

# GERONTO-McGILL

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## META-ANALYSIS SUPPORTS BEHAVIOURAL TREATMENTS OVER MEDICATION FOR INSOMNIA

by Angela J. Ring

Chronic insomnia is a common problem faced by many older adults. Symptoms can include trouble falling or staying asleep, and can have a serious impact on daily functioning. Older adults who suffer from sleep difficulties may experience problems with concentration and general health, thus putting them at greater risk for injury and both physical and psychosocial decline. As such, finding safe and effective long-term treatments for insomnia is an important element when considering comprehensive treatment approaches for older adults.

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## HOW ONE PERSON CAN MAKE A DIFFERENCE

An interview with Stéphane Bastianetto, Ph.D., Douglas Hospital Research Centre

by Tania Elaine Schramek

Dedication and passion only begin to describe the work ethic of Stéphane Bastianetto, Ph.D., research associate at the Douglas Hospital Research Centre (DHRC) of McGill University and founder of "Neuromedia", a website aimed at informing the older population, their families, and health care professionals from various fields about many issues surrounding brain aging.

Hailing from Paris, France, Dr. Bastianetto came to Montreal after having completed his bachelor's degree in Cellular Biology, a master's in Physiology, and doctoral studies in Neuroscience at the renowned Université Pierre et Marie Curie of Paris.

Throughout his training, Dr. Bastianetto became increasingly curious about the mechanisms that contribute to aging of the brain. Accordingly, in 1995, he pursued his postdoctoral studies with Dr. Rémi Quirion, whose research interests included understanding how a substance known as DHEA could counter the effects of aging, particularly brain aging. At the time, DHEA



was all the rage in the scientific literature. Although it proved promising in many respects, and was indeed shown to protect brain cells (i.e. be neuroprotective), these effects were not as robust as expected.

A turning point in his career occurred motivated, in part, by personal bereavement and by his work environment. Dr. Bastianetto, like all too many, was faced with the loss of his grandmother to Alzheimer's disease. In addition, on a day-to-day basis, working at the Douglas

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## EDUCATION

### McGILL CARDIAC HEALTH IMPROVEMENT PROGRAM: HELPING PEOPLE LIVE HEALTHY LIFESTYLES

by Daniel Auld

Are you at risk for cardiovascular disease and want to improve your health? Do you think you might need some help keeping your New Year's resolution!? Then why not get in touch with the McGill

Cardiac Health Improvement Program?

But first, a word about cardiovascular health... As we age, it seems that many of us

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## **An interview with Stéphane Bastianetto, Ph.D., Douglas Hospital Research Centre**

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Hospital, he saw how patients and their families had to deal with the many challenges and suffering brought on by Alzheimer's. Dr. Bastianetto thus concentrated his research efforts on identifying agents that could counter the effects of this devastating disease and brain aging in general.

In collaboration with Charles Ramassamy, Ph.D., Dr. Bastianetto and Dr. Quirion compared the neuroprotective capacities of DHEA to those of a standardized natural extract known as *Ginkgo biloba* (EGb 761, IPSEN Institute, France). Interestingly, they found that the *Ginkgo biloba* EGb 761 showed greater beneficial effects. The next step in their investigations was to try and identify how EGb 761 worked at the cellular level. Coming from Europe, where EGb 761 has been prescribed in the symptomatic treatment of dementia (and particularly Alzheimer's disease) for decades, Dr. Bastianetto wanted to figure out which of the ingredients in these natural extracts rendered them beneficial. For instance, what is it about red wine, green tea, or fruits and vegetables that is so good? Dr. Bastianetto explains that "moderate red wine drinkers and those who also have a diet rich in fruits and vegetables are in essence loading up on polyphenols, also known as flavonoids, which happen to be potent antioxidants."

Antioxidants guard the body and brain from the damaging effects of free radicals, which can destroy cells and also play a role in many diseases. Dr. Bastianetto's studies have shown that the polyphenols not only protect the brain from free radicals, but may also decrease the formation of amyloid plaques, which are clusters of dead and dying brain cells and the primary hallmark of Alzheimer's disease. In particular, he has shown that polyphenols protected brain cells in the hippocampus - the first structure to be affected in Alzheimer's - from the toxic effects of amyloid. Even more fascinating is the fact that polyphenols can actually alter processes at the genetic level that are known to go awry in Alzheimer's. Dr. Bastianetto's future research aims to verify the efficacy of polyphenols in laboratory animals and humans. Given that people with diets rich in fruits, vegetables, tea, and red wine in moderation have already been shown to have decreased risk for dementia, his findings and those of others are very hopeful indeed.

Dr. Bastianetto's contributions don't end there. Just as his personal experience and work environment sparked his initial interest in researching brain aging, they also brought to light the need for a centralized resource hub where families, patients, and health care professionals alike, could obtain information about topics ranging from the latest research discoveries, tests used by health professionals, to legal and administrative issues that arise when an individual loses the capacity to make informed decisions.

Accordingly, Dr. Bastianetto developed a trilingual (French, English, Spanish) website aimed at providing serious, objective, concise, and accessible information from a multidisciplinary perspective on matters of brain aging and neurological diseases (see [www.neuromedia.ca](http://www.neuromedia.ca)). Upon arrival on this website, we meet Mr. Seneca, a young retiree who is concerned about the health and finances of his aging mother as well as his own. With the help of Mr. Seneca, one can surf their way through sections including clear and easy to understand articles on the brain and its normal functioning, neurological disorders, neuropsychological tests, prevention of brain aging (e.g. eating well, exercising on a regular basis, keeping our minds and brain active), patient care and prescription drugs, and finally, legal and economical issues. Most importantly, Neuromedia also answers your questions. One simply has to send his/her question in and await the reply from qualified professionals. Dr. Bastianetto also writes and sends a weekly newsletter to all of the Neuromedia members summarizing new research, providing updates on patient care and legal issues (e.g. power of attorney).

Since its debut in June 2002, Neuromedia counts over 15,000 visitors a month and continues to grow. Dr. Bastianetto adds that "psychologist Hildegard Brack, Ph.D., and Dr. Serge Gauthier, M.D., FRCPC, Director of the Alzheimer and Cognitive Disorder Clinic at the McGill Centre for Studies in Aging, kindly work with me on a volunteer basis to bring this essential information to the public; their contributions have been of tremendous importance and are deeply valued".

Amazingly, to date, Dr. Bastianetto has entirely funded Neuromedia himself, but in

order to ensure the viability of the website, visitors will soon have to pay the modest sum of \$20 a year to have access to the wealth of information the website provides. Given that a diagnosis of Alzheimer's and all that this entails can be overwhelming for patients and their families, the resources available at Neuromedia and the great time and effort that go into its preparation are most welcome and appreciated.

Geronto-McGill wishes Dr. Bastianetto and Neuromedia continued success and thanks indeed and extends its congratulations for having won the esteemed "Entretiens de Bichat" award for patient education.

## TANGO ANYONE?

by Tania Elaine Schramek

Falls are a big concern for older adults, and new ways to prevent them are always welcome. Walking has long been recognized as a sure way to stay in shape and to help preserve balance and motor coordination. While this remains true, new research from McGill University suggests that dancing the tango may be a more effective, not to mention fun way of achieving these goals.

Patricia McKinley, Ph.D., and her team conducted a study in 30 healthy adults aged between 62 and 90 who had experienced a fall in the last year. Half were assigned to a walking group while the others took tango lessons. Both groups met twice a week for ten weeks. Relative to the walking group, the tango group showed improvement in balance, posture, and motor coordination, and performed significantly better on complex cognitive tasks while walking, at standing on one foot, and at turning in confined spaces.

Hidden in the steps of the sultry Argentine Tango are the exact types of complex moves rehabilitation experts have their patients work on in their sessions, e.g. forward, backward and side-to-side weight shift; one-legged stance; walking on a straight line both backwards and forwards; increasing step length in all directions; and turning within a narrow space. Moreover, professor McKinley stated that “Tango dancing is an ideal leisure activity for this population, because it satisfies three basic requirements for exercise adherence: it’s fun, it’s a group activity, and it has a tangible goal that can be perceived not only by the dancer, but by his or her family and friends.”

The results of this innovative study funded by the Drummond Foundation were well-received considering that one-third of the older population in Canada experiences a fall each year and that 40 percent of hospital admissions are due to fall-related injuries. So, why not get out those dancing shoes and tango your way to good health, improved balance, and new friendships.

**Source:** McGill University Relations Office

For more information, contact Cynthia Lee, Communications Officer at the McGill University Relations Office, at (514) 398-6754.

## META-ANALYSIS SUPPORTS BEHAVIOURAL TREATMENTS OVER MEDICATION FOR INSOMNIA

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A meta-analysis recently published in *Health Psychology* of 23 studies conducted with over 500 participants supports the effectiveness of behavioural interventions for the treatment of insomnia in older adults. This challenges the popular belief that older adults respond better with medication for treatment of sleep problems. In this meta-analysis of randomized controlled trials, a moderate to large effect of behavioural treatments on subjective sleep outcomes was found. The study conducted by Dr. Michael Irwin, a professor of psychiatry at UCLA’s Neuropsychiatric Institute, and his colleagues also points to the relatively equivalent benefits of Cognitive-Behavioural Therapy, Relaxation Training, or Behavioural Modification alone.

Interestingly, these findings were true for both middle-aged and older adults who showed similar improvements in sleep quality, sleep latency, and wakening after sleep onset. The authors suggest that behavioural treatments can be advantageous when treating sleep problems in older adults because they can not only be used for longer periods than many medications, but are also not plagued by issues of long term safety. More importantly, however, is that despite a push

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## McGILL CARDIAC HEALTH IMPROVEMENT PROGRAM: HELPING PEOPLE LIVE HEALTHY LIFESTYLES

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have cardiovascular systems that function less and less well. In fact, the risk of cardiovascular disease, such as stroke and heart attack, increases as we get older and can be a major problem for some. Despite the fact that cardiovascular disease is influenced by our individual genetic makeup – such that different people have inherently different risks – it is clear that there are a lot of changes that we can make in our lifestyle, exercise and eating habits that will positively influence our cardiovascular health.

That is where the McGill Cardiac Health Improvement Program (CHIP) fits in. Right here in Montreal, there is a group of dedicated clinicians whose passion is guiding people at risk for cardiovascular disease towards a healthier future. CHIP is a not-for-profit organization (although there are fees involved) that specializes in helping people with heart disease, diabetes and those who have had strokes. Anyone at risk and who is referred by their physician can participate (see contact info below), and many of the clients are older individuals.

CHIP uses a multi-disciplinary approach that addresses many problem areas in at-risk individuals. Prominent in the program is exercise. CHIP offers a Supervised Exercise program that is tailor-made to improve the performance of daily activities and general fitness, as well as to provide the knowledge required to exercise safely. Another of CHIP's mainstays is the 12-week Cardiac Prevention and Rehabilitation program. Additionally, CHIP has a specialized program designed to help individuals who have recently suffered a

heart attack or stroke, or who have undergone angioplasty, to 'get their recovery on track.' The program offers supervised exercise, and advice from both dietitians and psychologists (to help with stress, etc.), as well as social support. It is designed to help people feel better by speeding their recovery and improving their quality of life.

But what use is exercise if one does not eat properly? Complementing its other programs, CHIP offers comprehensive counseling in healthy eating. If you ever thought that you might need some advice or encouragement when it comes to sticking to a healthy diet, then CHIP is for you. What's more, with a focus on the Mediterranean diet, the food is sure to be great!

CHIP goes beyond physical health as well, believing in the adage that a healthy mind leads to a healthy body. Indeed, they have a major program whose focus is to help people cope with heart disease. Most often, individuals suffering from heart disease find it very difficult, with emotions running high, and a surprisingly high number of people becoming depressed. This individualized program helps people identify and control their stress, as well as other feelings and emotions, such as fear and anger.

Another area of CHIP is their diabetes program, which instructs those with diabetes or insulin resistance syndrome on how to exercise correctly and how to adapt their diets to suit their condition and to improve their health. In this program, the CHIP staff offers support and counseling to help individuals make these lifestyle changes.

So if you've been told by your doctor that you have – or are at risk for – any of the cardiovascular related conditions mentioned here, CHIP might be for you. Speak to your doctor or contact them directly.

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*FAX: (514) 489-2604*

*<http://www.chiprehab.com/>*

## PROTEINS AND DEPRESSION: CLUES FROM THE BRAIN

by Daniel Auld

Although not an inevitable consequence of aging, depression is more common among older individuals than younger people. Depression is usually treated with talk therapy, also known as psychotherapy, and/or medication. In some particularly recalcitrant cases, electroconvulsive therapy is very effective. The most popular antidepressant medications (such as Prozac) act on brain cells – termed neurons – that use a chemical called serotonin, which is important for maintaining mood. In fact, depressed individuals generally have reductions in serotonin activity and antidepressant drugs increase that activity, and this holds true for older individuals with depression as well. Although drugs act quickly to increase serotonin, their effect on mood improvement can often take much longer (weeks, for instance). Thus, scientists and doctors have always suspected that something else was involved.

Exciting new research has shed some light on this mystery. Dr. Paul Greengard (who won the Nobel Prize in 2000) and his team found that in an animal model of depression – yes, some mice seem to be depressed – a protein called p11 is reduced. This is interesting because p11 contacts another protein that is very important for the action of serotonin. In fact, serotonin normally contacts this other protein, called the 5-HT1B receptor, which is essential for relaying the serotonin message to other cells. Remarkably, depressed people have low levels of p11 as well. Next, the scientists gave rodents treatments that are commonly used in humans for depression, namely

antidepressant drugs and electroconvulsive therapy. Amazingly, these treatments increased p11. Moreover, mice that were genetically modified to not have p11 (the gene was removed) were more prone to depression-like behaviour. On the other hand, mice that have extra copies of p11 were more resistant to depression.

At the end of the day, the most important implication of this new research is that we now have another clue to help us understand depression. And every clue we have brings us closer to more effective therapies.

### Reference

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## META-ANALYSIS SUPPORTS BEHAVIOURAL TREATMENTS OVER MEDICATION FOR INSOMNIA

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by drug companies for the long-term use of insomnia medications, the research does not indicate that this approach is more effective. Dr. Irwin and his colleagues caution that more research into the specific mechanisms that mediate the relationship between behavioural treatments and improved sleeping patterns is needed however, and in particular, that attention should be paid to understanding the high prevalence of sleep disturbances within this population.

**Source:** Irwin, M.R, Cole, J.C, & Nicassio, P.M. (2006). *Comparative Meta-Analysis of Behavioral Interventions for Insomnia and Their Efficacy in Middle-Aged Adults and in Older Adults 55+ Years of Age. Health Psychology, 25(1), 3-14.*

## **POLICY AND POLITICS**

### **AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE: ADDRESSING THE RISK OF SERIOUS INJURY FOR THE OLDER ADULT**

by Angela J. Ring

The Canadian government, in conjunction with Veterans Affairs Canada, has launched a community-based health promotion initiative aimed at helping older adults reduce the risk of serious injury. Recognizing that falls account for 57% of direct health care costs for older adults, a sum of \$2.4 billion dollars annually, the federal government launched the program in the hope of educating those at risk. The issue is not simply a fiscal one however; falls are the leading cause of fatal injuries for older adults, and account for roughly 50% of all injuries in this population. In addition, falls can have serious implications for both independence and quality of life for many older adults, since those who experience this kind of injury are up to three times more likely to be faced with long term institutionalization. With population estimates putting the number of Canadian

citizens over the age of 65 at close to 5 million in 10 years, preventing serious injury is becoming increasingly important. Despite this reality, many older adults believe falls to be unpreventable accidents, and as such the Canadian government hopes to change this belief by providing older adults with information on how falls can be prevented.

Studies investigating falls suggest that they are not merely simple accidents, but rather the result of the complex interaction between both personal health practices and individual health status. For example, the natural decline in functioning that occurs with aging, such as reduced visual acuity, hearing loss, a decreased sense of touch and smell, changes in bone density, as well as a longer healing period all put older adults at greater risk for serious injury, even if they benefit from otherwise good health. In addition, research suggests that approximately 50% of all injuries among older adults happen at home, particularly in bathroom areas and stairs, indicating that safety hazards in the home environment may be an important factor. As such, the government initiative has outlined specific strategies related to improving both personal health habits that may contribute to falling risk, and home safety precautions.

In terms of home safety, the initiative draws attention to the fact that many injuries in the home are the result of seemingly innocent hazards. The idea is to encourage older adults to seek out and identify these hazards in order to lower the associated risk. Things such as ensuring that all entrances, both into and within the home, are equipped with adequate lighting and easily accessible switches, taking care that stairs and pathways have good, solid railings and appropriate traction, are clear of clutter and in good condition are just some of the home safety issues outlined. Other seemingly innocuous dangers are rugs and bathmats that aren't anchored down, thus increasing the possibility of slipping, using regular floor wax instead of the non-skid variety, and absent light-switches at both the top and bottom of staircases. Other recommendations include keeping minor

light sources on at night in case getting up is necessary, removing reading glasses when walking and using stairs, being weary of pets underfoot, and having a seat at the entrance of the home in order to sit while putting on or removing footwear.

In addressing health issues that may contribute to falls, the initiative points to a healthy lifestyle. More specifically, eating a healthy, balanced diet and eating at regular intervals can prevent the weakness and dizziness that may precipitate falls. Remaining physically active also helps to keep muscles strong and maintain balance and flexibility, all of which can contribute to the risk of falling. Lastly, taking care to monitor vision and hearing are important, as those older adults who cannot see or hear properly are at greater risk of injury. Regular visits to health care professionals in order to monitor prescriptions for glasses and the need for hearing aids, and taking care to use these aids properly are important steps that can be taken as part of a rounded prevention plan.

*For more information, please contact the Health Canada/Veterans Affairs Canada Falls Prevention Initiative. Phone: (613) 952-7606, fax: (613) 957-9938, email: seniors@hc-sc.gc.ca.*

*Also available via the World Wide Web at: [http://www.phac-aspc.gc.ca/seniors-aines/pubs/ycpf\\_info](http://www.phac-aspc.gc.ca/seniors-aines/pubs/ycpf_info)*

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