

# Return-to-Work in Stroke Survivors

Why does it matter?  
How can clinicians help?

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# Benefits of Work

- Provides income
- Central to identity, social roles and status
- Meets psychosocial needs
- Employment and socio-economic status are primary drivers of social gradients in health

# Unemployment

Long-term associated with:

- Higher mortality
- Poorer general health
- Poorer mental health  
(distress, anxiety, depression, suicide)
- Higher health use and hospitalization rates



# **Work for sick & disabled people:**

- Is (generally) therapeutic
- Minimises harmful physical, mental and social effects of long-term absence
- Reduces poverty and social exclusion

# Is Work Good for Health?

“The beneficial effects of work on physical and mental health generally outweigh the risks of work and the harmful effects of unemployment.”

- Waddell and Burton 2006

# Outline of Presentations

## 1. Introduction

- Epidemiology
- Why is RTW important?
- Why don't stroke survivors RTW?
- Why isn't rehabilitation successful at times?

## 2. Factors that influence RTW

## 3. RTW assessment

## 4. Treatment and Practical RTW suggestions

## 5. Case Scenarios

# Epidemiology

- Typically 20-25% of stroke patients of working age
- Varies: 45% under 65, 27% under 55 (*Wolfe 2009*)
- Rates increasing as people are working longer and survival rates are improving
- **~44% RTW**, often in the first 3-6 months
- Canadian study: **80% don't RTW**
  - *Teasell 2000, London ON*

# Canadian study of Young Stroke Survivors

*Teasell et al, 2000*

Retrospective file review (London, ON)

15% of survivors were under age 50 (n = 83)

48% Anxious about RTW (15% anxiety about return home)

<b>Work Status</b>	<b>Pre-stroke</b>	<b>3-months</b>
<b>Post</b>		
Full-time	<b>64%</b>	6%
Part-time	5%	6%
Student	8%	4%
Unemployed	23%	84%

# Why is RTW important post-Stroke?

- Work contributes to life satisfaction, well-being, self worth and social identity
- Provides financial stability and independence
- Reduces daily boredom
- Workplace often provides a social network
- May assist in stroke recovery
- Helps reduce the social stigma of stroke
- Significant societal cost for not RTW

# Why don't stroke survivors RTW?

*Those not returning reported:*

- Can no longer do required job tasks (62%)
- They aren't fit enough to RTW (61%)
- Afraid of losing wage replacement benefits (32%)
- Can't drive or use public transport (31%)
- Can't meet work expectations (30%)
- Forced to retire by employer (19%)

# Why don't survivors return to work?

- Alaszewski et al., 2007
  - Qualitative study of 43 individuals under 60yrs
  - Participants valued work and viewed work (especially paid work) as more desirable than not working

Non-RTW subjects – felt RTW was desirable however, were unable to overcome barriers

RTW subjects – recognized the barriers however, *found ways to manage them*

# Why isn't rehab successful for RTW?

Singapore study of OT RTW program outcomes:

- Require further rehabilitation (21%)
- Failed to attend assessment (10%)
- Deemed unfit to work generally (7%)
- Further medical/ surgical care required (3%)
- Withdrawal from job trial (3%)

# Factors Influencing RTW

- Stroke location?
- Physical/Functional Factors
- Vocational /Work Environment Factors
- Psychosocial Factors
- Cognitive Factors
- Other Factors

# Stroke Location

- Anatomic location of ischemic stroke is relatively *unimportant* compared with functional status in predicting RTW
  - Wozniak et al. 1999
- Side of brain damage and stroke location were NOT found to be correlated with RTW
  - Treger et al. 2007

# Physical and Functional Factors

- Stroke severity measured by the Barthel Index
- Motor strength score at 7 days
- Function of hemiplegic hand/ADL independence
- Aphasia
- ***Fatigue***

# Vocational/Work Environment Factors

- Physical and mental job demands
- Education and wage level
- Perception of supportive colleagues and employer
- Perception of more autonomy in decision making
- Perception of job security and satisfaction
- Flexible work environment/ supportive social networks
- Self-employed more likely to RTW

# Psychosocial Factors

- Positive attitude
- Low self-esteem
- Substance abuse
- Difficulty dealing with anger and frustration
- Psychiatric morbidity
  - Insomnia
  - Anxiety
  - Depression (~ 50% report depressive symptoms)

# Cognitive Factors

- Decreased ability to concentrate
- Reduced attention
- Challenges with executive functioning  
(i.e. abstract reasoning, planning, and the capacity to govern self-directed behavior)

# Other Factors/ Barriers

- Adequacy and appropriateness of health care
- Insurance/ wage replacement benefit issues
- Transportation issues
  - Loss of drivers license.
  - Inability to take public transportation

# Work Disability Paradigm

Work disability is not just the  
*lesion,*  
but a complex  
Person – Environment  
problem

Requires collaboration



# Two Key Roles of Rehab Therapists

1. Assessment of work ability/RTW readiness
1. Guide occupational rehabilitation

# **Assessment of Return to Work Readiness for Stroke Clients**

# Abilities Should Match Requirements

## Functional Testing

- Performance testing  
(i.e. Functional Capacity Evaluation)
- Self-report questionnaires  
(i.e. Workability Index)

## Job Demands Analysis

- Worksite visit
- Employer report  
(i.e. Physical Demands Analysis form)
- Worker report

**Assessment important but not perfect**

# Physical and Functional Assessments

- VALPAR Systems
- Baltimore Therapeutic Equipment (BTE)
- Purdue Pegboard
- Jamar Dynamometers
- Tap Dance Typing Speed Test
- 'Five Finger Typist'
- ***Fatigue Severity Scale (FSS)***
- [Matheson](#) – FCE for individuals with Acquired Brain Injury

# Many Commercial FCE Protocols

Isernhagen

Arcon

WorkWell

Blankenship

Ergoscience

WorkAbility

(PWPE)

BTE/ Hanoun

Matheson (Epic)

Valpar/Joule

Key

# Psychological Status Tools

- General health tool that looks at physical and mental health (Short Form – 36)
- Beck Depression Inventory (BDI)
- Beck Anxiety Inventory (BAI)
- Pain Disability Index (PDI)

# General Cognitive Assessment Tools

**Montreal Cognitive Assessment (MoCA)** assesses a wide range of cognitive functions

[www.mocatest.org](http://www.mocatest.org)

**Cognitive Assessment of Minnesota (CAM)** is designed to assess a hierarchy of cognitive skills

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

**Loewenstein OT Cognitive Assessment**

[www.lotca.com/lotca-cognitive-battery](http://www.lotca.com/lotca-cognitive-battery)

# Specific Cognitive Tools (1)

**Rivermead Behavioral Memory Test III** evaluates memory function including; verbal, auditory and visual memory

**Test of Everyday Attention (TEA)** assesses selective, sustained and divided attention, auditory-verbal working memory and attentional switching

**Behavioral Assessment of Dysexecutive Syndrome (BADS)** designed to assess shifting, planning and multitasking

**Behavioral Rating Inventory of Executive Functions (BRIEF)** measures various aspects of executive functioning including:

Inhibition, Self-monitoring, Planning and organizing, Shift (ability to make transitions), Initiate, Task Monitor, Emotional Control, Working memory

# Specific Cognitive Tools (2)

## **Multidimensional Assessment of Fatigue**

severity, distress, degree of interference and timing (frequency)

## **Visual Perceptual Tests – Numerous**

- Test of Visual Perceptual Skills (TVPS)
- Occupational Therapy Adult Perceptual Screening Test (OT-APST)

## **Sensory Processing**

- Adolescent/Adult Sensory Profile

# Physical Job Demands Analysis

- Worksite visit with direct measurements
- Client reported demands (standardized forms)
- Employer reported demands
  - Physical Demands Analysis form (PDA)

# Cognitive Job Demands Analysis

- Evaluation of the following areas related to the job (Matheson and Associates 2010)
  - Attention
  - Memory
  - Structure and routine
  - Characteristics of the tasks (single vs. multiple steps)
  - Problem solving
  - Information processing
  - Initiation, planning and organizing.
  - Safety and judgment
  - Others...

*\*\*Job Demands Analysis is an area that needs considerably more development\**

# **Guiding Occupational Rehabilitation for Stroke Survivors**

# RTW Focused Rehabilitation for Stroke Survivors

1. General Information
2. Physical and Functional Intervention
3. Psychological Int.
4. Cognitive Int.
5. Vocational Int.



# Generalities...

- What is recovery to rehab professionals may be different than what the patients view as recovery
  - Professional - Independence in ADL and mobility
  - Patient – RTW
- Independent ADL no guarantee of RTW
- Must avoid early discharge from hospital with no follow-up
- Improvements can be seen for months and years post stroke

*“RTW should be a major goal”*

# Readiness to RTW?

- Many patients are not given explicit advice or do not agree with their medical practitioners
- Absence of clear guidance leaves patients in limbo
- Decisions guided by assessment findings but...
- Decision shouldn't be completely up to the medical team

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# Physical/Functional RTW Interventions

Enhance workability

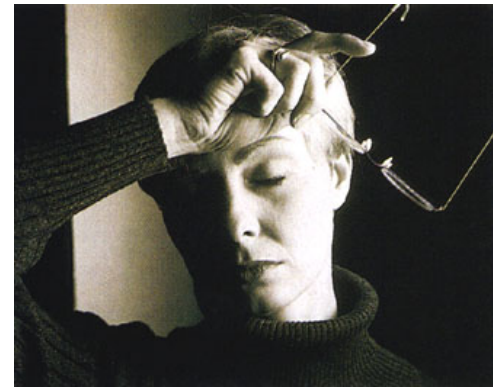
Increase Capacity/ Decrease Demands

Dealing with fatigue and practical advice for  
phased RTW

# General Principles to Aid RTW

- Importance of a RTW focus
  - Tschernetzki-Neilson et al 2007
- Realize and educate that RTW can be therapeutic
- Stroke survivor must be in charge
- Flexibility, collaboration and support from others is crucial

# Dealing With Fatigue



- Incidence rates: 39 – 72%  
(incidence increases with time since stroke)
- Not just tiredness or general sleepiness
- *Pervasive* fatigue or exhaustion – ‘*mind-numbing*’
- At times long lasting (months to years)
- Can be unpredictable or experienced daily
- Physical and cognitive
- At times does not improve with rest

# Dealing with Fatigue (1)

- Complete medical work-up as fatigue can be multi-factorial (depression, sleep, medications etc.)
- Avoid de-conditioning in the first place  
(Physical rehabilitation when medically stable and early RTW avoids de-conditioning)
- Education – worker, family members and employer
  - Educate the worker early after the stroke
  - Validate their experience and provide assurance
  - Education fosters acceptance and adaptation

# Dealing with Fatigue (2)

- Teach energy conservation and coping strategies.
  - Pacing (No “good or bad days” – even keel)
  - Schedule and plan daily activities.
  - Use an activity diary and set realistic goals.
  - Often napping must be part of the daily routine (that’s OK!)
- Increase endurance and capacity via physical rehabilitation
- Proper sleep hygiene
- Cognitive Behavioral Therapy?

# Exercise

- Include exercises aimed at body functions and structures (cardiovascular, endurance and strengthening), BUT...
- Understand the patient's job and focus exercises specific to work demands
- “RTW specific training”
- Individually-tailored programs (what does the patient want to focus on?)
- Include the partner/family members
- Reinforce and focus clients on their abilities

# Exercise and Work Simulation

Focus exercise and work simulation  
to patients pre-accident job or  
vocational goal



# Work Simulation

- Tailor activities to physical AND cognitive demands
- Pattern work simulation activities that reflect a working day
- Teach energy conservation techniques that can be used realistically in the work environment
- *BEST* form of work simulation is actually getting the client back into the workplace
  - Educate employer with regards to RTW challenges that the patient will face.

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# Psychological Interventions that support RTW

## *General Thoughts:*

- Normalize the client's experience and feelings (anxiety, fear, anger, depression)
- Help the client process and grieve the loss (perceived or actual loss)
- All team members can support the client and assist in stabilizing them psychologically (this is not exclusively the role of the psychologist)

# Psychological Interventions that support RTW

- Cognitive Behavioral Therapy
  - Focuses on the patients present problems, rather than focusing on the past
  - Use of motivational interviewing to understand why a patient thinks the way they do and understand their motivations
  - Structured exercises to change distorted thoughts and inappropriate behaviors
  - Homework assignments to practice and reinforce what they have learned
  - Helps to develop realistic goals

# Psychological Interventions that support RTW

- Stress management and relaxation therapy
- Biofeedback



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# Cognitive Rehabilitation

- Attention training activities for alternating, selective, divided and sustained attention
- Memory training activities and external cues to prompt memory such as; diary, visual prompts, alarm or calendar

# Work Simulation

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# Participatory Ergonomics

- Collaborative approach

*Top down approach rarely works*

- Involve all stakeholders

- Worker
- Employer
- Union representative
- *Case manager or rehab coordinator*

- Brainstorm and negotiate suitable/ acceptable duties

# Participatory Ergonomics

- Focus on the outcome rather than specifying means to achieve it
- Stroke survivors may use different means to achieve equivalent result

*Worker makes final decision*

# Other RTW Options

- Start with voluntary instead of paid work to enhance confidence
- Graduated (phased) return to full duties
- Transitional (weaning off rehab) return to full duties
  - Both require advanced planning and monitoring
- Work trial (few weeks to a month)
- Supernumerary – additional helper

# Modified Duty

- ['Duty to Accommodate'](#) legislation
- Modified tasks: Physical and mental
- Phased return: Modified hours or days (morning or afternoon only?)
- Work from home?
- Typically easier with large employers
- Modified duties have a tendency to linger

# Supportive Employer and Colleagues (1)

- Communication – should keep in touch without pressuring to RTW
- Pre-RTW interview – what (if any) adjustments are needed
- Shouldn't make assumptions regarding ability, discuss with worker
- Constant encouragement to increase confidence

# Supportive Employer and Colleagues (2)

- Any modifications must be in place for the person's first day back
- Follow-up regularly after initial RTW
- Allow time to adjust – may take months to years
- May require a separate 'resting' room or a complete break at lunch and other times (avoid working lunches)
- Ensure schedule accommodates follow-up medical and rehab appointments

# Supportive Employer and Colleagues (3)

- Confidentiality
  - Stroke awareness must be handled with sensitivity
  - Some prefer medical conditions to be confidential
  - Others prefer providing information
  - Educational resources may be helpful (i.e. pamphlets)

*Regardless of confidentiality needs, RTW won't be successful unless employers and co-workers are educated regarding a stroke survivor's abilities*

# What if worker can't return to original job?

- Predominately social issue, no longer medical
- Vocational assessment and placement services
- Assess ability, aptitude, interests
- Supported job searching
- Very high rates of success (up to 80% sustained work) with ***Supported Employment*** for individuals with serious mental disorders and learning disabilities

# Supported Employment Principles

- Client determines eligibility
- Integrated with treatment/ rehabilitation
- Competitive employment is the goal
- Searching for a job begins rapidly (assessment and re-training is de-emphasized)
- Jobs fit the individual
- Follow-up supports are not time-limited

# Resources

- [Alberta Stroke Info Card](#)
- [Vocational Rehabilitation Association of Canada](#)
- [\*Work After Stroke\*](#):
  - Patient Document
  - Employer's Guide
  - Information for Family and Friends