can be found at the NeuroGym Rehabilitation clinics. The clinics use a neurological training approach, centered on activity and motor learning, that takes advantage of the body’s capacity to retrain itself, even after an injury.

NeuroGym founder, Avi Nativ, says his clinic and approach are different in that they use unique equipment, developed specifically for the purpose of treating people who have lost function due to a neurological injury or disease.

“A lot of the equipment we have developed because of the need to create a much more active system of rehabilitation that can invoke the neuromuscular system even in situations where it’s very difficult, almost impossible,” explains Nativ. “With the set of tools we have plus the active philosophy, we can improve people’s neuro-motor skills and mobility, especially with a partial spinal cord injury.”

Even those with a complete SCI can achieve more function using his approach, Nativ says.



Some of the equipment Nativ uses relies on electronic technology that has only been available in recent years. His NeuroGym trainer, for example, includes hardware and software that provide users with instant feedback as they attempt various activities.

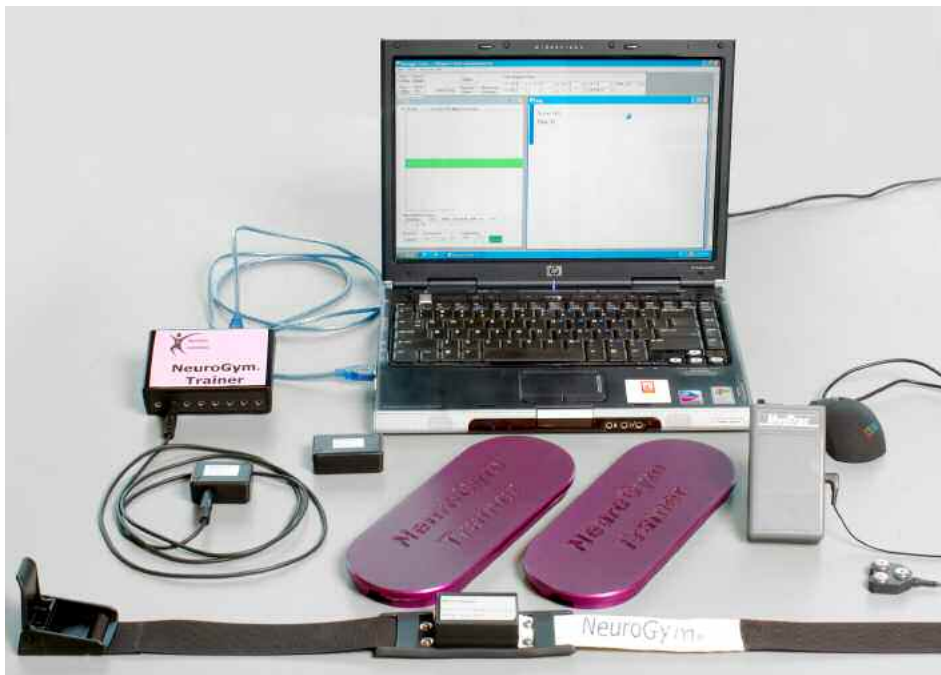
Sensors capable of detecting even minute levels of pressure, joint movement or muscle activity relay information back to the computer, helping the user repeat actions they may not even have been aware they could make on their own. With enough repetition, neural pathways will be strengthened, leading to improved ability to perform the same activity independently.

Other equipment is purely mechanical, but no less effective. Nativ has developed several machines that partially or fully support people’s weight while they perform activities in a standing position. The alternative might be to have one or more therapists supporting the person’s weight, a less feasible or safe proposition.

Recent research, he says, has confirmed that it’s a good idea to get people upright. “It’s clear to us now that if we train people with partial weight bearing, we are going to improve skills,” he says, adding that clinical testing has borne out that this strategy will help those who are able to perform skills in a standing position to increase those skills, while others will derive benefits simply from having their body in an upright, weight-bearing position.

Nativ likens the brain processes triggered by training at his clinic to being in a “neurological gymnasium.” The actual gymnasium includes a circuit-training setup. Depending on the person’s needs, a typical round of therapy might include a session focused on balance, followed by range of motion exercises and then strength training. As with any training, success relates directly to the amount of effort put into learning or improving a skill.

Part of the impetus behind Nativ’s approach is the mounting evidence that the brain is capable of greater recovery after an injury than was previously thought. “We are in a paradigm shift in rehabilitation,” he says. “We are starting to understand that the capabilities of improving motor skills are a lot better than what we had believed traditionally. Training is moving in a lot more active direction.”



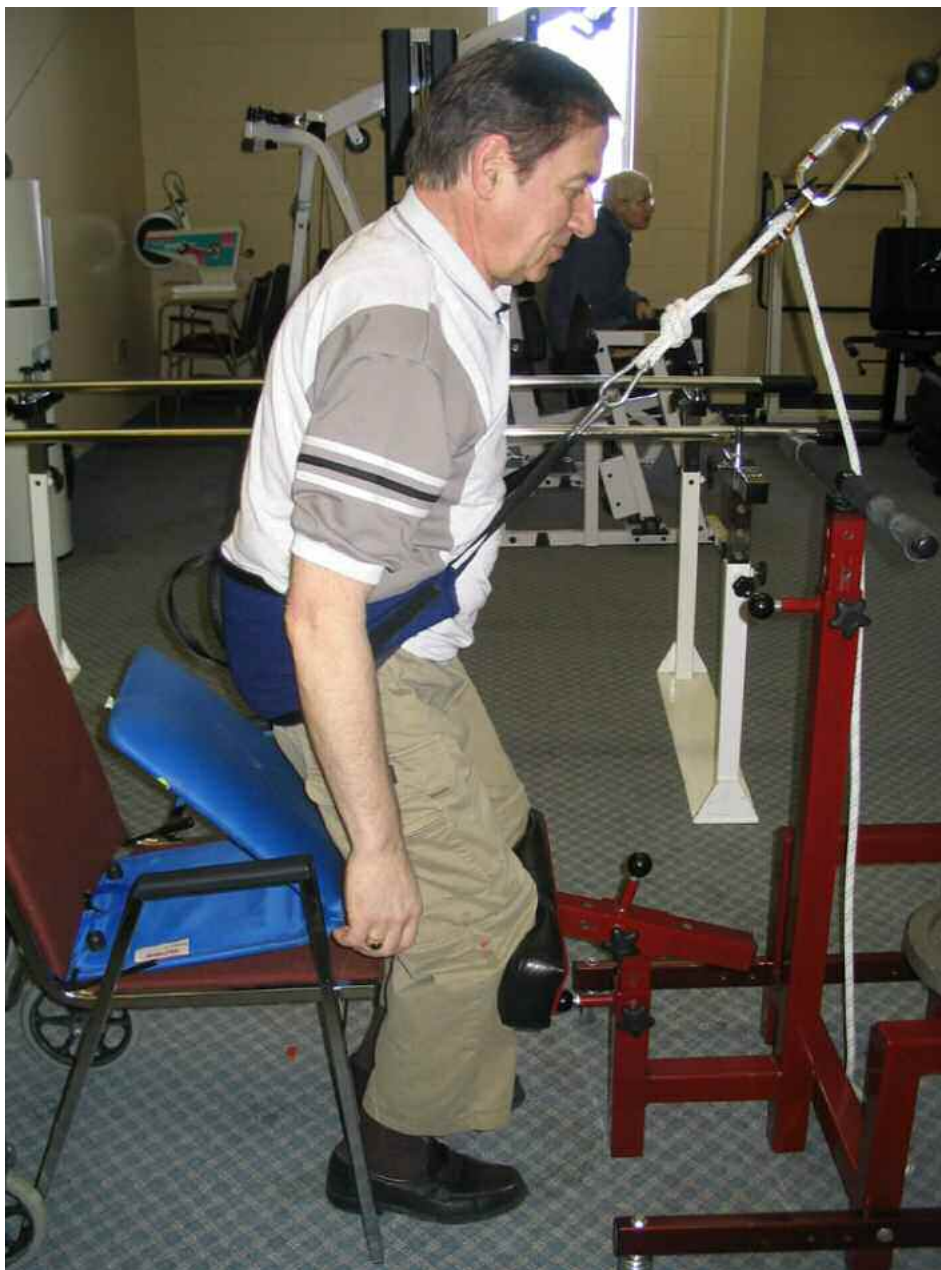
One of NeuroGym's clients, John Dooling, enthusiastically sings Nativ's praises. "The machines he's invented are fantastic," he says. Dooling went through four years of conventional therapy after a 1994 car accident left him with 10 broken vertebrae and a partially severed spinal cord.

While the conventional treatment he received was helpful, he felt it focused too much on coping with limitations rather than expanding possibilities. Since starting to work with Nativ in 1998, Dooling says he continues to progress, thanks in part to the "outside the box" thinking and the technology Nativ has developed. Today, while he often still uses a wheelchair, Dooling is able

to walk with a cane and engage in a number of other activities that he was told would be impossible.

"If I was a computer, it's like somebody wiped out the hard drive," he says about his injury. "Now I'm busy reloading all the programs. Neuro-rehab is a long, winding road, but it is possible. I never thought I was going to spend a whole decade learning how to do this all over again, but it can be done."

So far, Nativ's full set of equipment and approach have been available only at his main Ottawa clinic and at a licensed clinic in Hamilton, which doubled as testing grounds to refine the concepts. As the word gets around, though, it is also gradually appear-



ing at other rehab centres. And with four patents pending on his equipment, Nativ's company is poised to begin actively marketing the NeuroGym line to clinics everywhere rather than waiting for demand to spread by word of mouth.

Most physiotherapists don't double as equipment designers, says Nativ, but then not all physios double as researchers either. He attributes his innovative tendencies and interest in rehabilitation to a varied educational background coupled with personal interests. After completing an undergraduate degree in physical education and psychology in his native Israel, Nativ came to Canada to complete his master's and PhD in kinesiology (psycho-motor behaviour, specifically) at the University of Waterloo. Only after his doctorate did he study physiotherapy. A smattering of engineering courses during his education provided him with some know-how about designing equipment.

Nativ has been developing the ideas that resulted in the NeuroGym line since completing his doctorate in 1986, and doesn't plan to stop anytime soon. "If you don't have the tools, you have to look for them," he comments. He knows that more progress is feasible, and his goal, he says, is to ensure that his clinic continues to do "the possible and the impossible."

For more information on the equipment, contact: 1 (877) 523-4148, or (613) 523-4148, or visit www.neurogymtech.com. For information on the clinic, where the equipment was developed and is used daily, visit www.neurogym.com. 