



1308 West 8th Ave  
Vancouver, BC, Canada

# rTMS E-NEWSLETTER

*Your source for the latest information on repetitive Transcranial Magnetic Stimulation (rTMS) therapy*

a safe, effective, rapid-acting and non-invasive treatment for depression and many other mood & neurological disorders

July 2008 • Volume 1 • Issue 2

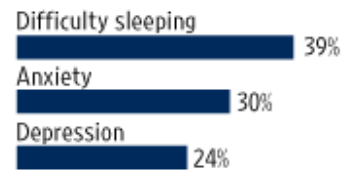
## Post Traumatic Stress Disorder: The Mental Health of Soldiers



A Rand Corp. study released this month said 20% of the roughly 1.6 million military personnel who have served in Iraq or Afghanistan have symptoms of Post Traumatic Stress Disorder. It found that half of the military personnel had friends who were seriously wounded or killed, while about 45% saw dead or wounded civilians.

### Psychological Warfare

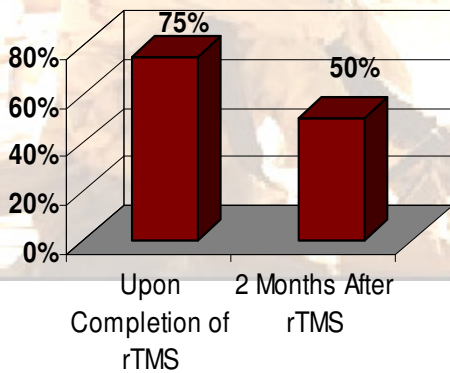
Surveyed military personnel and spouses who experienced these problems at least twice a week:



Source: American Psychiatric Association survey of 347 adults who served in war zones since 2001 or are spouses of service members, conducted March 5-18

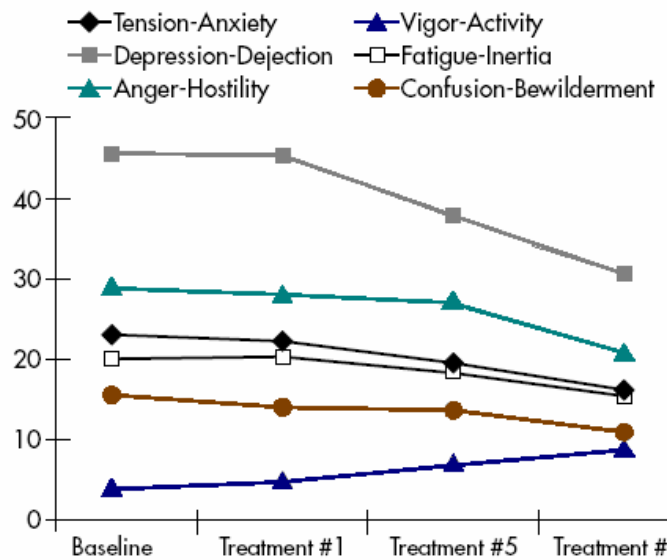
The APA's Dr. Robinowitz indicated that the risk of serious mental health problems increase the more times military personnel deploy to war zones. During a recent interview she stated, "If you suffer a trauma on one tour, and then go back and are re-traumatized, you're more likely to have PTSD. The more you're exposed to trauma, the more you can exacerbate the PTSD." [Dow Jones & Company, 2008]

Percentage of Reduction in Depression and PTSD Symptoms Following rTMS Therapy



N = 12

Profile of Mood Assessment Results after Intervals of rTMS



"Twelve patients with comorbid post traumatic stress disorder (PTSD) and major depression underwent repetitive Transcranial Magnetic Stimulation (rTMS) to left frontal cortex as an open-label adjunct to current antidepressant medications. **Seventy-five percent of the patients had a clinically significant antidepressant response after rTMS, and 50% had sustained response at 2-month follow-up.** Comparable improvements were seen in anxiety, hostility, and insomnia..." [Rosenberg et al., 2001]

# New Research on rTMS Therapy

## Depression

“Over the 3 weeks, ***the active rTMS treatment was superior to sham TMS... which indicates not only a statistically but also a clinically significant effect.*** The patients had typically been through two failed antidepressant treatment attempts with non-tricyclics before inclusion in the study.” (Bretlau et al., 2008)

“These findings show that high-frequency ***rTMS over the left DLPFC is superior to sham in the treatment of depression.*** The effect size is robust and comparable to at least a subset of commercially available antidepressant drug agents.” (Schutter, 2008)

“***Repeated rTMS applications have demonstrated a reproducible antidepressant effect in patients with refractory depression*** who initially showed a clinically significant benefit. The duration of effect varied across patients, but benefits were sustained for a mean of nearly 5 months.” (Demirtas-Tatlidede et al., 2008)

## Tinnitus

“...this study demonstrates... that ***it is feasible to use maintenance rTMS to manage chronic tinnitus.*** Maintenance rTMS might impede cortical expansion of the tinnitus frequency into adjacent cortical areas...” (Mennemeier et al., 2008)

“An evaluation after 3 months revealed a ***remarkable benefit from the use of combined prefrontal and temporal rTMS treatment.*** These results support recent data that suggest that auditory and nonauditory brain areas are involved in tinnitus pathophysiology.” (Kleinjung et al., 2008)

## ADHD

“The purpose of our study is to verify the therapeutic effectiveness of repetitive Transcranial Magnetic Stimulation (low frequency)... ***Results show a significant improvement that lasted for at least 4 weeks.***” (Niederhofer, 2008)

## Epilepsy

“We conclude that ***2 weeks of rTMS*** at 0.5Hz with a figure-of-eight coil placed over the epileptic focus... ***decreases the number of seizures in patients with focal epilepsy,*** without reduction in IEDs [*interictal epileptiform discharges*].” (Santiago-Rodriguez et al., 2008)

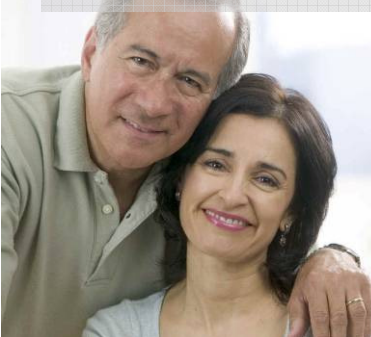
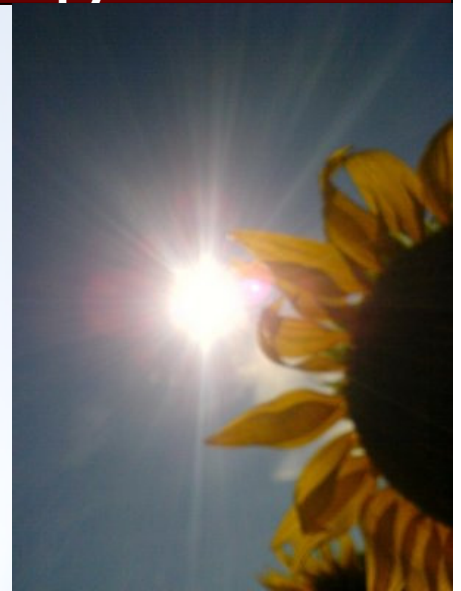
## Parkinson's Disease

“***The SMA [Supplementary Motor Area] stimulation, in contrast to the sham stimulation, engendered significant improvements in total scores and motor scores*** of the Unified Parkinson's Disease Rating Scale... Results indicate that 5 Hz rTMS over SMA modestly improves motor symptoms in PD patients...” (Hamada et al., 2008)

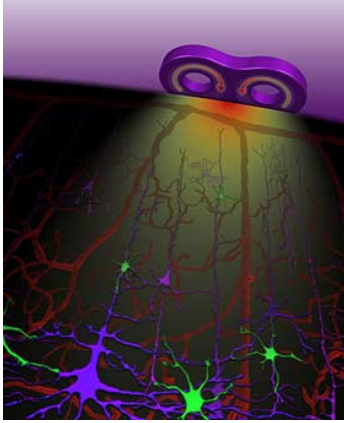
## Suggested Reading:

### Transcranial Magnetic Stimulation in Clinical Psychiatry

by Dr. Mark George & Dr. Robert Belmaker  
(American Psychiatric Publishing Inc., 2007)



## Suggested Links



### International Society for Transcranial Stimulation (ISTS)

<http://www.ists.unibe.ch/>

The ISTS website contains information on affiliated organizations, membership application, a consensus statement, trial information as well as other useful links.

### Mayo Clinic

#### Transcranial Magnetic Stimulation

<http://www.mayoclinic.com/health/transcranial-magnetic-stimulation/MH00115>

Transcranial magnetic stimulation uses magnetic coils to stimulate nerve cells to improve mood. Discover how it works and understand the pros and cons. -July 24/06

### Mad Science

#### Selectively Deactivate Parts of Your Brain with Transcranial Magnetic Stimulation

<http://www.telegraph.co.uk/earth/main.jhtml?view=DETAILS&grid=&xml=/earth/2008/05/16/scibrain216.xml>

Contains an article on TMS and a video demonstrating a journalist for UK paper, "The Daily Telegraph" having the speech centers of his brain deactivated while he recites a nursery rhyme. -May 20/08

## An rTMS Technician's Perspective



Upon completion of my degree, I wanted to find a place where I could really make a difference in people's lives. A recruiting ad for a clinic that offers rTMS treatment for those suffering from depression and other mood/neurological disorders caught my attention. Not long ago, a close family member was diagnosed with depression; knowing how much it can affect a people's lives and others around them, I applied for the position.

A few days later, I was hired as a rTMS technician. To-date I can say that it is almost shocking to me how much a patient's mood can improve during and after rTMS therapy. Patients can arrive at the clinic quiet and pessimistic, yet leave feeling all excited about the future! It is really amazing how rTMS can make such a difference. I am so glad to have an opportunity to support and offer a viable treatment to these patients. In the end, a patient's smile is all it takes to make my job rewarding.

-Lisa Liang  
rTMS Technician

## A Patient's Story...

*"I was born with a severe depressive state, in other words with a chemical imbalance, which propelled me into a depressive state lasting anywhere from a few hours to several months at a time.*

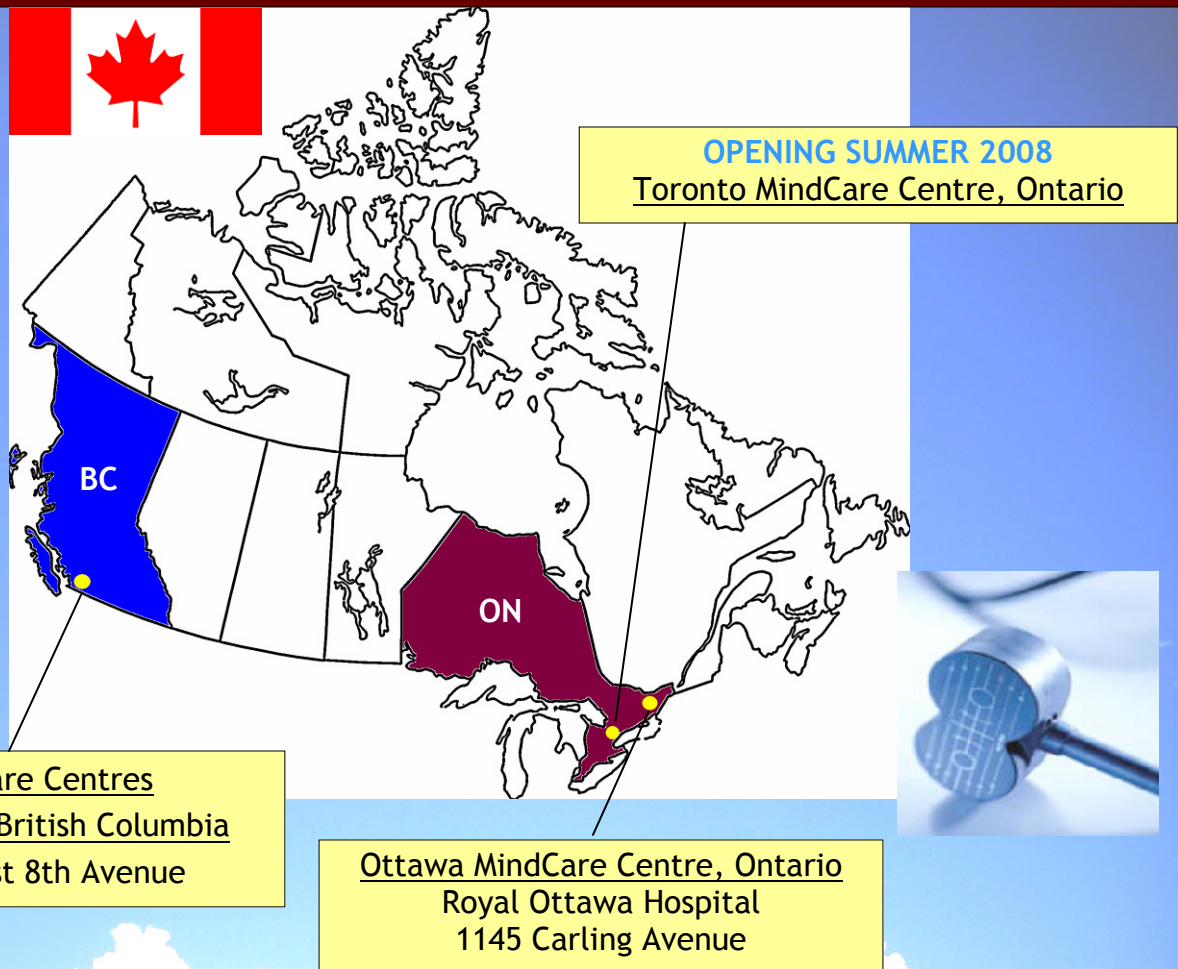
*After beginning rTMS therapy I began to notice significant changes in my mood, my outlook in life and I had a positive feeling about my future, which is something I hadn't experienced in all my years (52).*

*My stay was three weeks, and as a busy professional senior scientist, I didn't think I would stay the duration, though I am very happy I did. And indeed, after a few weeks of my treatment, I was DEPRESSION FREE!*

*Depression free and medication free for the first time since I was young, all I can say is with all the money I had spend in the past for depression, the small amount of money I did spend for my treatment was well worth my time - my only question is why didn't someone didn't invent rTMS sooner?"*

[Submitted by N.H. (WA, USA), June 19/08]

## MINDCARE CENTRES ACROSS CANADA



## rTMS has successfully treated...

Chronic migraines  
Alzheimer's disease  
Stroke recovery

Post-Traumatic Stress Disorder  
Auditory hallucinations (Schizophrenia)  
Obsessive-Compulsive Disorder

Fibromyalgia  
Epilepsy  
Autism

Parkinson's disease  
Huntington's disease  
Bulimia

# rTMS in the Media



www.globes-online.com  
 "...Brainsway Ltd. has reported results of the trial of its Deep TMS device in the treatment of **manic depressive patients** at the Shalvata psychiatric hospital who did not respond to other treatments. ...80% of the patients responded to treatment, with more than 50% reporting a significant improvement." (Globes Online, June 11/08)



"'I'm excited because I think it's a real major advance in our ability to treat **depression**,' said Dr. Philip Janicak, psychiatrist, Rush University Medical Center... After four to six weeks, those who received TMS were twice as likely to report improvement in their mental state compared to those who had the sham procedure." (ABC 7 News, May 15/08)



"A British team is to test a home 'brain stimulation' method to short-circuit **migraines** before they become disabling. Migraine pain is the most common neurological condition in the developed world. It affects over 15% of the UK population... a team at Ohio State University showed that *zapping the brain with a magnetic field, using transcranial magnetic stimulation, TMS, can abort attacks as they start to develop.*" (Telegraph UK, May 16/08)



"**rTMS is probably the most promising advance in neuro-psychiatry so far**,' says psychiatrist Sanjay Chugh, who has recently brought the treatment to India... Neuropsychiatric illnesses are often associated with changes in neurotransmitter and neuroendocrine systems, both of which rTMS can alter. *The ability of rTMS therapy to alter brain functioning provides a limitless potential to work as an effective therapy option for any disorder involving dysfunctional behaviour in the neural circuits.*" (Times of India, June 15/08)

## \$\$\$ Cost Analysis: Medications vs. rTMS \$\$\$

Patient has been off work with diagnosed depression for 4 months. Treatment is undertaken after at least one failed drug therapy.

### Option 1: Pharmacotherapy

The patient is treated actively for eight weeks on typical anti-depressants and returns to work at the end of this period. The patient is prescribed an anti-depressant for maintenance for a period of an additional two years.

### Option 2: rTMS

The patient is treated with 30 sessions and returns to work in three weeks. He returns to work immediately and returns for eight maintenance sessions after eight months, 18 months and 36 months and continues to work during the maintenance period.

### Treatment Four Months after Diagnosis, One Failed Drug Therapy

	Treatment Cost	Salary Cost	Maintenance Cost	Return to Work Cost	UnWeighted Total Cost	Probability Weight *	Weighted Total Cost
<i>Senior Executive</i> \$150,000 per annum							
<b>Pharmacotherapy</b>	\$5,000	\$16,154	\$12,000	\$500	\$33,654	0.50	<b>\$67,308</b>
<b>rTMS</b>	\$7,500	\$8,058	\$6,000	\$500	\$20,058	0.70	<b>\$28,654</b>
<i>Middle Management</i> \$60,000 per annum							
<b>Pharmacotherapy</b>	\$5,000	\$8,462	\$12,000	\$500	\$23,962	0.50	<b>\$47,923</b>
<b>rTMS</b>	\$7,500	\$2,423	\$6,000	\$500	\$16,423	0.70	<b>\$23,462</b>
<i>Junior Staff</i> \$16 per hour							
<b>Pharmacotherapy</b>	\$5,000	\$3,554	\$12,000	\$500	\$21,054	0.50	<b>\$42,108</b>
<b>rTMS</b>	\$7,500	\$1,333	\$6,000	\$500	\$15,333	0.70	<b>\$21,904</b>

### Comparison of Costs

In this case, the *cost of therapy is lower for rTMS* because of the high cost of maintenance for a typical two year prescription of pharmaceuticals. When the cost of work absence is added, rTMS has a significant cost advantage.

Again, rTMS is less expensive than pharmacotherapy because with more severe cases, longer drug therapies are typically required to have a therapeutic effect. With rTMS, both scientific and clinical results show that about the same number of treatments are required in all but the most severe cases. It is important to see that early use of rTMS has financial benefits for the employer/insurer even for lower paid staff.

\*Refers to the probability that the treatment will produce a significant positive response in the patient

## MindCare Centres Events



### INTRODUCING A NEW MEMBER OF MINDCARE CENTRES MEDICAL ADVISORY BOARD

MindCare Centres is pleased to announce that **Dr. Allan H. Young** of the Department of Psychiatry, University of British Columbia, has joined the MindCare Centres Medical Advisory Board.

Dr. Young holds the Leadership Chair in Depression Research and is the Associate Director of the UBC Institute of Mental Health.

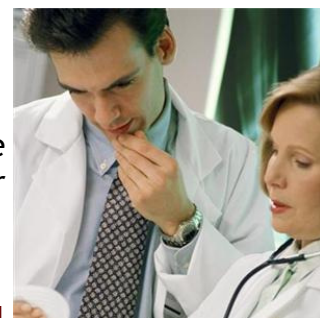


### NEW MINDCARE CENTRES CLINIC OPENING IN TORONTO, ON

A **NEW** MindCare Centres clinic is opening in Toronto, ON in the summer of 2008. A patient waitlist is in effect.

### PHYSICIAN TRAINING COURSE – FALL 2008

A **Physician Training Course** in *rTMS theory and application* is going to be taking place at the Vancouver MindCare Centres in the **Fall of 2008**. For more information please contact us at: [info@mindcarecentres.com](mailto:info@mindcarecentres.com)



### CHARITY GOLF TOURNAMENT: DEPRESSION RESEARCH

MindCare Centres proudly participated in a golf tournament to support Vancouver General Hospital and the University of British Columbia to raise funds for **depression research**. To date the event has raised over \$600 000!



### CANADIAN PSYCHIATRIC ASSOCIATION ANNUAL CONFERENCE VANCOUVER, BC - SEPTEMBER 4-7, 2008

The Canadian Psychiatric Association's Annual Conference is the largest psychiatric continuing professional development program in Canada. MindCare Centres will be featuring rTMS in this year's upcoming Conference to be held in Vancouver, BC. Each year, more than 1200 psychiatrists and other mental health care professionals attend the conference to keep up-to-date on the latest research, exchange ideas, and network with colleagues from across the country.



facebook

MindCare Centres is now on Facebook! We invite you to join our Facebook group. A great way to exchange information, share experiences and offer advice! Under "Groups" search for "MindCare Centres" and click "Join"!

We want your feedback! What aspects of rTMS would you like more information on? Please contact us if you have suggestions for future editions of our rTMS E-Newsletter!

If you would like **further information on rTMS** or anything mentioned in this publication, please contact us:

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