WorkSafeBC

9th Annual Health Care Professional Conference

June 7, 2013

Vancouver, B.C.

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9th Annual Health Care Professional Conference

• Attendee List •

First Name	Last Name	Organization	Address	City
David	Aboussafy	Dr. D. Aboussafy, R.Psych.	607 Robson Ave.	New Westminster
Heather	Adams	University Centre for Research on Pain and Disability	5595 Fenwick Street Suite 314	Halifax
Hannah	Ager	OT Consulting/Treatment Services Ltd	#210–3438 Lougheed Hwy.	Vancouver
Lynn	Alden	UBC	2136 West Mall	Vancouver
Zahra	Alibhai	BCLIS	404–2150 West Broadway	Vancouver
Mike	Allegretto	CBI Health Centre Downtown Victoria	605 Discovery St.	Victoria
Dr. Tyler	Amell	CBI Health	1929 30th Avenue SW	Calgary
Seann	Atley	Rehabworks Disability Management	PO Box 45017	Langley
Amanda	Bactad	Bayshore Home Health	1843 West Broadway	Vancouver
Sue	Barnes	Dale Charles Physiotherapy	101–325 Power Street	Penticton
Mycal	Barrowclough	British Columbia Nurses Union	313 Cutler Street	Coq
Cassandra	Basi	Newton Physiotherapy	#230 13711 72 Ave.	Surrey
Suzie	Beliveau	Squamish Physio–PThealth	38247 Cleveland Ave.	Squamish
Colleen	Bell	WorkSafeBC	6951 Westminster Hwy.	Richmond
Darleen	Bemister	Simon Fraser University	8888 University Drive	Burnaby
Deepak	Bhasin	LifeMark Health/Centric	101, 20230–64 Ave.	Langley
Mark	Bhopal	Bhopal Rehabilitation Consulting	PO Box 119 Trans-Canada Hwy.	Duncan
Nancy	Buchan	Minoru Sports & Fitness Rehab	7560 Minoru Gate	Richmond
Ralph	Cheesman	Back in Motion Functional Assessments Inc.	Suite 110–6651 Elmbridge Way	Richmond
Jo–Anne	Chisholm	Access Community Therapists Ltd.	1534 Rand Ave.	Vancouver
Minda	Chittenden	Meridian Rehab	3007 28th Ave.	Vernon
Robyn	Clark	Kootenay Health Services Inc.	Suite 205, 625 Front Street	Nelson
Jenna	Copeland	Raincoast Community Rehabilitation Services inc.	2392 Kingsway	Vancouver

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First Name	Last Name	Organization	Address	City
Maria	Coughlin	Burnside Physiotherapy	5, 101 Burnside Rd. West	Victoria, BC
Kim	Cox	Nurse Next Door	320–5511 West Blvd.	Vancouver
Tamara	Dalrymple	Koala Consulting	201–2187 Oak Bay Ave.	Victoria
Gordon	Davidson	Traumatic Stress Recovery	114 3105 31 St.	Vernon
Betty	Donahue	Pro Physioworks	240 North Mackenzie Ave.	Williams Lake
Jane	Doogan	WorkSafeBC	6951 Westminter Hwy.	Richmond
Carly	Duggleby	Back in Motion Functional Assessments	6651 Elmbridge Way	Richmond
Heike	Dumke	Back in Motion Rehab	Suite 210–7525 King George Blvd.	Surrey
Tricia	Earl	CBI OT Services	101–4300 Wellington Rd.	Nanaimo
Darren	Earl	CBI Health Group	101–4300 Wellington Rd.	Nanaimo
Duane	Endo	WorkSafeBC	6951 Westminter Hwy.	Richmond
Helen	Evans	PICNet	555 W.12th Avenue, Suite 400 East Tower	Vancouver
Devlin	Fenton	CHIROFEN LTD	4518 Woodgreen Dr.	West Vancouver
Annette	Fieltsch	Back in Motion Functional Assessments	4–3318 Oak St.	Victoria
Cindy	Fisher	Fisher Counselling Services	PO Box 505	Parksville
Kimberly	Fitton	WorkSafeBC	6951 Westminter Hwy.	Richmond
Vicky	Forsyth	Back in Motion	110–6651 Elmbridge Way	Richmond
Sarah	Gallant	OrionHealth	16555 Fraser Highway	Surrey
Jennifer	Gauvin	Student BCIT	5606 Clark Drive	Delta
Tony	Gould	IWA Forest Industry LTD Plan	Suite 2100–3777 Kingsway	Burnaby
Ed	Graham	WorkSafeBC	6951 Westminter Hwy.	Richmond
Cheryl	Guest	Passages Ltd.	#600–890 West Pender Street	Vancouver
Aaron	Hait	Boundary Plaza Psychology	3665 Kingsway, Suite 310	Vancouver
Sarah	Hart	Innovative Living Solutions Inc.	789 Kinchant Street	Quesnel
Paul	Hatch	Fleetwood Chiropractic	15081 86A Avenue	Surrey
Robin	Henery	ATF Canada	625 Agnes Street	New Westminster
Susan	Higginbottom	Dr. Susan Higginbottom	300–1200 Lonsdale Ave.	North Vancouver
Naomi	Hill	Raincoast Community Rehabilitation Services Inc.	2392 Kingsway	Vancouver
Audrey	Ho	Dr. Audrey Ho Inc.	2025 42nd Avenue, Suite 262	Vancouver

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First Name	Last Name	Organization	Address	City
Brenda	Hogan	Back in Motion Rehab	140–6651 Elmbridge Way	Richmond
Anne Marie	Hogya	Magma Rehabilitation	–	Moss Street
Tracie	Holland	Back In Motion Rehab	#206 5500 152nd St.	Surrey
Lars	Hollmann	WorkSafeBC	6951 Westminter Hwy.	Richmond
Gabriel	Horvath	IWA–Forest Industry Rehabilitation Services	Suite 2100–3777 Kingsway	Burnaby
Alice	Hsing	RCMP	657 West 37th Avenue	Vancouver
Cyrus	Huang	LifeMark Health	230–181 Keefer Pl.	Vancouver
Gabrielle	Jacobson	WorkSafeBC	6951 Westminter Hwy.	Richmond
Iveta	Janickova	Treloar Physiotherapy Clinic	505–686 West Broadway	Vancouver
Steven	Jones	CBI Health	1623 McKenzie Ave.	Victoria
Jeannette	Jorgenson	LifeMark Health\Centric	101, 20230 64th Ave.	Langley
Kathryn	Jung	Treloar Physiotherapy Clinic	505–686 West Broadway	Vancouver
ALAN	Kaplan	Orion Health	120–16555 Fraser Hwy.	Surrey
Michelle	Kegaly	New West Wellness Centre Inc.	#140–815 1st Street	New Westminster
Aviva	Kennedy	Bacl In Motion Rehab Inc Richmond	140–6651 Elmbridge Way	Richmond
John	Kim	Rehabworks Disability Management	PO Box 45017	Langley
Kelly	Kinghorn	WorkSafeBC	6951 Westminter Hwy.	Richmond
Sarina	Kot	Dr. Sarina Kot	262–2025 W. 42nd	Vancouver
Cary	Kruger	Kruger Neuro-Rehabilitation Inc.	112–1890 Cooper Rd.	Kelowna
Marilyn	Kwong	Back in Motion Rehab	2311 Cypress St.	Vancouver
Bobbi	Laird	Sealyte Counselling Services Inc.	25009–140 East Island Hwy.	Parksville
William	Lakey	BC Public Service	707–808 Nelson Street	Vancouver
John	Lawrence	Swanson and Associates	1315 Summit Drive	Kamloops, BC
Ron	Laye	Dr. Ronald Laye, R.Psych.	2550 Stephens Street	Vancouver
Sandy	Liles	BC Centre for Ability	2805 Kingsway	Vancouver
Danuta	Lipien	Drake Medox Health Solutions	13817 103rd Avenue	Surrey
Rob	Low	Drake Medox Health Solutions	13817 103rd Avenue	Surrey
Alex	Low	Raincoast Community Rehabilitation Services Inc.	2392 Kingsway	Vancouver
Bill	Lyons	LifeMark Physiotherapy	209–12080 Nordel Way	Surrey

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First Name	Last Name	Organization	Address	City
Bill	MacDonald	Golden Ears Physiotherapy	202–20395 Lougheed Highway	Maple Ridge
Jamie	MacGregor	Okanagan Hand Therapy	2815 35th St.	vernon
Myra	Magrath	Great West Life	2nd Floor, 8700–200 St.	Langley
Margaret	Mallam	RCMP	657 West 37th Avenue	Vancouver
Steve	Matovic	IWA—Forest Industry Rehabilitation Services	Suite 2100–3777 Kingsway	Burnaby
Rebecca	McDonald	OrionHealth Vancouver	201–3150 E. 54th Ave.	Vancouver
Kristin	McFadden	OrionHealth	Unit 210–555 Sixth St.	New Westminster
Marisol	McRae	–	–	Surrey
Rebecca	Meeks	Hazelwood Physio Clinic	203 16088 84 Ave.	Surrey
Francine	Miller	Access Community Therapists Ltd.	1534 Rand Ave.	Vancouver
Merry	Miller	Private Practice & Centric	3985F Westside Road North	Kelowna
Lawrence	Miller	Dr. Lawrence Miller, Professional Psychology Corporation	405–3551 Foster Avenue	Vancouver
Carol	Murray	WorkSafeBC	6951 Westminter Hwy.	Richmond
Jack	Nguy	OrionHealth Vancouver Pain Clinic	201–3150 East 54th Ave.	Vancouver
Michelle	Noel	Progressive Rehab	401–3999 Henning Dr.	Burnaby
Lesley	Norris	Back in Motion Rehab Inc.	210–7525 King George Blvd.	Surrey
Khalil	Nourani	Direct Solutions Counselling	301–545 Clyde Ave.	West Vancouver
Sacha	Oddstad	Canadian Pacific Railway	1670 Lougheed Hwy.	Port Coquitlam
Scott	Park	The Well Chiropractic Clinic	E 1001 Austin Ave .	Coquitlam
Avis	Picton	OrionHealth Surrey	120–16555 Fraser Hwy	Surrey
Noel	Plummer	Family Chiropractors	208 231 Trans Canada Hwy.	Salmon Arm
Steve	Powell	ATF Canada, a Division of AIM Health Group	150–625 Agnes Street	New Westminster
Colleen	Quee–Newell	Dr. Colleen Quee–Newell Inc.	309–2902 W. Broadway	Vancouver
Tamara	Rae	Progressive Rehab OrionHealth	2737 Wyat Place	North Vancouver
Debra	Richards	CBI Health Centre	605 Discovery Street	Victoria
Karen	Richardson	Back in Motion Rehab	112–15155 62A Ave.	Surrey

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Dustin	Robin	Victoria Sports Physiotherapy	108–1669 Victoria St.	Prince George
Peter	Rothfels	WorkSafeBC	6951 Westminter Hwy.	Richmond
Chris	Rowe	OrionHealth	120–16555 Fraser Hwy.	Surrey
Pamela	Russell	OT Works!	1517 London Street	New Westminster
Nirmal	Sahota	OrionHealth	#120–16555 Fraser Hwy.	Surrey
Lucyna	Samuel	WorkSafeBC	400–224 Esplanade W.	North Vancouver
Patricia	Samuhel	Treloar Physiotherapy Clinic	505–686 West Broadway	Vancouver
Jujhar	Sidhu	Dr. Jujhar S. Sidhu	8181 120A Street	Surrey
Linda	Stull	Private Practice	Suite 1210–750 W. Broadway	Vancouver
Craig	Sully	Kootenay Health Services Inc.	Suite 205, 625 Front St.	Nelson
Ash	Sumner	Interior Health	2268 Pandosy Street	Kelowna
Amy	Sutton	Drake Medox Physiotherapist	164 Oriole Road	Kamloops
Anju	Talwar	WorkSafeBC	6951 Westminter Hwy.	Richmond
Roxana	Tatomir	BC Centre for Ability	2805 Kingsway	Vancouver
Michele	Tedford	WorkSafeBC	6951 Westminter Hwy.	Richmond
Cindy	Thompson	Maples Counselling Inc.	147 Butler Ave.	Parksville
Claire	Tomsett	CBI Health Group	2755 Lougheed Hwy.	Port Coquitlam
Tien Hong	Tsai	Apex Fitness and Rehabilitation	#318–2990 Princess Crescent	Coquitlam
Tammy	Uyeda	Drake Medox Health Solutions	164 Oriole Road	Kamloops
Hendre	Viljoen	Back in Motion	Suite 210–7525 King George Blvd.	Surrey
Theresa	Weltzin	OrionHealth Inc.	#120 16555 Fraser Hwy.	Surrey
Charlene	Wharton	OT Consulting/Treatment Services	#210–3438 Lougheed Hwy.	Vancouver
Cathey	Wong	LifeMark Centric Health	230–181 Keefer Place	Vancouver
Jerry	Wong	OT Consulting/Treatment Services Ltd	#210–3438 Lougheed Hwy.	Vancouver
Matthew	Wright–Smith	Healthx Physical Therapy	20501 Logan Ave.	Langley
Sharon	Yen	Golden Ears Physiotherapy	202–20395 Lougheed Highway	Maple Ridge
Alice	Yu	OrionHealth	201–3150 E. 54th Ave.	Vancouver
Dale	Zaiser	Holloway Zaiser Group	403–1838 Nelson St	Vancouver

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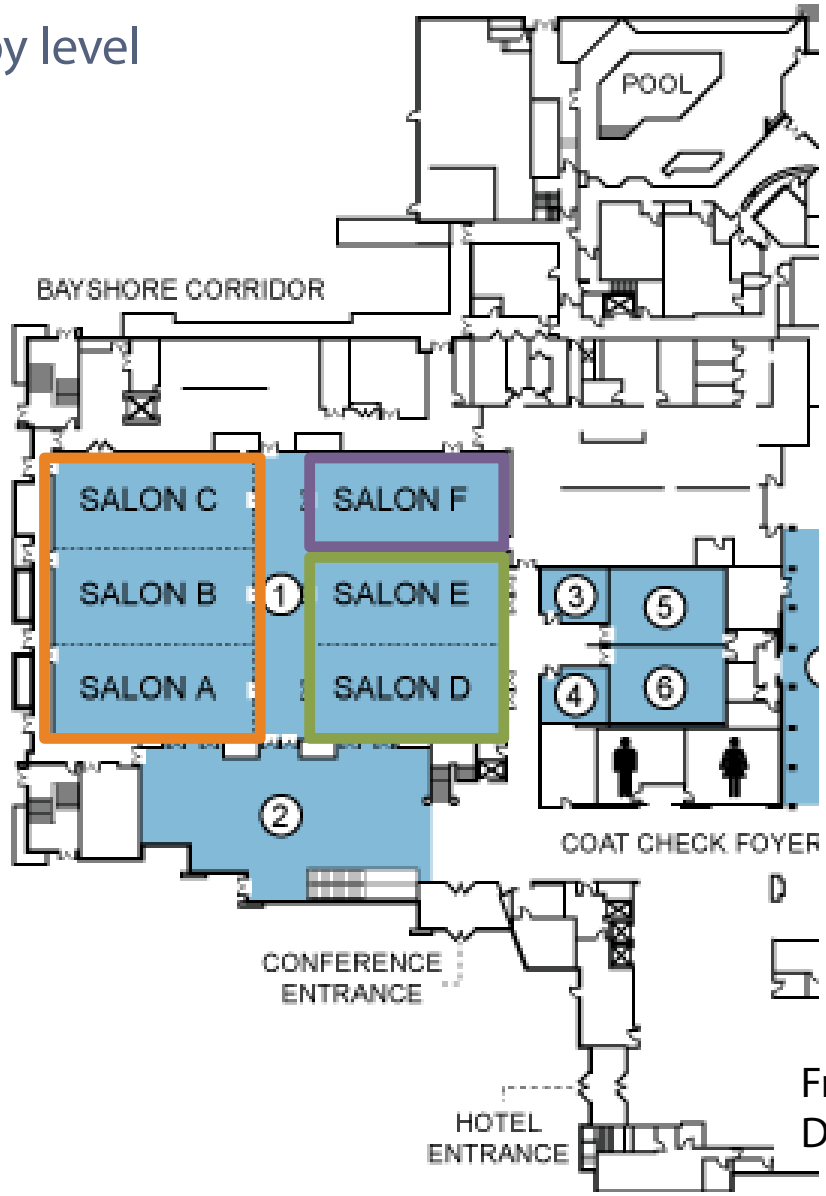
June 7, 2013
9th Annual Health Care Professional Conference
Agenda

Time	Topic/Activity	Presenter	Location
7:45–8:30	**Registration/Breakfast (sponsored by Centric Health)/Visit booths** 		
8:30–8:40	Introduction	Geoff Dalmer Program Manager, Health Care Services, WorkSafeBC	Salon ABC
8:40–8:55	Early Return to Work: Our Goal — Your Support	Ian Munroe Vice President, Claims Services, WorkSafeBC	Salon ABC
8:55–9:25	Courage to Come Back Award Recipient: A Worker's Perspective	Michael Coss	Salon ABC
9:25–10:15	Third Wave of Cognitive Behavior Therapy: How to Embed Acceptance and Commitment Therapy into Programs for Injured Workers	Dr. Daniel O'Connell, PhD Institute for Health Care Communication, and University of Washington School of Medicine, Seattle, Washington	Salon ABC
10:15–10:45	**Refreshment break/Visit exhibitor booths**		
10:45–11:15	Worker and Employer Services Update: Three Pillars of Case Management	Trevor Alexander Executive Director Worker & Employer Services, WorkSafeBC	Salon ABC
11:15–12:00	**Concurrent Workshops:**		
	Assessing Fitness to Work with Chronic Pain Patients	Dr. Chris Stewart-Patterson, MD, CCBOM, FACOEM Occupational Physician, Khatsahlano Corporate Medical Services Program Director, Harvard Medical School	Salon ABC
	Experimental Study of the Impact of Assistive Technology on Users and Their Informal Caregivers	Dr. Ben Mortenson, PhD Post-Doctoral Fellow Gerontology Research Centre, Simon Fraser University	Salon F

Time	Topic/Activity	Presenter	Location
12:00–12:55	**Lunch (sponsored by We Care)/ Visit exhibitor booths**		
12:55–1:00	Platinum Sponsor Afternoon Introduction		
1:00–1:50	Targeting Risk Factors for Delayed Recovery	Dr. Michael Sullivan, PhD Professor of Psychology, Medicine, and Neurology, McGill University	Salon ABC
1:50–2:35	**Concurrent Workshops:**		
	How Can Brain Imaging and Stimulation Inform Rehabilitatiion	Dr. Michael Borich, PhD Postdoctoral Research Fellow, Brain Behaviour Laboratory, University of British Columbia	Salon F
	Using Progressive Goal Atainment Program (PGAP) for the Management of Work-Disability Associated with Health and Mental Health Problems	Dr. Michael Sullivan, PhD Professor of Psychology, Medicine, and Neurology, McGill University	Salon ABC
2:35–3:05	**Refreshment break/Visit exhibitor booths**		
3:05–3:55	Assessment of Malingering in Work Ability	Dr. Chris Stewart-Patterson, MD, CCBOM, FACOEM Occupational Physician, Khatsahlano Corporate Medical Services Program Director, Harvard Medical School	Salon ABC
4:00	Closing and Prize Draws	Geoff Dalmer Program Manager, Health Care Services, WorkSafeBC	Salon ABC

Room Location Map

Lobby level

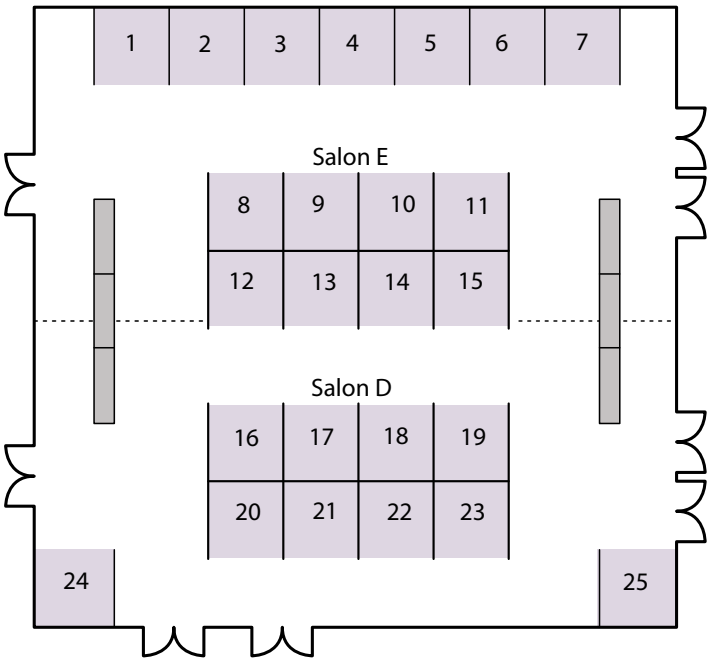


Plenary room

Breakout room

Exhibitor room

Exhibitor Floor Plan



1. & 2.	We Care
3.	Valco
4.	Burnaby Orthopaedic & Mastectomy
5.	Canada Diagnostic
6.	Massage Therapists' Association of British Columbia
7.	Canadian Magnetic Imaging
8.	BC MedEquip
9.	CBI Health Group
10.	Connect
11.	Canadian Association of Occupational Therapists — British Columbia
12.	Community Therapists
13.–15.	Centric Health
16.	Edgewood
17.	Össur
18.	Bayshore Home Health
19.	Chairlines
20.	Orion Health
21.	Back in Motion
22.	Paine Edmonds Lawyers
23.	Advanced Health Care Products
24.	Last Door
25.	Life Flight International

Up to date as of May 24, 2013

Speaker Disclosure Statements

All presenters participating in these programs are expected to disclose to the program audiences any real or apparent conflict of interest related to the content of their presentation.

Guest Speaker	The following information discloses my relationship with WorkSafeBC (Workers' Compensation Board), and/or other corporate sponsors that might relate in some way to the presentation of my subject at this conference
Trevor Alexander	Nothing additional to biography
Dr. Michael Borich	Nothing additional to biography
Michael Coss	Nothing additional to biography
Dr. Ben Mortenson	Nothing additional to biography
Ian Munroe	Nothing additional to biography
Dr. Daniel O'Connell	Nothing additional to biography
Dr. Chris Stewart-Patterson	Nothing additional to biography
Dr. Michael Sullivan	Shareholder in the company that owns PGAP

• Ian Munroe •

Ian Munroe joined WorkSafeBC in 1994 as executive director, Compensation Services Division, and is currently the vice president of Claims Services with the Worker and Employer Services Division. Prior to joining WorkSafeBC, he held positions as assistant deputy minister, Court Services, and assistant deputy minister, general manager, and chief information officer with the Liquor Distribution Branch. Prior to these public sector positions, Ian had various positions with Sears Canada in Vancouver and Toronto.

As vice president, Claims Services, Ian is responsible for the administration of claims operations throughout the province of B.C. He is the executive sponsor for the Service Delivery Improvement Strategy for Claims.

Plenary session:

Early Return to Work: Our Goal — Your Support

Learning objective:

To recognize and acknowledge the important services that health care professionals provide to injured workers in the province of British Columbia.

Notes

Notes

• Michael Coss •

Michael Coss is the author of *The Courage to Come Back: Triumph over TBI - A Story of Hope (2011)* and the inspiration behind the creation of the Michael Coss Brain Injury Foundation. The foundation was created to raise money for children in need of financial support to access brain injury treatment and the proceeds from the sale of Michael's book go directly to help the kids. The book is a moving account of Michael's journey facing the challenges of traumatic brain injury.

Michael is also the winner of the 2011 Courage to Come Back Award for Physical Rehabilitation (Coastal Health). Michael will tell you that his life was changed forever, and it's been changed for the good. First though, he will usually tell you that he is the very proud father of twins, Nathan and Danielle who are now six years old.

On May 18th, 2006 Michael was driving to Kelowna with his former spouse and seven-month-old twins to attend a work function and stay with friends. Catastrophe struck while on the Coquilhalla highway — Michael lost control of the van and it rolled at least one and a half times.

Miraculously, his former wife Ann and daughter Danielle escaped only with minor injuries, but Nathan and Michael were not as fortunate. Nathan spent several weeks at BC Children's Hospital with head injuries. When the medical services arrived at the scene of the accident, Michael was unresponsive, with evidence that the airbags had deployed and he was restrained by his seatbelt. Glasgow coma scale (CGS) rating at the scene was 8 out of a possible 15, which indicated a comatose state.

He was transported by air to Royal Inlands Hospital in Kamloops where he was assessed by Neurosurgery. He had bilateral ventricular shunts inserted. Later, he was transferred to Royal Columbian Hospital to be closer to his family where he remained comatose.

Michael's injuries were nearly fatal and despite comprehensive treatment at two hospitals, he remained in a coma for six and a half months. Doctors told his family that his chances of recovery were remote. His wife Ann was devastated, facing the challenge of raising their two babies without a father. Recommendations were made to his family to look for a long-term care facility to look after him for the rest of his life.

But they did not know Michael Coss and his family. Michael's family had researched hyperbaric oxygen therapy (HBOT), the medical use of oxygen at a level higher than atmospheric pressure. The treatments are commonly used in Asia and Europe and are available in Canada, where they are not approved by Health Canada and therefore not covered by medical insurance. The more the family learned, the more they came to believe that these treatments might work for Michael, though they were prohibitively expensive and came with no guarantee.

His friends and co-workers saw a chance to mobilize and make a difference in Michael's life. Within a few

weeks, funds were raised from donations from friends, family, and his former work colleagues at Molson Coors Canada.

Five days a week via ambulance, his mother accompanied him from Royal Columbian Hospital to the Richmond Hyperbaric Health Centre. Staying by his side, she would dampen a sponge with water to make him swallow and equalize the pressure within his ears. It worked, and on Christmas Eve of 2006, after three treatments and half a year in a coma, Michael awoke and uttered his first words.

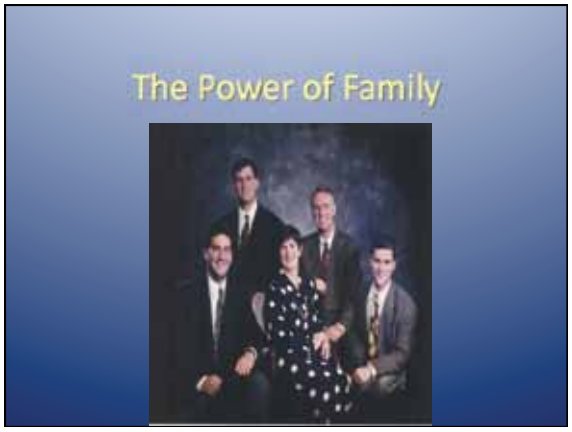
Only three months out of his coma, he learned about Rick Hansen's Wheels in Motion events to raise funds for research and to improve the quality of life for people with spinal cord injuries. Michael was inspired by Rick Hansen and wanted to be a part of the event. In the midst of his rehabilitation he canvassed his network and once again they rallied in support. Friends, family members, Molson Coors co-workers, and other corporations raised over $22,000. His team (Team Cosco) not only won the award for the top fundraiser in Canada for Wheels in Motion 2007, they also set a fundraising record for the entire six year history of the program.

Through a long, intensive, and grueling rehabilitation he re-learned how to talk, eat, and is now re-learning how to walk.

Today Michael serves as an inspiration, motivational speaker, and catalyst for traumatic brain injury survivors everywhere. He currently resides in a group home not too far from his family and visits with them several times a week. His long term goal is to be an able and active participant in his family's life. He is not yet ready to walk hand in hand to the park with his children but at least he is in training for it.

Plenary session:

Courage to Come Back Award Recipient: A Worker's Perspective


The Power of Family


Adventure in the Skies
ESSO


Black and Blue Line

Dog-gedness

Down and Almost Out

Not Exactly a Styling Salon

A Double Miracle

Michael and Pauline

• Dr. Daniel O'Connell, Ph.D. •

Daniel O'Connell, Ph.D., is a clinical psychologist who lives in Seattle, Washington. Over the last 35 years, Dr. O'Connell has worked as an educator, consultant, clinician, department chair, and executive director in medical, behavioural health, and educational settings. He is a consultant to The Institute for Healthcare Communication and serves on the faculty of the Foundation for Medical Excellence. He teaches in the Residency Programs at the University of Washington School of Medicine, and maintains a coaching and consulting practice working primarily with health care organizations and individual providers on all aspects of the psychology of medicine, leadership in health care settings, and professional interactions.

Dr. O'Connell develops educational programs for health care providers, groups, and institutions and has led more than 500 workshops on various topics in the psychology of relationships and communication in health care.

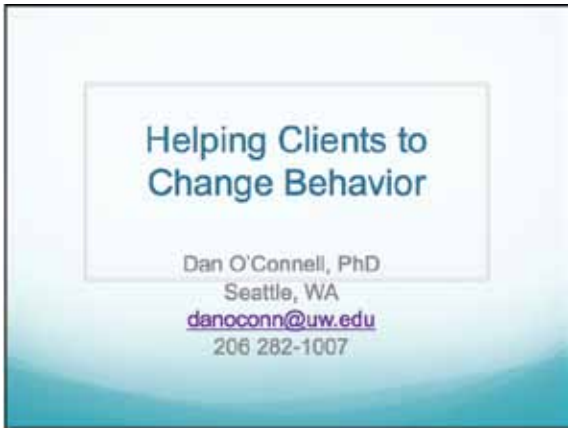
He created a program for the disclosure and resolution of adverse medical outcomes that is widely taught in the United States and Canada.

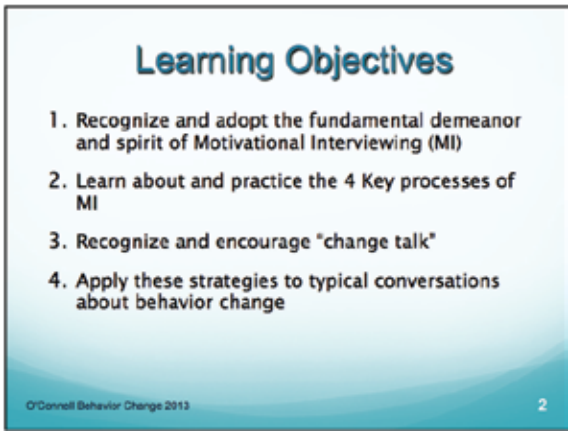
Plenary session:

Third Wave of Cognitive Behavior Therapy: How to Embed Acceptance and Commitment Therapy into Programs for Injured Workers

Learning objectives:

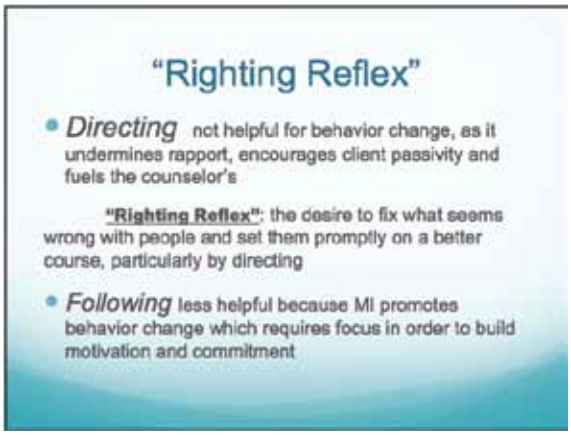
- Describe the key elements of ACT: Acceptance and Commitment Therapy
- Consider how to embed ACT concepts into programs for injured workers
- Demonstrate how these ideas would sound in conversations with patients intended to promote their willingness and ability to function as well as possible despite injury and disability.


Helping Clients to Change Behavior
Dan O'Connell, PhD
Seattle, WA
danoconn@uw.edu
206 282-1007


Learning Objectives
1. Recognize and adopt the fundamental demeanor and spirit of Motivational Interviewing (MI)
2. Learn about and practice the 4 Key processes of MI
3. Recognize and encourage "change talk"
4. Apply these strategies to typical conversations about behavior change
O'Connell Behavior Change 2013
2


What is MI?
• MI is a collaborative, goal-oriented style of communication, with particular attention to the language of change. MI is designed to strengthen personal motivation and commitment to a specific goal by eliciting and exploring the person's own reasons for change within an atmosphere of acceptance and compassion.


Continuum of Communication Styles to help client feel:
engaged, empowered and open
Directing
Guiding
Following

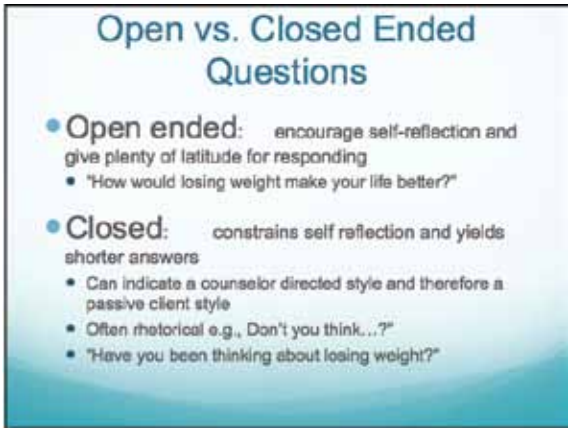

"Righting Reflex"
Directing not helpful for behavior change, as it undermines rapport, encourages client passivity and fuels the counselor's
"Righting Reflex": the desire to fix what seems wrong with people and set them promptly on a better course, particularly by directing
Following less helpful because MI promotes behavior change which requires focus in order to build motivation and commitment

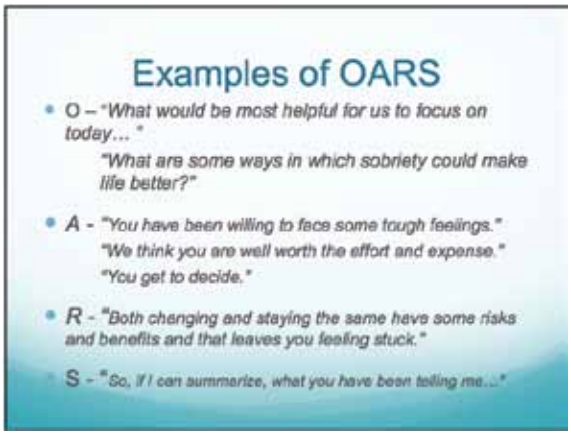

Spirit of MI
Collaboration: done with rather than to or for
Compassion: non-judgmental focus on behavior and your willingness to guide
Evocation: within the client are most of the ideas, reasons and capabilities needed and our job is to draw them out
Acceptance: recognizing, supporting and encouraging client's own capability for self reflection, choosing and carrying out change

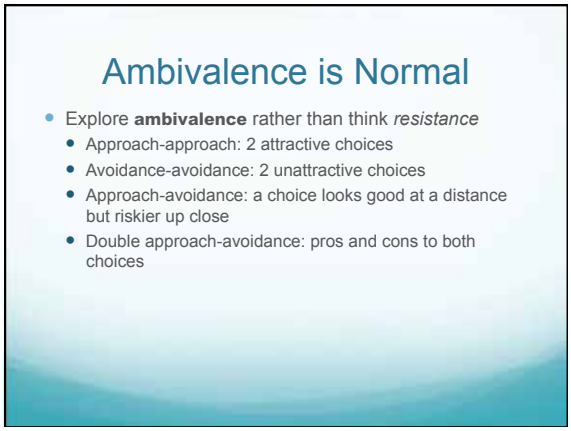
OARS

Move through the waters to change

- Open ended questions
- Affirming client value, strengths, autonomy
- Reflecting what client says, and capturing what client means
- Summarizing to pull together client's thoughts and feelings as platform for further movement


Open vs. Closed Ended Questions
Open ended: encourage self-reflection and give plenty of latitude for responding
"How would losing weight make your life better?"
Closed: constrains self reflection and yields shorter answers
Can indicate a counselor directed style and therefore a passive client style
Often rhetorical e.g., Don't you think…?"
"Have you been thinking about losing weight?"


Examples of OARS
O – "What would be most helpful for us to focus on today… "
"What are some ways in which sobriety could make life better?"
A - "You have been willing to face some tough feelings."
"We think you are well worth the effort and expense."
"You get to decide."
R - "Both changing and staying the same have some risks and benefits and that leaves you feeling stuck."
S - "So, if I can summarize, what you have been telling me…"


Ambivalence is Normal
Explore ambivalence rather than think resistance
Approach-approach: 2 attractive choices
Avoidance-avoidance: 2 unattractive choices
Approach-avoidance: a choice looks good at a distance but riskier up close
Double approach-avoidance: pros and cons to both choices

2 sides of the Ambivalence: Change Talk vs. Sustain Talk

- Change talk are statements that indicate some movement in the direction of change
  - *"I need to do something about this."*
  - *"I could get out and walk a little more I suppose."*
- Sustain talk are statements that indicate support for the status quo.
  - *"I don't think I am in much danger of that happening."*
  - *"I don't see how that would help."*

Don't encourage Sustain Talk

- Questions that elicit sustain talk
  - What gets in the way?
  - What prevents you from?
  - Why haven't you?
- Even empathic statements can encourage sustain talk so watch how you use them
  - Reflect ambivalence and choice at same time

Using crack has brought you so much pleasure that you may decide to continue to use despite the way it has also made your life miserable. (said without sarcasm)

Focusing

- On going process of seeking and maintaining direction
- Style is to guide rather than direct or simply follow from one topic to another.
- Sources of focus can be client, setting, your clinical expertise
  - *"What do you want to focus on today?"*
  - *"Our program helps clients with drugs and alcohol."*
  - *"My experience suggests that medication can be very helpful and I wonder if we can talk more about that."*

Using OARS to Focus

- **O** – *"There are a number of ways in which people are able to live well with HIV. What would be most helpful for us to talk about?"*
- **A** – *"This is your life and I respect your choice for where to begin."*
- **R** – *"It makes sense to you to focus on finding a job as a first step."*
- **S** – *"So we have discussed medication, lifestyle and counseling as ways to work with depression. I wonder if talking more about counselling would be useful, as that seems to really have helped you in the past."*

Evoking Preparation Change Talk:

DARN

- **D**esire (I wish, I want, Wouldn't it be great if)
- **A**bility (I could, I would be able to, I have done that in the past)
- **R**easons (I would worry less, I would have more stability, I/we would be better off)
- **N**eed (Must, should, ought to, have to)

Importance of values

- Motivation for change often emerges from recognition of *discrepancy* between core values and current behavior
- So, ask about values, reflect and explore value statements and link values to the choice to change.
  - *"You have demonstrated courage in the face of tough odds."*
  - *"You have shown enormous self discipline in so many areas of your life."*
  - *"You truly want your children to have a less chaotic childhood than you had and you are wondering if it is not too late to turn things around for them."*

Ready to start Planning?

- Look for signs of readiness
  - Increased change talk
  - Diminished sustain talk
  - Increased resolve/tipping point for ambivalence
  - Envisioning/client can see himself in a changed state
- Transition from Evoking to Planning
  - *"So where does all this leave you?"*
  - *"I wonder what you might decide to do?"*

"Mobilizing" Change talk

- Commitment talk: *I intend, I plan, I promise*
- Activation talk: *I am willing to, I am prepared to, I am thinking about*
- Taking steps: *I looked into clinics, I read that stuff you gave me, I went to an AA meeting*

Using your OARS to Elicit and Encourage Mobilizing Change Talk

- *O – What actions do you think would be most effective in resisting relapse?*
  "What are some things you have already been doing to make your back stronger?
- *A – "You have shown amazing will power for long periods in the past."*
- *R - "Avoiding old haunts is one way you think you could protect your sobriety."*
- *S – "So you can remember times when you have made good decisions despite temptations and you can picture how getting more involved with your kids' lives might give you the perspective you need to stay strong."*

Seeing if commitment to a plan is possible at this point using CAT

- Commitment –*"Is that what you intend to do?"*
- Activating – *"How would you get ready?"*
  "Are you willing to give that a try?"
- Taking Action - *"So you have already been in touch with your ex-wife about how you could be more involved with you kids when you get out."*

Encouraging Planning Tips

- Don't yield to the "Righting Reflex" by unsolicited advice giving
- If asked for advice, give a set of options and elicit the client's reflections on each to avoid the Yes/But trap.
- Use Elicit-Provide-Elicit sequence to keep client active in reflection and choosing.
- Remind you and client of their autonomy
  - This is your decision to make.

Strengthening Commitment

- Listen for mobilizing language and reflect, affirm and summarize to highlight it.
  - How would that change your life for the better?
- Listen for implementation intentions and affirm and explore
  - *When is a good time to sign up for classes?*
- Evoke intention
  - *So in order to get this going, what would you have to do first?*
- Do not press for overt commitment if ambivalence surfaces. Switch to affirming, reflecting and summarizing to prevent rapport being damaged by perceived pressure from you.

• Trevor Alexander •

After graduating from the University of Alberta in 1985, Trevor Alexander worked with young offenders for two years before joining the Northwest Territories Workers' Compensation Board, first as a Pensions case manager and then as the manager of Client Services. He later became the director of Client Services, responsible for the Claims, Vocational Rehabilitation, Pensions, and Clinical Services departments.

In 1999, Trevor transferred to WorksafeBC as a Client Services manager responsible for Entitlement and Activity Related Soft Tissue Disorder claims. In 2001, Trevor took on the role of regional director for the Interior and North regions.

Since 2010, as the executive director in Worker and Employer Services, Trevor has lead WorkSafeBC's Claims Services delivery. He works closely with internal and external customers to ensure that services provided ensure the best recovery and return-to-work outcomes. He cares deeply about ensuring that WorkSafeBC provides the best possible care and service to the workers and employers of the province.

Plenary session:

Worker and Employer Services Update: Three Pillars of Case Management

Learning objectives:

- Share the future vision of WorksafeBC to improve service and care for injured workers in B.C.
- Explain two new strategies recently implemented by WorkSafeBC: Return-to-Work Services and the Three Pillars of Case Management.

Identify the importance of the health care providers in our collective efforts to improve recovery and return-to-work for injured workers.

Claims Services Future State

WorkSafeBC

Trevor Alexander
Vice President
Claims Services

Our Goals

- Improve Return to Work Outcomes
- Improve Service

Claims Management System

- Increased automation
- Rich claims data
- Case management planning tool
- Future state opportunities

Opportunities

- Early Intervention
- Improve timeliness of treatment and RTW outcomes on MSI claims
- Maximize the role of nurse advisors to facilitate RTW on identified claims
- Focus Case Managers on complex claims with various RTW risk factors

4

New Initiatives

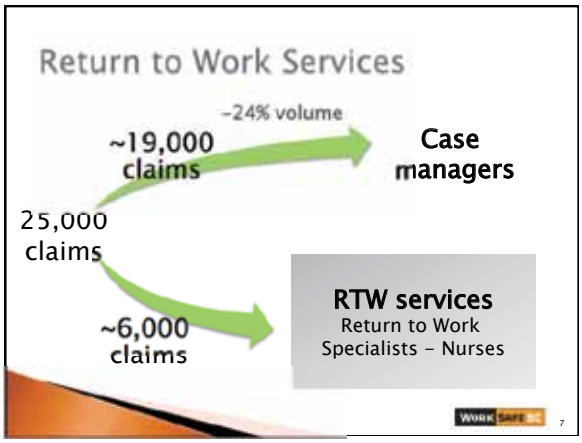
- Return to Work Services
- Three Pillars of Case Management

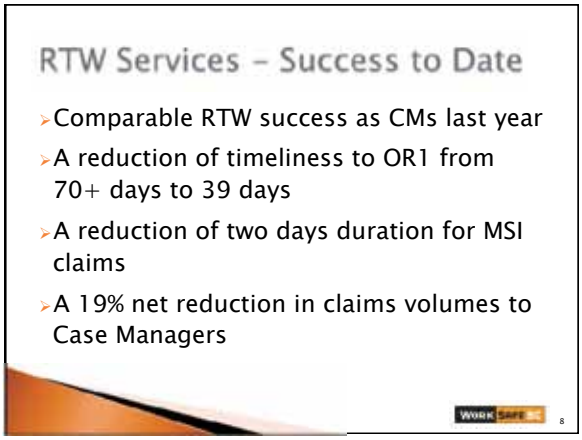
5

Return to Work Services

- Time loss MSI claims
- Early active treatment
- RTW facilitation

6


Return to Work Services
-24% volume
~19,000 claims
Case managers
25,000 claims
~6,000 claims
RTW services
Return to Work Specialists – Nurses
7


RTW Services – Success to Date
Comparable RTW success as CMs last year
A reduction of timeliness to OR1 from 70+ days to 39 days
A reduction of two days duration for MSI claims
A 19% net reduction in claims volumes to Case Managers
8


Next Steps
Met with Jamie MacGregor from PABC
Made adjustments to the hand off between physio and OR1
Looking at ways to enhance opportunities with physio
The third class of RTW Specialists has completed training
Pre-eligibility opportunities
9

Three Pillars of Case Management

10

Three Pillars – Project Plan

- Conduct Focus Group Sessions
- Review over 1,500 claims
- Conduct Literature Research
- Review other jurisdictions' approaches

→ Extract Best Practices → Develop "Three Pillars of Case Management" → Implement "Three Pillars of Case Management"

- Technology
- Change Management
- Training

11

Three Pillars – Case Manager

Case Managers' role is to assist injured workers in their recovery and their return to work.

In order to succeed, Case Managers need to have a personalized plan for each injured worker.

To develop and implement the plan, Case Managers need to have a relationship with the worker.

To develop and maintain the relationships, Case Managers must provide quality service and adjudication.

12

3 Pillars and 15 Best Practices

Relationship	Planning	Quality Service and Adjudication
Develop and maintain a relationship of trust with the worker	Complete Initial Claim Review	Provide timely and accurate decisions
Complete an initial interview with the worker	Create a Recovery and RTW Plan	Advise workers and employers of the decisions made in plain language
Create Service Agreement for ongoing worker contact	Identify and mitigate Return to Work Risk factors	Be available and return phone calls
Complete an initial interview with the employer	Understand the Medical Recovery Guidelines	
Create Service Agreement for ongoing employer contact	Identify and act on early intervention opportunities	
	Proactively manage the Recovery and RTW plan	
	Facilitate Team Meetings	

WorkSafeBC 13

Three Pillars – Expected Results

- Improved Service to Workers & Employers
- Improved RTW Outcomes
- Improved Communication with Workers, Employers and Providers

WorkSafeBC 14

How Can You Help?

- Proactive Return to Work Planning
- Coach toward Return to Work
- Worker involved in Return to Work Planning
- Ongoing contact with the case manager

WorkSafeBC 15


Questions?
WORK SAFE BC

• Dr. Chris Stewart-Patterson, MD CCBOM FACOEM •

Dr. Stewart-Patterson has been practicing Occupational Medicine since 1989. He has provided occupational medical services to the City of Vancouver, BC Government Occupational Health Programs, Health Canada's Workplace Health, RCMP, BC Rail, the Canadian Armed Forces, and more. He frequently lectures internationally on medical disability. Dr. Stewart-Patterson is a program director at Harvard Medical School.

Plenary session:

Assessing Fitness to Work with Chronic Pain Patients

Learning points:

- Issues in pain related disability evaluation
- Understanding "focus on function"
- Approach to assessing impairment
- Approach to fitness-to-work assessment

Assessment of Fitness to Work with Chronic Pain

Chris Stewart-Patterson MD
Program Director
Harvard Medical School

No Disclosures

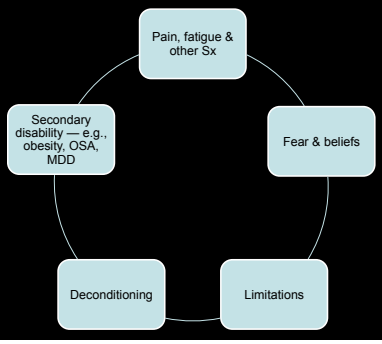
Why Care About RTW?

- "Strong evidence base showing that work is generally good for physical and mental health and well-being"
- Worklessness is associated with poorer health
- The proviso is that jobs should be safe and accommodating
- Overall, the beneficial effects of work outweigh the risks of work, and are greater than the harmful effects of long-term unemployment or prolonged sickness absence
  - Waddell, G., Burton, A. K., (2006). Is work good for your health and well being? London, The Stationery Office.

The Big Idea

We can be more comprehensive in assessing our chronic pain patients' fitness for work

Disability Pain Cycle



Work Absence & Weight Gain

- 1263 workers with benefits for LBP
  - 40% were overwt & 30% were obese
- 14% report wt gain of ≥7% 1 yr after
- 8% gained > 10% of baseline wt
- >180 days off = OR of 2.40 for significant (≥7%) wt gain
  - *JOEM* Volume 55, Number 3, March 2013

Focus on Function!

- Impairment evaluation
  - Spectrum of impairment with a given Dx
- Assessment of capacity, restriction & limitations for RTW
- Focus of Tx is to improve function
- Assessment of malingered pain

Focus on Function!

Clinical Data Base for Functional Assessment

- Symptom severity
- Stated tolerances
- Current roles
- Observed functioning
- Physical examination
- Validated questionnaires
- Functional capacity evaluations

Current Status

Impairing symptoms

- Severity
  - Intensity
  - Frequency
  - Duration
  - Precipitants & effects on functioning
- Perceived work barriers

APG Chronic Pain "Red Flags"

- Tumour & neoplasia
- Infection
- Progressive neurological deficit
- ICP or intracranial mass
- Rheumatological disease
  - (ACOEM APG. Hegmann, 2010)

Sleep Screening

- Medication
- Sleep onset
- Nocturnal wakenings
- Time get up
- Refreshed
- Nap times
- +/- OSA screen

Current Function

- Self-reported activity tolerances
- House and yard chores
- Role functioning
- Hobbies and recreational activities
- Accommodations at home
- Describe therapeutic exercises

Disability Self Perception

- 60 pts AS, FMS, RA & 4 controls
  - Pt self rate disability with 7 activities (VAS)
  - Video of same 7 activities performed
  - 6 OT & MDs (blinded to Dx) rate video (VAS)
- Discordance in VAS
  - AS & RA not significant
  - FMS is high (36%) $p<0.01$
    - Hidding et al. J Rheumatology 1994;21:5 p818

Horse Sense…

- Feeding horses
  - 4.3 METS (DOT medium demand level)
    - (3.6 to 6.3 METS)
    - lifting up to 21 to 50 lbs occasionally
- Grooming horses
  - 7.3 METS (DOT Heavy demand level)
- Trotting
  - 6.3 METS (DOT Heavy demand level)
- Cleaning stalls
  - 7.7 METS (DOT Very Heavy demand)

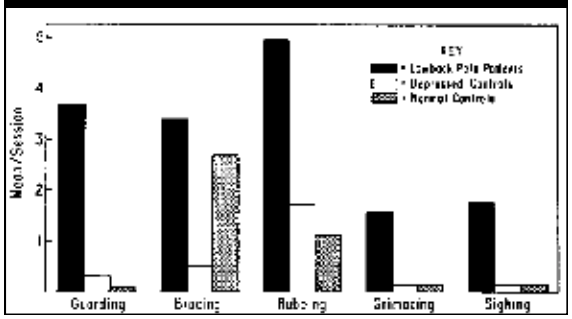
Physical Examination

- Signs related to impairment
  - Joint: reduced range of motion
  - Muscle: atrophy
  - Neurological: reduced strength, sensation, reflexes
  - Dermatological: swelling, lack of calluses or dirt
- Effort behaviors
- Cross validation observing function
  - Sit, stand, walk, crouch, bend…

Pain Behavior Observation System

- Rubbing
- Guarding
- Bracing
- Grimacing
- Sighing
- Frequency correlates with VAS and 0-10 pain ratings
  - Keefe & Block *Behav Ther.* 1982;13: 363–375

CLBP pts, depressed pts & normal controls



Questionnaires

- AMA endorses consistency & validity tests for impairment assessments
- Disability questionnaires
- Symptom questionnaires
- Neuropsychological testing
  - » (Rondinelli, 2007; Genovese & Galper, 2009)

Pain Disability Index (PDI)

- Self rating of perceived disability
- Pain disability scores correlate with 5 pain behaviors
- Frequency of pain behaviors is greater during walking & shifting position
  - – *Clin J Pain* Vol 21, #3, May/June 2005
- Risk range is >38
- www.med.umich.edu/1info/fhp/practiceguides/pain/detpdi.pdf

Coherence Analysis

Coherence Analysis is a method of systematically reviewing the clinical data

- Use multiple themes when analyzing impairment data and formulating conclusion
  - (ACOEM APG. Hegmann, 2010)
- Determine if the overall data "coheres" or holds together in a manner that makes clinical sense
  - (Carone & Bush 2012 p206)
- The clinical elements interact to support & strengthen the impairment conclusion

Coherence Analysis (7 C's)

Continuity
(AMA Impairment guides 6th Ed; U.S. S.S.A., 2010; ACOEM APG 2010;Samuel & Mittenberg, 2005;; Young, et al 2006)

Consistency
(AMA Impairment guides 6th Ed; U.S.SSA, 2010 ;ACOEM APG 2010)

Compliance
(Demeter & Andersson, 2003; Trimble, 2004; U.S. SSA 2010; ACOEM APG2010; APA 2000)

Congruency
(AMA Impairment guides 6th Ed; ACOEM APG 2010; APA 2000)

Causality
(AMA Impairment guides 6th Ed.; ACOEM APG 2010.)

Comorbidity
(AMA Impairment guides 6th Ed; DSM IV, 2000; ACOEM APG 2010.)

Cultural factors
(AMA Impairment guides 6th Ed; DSM IV ; (ACOEM APG 2010.)

Compliance

- Medications
- Invasive treatments
- Surgery
- Self initiated treatments
- Self funded treatments
- Demonstrate exercise program

Injury Comorbidity

- Injury absence duration for 2004-2007
  - 15,246 episodes
- 50th percentile of the SA episode duration
  - No comorbidity 67 days
  - 1 comorbid condition 101 day
  - 2 or more conditions 159 days

- *JOEM* Vol 55;4 April 2013

Evidence of Impairment

- Severity of symptoms
- Functional history
- Examination findings & observations
- Functional testing results
- Pathology from clinical investigations
- Questionnaires
- Medical records
- Coherence analysis

Areas of Impairment

- Disease/injury location
- Chronic pain
- Sleep
- Psychiatric
- Cognitive

Functional Capacity

- Capacity
- Limitations
- Restrictions
- Tolerance
  - » AMA guides to the evaluation of Work Ability & Return to Work 2nd ed.

Tolerance

- Ability to sustain work or activity
- Not scientifically measurable
- Frequently less than capacity
- Dependent on the rewards
- "Believable" or not?

» AMA guides to the evaluation of Work Ability & Return to Work 2nd ed.

Assessing Fitness to Work

- Diagnosis?
- Impairment?
- Functional capacity
- Review job
  - – Duties & demands
  - – Safety sensitive?

We can be more comprehensive in assessing our chronic pain patients' fitness for work

• Dr. Ben Mortenson, Ph.D. •

Ben Mortenson graduated from the University of Alberta in 1991 with a Bachelor of Science in occupational therapy and has practiced in a wide variety of areas including orthopedics, plastics, medicine, rehabilitation, and residential care. He completed his Masters of Science at the University of British Columbia in 2002 and his PhD there in 2009. His research focuses on four overlapping areas: assistive technolog y, social participation, caregiving and outcome measurement.

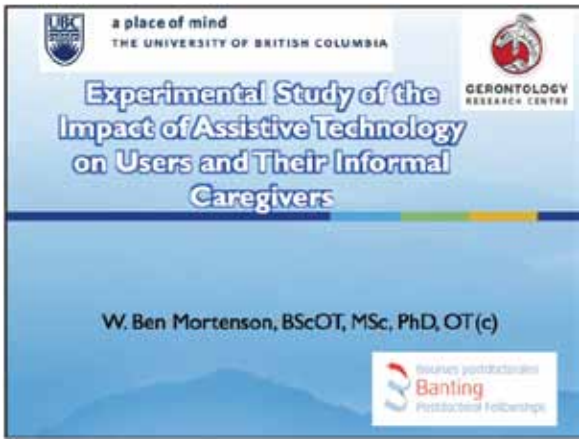
His work is centered on four main populations: assistive technology users, informal and formal caregivers, individuals with spinal cord injury, and residents in long-term care. His doctoral research was a two-phase, project that explored the impact of wheelchairs on those living in residential care in the Lower Mainland. During his Canadian Institute of Health Research funded, post-doctoral training with Louise Demers at the University of Montreal he conducted a pilot intervention study that explored the impact of a client-centred assistive technology intervention on community dwelling individuals and on their caregivers. He is currently a Banting post-doctoral fellow at Simon Fraser University and he is conducting a multi-site intervention study, which explores the effect of a standardized approach to assistive technology provision and training on users and their informal caregivers.

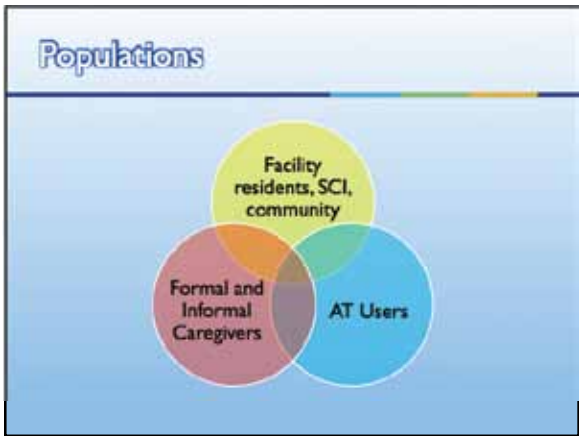
Workshop session:

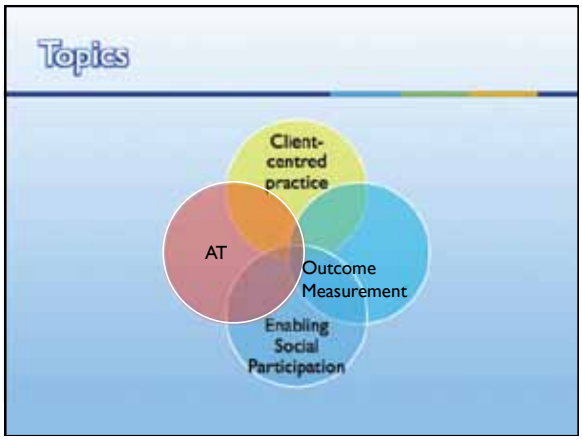
Experimental study of the impact of assistive technology on users and their informal caregivers

Learning objectives:

- Describe the effect of an inclusive and targeted approach to assistive technology provision on assistance users
- Describe the effect of an inclusive and targeted approach to assistive technology provision on informal caregivers
- Explain how these findings might be applied clinically and identify the policy implications of this research.


a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA
GERONTOLOGY
RESEARCH CENTRE
Experimental Study of the Impact of Assistive Technology on Users and Their Informal Caregivers
W. Ben Mortenson, BScOT, MSc, PhD, OT(c)
Banting


Populations
Facility residents, SCI, community
Formal and Informal Caregivers
AT Users


Topics
Client-centred practice
AT
Outcome Measurement
Enabling Social Participation

Learning Objectives

- Describe the effect of an inclusive and targeted approach to assistive technology provision on assistance users.
- Describe the effect of an inclusive and targeted approach to assistive technology provision on informal caregivers.
- Explain how these findings might be applied clinically and identify the policy implications of this research.

Collaborators

- Louise Demers, Marcus Fuhrer, Jeff Jutai, Frank DuRuyter, Jim Lenker, & Andrew Sixsmith

Assistive Technology Definition

- Defined as any item, piece of equipment, or product system that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. (US Public Law 100-407).

Effect of AT on Users

- Beneficial results of AT for users (Mann et al., 1999; Wilson et al., 2009).
- Scant attention paid to the impact of these devices on caregivers.

Informal Caregivers Definition

- Spouses, family members, friends or community members who provide unpaid assistance for those who are ill are disabled (Walker, Pratt, & Eddy, 1995).

Implications for Formal Caregivers

- Healthcare workers have some of the highest rates of injury, especially among those who work in residential and community care (Workplace BC, 2013).
- Over-exertion/repetitive strain was identified as the accident type in 45% of claims.

Long Term Care Example

- In 2009 over 2,600 workers in long-term care facilities sustained injuries requiring compensation.
- $17 million in claim costs were paid
- 120,500 days of work were lost
- 55% of the time the patient or another person was the cause of the injury.
- 11% of the time medical equipment was the cause of the injury.

Implications for Formal Caregivers

- If AT makes users more independent, it should decrease demands on caregivers.
- May need to encourage use of AT or training/ reminders.

Implications for Formal Caregivers

- Caregivers may use AT, like lifts, to help decrease burden, but adoption is complex (Schoenfisch, Myers, Pompeii & Lipscomb, 2011; Skoglind-Ohman & Kjellberg, 2011).
- Caregivers may be injured by assistive devices, i.e., power wheelchairs.
- Likely work with informal caregivers.
- Formal caregivers may also be informal ones.

Informal Caregiving Demographics

- In 2007, 2.7 million Canadians over the age of 45 were informal caregivers
- 75% were aged 45–64
- 60% were women
- 57% were employed

(Cranswick & Dosman, 2008)

The Occupation of Informal Caregiving

Informal caregivers assist with the following activities:

Activity	%
Transportation	71
House activities	51
Meals	39
Managing care	35
Personal care	32
Medical care	27

(2008–2009 Canadian Community Healthy Aging Survey)

Background

- 98% of homecare clients have an informal caregiver (Canadian Institutes of Health Information, 2010).

Informal Caregiver Distress

- Caregiver burn-out is a serious concern (Egbert et al., 2008).
- Hours of informal care and caregiver distress increase as care recipient's ability decreases (HCC, 2012).
- Replacement: @ $25-26 billion in Canada (Hollander, Liu, & Chappell, 2009).
- Replacement: @$450 billion in the US(Feinberg et al., 2011).

Outline

1. Describe results from a systematic review we conducted about how AT affects users' informal caregivers.
2. Describe quantitative and qualitative findings from an intervention study we conducted.
3. Briefly describe a model of the effects of AT on users and caregivers.

Systematic Review Question

- What effect does assistive technology use by adults with disabilities have on their informal caregivers?

Mortenson, W.B., Demers, L., Fuhrer, M.J., Jutai, J., Lenker, J., & DeRuyter, F. (2012). How assistive technology use by individuals with disabilities impacts their caregivers: A systematic review of the research evidence. *American Journal of Physical Medicine and Rehabilitation, 91*, 984-998.

Systematic Review

Inclusion:

1. Adult users (18+).
2. AT intended to enhance user self-care, mobility, or memory; device training; and environmental modifications to accommodate AT.
3. Empirical studies only.

Systematic Review

Exclusion:

1. Did not include AT as the main component of the intervention.
2. Pooled data from both users and non-users.
3. Published before 1990.

Search Strategies

- Database specific MeSH and keyword searches to locate in process citations.
- Data sources included Embase, Medline, Cumulative Index to Nursing and Allied Health Literature, Web of Science, PsychINFO, PubMed and active researchers in this area.

Appraisal

Level of evidence based on study design

I= systematic review of RCTs 4= case series (cross-sectional)

- Kearney's grade (reverse scored) (Qual)

I=dense description,V=findings restricted to *a priori* frameworks.

RESULTS

Search Results

1266 records found (excluding duplicates)

1195 excluded based on review of title or abstract

71 full articles reviewed

22 articles included in review

Methods of Included Studies

- 7 qualitative (1 focus group, 6 interviews)
- 13 quantitative (8 surveys, 2 case studies, 3 intervention studies without control group)
- 2 mixed-methods (intervention without control group + interview)

Most had sample sizes <50 participants.

Level of Evidence

Quantitative

- All = level 4 evidence (case study/cross-sect.)

Qualitative

1 = grade V (a priori)
2 = grade IV (descriptive categories)
4 = grade III (shared pathways)

Mixed Methods

- level 4 & grade V

Studies by Device Type

- 8 mobility AT (incl. 4 about power mobility)
- 2 medical alert device (with voice prompts)
- 4 cognitive AT
- 6 multiple devices

General Findings

Beneficial outcomes of AT:

- ↓worry,↓ time of care provision and ↓physical exertion.

Negative outcomes:

- caregiver injury, caregiver worry about user injury, frustration with having to cue the user, and stigma and accessibility issues that jointly affect users and their caregivers.

Methodological Limitations

- 16 studies supplied little information about the AT provided
- 14 studies did not explicitly define the caregivers they included
- 8 eight used care recipients' perceptions in order to establish caregivers' outcomes.

Methodological Limitations

- None documented the usage frequency of the AT being studied
- None of the intervention studies reported data about possible co-interventions or described characteristics of participants lost to follow-up.

Discussion

- The evidence provided by these studies is limited because of the study designs that were used and their methodological limitations.
- This is especially problematic regarding limited description of the intervention (treatment fidelity) and adherence (AT non-use).
- This study laid the ground work for the next study we did.

Effect of AT Intervention on Users and their Informal Caregivers

- **Mortenson, W.B.**, Demers, L., Fuhrer, M.J., Jutai, J., Lenker, J., & DeRuyter, F (2013). Effects of an assistive technology intervention on older adults with disabilities and their informal caregivers: An exploratory randomized control trial. *American Journal of Physical Medicine and Rehabilitation*. 92(4), 297-306.

Hypotheses

1. Following an intervention that increases the appropriateness of existing AT or provides new AT, older community-dwelling AT users will report less difficulty in performing selected activities and increased satisfaction.
2. As a result of the intervention, caregivers will report decreased caregiving burden.

METHODS

Methods

- Multi-site, Delayed intervention RCT

Intervention

- Included

i) identification and assessment of a problematic activity with the caregiver and assistance user

ii) development of a collaborative solution, and

iii) intervention, including device provision training and monitoring

- Up to $350 worth of equipment
- The treatment protocol included a detailed description of each component and was operationalized into 20 discrete steps

Inclusion Exclusion Criteria

User:

- >65
- Physical disability
- No cognitive impairment/ French or English speaking

Caregiver:

- >age of consent
- More than two hours of care per week
- English or French speaking/ no cognitive impairment

User Outcome Measures

Primary User outcomes:

- Measures performance and satisfaction with selected activity from the Assessment of Life Habits (LIFE-H) (Noreau, et al., 2004) .

Secondary User outcome measure

- Individually Prioritised Problem Assessment (IPPA) (Wessels et al., 2000).

Caregiver Outcome Measures

- Caregiver Assistive Technology Outcome Measure (CATOM) (Depa, Demers, et al., 2009).
- Developed based on a stress model (including frequency of help provided, physical strain, perceived lack of free time, anxiety).
  - Part 1: documents all of the activities that caregivers assist with
  - Part 2: records physical and emotional burden associated with the dyad selected activity
  - Part 3: records overall burden

Independent Variables/Covariates

- Demographic and diagnostic data.
- Health (EQ-5D) (EuroQol Group, 1990).
- Functional Capacity (Functional Autonomy Measurement System) (SMAF) (Desrosiers, et al, 1995).
- Cognition (MMSE) (Folstein et al., 1975).
- Attitudes Towards Assistive Devices Scale (Roelands et al., 2002).

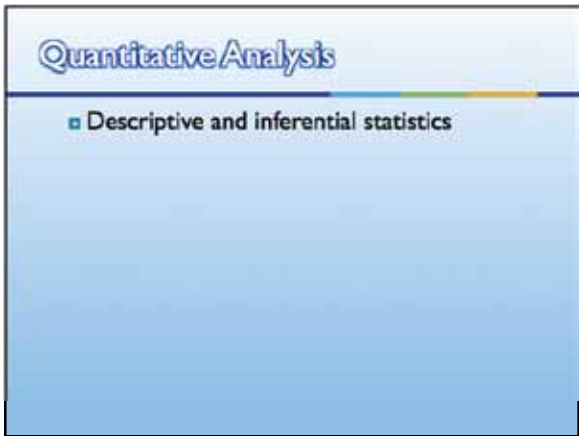
Treatment Fidelity

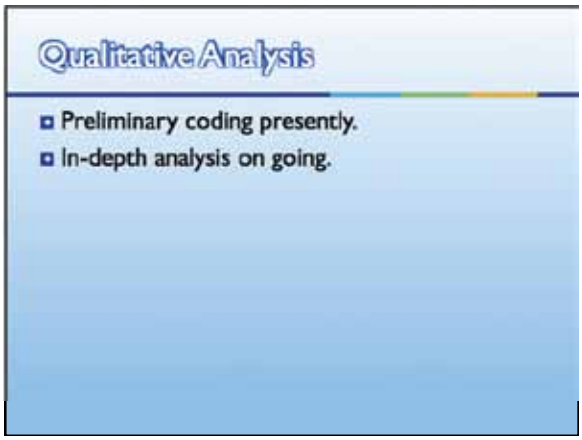
- % of 20 steps of treatment protocol completed were calculated.

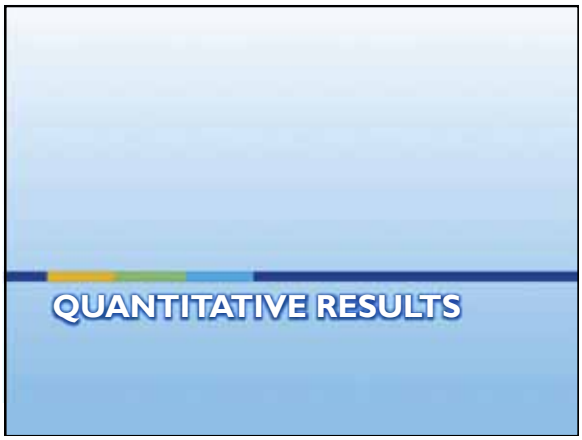
Qualitative Data

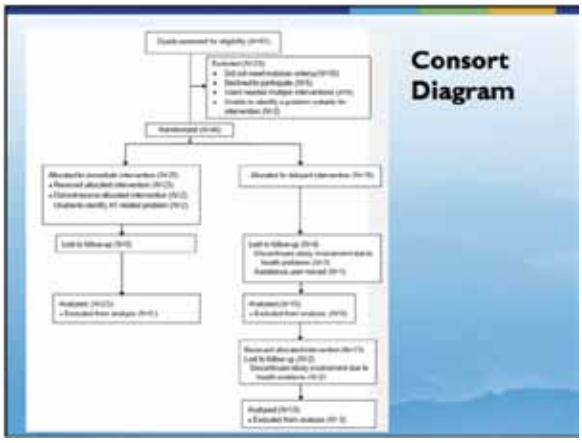
Vancouver site:

- Recorded treatment reflections after each visit
- Conducted post study interviews with willing participants, exploring their experiences with assistive technology use (inside and outside study), the intervention, and experiences of caregiving.


Quantitative Analysis
Descriptive and inferential statistics


Qualitative Analysis
Preliminary coding presently.
In-depth analysis on going.


QUANTITATIVE RESULTS



	Delayed	Immediate
Assistance user background characteristics (range)	Mean or %	Mean or %
Age	83	82
Sex (female)	58%	48%
Level of education	11	10
MMSE (0-30)	27	26
Function (-87-0)	-25	-23
Perceived Health (0-100)	52	56
Attitudes towards Assistive Devices (12-60)	41	41
Assistance user outcomes		
Difficulty (1-5)	3.6	3.5
Satisfaction (1-5)	2.7	2.4
Accomplishment (0-9)	3.6	4.3

Caregiver Background Characteristics	mean or %	mean or %
Age	74	68
Sex (female)	58%	76%
Relationship		
Spouse	79%	56%
Child	16%	40%
Other	5%	4%
Cohabitation with assistance user	84%	76%
Level of education	12	14
Hours of care provision	12	18
Perceived Health (0-100)	64	80
Caregiver outcomes		
CATOM items 1-14 (14-70)	55	52
CATOM item 15-18 (4-20)	17	15

Dyad Selected Activities

- bathing (29%)
- indoor/outdoor mobility (27%)
- transferring (10%)
- dressing (7%)
- toileting (7%)
- meal preparation/eating (7%)
- other (12%)

Treatment Fidelity

- 89% of the 20 steps completed on average.

Short Term Outcomes

Immediate Intervention

- Assistance users:
  - ↑satisfaction with performance ($p<.001$)
  - ↑ accomplishment scores ($p = .014$)
  - ↓difficulty ($p=.004$)
- Informal caregivers:
  - ↓burden ($p=.013$)

Delayed Intervention and Longer Term Outcomes

Delayed intervention group:

- Experienced similar benefits following the intervention.

Four month outcomes:

- Mostly maintained four months after conclusion of the intervention.

Relationship between Caregiver and User Outcomes

Correlations between Changes in Caregiver and User Outcomes for Both Groups

	Changes in Perceived Difficulty (IPPA)	Changes in accomplishment (Life-H)	Changes in satisfaction (Life-H)
Changes in Activity Specific Burden	r=-.405	r=.402	r=.325

QUALITATIVE RESULTS

Qualitative Participants

- Conducted 14 interviews with
  - 8 dyads,
  - 4 caregivers, and
  - 2 care recipients.

Generally Positive

- "The walker is helpful. [My mother] wants to use it and so far, though she's still declining, she still mobilizes. We don't want her to be bed ridden and just getting bedsores. We don't want that to happen."

  -Working daughter of mother with falls

Some AT interventions were unsuccessful

- Discussing sock aid provided:

P: "To put on a pair of socks it takes half an hour."

R: "So the sock aid is not that useful?"

P: "No, that thing is bad."

-Participant with Parkinson's

Caregivers Needed to Monitor Use

"We got the walker with wheels, you know, and he could not get it through his head he just had to walk between it so it would move on wheels. He insisted on [lifting it and] putting it in front on him. […] Well the minute he stepped on his bad leg down he would go."

-Caregiver of participant with Cancer

Caregivers Needed to Encourage Adherence

"She used to take the hip protectors off. So we told her, okay, you don't listen to us, you do whatever you want."

-Working daughter of participant with falls

Accessibility and Additional Caregiver Occupations

- "So I looked from the van and I said, 'This isn't going to happen." […] So we came back at night, so mind the extra time that this takes to do all of this planning. So we came back allowing enough time to do this, to find somebody or whatever we had to do. So again, I say, 'Wait in the car. I'll do the recon."

  Spouse of participant with Parkinson's and back problems

Accessibility Issues Restricted Some Caregivers

"There's a social burden that we're only beginning to appreciate. […] I do what [my husband] does. So if he's shut out or included, that what happens to me."

-Spouse of participant with Parkinson's and back problems

Financial Considerations

- "Knowing that she could get [a walker] and that she wouldn't have to pay for it. [That's…] a big deal for seniors. They're very worried about how much money am I going to need to live on right?"

-Daughter with fibromyalgia of parent with balance problems.

Reliability of Devices

- R: What's wrong with the reacher?
- P: It's a folding one […] so when you pick it up, well I can't figure out how to pick it up and not make it fall apart. So then that's frustrating.

-Spouse of participant with Parkinson's and back problems

Cascading Effects

- Daughter with fibromyalgia wanted mother to have walker for outside mobility
- Mother was reluctant to use the walker because she was, "too proud."
- Began to use it when best friend got one
- We provided the lightest walker available, but her daughter was unable to lift it into the trunk of her car.
- So she ended up needing to use "Handydart" to go places outside her neighbourhood with the walker.

Caregivers Benefited from Devices

- Describing her reacher

P: "I don't know how I lived without my reacher. It's absolutely marvelous. […] Even [my husband] is occasionally using it, aren't you?

H: "It's good!"

-Participant with MS and husband

DISCUSSION

User Outcomes

- As found in previous intervention studies (Mann et al., 1999; Wilson et al., 2009), participants in both groups experienced improvements in satisfaction and decreased difficulty.
- Accomplishment improved significantly for the immediate intervention group and almost for the delayed group.

Caregiver Outcomes

- First RCT to demonstrate AT is effective at decreasing caregiver burden.
- These results are in keeping with those of non-experimental studies suggesting that AT provision can make caregiving tasks easier, safer, and less time consuming (Mortenson et al., 2012).

AT Provision Alters the Occupation Caregiving

- Caregivers may need to train care recipients to use the devices.
- May feel the need to supervise and monitor device use.
- May feel the need to encourage device use.

This likely alters the relationship between care recipient and caregiver (Pettersson et al, 2005).

Mobility AT and Accessibility

- Care recipients who used mobility AT frequently encountered environmental barriers, which could limit their social participation.
- Caregivers who engaged in shared occupations with care recipients, could be similarly excluded (Rudman et al., 2005).

Mobility AT and Accessibility

- Feel "out of place" and taught to "know their place" (Kitchin, 1998).
- Design apartheid (Imrie, 1996).
- Important not to blame the mobility AT for these issues as this tends to reinforce a medical model of disability (Oliver, 1990).

Cascading Effects

- Like all innovations, provision of AT seemed to produce unanticipated consequences (Rogers, 2003), and result in cascading effects.
- Also important to consider how informal caregivers may also use AT to ensure needs of users and their caregivers are taken into consideration.

MODEL OF USER AND CAREGIVER OUTCOMES

Model of the Effects of AT on the Occupations of Users and Caregivers

Model

- Emphasized the interdependency (Rusbult & Van Lange, 2008) that exists between care-recipients and the critical importance of context, including AT.
- Focuses on inability to consider agents in isolation from their environments.

Practical Implications

- Limited homecare and home-making services likely result in occupational overload among informal and formal caregivers.
- Currently, in BC funding for AT for those over 65 is very limited.
- Improved funding for AT would be beneficial for users, and may also help reduce caregiver burden.

Practical Implications

- AT technology provision is not a "one-off" intervention.
- Training of users and caregivers is critical for their own safety and to train the user.
- Ongoing follow-up is necessary, given cascading effects, and use of devices by informal caregivers.

Limitations

- Small sample size.
- Intervention focused on a single problematic activity.
- Unknown how intervention compares with standard of care.
- Subjective nature of outcome measures.
- Lack of blinding.

CONCLUSION

Future Research

- Currently we are conducting a CIHR funded follow up study comparing our intervention with customary care.
- Using more objective measures.
- Also monitoring adherence.

Future Research

- Research assessing the effect of cognitive and monitoring AT for users and their caregivers.
- Research exploring the effect of AT interventions on users, and both informal and informal caregivers.

Future Research

- More qualitative studies to develop a better understanding of the device prescription and training process from multiple perspectives.
- Need to better understand the active ingredients of the intervention that improve caregiver outcomes.
- Measurement development

Acknowledgements

- Study participants
- Research Staff (Michelle Plant, Louise Roy, Denise McCabe, Francine Giroux, Marie-Hélène Raymond, Amir Moztarzadeh)
- Funding

NIDRR

CIHR IRSC

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Additional Material

RM-ANOVA

Construct	Grp	Baseline Mean±SD	4 weeks	Time*Grp: F(sig)	Partial Eta Sq
User difficulty	I	3.5±1.2	2.1±.8	9.7(.004)	.217
	D	3.5±.7	3.3±1.0		
User satisfaction	I	2.4±1.1	4.1±1.1	19.7(<.001)	.354
	D	2.6±1.0	2.5±1.1		
User accomplishment	I	4.0±2.3	5.4±2.3	6.6 (.014)	.155
	D	3.7±2.3	3.5±2.2		
Caregiver activity specific burden	I	51.6±11.6	61.3±7.2	6.8 (.013)	.160
	D	55.1±8.7	55.3±8.8		
Overall caregiver burden	I	14.8±4.2	15.3±4.4	0(.995)	0
	D	17±2.8	17.4±2.6		

Paired T-test for Delayed Group

	Pre-Tx	Post-Tx	Mean change	Std. Deviation	t	Sig. (2-tailed)
Assistance Users						
Difficulty	3.2	2.4	-.8	1.4	2.2	.051
Accomplishment	3.7	5.8	2.1	2.9	-2.6	.024
Satisfaction	2.5	3.6	1.1	1.6	-2.3	.041
Caregivers						
CATOM (Q1-14)	57.2	61.5	4.3	3.7	-4.2	.001
CATOM (Q15-18)	17.1	16.9	-.2	2.3	.2	.817

Qualitative Study Participants

	AT Users		Caregivers	
	Mean (N)	SD(%)	Mean(N)	SD(%)
Age (years)	82	8	67	16
Female	(7)	(50%)	(11)	(80%)
Education (yrs.)	12	5	14	3
Health (EQ-5D) (range 0-100)	52	18	80	11

Cohabitation: 79% Hours of Care: Mean=27 (SD=25)

Qualitative Study Demographics

Variable	AT Users	
	Mean (N)	SD(%)
Cognition (MMSE)	27	4
Function(SMAF)	-20	10

Variable	Caregivers	
	(N)	(%)
Child	7	50%
Spouse	6	6%
Other	1	1%
Works outside the home	7	50%

• Dr. Michael Sullivan, Ph.D. •

Dr. Michael Sullivan is currently Professor of Psychology, Medicine and Neurology at McGill University. He also holds cross-appointment with the School of Physical and Occupational Therapy and is Scientific Director of the University Centre for Research on Pain and Disability. He has lectured nationally and internationally on the social and behavioral determinants of pain-related disability. He is known primarily for his research on the relation between catastrophic thinking and pain experience, and for the development of community-based approaches to the management of pain-related disability.

Dr. Sullivan developed the Pain Catastrophizing Scale (PCS) in 1995. The PCS has been used in more than 600 scientific studies; it has been translated into 20 languages and is currently the most widely used measure of catastrophic thinking related to pain. Dr. Sullivan also developed the Progressive Goal Attainment Program (PGAP); the first community-based intervention program designed specifically to target psychosocial risk factors for pain-related disability.

Dr. Sullivan has published over 120 scientific papers, 15 chapters, and five books. He currently holds a Canada Research Chair in Behavioral Health. In 2011, Dr. Sullivan received the Canadian Psychological Association Award for Distinguished Contributions to Psychology as a Profession. Dr. Sullivan completed his undergraduate training at McGill University and his graduate training at Concordia University in Montreal.

Plenary session: Targeting Risk Factors for Delayed Recovery

Research over the past decade has shown that medical factors alone cannot account for prolonged pain and disability following occupational injury. It's now clear that psychosocial factors also play a role in contributing to problematic trajectories of recovery. This presentation will briefly describe what has been learned about the contribution of psychosocial factors to delayed recovery.

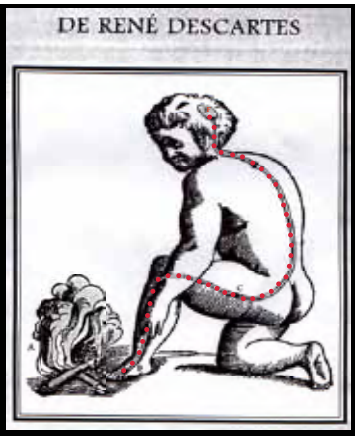
Learning objectives:

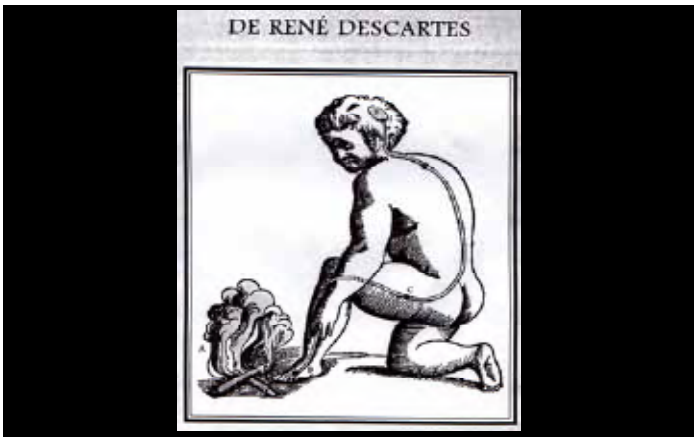
- Become familiar with recent research on determinants of chronic pain and disability following musculoskeletal injury.
- Become familiar with risk factors for work-disability associated with mental health problems.
- Become familiar with techniques designed to target risk factors for work-disability associated with mental health problems.

Targeting Psychosocial Risk Factors for Delayed Recovery

Michael Sullivan, PhD
Departments of Psychology, Medicine and Neurology
Canada Research Chair in Behavioural Health

McGill irsst CIHR IRSC LAEF

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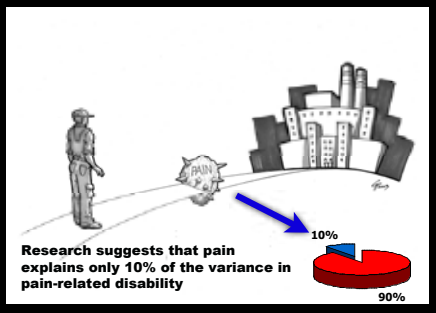
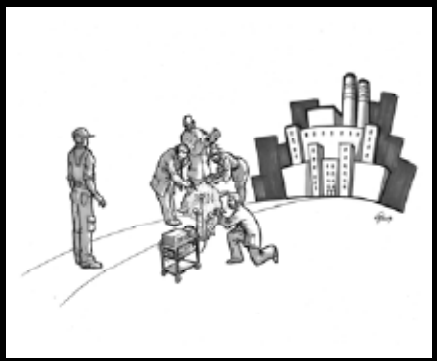
Sullivan (Clin J Pain) 2008

Pain as Primary Obstacle?

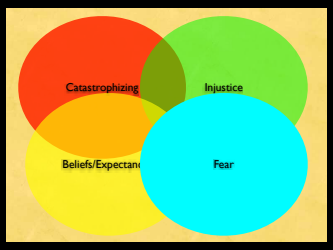
Pain only partially explains disability



Research suggests that pain explains only 10% of the variance in pain-related disability

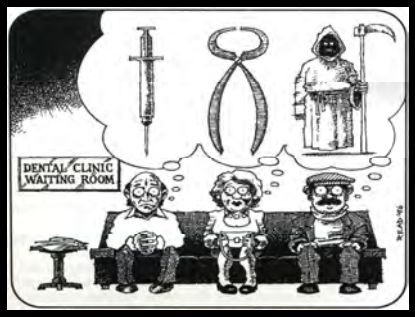


Disability-Related Psychosocial Risk Factors



Psychosocial risk factors have been shown to account for as much as 30% of the variance in the magnitude of disability.

Catastrophic Thinking



Symptom Exacerbation Fears

Disability Beliefs

Perceived Injustice

Nothing will ever make up for what I've gone through

Solutions to Catastrophizing

Education

Disclosure techniques to reduce distress and disability behaviour.

Use activity participation as a means of assisting the client in disengaging from catastrophic rumination .

Solutions to Perceived Injustice

Validation of distress or suffering.

Provider identifies his/her role as helper.

Increase awareness of the negative consequences of perceived injustice.

Solutions to Symptom Exacerbation Fears

Repeated activity exposure within tolerance limits.

Pre-determined activity involvement instead of symptom signaled activity termination.

Solutions for Disability Beliefs

Engage clients in behaviour that is inconsistent with their beliefs.

Progressively create a reality that is incompatible with disability beliefs.

Multidisciplinary Treatment Outcomes

Fear	20% ↓
Catastrophizing	23% ↓
Perceived Injustice	13% ↓
Disability Beliefs	15% ↓

P G A P

A Tool Kit for Targeting Psychosocial Risk Factors for Prolonged Disability

PGAP Treatment Outcomes

Fear	22% ↓
Catastrophizing	43% ↓
Perceived Injustice	23% ↓
Disability Beliefs	35% ↓

Multidisciplinary → PGAP

20% ↓	22% ↓
23% ↓	43% ↓
13% ↓	23% ↓
15% ↓	35% ↓

Summary

Emerging research points to the prognostic value of psychosocial risk factors for delayed recovery.

Research supports the importance for early screening of psychosocial risk factors.

Targeted interventions will be more effective and cost effective than non-targeted approaches for individuals who present with a psychosocial risk profile.


McGill
CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada
Merci!
LAEF
La Fondation Louise & Alan Edwards Foundation
irsst

• Dr. Michael Borich, DPT, Ph.D. •

Dr. Michael Borich is a postdoctoral research fellow in the Brain Behaviour Laboratory (led by Dr. Lara Boyd) at the University of British Columbia. Dr. Borich holds a doctoral of philosophy in Rehabilitation Science and also a clinical doctoral degree in Physical Therapy, both from the University of Minnesota. His areas of expertise include white matter imaging, transcranial magnetic stimulation, and motor skill learning in healthy individuals and individuals with neurologic injury or disease.

During his Ph.D. work, Dr. Borich investigated the role of sleep in memory formation and the changes in brain activity associated with response to motor skill training in young healthy individuals. He began his postdoctoral training in 2011 and was recently named a recipient of a Heart and Stroke Focus on Stroke 11 Research Fellowship for his work examining changes in myelin water content following stroke and the impact of these changes on motor recovery and learning.

Dr. Borich is keenly interested in the capacity for the brain to change in response to rehabilitation strategies after injury or in the context of disease. Currently, he is investigating how the structure of the pathways in the brain that carry information can be modified with learning to promote restoration of function after stroke.

The overarching objective of his research activities is to understand the neural substrates supporting motor control and motor learning to enable the design of optimal rehabilitation strategies to maximize recovery of function following neurologic insult.

Workshop session:

How Can Brain Imaging and Stimulation Inform Rehabilitation

The learning objectives are:

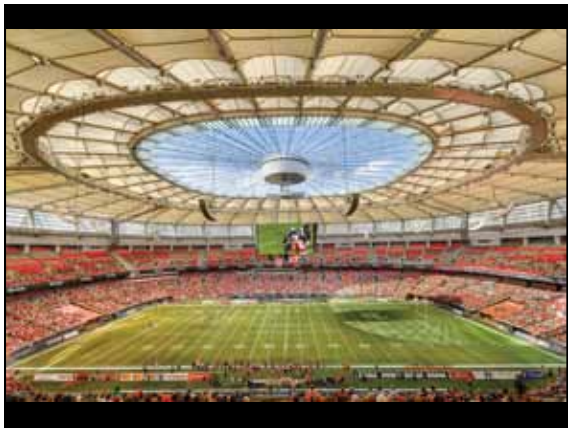
- Describe how advanced neuroimaging techniques (e.g. magnetic resonance imaging, transcranial magnetic stimulation) can be used to measure brain structure and function.
- Explain the importance of experience-dependent neural plasticity in the context of (re)learning following injury.
- Identify clinical applications for the understanding that the brain maintains the capacity for lasting structural and functional change with advancing age and following injury.

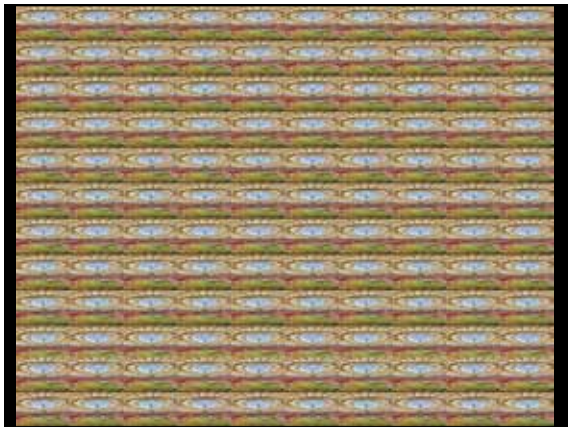
How can brain imaging and stimulation inform rehabilitation

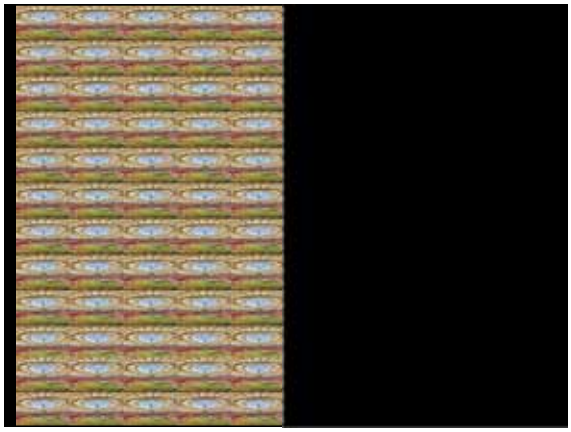
Michael R. Borich, DPT, PhD
Postdoctoral Research Fellow
Heart and Stroke Foundation of Canada Fellow
Brain Behaviour Laboratory
Department of Physical Therapy
University of British Columbia

07.06.13

WorkSafeBC
9th Annual Health Care Professional Conference







Learning objectives

1. Describe how advanced neuroimaging techniques (e.g. magnetic resonance imaging, transcranial magnetic stimulation) can be used to measure brain structure and function
2. Explain the importance of experience-dependent neuroplasticity in the context of (re)learning following injury
3. Identify clinical applications for the understanding that the brain maintains the capacity for structural and functional change with advancing age and following injury

Organizing principles

All learning and re-learning (recovery) during rehabilitation is represented neurologically by structural and functional change

Neuroplastic change is constantly occurring and is experience-dependent

Organizing principles

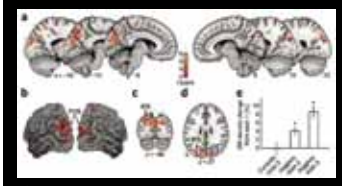
Neuroimaging can be used to characterize neuroplastic change

Non-invasive brain stimulation can be used to facilitate experience-dependent neuroplastic change

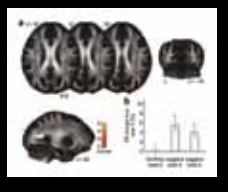
***Stimulation alone is insufficient to drive lasting and meaningful neuroplastic change*

Experience dependent plasticity

- The ability of the brain to adapt is critically influenced by behaviour

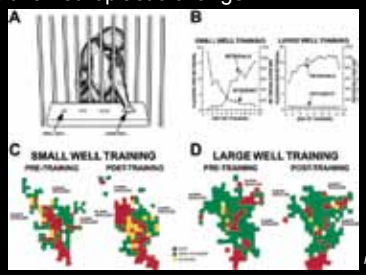


Scholz et al., 2009



Theory of rehabilitation

- Successful therapeutic interventions emphasize characteristics that stimulate positive neuroplastic change



Nudo et al., 1997

The Dose problem

What amount of practice leads to relatively permanent behavioral and neuroplastic change?

9,600 retrievals over 4 weeks (Nudo et al., 1996)

2,500 hand movement repetitions over 5 days in healthy controls and people with stroke (Boyd et al., 2003; 2004; 2008; 2009; 2010)

1000+ per day x 18 sessions finger tracking (Carey et al., 2002, 2004)

31,500 repetitions of a finger sequence over 35 days (Karni et al., 1995)

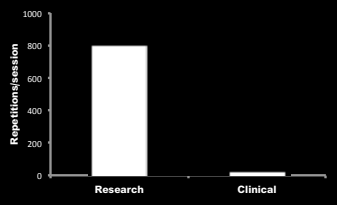
7,000 trials food catch task over 35 days (Pavlides et al., 1993)

12-14 hrs x 14 days = 196 hrs of opportunity to use affected arm/hand (Taub et al., 1993; Wolf et al., 1989)

The Dose problem

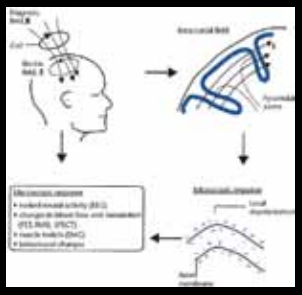
What is observed in clinical practice:

32 task-specific repetitions/session (Lang et al., 2009)



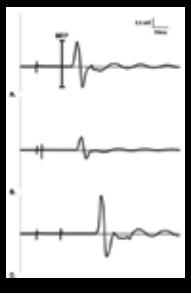
Neurostimulation

TMS: How does it work?

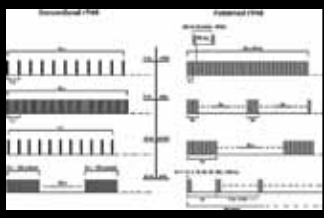


TMS can measure or modulate activity

Investigatory
Non-repetitive or pulsed

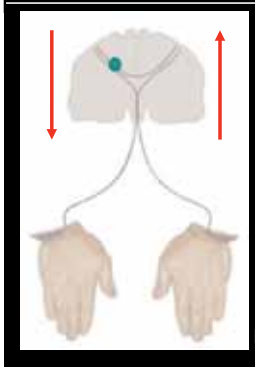


Neuromodulatory
Repetitive or patterned

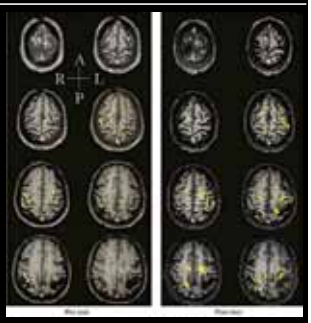


Frequency:
≤1Hz tends to inhibit
≥5Hz tends to excite

Stroke disrupts interhemispheric excitability

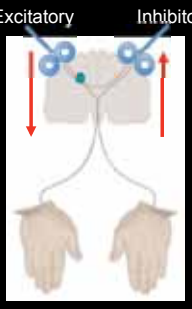


Hemiparetic hand

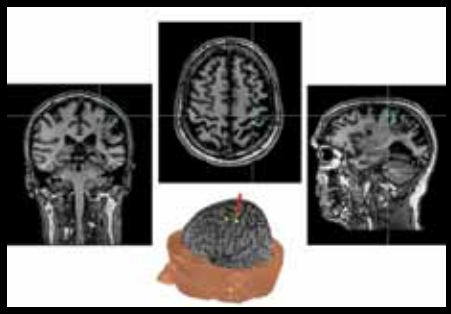


Carey et al., 2002

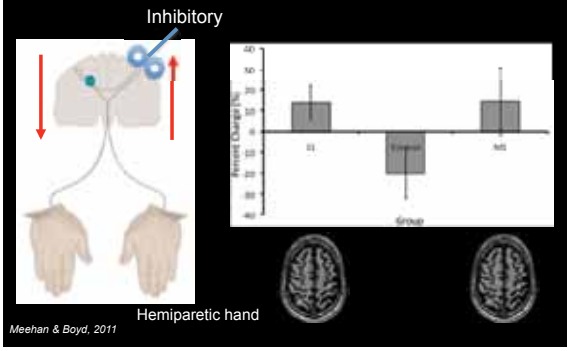
rTMS to improve hand function in stroke



Frameless stereotaxic neuronavigation



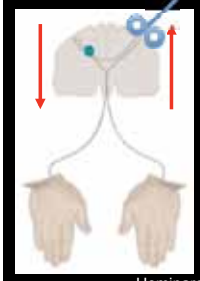
Contralesional primary motor (M1) OR sensory (S1) cortex 1Hz rTMS enhances motor skill learning



Meehan & Boyd, 2011

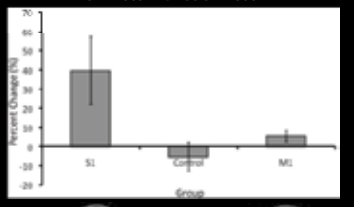
1Hz rTMS to S1 improves motor function

Inhibitory



Hemiparetic hand

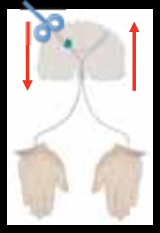
Hemiparetic Arm Function: Wolf Motor Function Test



Meehan & Boyd, 2011

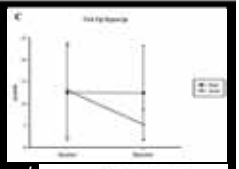
5Hz rTMS to ipsilesional S1

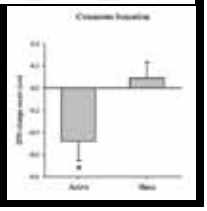
Excitatory



Hemiparetic hand

Improved motor *and* sensory function





Brodie, Meehan, Borich & Boyd, In revision

rTMS in chronic stroke

- Facilitates response to motor skill training
- Can translate into motor function improvements

*Optimal stimulation parameters have yet to be determined

Neuroimaging

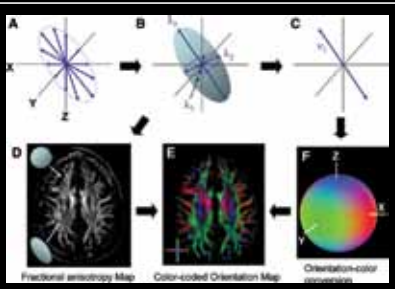
White matter imaging

Evaluate structure rather than function of neural tissue

Healthy Brain

Stroke Brain

Diffusion tensor imaging

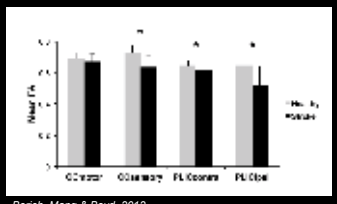


Mori et al., 2006

Larger FA values: greater extent of aligned structures

Magnitude and direction of diffusion

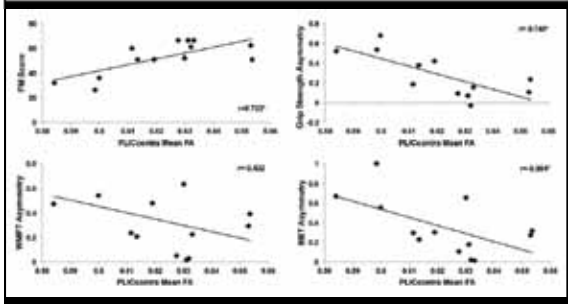
FA values are reduced in chronic stroke



Borich, Mang & Boyd, 2012

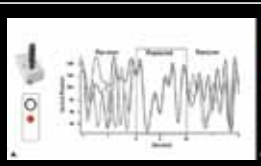
*Both local and remote to infarct

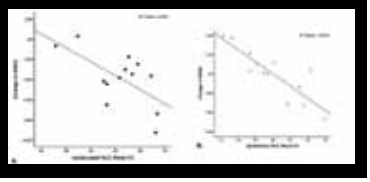
FA values are associated with behavior



Borich, Mang & Boyd, 2012

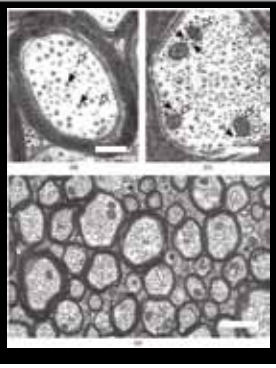
and are linked to motor skill learning





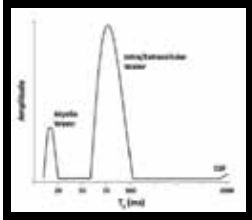
Borich, Brown & Boyd, in press

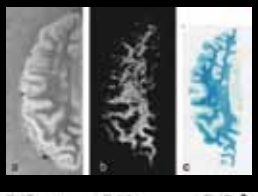
Multiple structural properties affect diffusion

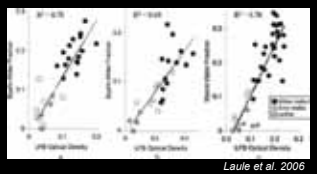


Edgar & Griffiths, 2009

In vivo measurement of myelin







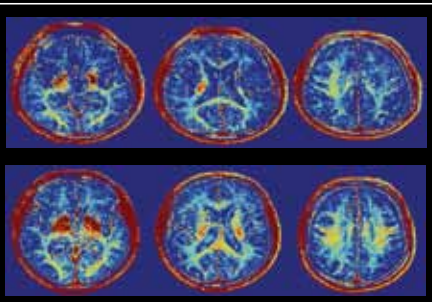
Separates the T_2 signal into three primary components:
1) Short (<40ms)
2) Intermediate (~80ms)
3) Long (>2s)

Laule et al. 2006

Example of myelin water maps

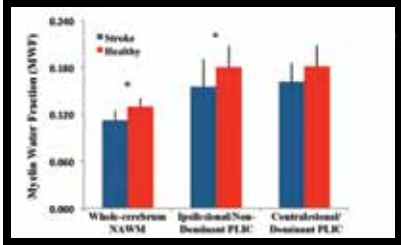
Stroke

Healthy



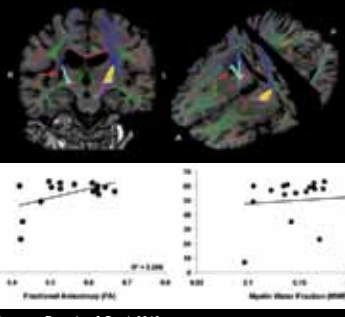
Borich, MacKay, Vavasour, Rauscher & Boyd, 2013

Myelin is reduced in chronic stroke



Borich, MacKay, Vavasour, Rauscher & Boyd, 2013

FA, but not MWF, correlated with impairment



Borich, MacKay, Vavasour, Rauscher & Boyd, 2013

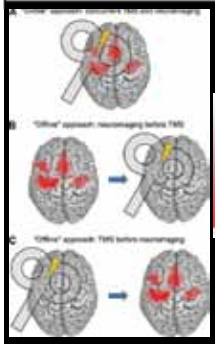
White matter imaging in chronic stroke

- Changes in diffusion behavior are associated with motor behavior and response to skill training
- Reductions in myelin water content also present but not correlated with impairment

*White matter structural plasticity has yet to be characterized after stroke

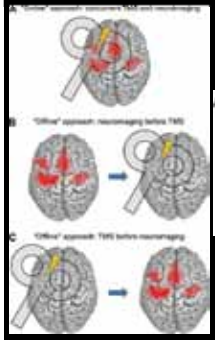
Combining brain imaging and stimulation

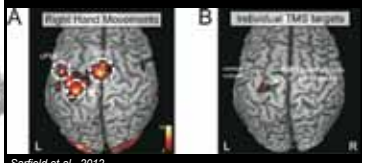
Combining neuroimaging and TMS



Siebner et al., 2009

Combining neuroimaging and TMS

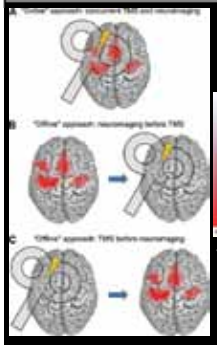




Sarfield et al., 2012

Siebner et al., 2009

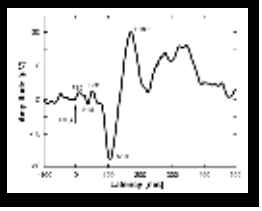
Combining neuroimaging and TMS



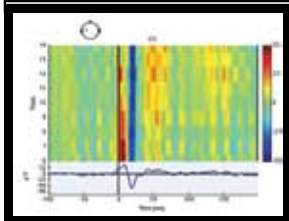
Siebner et al., 2009

'Online' TMS and EEG

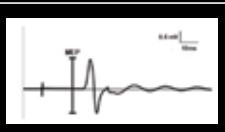
Ilmoniemi & Kicic, 2010

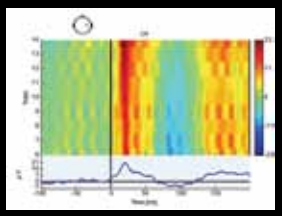


Online TMS and EEG



Borich & Boyd, unpublished data





Summary

- The brain maintains the capacity for change across the lifespan and in the context of neurologic injury
- Experience is the primary factor driving neuroplastic change
- Brain stimulation can modulate experience-dependent change in the brain
- Multimodal brain imaging offers new biomarkers to index change in brain structure, function and metabolism

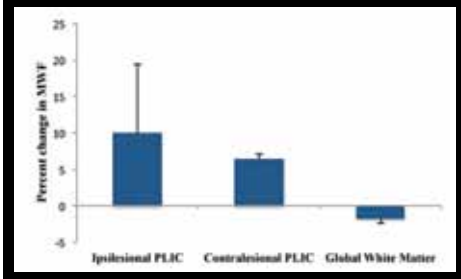
Clinical Significance

Exploiting these results will inform the design and evaluation of individualized rehabilitation approaches to maximize efficacy and utilization of rehabilitation resources to restore arm function after stroke

Virtual reality approaches to rehabilitation

- Uniquely apply principles of experience-dependent neuroplasticity:
  - mitigate neurodegeneration associated with disuse
  - target specific functional impairments
  - provide sufficient repetition and intensity
  - personalized training to maximize salience
- Non-immersive video game systems
  - low cost
  - easy to set up hardware
  - flexible

Changes in MWF observed in stroke with VR-based training



10 sessions in 4wks, 2-3x/wk, 1hr/session, 1200 movements/session

Borich, MacKay, Rauscher, Vavasour, Boyd, in prep

Acknowledgements

Collaborators:
- Lara A. Boyd
- Alex L. MacKay
- Irene Vavasour
- Alexander Rauscher
- Naznin Virji-Babul
- Teresa J. Kimberley

Members of Brain Behaviour Lab

UBC 3T MRI Centre staff

Research participants

Questions?

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UBC
a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

• Dr. Michael Sullivan, Ph.D. •

Dr. Michael Sullivan is currently Professor of Psychology, Medicine and Neurology at McGill University. He also holds cross-appointment with the School of Physical and Occupational Therapy and is Scientific Director of the University Centre for Research on Pain and Disability. He has lectured nationally and internationally on the social and behavioral determinants of pain-related disability. He is known primarily for his research on the relation between catastrophic thinking and pain experience, and for the development of community-based approaches to the management of pain-related disability.

Dr. Sullivan developed the Pain Catastrophizing Scale (PCS) in 1995. The PCS has been used in more than 600 scientific studies; it has been translated into 20 languages and is currently the most widely used measure of catastrophic thinking related to pain. Dr. Sullivan also developed the Progressive Goal Attainment Program (PGAP); the first community-based intervention program designed specifically to target psychosocial risk factors for pain-related disability.

Dr. Sullivan has published over 120 scientific papers, 15 chapters, and five books. He currently holds a Canada Research Chair in Behavioral Health. In 2011, Dr. Sullivan received the Canadian Psychological Association Award for Distinguished Contributions to Psychology as a Profession. Dr. Sullivan completed his undergraduate training at McGill University and his graduate training at Concordia University in Montreal.

Workshop session:

Using Progressive Goal Attainment Program (PGAP) for the Management of Work-Disability Associated with Health and Mental Health Problems

The learning objectives are to become familiar with:

- Health/mental health problems that can lead to work-disability
- Risk factors for work-disability associated with health/mental health problems
- Recent research on effectiveness of PGAP with clients suffering from health/mental problems

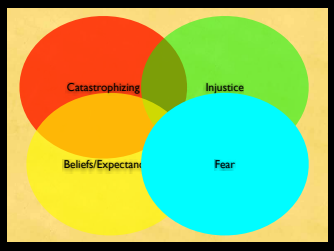
Using the Progressive Goal Attainment Program (PGAP) for the Management of Work-Disability Associated with Health and Mental Health Problems

P G A P

McGill

Michael Sullivan, PhD
Departments of Psychology, Medicine and Neurology
School of Physical and Occupational Therapy
Canada Research Chair in Behavioural Health

Disability-Related Psychosocial Risk Factors



P G A P

A Tool Kit for Targeting Psychosocial Risk Factors for Prolonged Disability

Targeting Psychosocial Risk Factors

- Education/Reassurance.
- Disclosure/Validation.
- Thought monitoring/re-appraisal.
- Activity exposure.
- Creating reality incompatible with disability beliefs.

A Standardized Intervention

Step 1
Screening for Psychosocial Risk Factors

- Catastrophizing
- Perceived Injustice
- Fear of Symptom Exacerbation
- Disability Beliefs

Step 2
Engage the Client

- Rehabilitation is not a very attractive treatment option to many clients.
- More than 50% of clients refuse referrals to rehabilitation.

PGAP Videos

- Pain Conditions
- Depression
- Post-Traumatic Stress Conditions (Military)
- Cancer Survivors
- Other Chronic Illnesses

Individuals need to be challenged in order to recover.

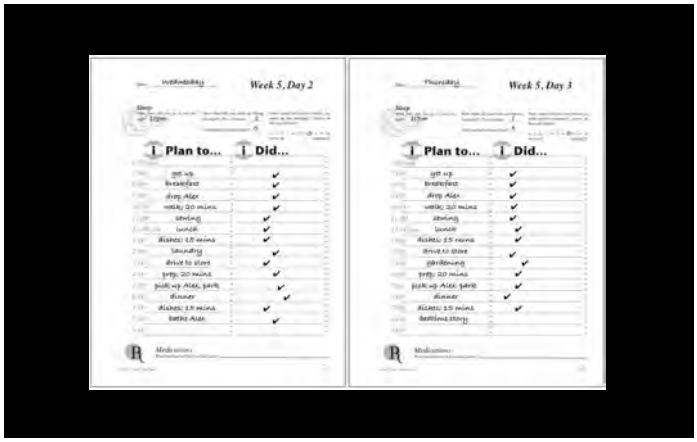
There is no curative process that occurs at home.

Individuals can return to work even if symptoms persist.

Return to Work as Stated Objective of Treatment

Step 3
Initiate PGAP

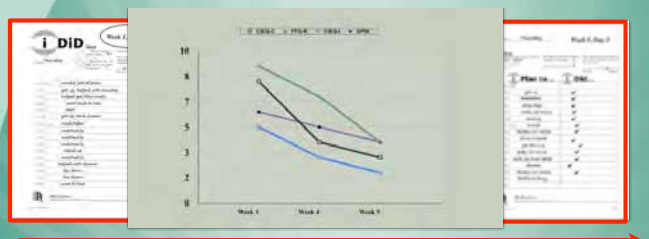
- Invite/engage the client.
- The role of the working relationship.
- Activity structuring and scheduling.
- Risk-targeted techniques.



Techniques

- Disclosure of activity-related information at the beginning of every session.
- Repeated exposure to discontinued activities.
- Developing a schedule of activity participation that will challenge the client's disability beliefs.

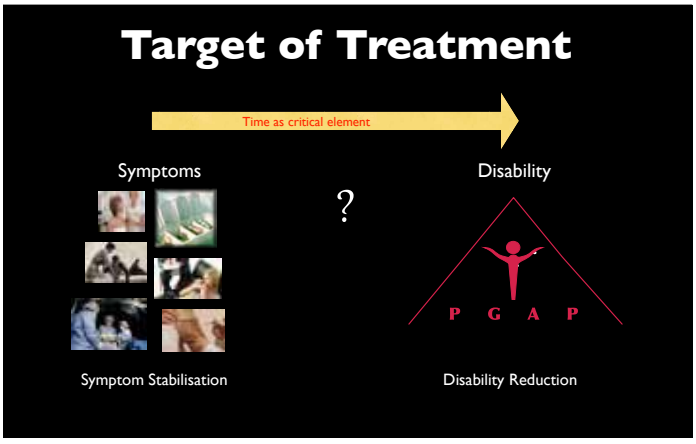
PGAP: Life-Role Resumption



Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10

Weekly meetings with the PGAP provider.

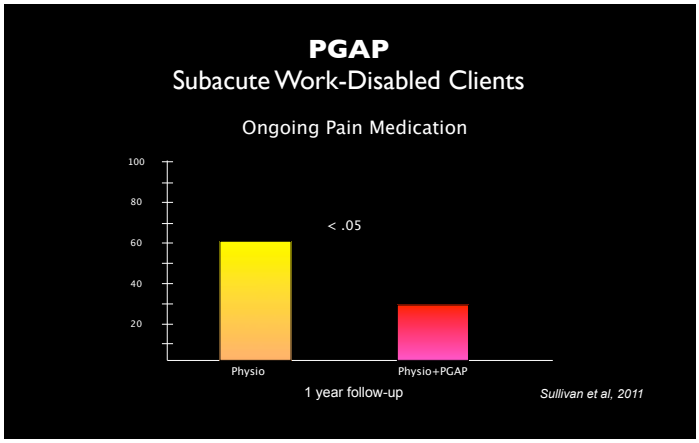
Target of Treatment



The Evidence

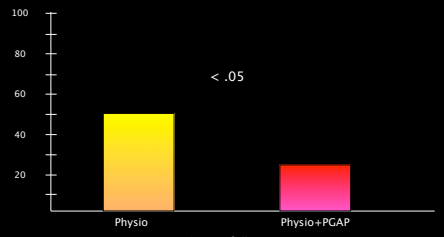

Research Report
A Psychosocial Risk Factor–Targeted Intervention for the Prevention of Chronic Pain and Disability Following Whiplash Injury
ARTICLES
Psychosocial Treatment Techniques to Augment the Impact of Physiotherapy Interventions for Low Back Pain
TBM
Targeting Catastrophic Thinking to Promote Return to Work in Individuals With Fibromyalgia
Michael JL Sullivan, PhD
Heather Adams, BSW
Tamra Ellis, OT, MBA


ARTICLES
Psychosocial Treatment Techniques to Augment the Impact of Physiotherapy Interventions for Low Back Pain


PGAP
Subacute Work-Disabled Clients
Ongoing Pain Medication
100
80
60
40
20
< .05
Physio
Physio+PGAP
1 year follow-up
Sullivan et al, 2011

PGAP
Subacute Work-Disabled Clients

Ongoing Treatment

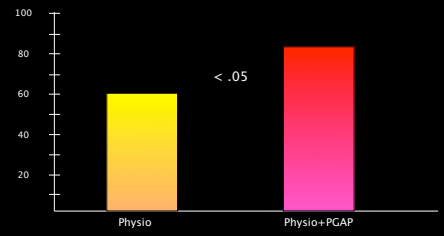


1 year follow-up

Sullivan et al, 2011

PGAP
Subacute Work-Disabled Clients

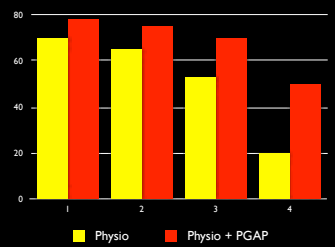
Return to Work



1 year follow-up

Sullivan et al, 2011

Return to work

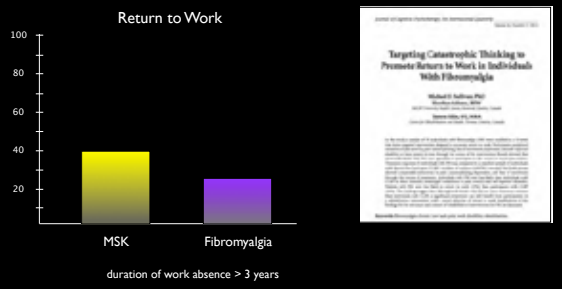


The added value of PGAP becomes more pronounced as the number of risk factors increases.

Sample: 13 [illegible] with chronic whiplash injuries.

PGAP

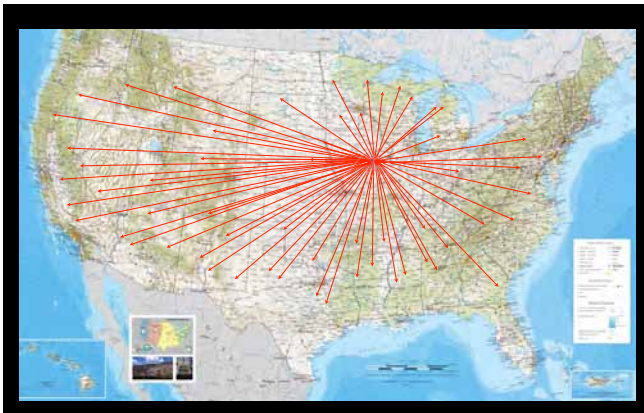
Positive outcomes even for high levels of chronicity



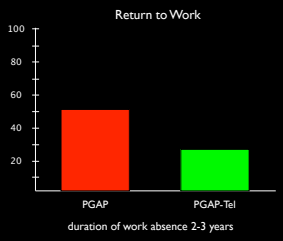
Targeting Catastrophic Thinking to Promote Return to Work in Individuals With Fibromyalgia

PGAP-Tel

Evolved originally to address rehabilitation needs of individuals living in rural or remote areas.

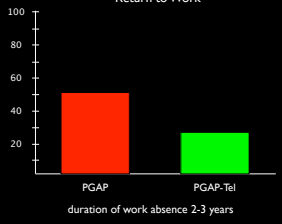


PGAP vs PGAP-Tel



Depression

PGAP vs PGAP-Tel



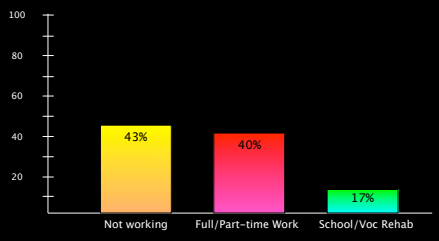
Depression

Depression and PGAP

- 75 participants with Major Depression
- Mean duration of work absence = 2.5 years
- Mean age = 45.6 years
- 22 men, 53 women

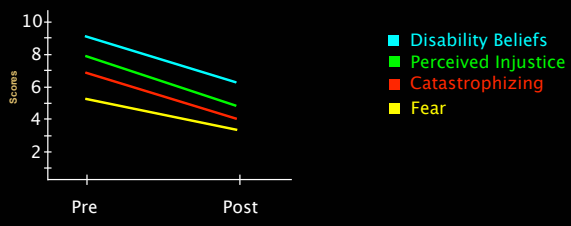
PGAP
Chronic Depression

Disability Outcomes



Sullivan et al, 2011

Risk Factor Reduction through PGAP



Predicting Return to Work

- Reduction in depressive symptoms
- Reduction in catastrophizing
- Reduction in disability beliefs

A Population Health Approach

- Establishing a community of providers

Informing Referral Sources

- Presentations to insurers
- Collaborative pilot projects
- Demonstrating relevant outcomes

Challenges to successful implementation.


Challenges
Cost
Threat to existing industry
Referral relationships
Incentives (or lack of)


Summary
Targeted interventions cost effective
Practice guidelines insufficient
Stakeholder involvement
Openness for change


McGill
Thank you!
McGill
Centre universitaire de recherche sur la douleur et l'incapacité
University Centre for Research on Pain and Disability
McGill
CIHR IRSC
LAEF

• Dr. Chris Stewart-Patterson, MD CCBOM FACOEM •

Dr. Stewart-Patterson has been practicing Occupational Medicine since 1989. He has provided occupational medical services to the City of Vancouver, BC Government Occupational Health Programs, Health Canada's Workplace Health, RCMP, BC Rail, the Canadian Armed Forces, and more. He frequently lectures internationally on medical disability. Dr. Stewart-Patterson is a program director at Harvard Medical School.

Workshop session:

Assessing of Malingering in Work Ability

Learning points:

- How to collect clinical screening data for malingering
- How to systematically review and analyze data
- Consider alternate explanations aside from malingering
- Provide opinion on malingering

Assessment of Malingering with Chronic Pain

Chris Stewart-Patterson MD
Program Director
Harvard Medical School

No Disclosures

In the News….

"Fraud And Disability Equal A Multibillion Dollar Black Hole For Taxpayers"
– Forbes 1/14/2013

- **"23rd Defendant Pleads Guilty in Long Island RR Disability Fraud Scheme"**
  – U.S. Attorney's Office March 28, 2013
- **"Disabled America: where work is for suckers"**
  – **MaCleans,** February 19, 2013

The Big Idea!

We can be more accurate in assessing malingering

"Evaluators should always be aware of malingering when evaluating impairments"

The Impairment Imperative!

Malingering Prevalence?

- AMA: Probable prevalence in D.I., P.I. & WCB
  - 25-30%
    - (Melhorn & Ackerman, 2008; Genovese & Galper, 2009)
- Neuropsychological probable malingering in IMEs
  - Mild head injury 39%
  - Fibromyalgia/chronic fatigue 35%
  - Chronic pain 31%
    - (Mittenberg, et al 2002)

DSM-IV Definition

- Intentional false or grossly exaggerated presentation motivated by external incentives
- Strongly suspected if any combination of:
  - Medico-legal context
  - Marked discrepancy between stated disability and observations
  - Lack of cooperation with evaluation & Tx compliance
  - Antisocial Personality Disorder
    - » (APA, 2000)

Approach to Malingering

1. Collect data for or against impairment
2. Systematically review & analyze
3. Consider alternate explanations
4. Provide opinion on malingering
   - Probable
   - Definitive

Malingering Screen

- Over-idealized pre-morbid functioning
- Vague and evasive
- Exaggerated symptoms
- Inconsistent symptoms & findings
- Endorses improbable symptoms
  - » (Knoll & Resnick 2006)
- Multiple lawsuits & unstable work history
- Recreational activities justified but not working
- Fails validity testing
  - » (Hall & Hall 2006)

Focus on Function!

- "Cross validation" of reported functioning with observation
  - – (Rondinelli, 2007)
- Reported functioning
  - – Self-reported tolerances
  - – Home chores
  - – Roles
  - – Hobbies and recreational activities

Examination

- Mental status examination
  - – lacking symptom detail
    - » (Rondinelli, 2007)
  - – evasive
    - » (Knoll & Resnick, 2006)
- Physical examination
  - – Abnormal illness & pain behaviors
  - – Effort behaviors
  - – Examination of assistive devices
- Observed functioning

Gait Inconsistencies and Incongruencies

13 actors given 2 days to prep "fake gait"

10 minute video reviewed by 4 neurologists

1. Momentary fluctuations (5/13)
2. Excessive slowness (2/13)
3. Uneconomic postures (2/13)
4. Sudden knee buckling (1/13)
5. "Additional suggestive symptoms" (5/13)
6. No inconsistencies (5/13)

Lempert et al. J Neurology 1991

Facial Numbness (DeMyer 2003)

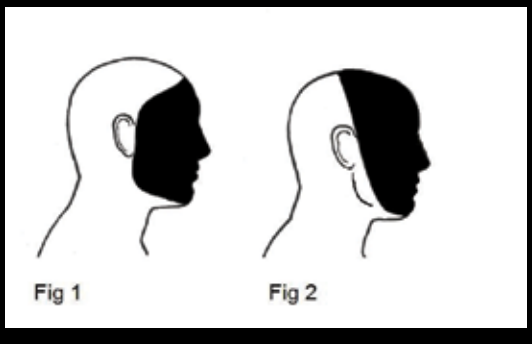


Fig 1 Fig 2

The Wrist Drop

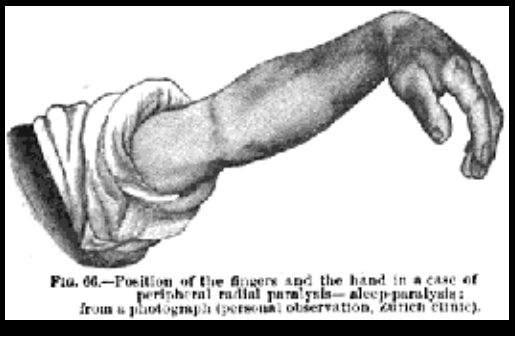


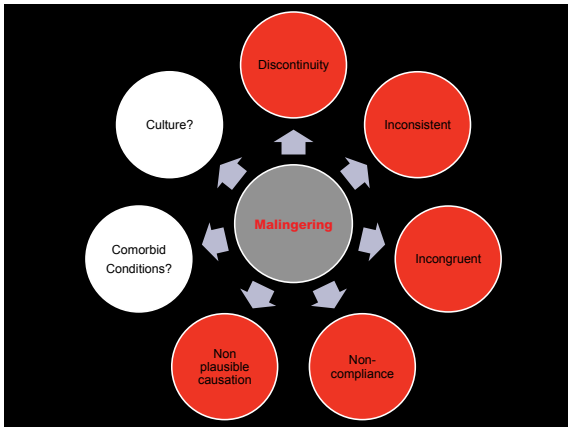
FIG. 66.—Position of the fingers and the hand in a case of peripheral radial paralysis—aleeping-paralysis: from a photograph (personal observation, Zürich clinic).

Questionnaires and Investigations

- Neuropsychological testing
- Malingering questionnaires
  - » (Rogers, 2008)
- Other questionnaires…
- Test security

Coherence Analysis

- Use multiple themes when analyzing impairment data and formulating conclusion
  - (ACOEM APG. Hegmann, 2010)
- A clinical picture that does not "hang together" or lacks coherence may be an indication of malingering
  - (Trimble, 2004; Rogers, 2008)
- Coherence Analysis is a method of systematically reviewing the clinical data



Dis-Continuity

Do a timeline!

- Continuous from the onset in a manner that would be expected
  - (Gold et al., 2008)
- Significant discontinuity may suggest malingering if it cannot be reasonably medically explained
  - (Schutz & Mavrakanas, 2009)

Dis-Continuity Timeline

5/12 continuously disabled & unemployed

"…hit his head at work…"

"…irritation after working... "

"…painting apartment …"

"…very physical for a few weeks…"

"…more physical work than usual…"

"…very active with work…"

In-Consistency

- Be alert for inconsistency when assessing the medical evidence
  - » (Demeter & Andersson, 2003; Rondinelli, 2007; Oyebode, Cantley, & Schroeder, 2008; Sreenivasan et al., 2003; Aronoff et al., 2007)
- A high frequency of inconsistencies or a compelling inconsistency may suggest malingering
  - » (Rogers, 2008; Trimble, 2004; Knoll & Resnick, 2006; Greve et al., 2009; Halligan et al., 2003)

Shoulder ROM In-Consistency

Jan 01: "...MVA …Shoulder not a problem [in hospital]…"
Mar 01: "…painful to abduct past 30 degrees…"
Sept 01: "…Shoulder AROM 100%"
Jan 02: "…Shoulder range of motion normal.."
Mar 02: "…still trouble with abduction…"
Oct 02:"…90° of abduction…collapse…"
Nov 02: "...AROM– inconsistent ++..."
Jan 03: "...full active range of motion.."
July 03: "…about 90 degrees of flexion and abduction…"
Nov 03: ".. .over his head to approximately 150 degrees"
Feb 04: "…clearly has a fairly full normal range of shoulder"

Non-Compliance

- Non-adherence, refused referrals, "no shows"
  - (Trimble, 2004; APA, 2000)
- Refusal to participate in disability assessment
- Poor effort testing may also indicate malingering
  - (Schutz & Mavrakanas, 2009; Rogers, 2008; Trimble, 2004; Aronoff et al., 2007)

In-Congruency

- The "degree of fit" of the clinical presentation is useful in assessing malingering
  - (Halligan et al., 2003; Aronoff et al., 2007; Rondinelli, 2007)
- 2 most common types of incongruency
  - difference between reported symptoms and genuine symptoms expected
  - reported level of functioning & observed level of functioning
    - (Rogers, 2008)

In-Congruency

History
- Indiscriminate symptom endorsement
- Preponderance of severe symptoms
- Improbable symptoms

Examination
- Bizarre or unusual examination
- Examination does not fit reported functioning

Questionnaires
- Validity scales

Causation (False Imputation)

- Causation should be reviewed in compensation cases when considering malingering
  - (Halligan et al., 2003)
- Compensation injures that did not occur at work may account for 10% of all compensation claims filed
  - (Melhorn & Ackerman, 2008; Aronoff et al., 2007)
- 344 ophthalmology IMEs
  - 14% were found not causally related to the claim
    - Schutz & Mavrakanas, 2009)

Comorbidity

- Medical comorbidity can increase impairment
  - (Rondinelli, 2007)
- Psychiatric comorbidity may explain atypical presentations
  - Symptom amplification & abnormal illness behaviors
    - (Sreenivasan et al., 2003)
  - Poor adherence
    - (Enns et al 2001)
  - Worse role functioning
    - (APA, 2000)

Cultural Factors

- Be cognizant of cultural differences
  - » (Rondinelli, 2007; APA, 2000; Hegmann, 2010)
- Medically "unexplained symptoms"
  - – Cultural presentation of disorders
    - Neurasthenia
  - – Culture bound syndromes
    - "Koro"
      - » (APA, 2000)

Cultural Explanation

- *"The DSM-IV notes that First Nations cultural can influence depressive symptoms…*
- *..males are less likely to endorse sadness or depression and are more likely to endorse lack of motivation and lack of interest….*
- *…more likely to not differentiate somatic complaints, such as fatigue, from concurrent emotional distress. …*
- *He has low appetite, guilt, low self-esteem, poor concentration, irritability & disrupted sleep…"*

Alternative Hypothesis?

- Cultural presentation of bonafide illness
- Comorbid psychiatric condition
- Substance Use Disorder
- Medicalization of social problems
  - – 28% of time GP authorization of sick leave
    - » (Gulbrandsen 1998)
  - – High home stress workers more likely to take >10 sick days per year
    - » J Occup Environ Med. 2009;51(8):879-86.

Further Reading

Detection of Potential Malingering Indicators through Document Review. Stewart-Patterson C. *IAIABC Journal* Fall 2009, Vol. 46 No. 2

Evaluating Malingering (& Impairment)

1. Collect the clinical impairment data
   - Focus on function
2. Systematically review the data
   - Coherence analysis (7Cs)
3. Consider alternate hypothesis
   - Comorbidity
   - Cultural factors
4. Malingering conclusion
   - Probable
   - Definitive

See you all next June for the 10th Annual

Health Care Professional Conference

Stay tuned for more details

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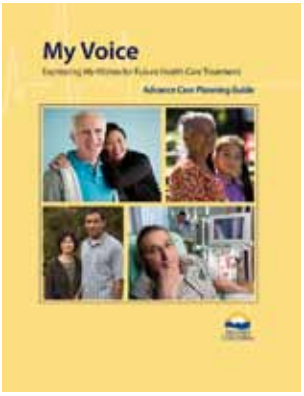

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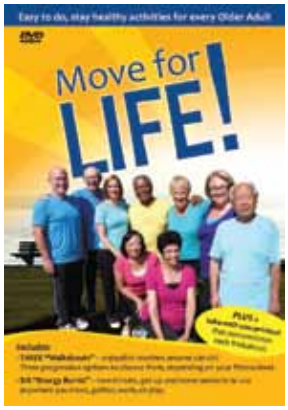

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