

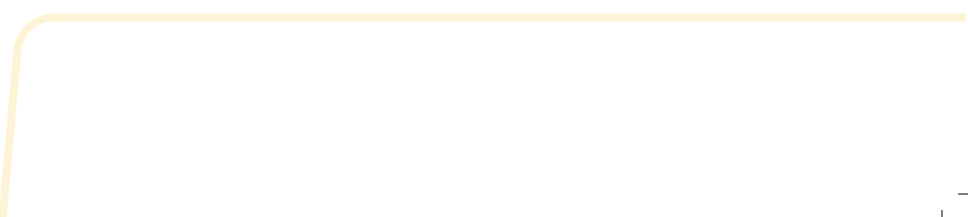
Speed Rehabilitation.  
Restore Function.



## ReJoyce Rehabilitation Workstation for Clinic and Home Use



Speed Recovery of Upper Limb Function  
and Perform Easy Assessments



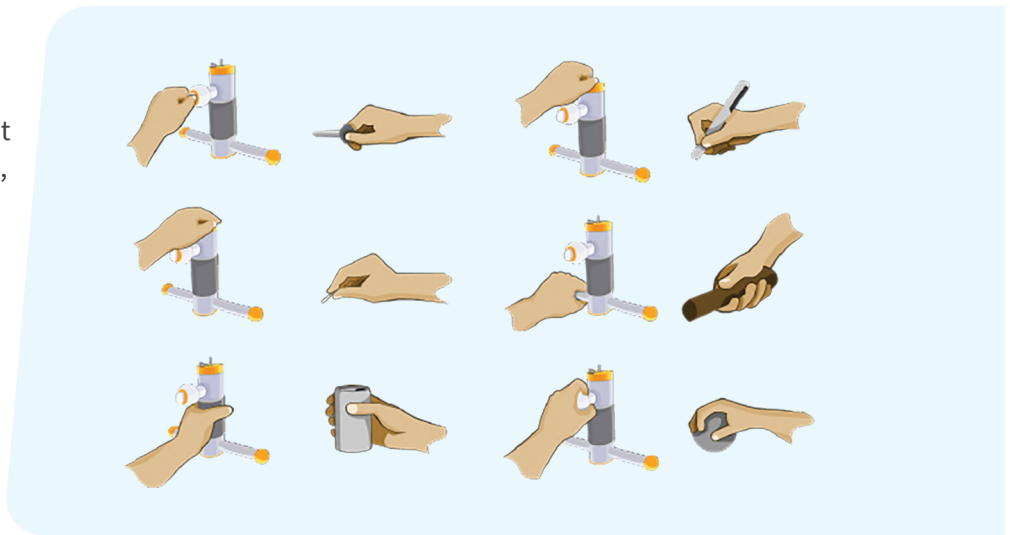
## Maximize Rehabilitation with Motivating Activities

**ReJoyce** is a rehabilitation workstation and patient evaluation tool designed to help people recover from hand and arm impairment. It motivates patients with practical games that engage patients in practicing typical activities of daily living (ADLs). The system includes the ReJoyce Automated Hand Function Test (RAHFT), which helps therapists quickly perform quantitative patient assessments, and create personalized therapy programs. With an at-home system, patients are also able to monitor their own progress with the RAHFT.

## Movement is the Best Medicine

Studies show that upper extremity function is vital to a person's independence and quality of life.<sup>1,2</sup> Based on the evidence that movement therapy is proven to improve function, ReJoyce works as follows:

- Provides standardized upper limb exercises representing activities of daily life (ADL) - Repetitive daily practice of task-oriented exercise reinforces brain and spinal cord pathways leading to significant functional gains.<sup>3,4</sup>
- Disguises intensive training with motivating games to keep patients more engaged and motivated than conventional techniques.<sup>5</sup>
- Using the ReJoyce, patients practice ADLs hundreds of times over a single treatment – 100x more repetitions compared to conventional therapy



Examples of ADLs that patients practice with ReJoyce.



1. Parker VM, Wade DT, Langton Hower R: Loss of arm function after stroke: measurement, frequency, and recovery, *Int Rehabil Med* 1986, 8:69-73
2. Kimmerle M, Mainwaring L, Borenstein M: The functional repertoire of the hand and its application to assessment, *Am J Occup Ther* 2003, 57:489-498
3. dkins DL, Boychuk J, Remple MS, Kleim JA: Motor training induces experience-specific patterns of plasticity across motor cortex and spinal cord, *J Appl Physiol* 2006, 101:1776-178
4. Wolf, S.L., et al., The Excite Trial: relationship of intensity of constraint induced movement therapy to improvement in the wolf motor function test. *Restor Neurol Neurosci*, 2007. 25(5-6): p. 549-62.
5. Colombo R, et al.: Design Strategies To Improve Patient Motivation During Robot-Aided Rehabilitation, *J Neuroengineering And Rehabilitation* 2007.

## Help Patients Efficiently and More Effectively

Therapists report that ReJoyce motivates patients more than conventional rehabilitation techniques.<sup>5</sup> As patients are able to practice independently, ReJoyce reduces supervision requirements enabling more efficient use of time once a personalized therapy program is devised. Patients also have the option to continue ReJoyce exercise therapy in their own homes after leaving the clinic. Therapists can offer tele-supervision with online sessions through the workstation.

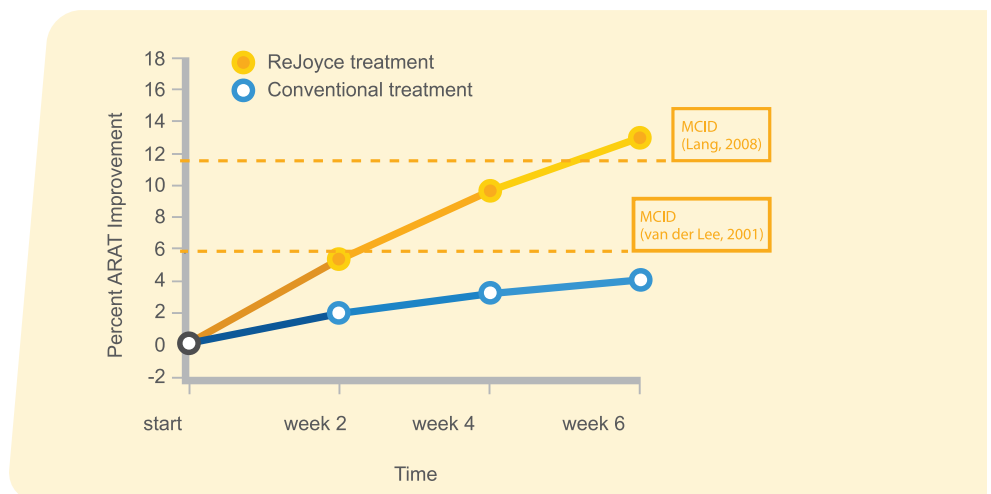
## Clinically Proven to Work

ReJoyce has been the subject of clinical studies around the world from North America to Australia. Studies have tested the system with acute and chronic stroke and spinal cord injured populations. In many of these studies, ReJoyce has been combined with FES (functional electrical stimulation) devices for the hand such as the ReGrasp.

In a survey, therapists and patients were asked to rank the benefit of the ReJoyce and unanimously agreed that the ReJoyce offered more or far more therapeutic benefits over routine therapy.

***They gave it an average score of 4.32 (out of 5). Patient satisfaction was also very high, with patients giving an overall score of 4.33.***

In a study published in 2011, patient outcomes based on the ARAT score were significantly better than conventional therapy.<sup>5</sup> This graph shows that two weeks of ReJoyce therapy provided equivalent results to six weeks of conventional therapy. ReJoyce was also the only therapy that achieved the minimal clinically important difference (MCID) as defined by Van Der Lee in 2001.



5. Colombo R, et al.: Design Strategies To Improve Patient Motivation During Robot-Aided Rehabilitation, J Neuroengineering And Rehabilitation 2007.

# ReJoyce



### Combine ReJoyce and ReGrasp (FES) for Faster Results

ReGrasp, an innovative functional electrical stimulation device that is also offered by Rehabtronics, can help patients with grasping and releasing tasks during ReJoyce therapy. ReGrasp is worn around the arm and controlled with small head movements.

### Reduce Costs with Remote Rehabilitation

Discharging patients early to continue telerehabilitation at home can reduce the cost pressure on rehabilitation wards, while actually increasing standard of care. With ReJoyce, home telemed integrates easily into existing clinical practices to increase patient throughput without compromising care.



### Home-Based Therapy, Remote Supervision

ReJoyce is ideal for rural clients, patients with reduced mobility and those who simply preferring home-based rehabilitation services. Using its telerehabilitation platform, clinics and therapists can offer clients specialized, high-intensity, home-based therapy.

### Proven Benefits of Telerehabilitation

Numerous scientific studies have proven the efficacy of ReJoyce-based telerehabilitation in patients. A ReJoyce-based telerehabilitation study involving FES resulted in outcomes that were three times better than conventional home-based therapy delivered with off-the-shelf devices (ARAT improvements of  $13.0\% \pm 9.8\%$  for the ReJoyce home based therapy vs improvements of  $4.2\% \pm 9.7\%$  for conventional treatment).<sup>6</sup>

---

6. Kowalczewski J, Chong SL, Galea M, Prochazka A. In-Home Tele-Rehabilitation Improves Tetraplegic Hand Function. *Neurorehabil Neural Repair*. Web. Mar 3, 2011.



Locations of ReJoyce Research Studies

“I’ve found that, in every-day-tasks, I’m using my hand a lot more than before, and that I can pick things up with a firmer grip.”

~ Gabriel Moraitis, Study Participant

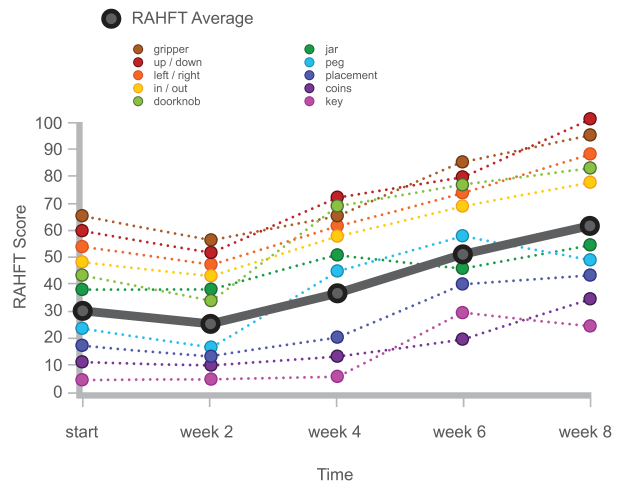
## Make Assessments 3X Faster with the RAFHT

The ReJoyce Automated Hand Function Test (RAHFT) is a quick, easy, and standardised assessment tool included with every ReJoyce System. The test takes less than 10 minutes to complete, which is three times faster than the ARAT and four times faster than the upper extremity portion of the Fugl-Meyer test.

Fully automated and validated, the RAHFT correlates with several conventional hand function tests.<sup>4</sup> It assesses a patient’s range of motion, hand control, speed, and finger dexterity through a variety of ADLs.

### Track Patient Progress Over Time

Each patient’s RAHFT results are saved by the ReJoyce software, which makes tracking patient progress on each task easy. Therapists are able to personalize and adjust a patient’s therapy accordingly.



### Options for Storing Assessment Results

Patient progress is automatically stored electronically for electronic records. You can also print hard copies with a single click.

4. Wolf, S.L., et al., *The Excite Trial: relationship of intensity of constraint induced movement therapy to improvement in the wolf motor function test. Restor Neurol Neurosci*, 2007. 25(5-6): p. 549-62.

## Convenient and Easy Set Up

Including all the components shown here, ReJoyce is easily installed on most tables or desks within minutes without special tools.



1 ReJoyce Manipulandum

2 ReJoyce Arm

3 Computer (software pre-installed)

4 Quick Reference Card

5 Instruction Manuals

6 Power Adapter

7 ReJoyce USB cable



**REHABTRONICS**  
TECHNOLOGY FOR RECOVERY

# 4350, 10230 - Jasper Avenue  
Edmonton, AB  
Canada T5J 4P6

T: +1 780.701.5167  
Toll Free - Canada/U.S.: 1.800.481.3214  
E: [inquiries@rehabtronics.com](mailto:inquiries@rehabtronics.com)

[www.rehabtronics.com](http://www.rehabtronics.com)