

GRASP

Graded Repetitive Arm Supplementary Program

Janice Eng, PhD, BSc(PT/OT)
Dept of Physical Therapy
University of BC
GF Strong Rehab Centre





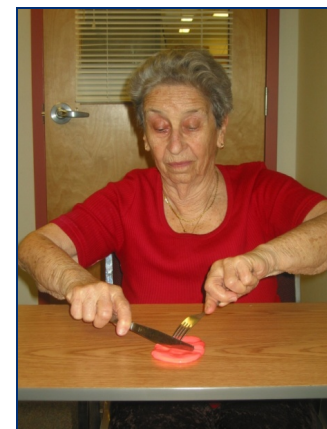
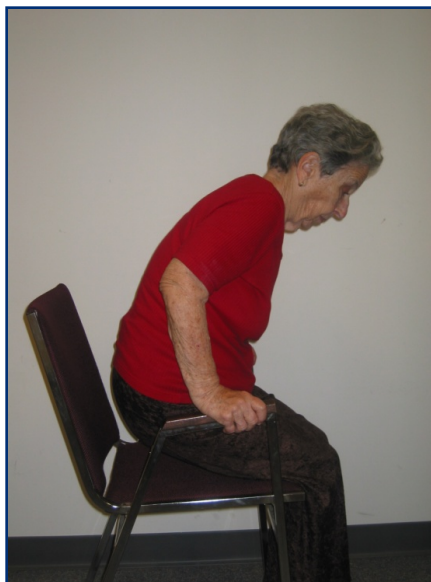
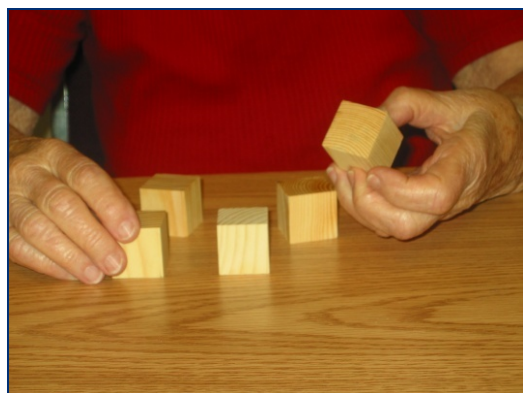
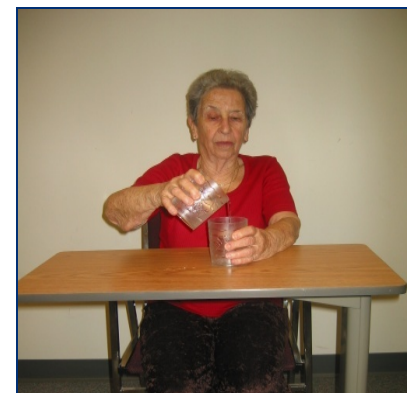
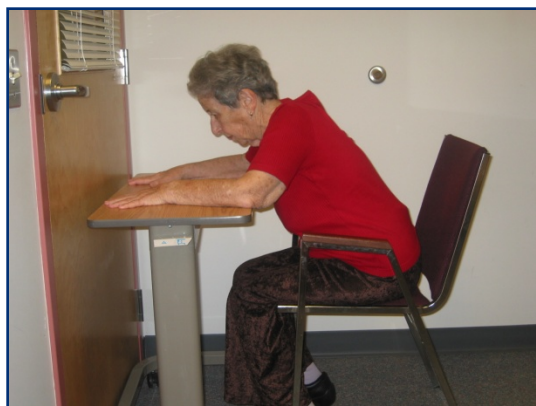
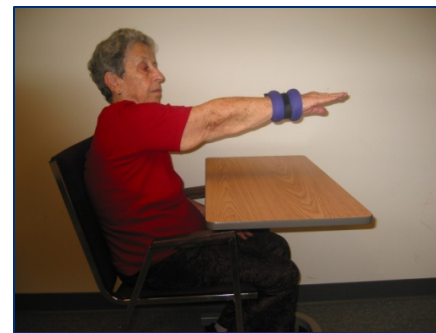
What is GRASP?

GRASP Graded repetitive arm supplementary program

- GRASP is an arm and hand exercise program for people with stroke
- It can be undertaken by the patient on their own as homework
- It is highly recommended that patients have assistance from family or caregivers with GRASP
- GRASP has been tested as a randomized controlled trial and the results have been published and shown to be effective
- We offer the program, manual and GRASP books free of charge

GRASP has 3 exercise levels to accommodate different levels of stroke severity. Below are some examples of exercises

- **Range of motion exercises**
- **Strengthening exercises**
- **Weight-bearing exercises**
- **Functional tasks**
- **Fine motor skills**





Who might benefit from GRASP?

GRASP has been shown to improve arm and hand function in:

- Stroke patients who are participating in regular stroke rehabilitation and start GRASP within the first 4 weeks of having their stroke
- Patients who have some ability to move their stroke-affected wrist into extension
- Patients who have some ability to shrug their stroke-affected shoulder



Will GRASP work for me if I have had my stroke more than 4 weeks?

- Hand and arm recovery depend on a number of factors, especially on the exact location and size of the brain injury
- Recovery also depends on the age of a person
- The brain recovers most immediately after a brain injury, however, there is increasing evidence that repetitive practice can result in meaningful and functional hand and arm improvements even after the first year of stroke
- Although many clinicians and patients tell us they are using GRASP successfully for more chronic patients, it is important to note that we have only tested GRASP in patients who commenced the program within their first 4 weeks of stroke
- There are studies underway which are evaluating GRASP in more chronic patients, but the results are not yet available



Will GRASP work for me if I don't meet the minimal movement criteria?

- The minimal movement criteria (some wrist and shoulder movement) was developed based on the research that it is expected that persons early after a stroke will continue to gain some hand movement if one can already feel some active contractions of the wrist muscles
- The minimal movement criteria was also specified to ensure that patients could indeed complete the GRASP tasks
- GRASP could potentially be very frustrating (and perhaps not beneficial) for those individuals who do not meet the minimal movement criteria



What is the research evidence behind GRASP?

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- GRASP was tested at 4 stroke inpatient rehabilitation sites in Canada
- Patients participated in GRASP, in addition to attending regular inpatient rehabilitation activities (e.g., physical therapy, occupational therapy)
- A control group participated in an educational program, in addition to attending regular inpatient rehabilitation activities



What is the research evidence behind GRASP?

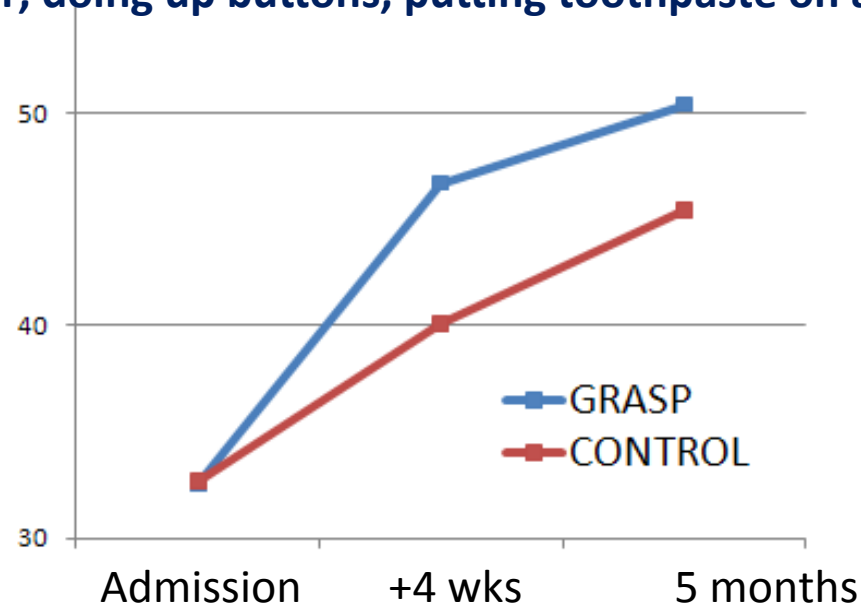
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- Physical therapists and occupational therapists taught the GRASP to their patients, and when possible to family and caregivers
- The therapists then checked on their patient's progress with GRASP once a week
- Patients recorded the number of minutes they did the GRASP on a calendar
- Patients were to practice GRASP for 1 hour/day



GRASP improved arm and hand function

We measured the Chedoke Arm & Hand Activity Inventory (includes tasks such as taking a lid off a jar, doing up buttons, putting toothpaste on a toothbrush)

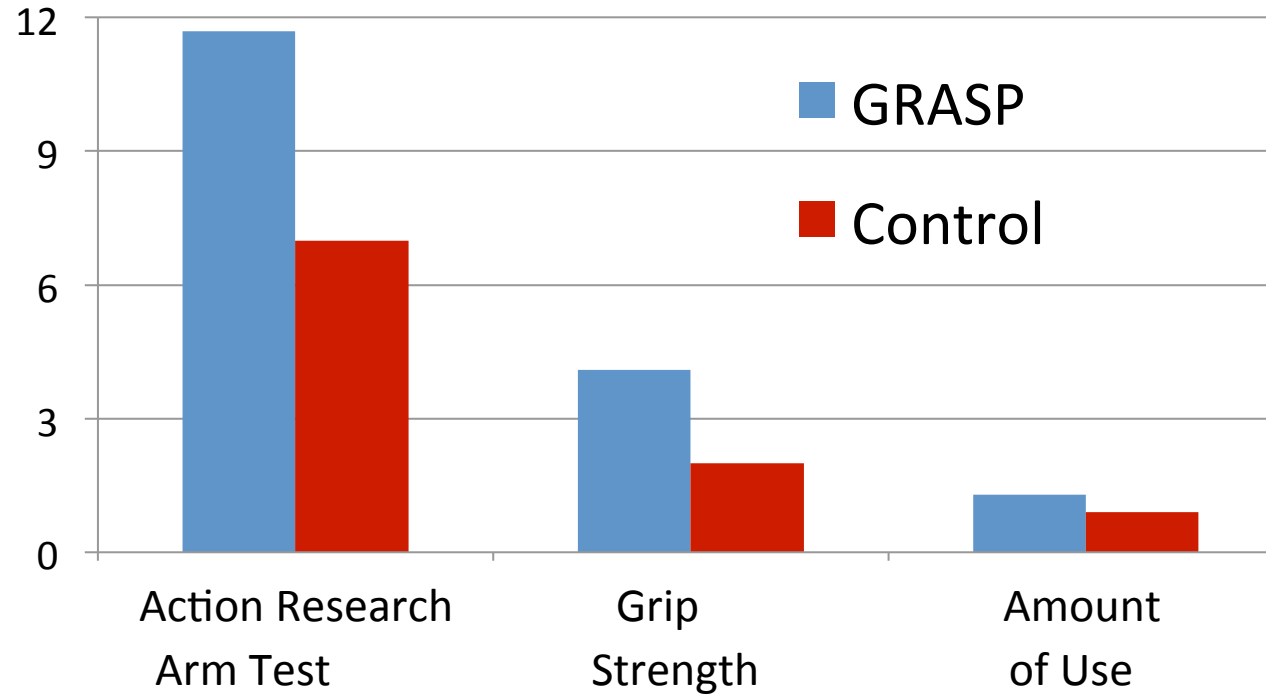


Both the control and GRASP had similar levels of arm function on rehab admission. After 4 weeks of rehabilitation, the GRASP group (blue) had significantly better arm and hand function. The GRASP group still had better arm and hand function after 5 months post-stroke, even though we stopped GRASP at 4 weeks. The trial was published in Harris JE, Eng JJ, Miller WC, Dawson AS. A self-administered graded repetitive arm supplementary program (GRASP) improves arm function during inpatient stroke rehabilitation: A multi-site randomized controlled trial. Stroke. 2009;40:2123-2128.



GRASP improved grip strength & use of the hand

Change in absolute units



GRASP improved the Action Research Arm Test (includes tasks such as reaching and picking up small objects), Grip Strength, and Amount of Use (how much one uses their stroke-affected hand in everyday tasks) more than the Control Group.



Caregiver involvement with GRASP improved outcomes

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- Patients who had caregiver or family involvement with GRASP improved more than those who did not have this support
- Patients who had caregiver or family involvement did the GRASP for more minutes per day
- Caregivers or family can play an important role in helping patients with GRASP in a number of ways (e.g., help set up equipment, help patient record time with GRASP, encourage and remind patients to complete 1 hour of GRASP daily, work through exercises with patient)
- The results of this sub-analysis were published in: Harris JE, Eng JJ, Miller WC, Dawson AS. The role of caregiver involvement in upper-limb treatment in individuals with subacute stroke. *Physical Therapy* 2010;90:1302-10.



GRASP improved arm function and arm use

- GRASP is an inexpensive method to improve upper limb function
- Safe and effective, & promotes upper limb use outside of therapy time
- Foster self-management of therapy and inclusion of family
- Currently used in Canada, US, France, Australia, UK, China, Sweden, Greece.....



GRASP website resources

GRASP website has the following available resources

- GRASP Guidelines and Instruction Manual
- GRASP Patient Books (books 1, 2 and 3)
- Equipment List and vendors who sell the equipment
- Tips from users of GRASP

We welcome feedback on GRASP that can be shared with other users. Feedback can be entered on the GRASP website.

Thank you for your interest in GRASP.