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SOME THINGS JUST GET BETTER WITH AGE

by Tania Elaine Schramek

Glancing through research related to aging and memory typically informs us that aging and poor memory go hand in hand. There are, however, many types of memory and taking a closer look reveals that some forms of processing are preserved with age and that some may become even better. One example of this is emotional processing. Numerous studies have shown that in young adults emotional material is better remembered than neutral information. This finding is known as the emotional enhancement effect.

A group of Massachusetts researchers compared the memory of young and older adults for emotional and neutral elements within complex visual scenes. They did not tell the participants that their memory would later be tested, a method known as incidental encoding. Interestingly, they found that older adults did NOT differ from their younger counterparts on their ability

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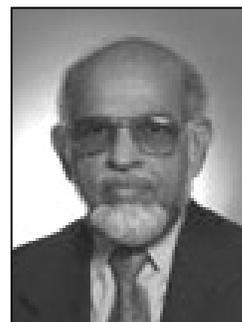
IDENTIFYING THE RISK OF ALZHEIMER'S DISEASE: A CASE FOR PREVENTION VERSUS MAINTENANCE

An interview with Dr. N.P. Vasavan Nair, of the Douglas Hospital

by Angela J. Ring

Dr. Neelakanta Pillai (N.P.) Vasavan Nair came to the Douglas Hospital in 1972 from Saskatchewan with the intention of studying schizophrenia and depression. Little did he know at that time that he would become one of the leading researchers at the Douglas Hospital. A quick look at his profile on the Douglas website only serves to underscore the impact of his presence in the hospital. Over the years he has served as Director of Research Services, Director of the Douglas Hospital Research Centre, Director of the Department of Psychiatry, and Medical Director for the Program for Dementia with Psychiatric Comorbidity, among many other accomplishments too long to list here.

When asked about his research, Dr. Nair chooses to discuss an on-going project started in 1983. He draws attention to the point that at that time, there wasn't much hope for treatment of Alzheimer's Disease (AD), but that prevention was thought a viable option. As such, Dr. Nair and his team of researchers were interested in detecting possible markers of risk for AD. Identifying early risk markers can be key when dealing with AD, since memory systems have many



backups, and as such people are able to compensate for quite some time before they notice any real change in functioning. Often by the time that people start noticing or complaining of memory difficulties, they are past the point of prevention.

The team of researchers began by recruiting healthy older adults between the ages of 60 and 90. Based on epidemiological studies they estimated that approximately 5-15% of their sample would likely develop AD. They then administered a test battery consisting of standard neuropsychological tests, endocrine measures such as cortisol

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EDUCATION

AGING INFO ONLINE COURTESY OF THE CANADIAN GOVERNMENT: A GREAT RESOURCE AT YOUR FINGERTIPS

by Daniel Auld

Have you ever had a question about aging, but were not sure where to find the answer? Wouldn't it be nice if there were information about a wide variety of aging-related topics that was easily available and presented in an interesting fashion?

Fortunately, there is – and it's free! The Aging and Seniors Division of the Public Health Agency of Canada and the National Advisory Council on Aging offer exactly such a service through the Internet. At their

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NOVARTIS

SOME THINGS JUST GET BETTER WITH AGE

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to remember emotional elements and in fact showed the same emotional enhancement effect and thus had better memory for emotional material compared to neutral information. The researchers then compared two new groups but they informed the participants of the upcoming memory test, i.e. intentional encoding. This time around, the young adults remembered both the neutral and emotional components of the scenes. The older adults, however, did not recall neutral components, but continued to show the emotional enhancement effect. The authors concluded that something in aging renders overcoming the attentional bias for emotional information difficult and suggested that perhaps the older adults did not engage in learning strategies that would help them to remember the entire scenes because new learning is as a general rule more difficult with age.

Evolutionary theorists would argue that this makes perfect sense because older adults have not really needed to maintain the ability to learn new information to survive as they have lived in relatively stable environments with younger kin. Further still, evolution could explain why attentional biases for emotional information persist; at least one group of researchers at Stanford thinks so. They contend that evolution would favour skills that helped older adults increase their descendants' chances of survival, such as transmitting their large stores of world knowledge, maintaining social cohesion in their groups, and most importantly, investing emotionally in their kin. In fact, social and emotional functioning improve with age, negative emotions are less frequently experienced than are positive emotions, older adults are more skilled at handling emotionally charged interactions and are better able to regulate negative

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An interview with Dr. N.P. Vasavan Nair, of the Douglas Hospital

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and melatonin, and CT scans. The idea was that by combining a variety of different measures, there would be an increase in sensitivity of the various tests. The test battery was administered to participants yearly to see what if anything would change over time, and if any of the changes were associated with the onset of AD.

Over the years Dr. Nair's team has found that an increase in cortisol levels is associated with mild cognitive decline, and that a decrease in melatonin levels is associated with a decrease in episodic memory. From these findings the team concluded that an increase in cortisol and a decrease in melatonin might be indications for possible risk of AD. Dr. Nair also points out that since the study began, other markers have been identified such as the apolipoprotein (apo) E4 allele. In light of this, Dr. Nair would like to develop a "package" of tests in order to create a standardized battery to be used in formal risk assessment. This battery would include neuropsychological testing, genetic testing, fMRI scans, and endocrine measures that combined would aid in identifying those people at greater risk for AD.

By developing a test battery for identifying those at risk, it would be possible to engage these individuals in preventative programs aimed at either delaying the onset of AD or reducing the severity of symptoms. This is particularly important for relatives of those with AD who often worry about what can be done for them. This feeling is now being reflected among many organizations such as the National Institutes of Health (NIH) that now largely concern themselves with developing prevention programs. Dr. Nair also draws from an example in Sweden where a community-based prevention program has shown successful results in reducing the incidence of AD.

He points out that at the governmental level, prevention is not viewed as the mandate of hospitals, and therefore funding for these kinds of programs can be scarce. Dr. Nair cautions that this can be a dangerous stance to take. With an aging world population, and particularly in communities that have a higher proportion of older adults, prevention will be key in managing the disease, both on a personal and economic level. The more people that can be helped in staving off the onset of AD, or in reducing the severity of symptoms, the fewer people there will be occupying hospital wards. Thus, prevention is not only

helpful for those that seek it, but also cost-effective in the long run.

What would a prevention program involve exactly? In large part it would involve educating the community about AD and prevention. On a more individual level, in most cases it would involve regular visits to a clinic with the aim of teaching specific strategies for prevention. These strategies might include stress reduction techniques to target high cortisol levels, as well as diet and exercise. The program might also aim to teach intellectual activities such as crosswords or chess to "keep the mind active". Dr. Nair points out that some of the findings of this research still need to be explored further, and may lead to other kinds of strategies for AD. He draws attention to the decreased melatonin findings, which may suggest a decreased sensitivity to light. Although this remains a hypothesis, if it turns out to be the case it may be possible to develop a "light treatment" of sorts to be used in conjunction with other preventative strategies. In the end though, the kinds of activities that might be prescribed will vary greatly from one individual to the next, but the basic principle will remain the same. By visiting a prevention program a few times per year, it may be possible to delay or even avoid hospitalization for AD, thus benefiting everyone involved.

POLICY AND POLITICS

CANADIANS MAKING A DIFFERENCE

by Tania Elaine Schramek

Who can forget the rumblings last year when two of the best-selling arthritis drugs, Vioxx and Bextra, were pulled from the market over findings of increased cardiovascular risks? Researchers estimate that COX-2 inhibitors, the class of drugs to which Vioxx and Bextra belong, have killed between 3,000 and 10,000 Canadians by causing heart attacks and strokes. This past June, a safety review panel was held to help Health Canada determine if these controversial drugs should be allowed back on the market. Interestingly, the panel was comprised of both arthritis patients and medical experts.

Some background on COX-2 inhibitors

COX-2 inhibitors were initially designed to provide pain relief without causing any of the gastrointestinal problems that come about with the use of traditional NSAIDs (non-steroidal anti-inflammatory drugs). NSAIDs target two enzymes in the body, the one that causes arthritis pain and swelling (COX-2) and the other that protects the lining of the stomach (COX-1). COX-2 inhibitors such as Celebrex, Vioxx, Bextra, and Mobicox were designed to only block the actions of the enzyme that causes arthritis pain and inflammation. Given that many arthritis patients ended up with bleeding in the stomach lining and/or ulcers with extended use of NSAIDs (e.g. aspirin and ibuprofen), COX-2 inhibitors were extremely well received when they burst onto the market in 1999. In fact, Vioxx was pulling in global sales of 2.5 billion in 2003. Then a clinical trial conducted by the makers of Vioxx, Merck, showed that heart conditions and cardiovascular complications could occur after 18 months of Vioxx use. It was taken off the market in October 2004. Ray Gilmartin, Merck's chief executive officer had this to say when the news broke. "Although we believe it would have been possible to continue to market Vioxx with labelling that would incorporate these new data, given the availability of alternative therapies and the questions raised by the data, we concluded that a voluntary withdrawal is the responsible course to take".

What Canadians had to say on the matter

Health Canada received 48 written submissions from patients and patient advocates. Impressively, 44 of the 48 were favourable to a return of COX-2 inhibitors to the Canadian market. One of the arthritis patients chosen for the June 9th panel, Michael Hynes, said "Your recommendations have the ability to maintain or destroy my life, as Celebrex is the only drug that gives me enough pain relief to get out of bed". In contrast, Cassandra Poirier, 19, discouraged the return of COX-2 inhibitors after her 54-year-old mother died of a heart attack as a result of taking Vioxx for 3 months. "It's a personal choice," said Poirier. "I think if my mother knew all the risks of taking a drug like that, being a single parent I don't think she would have." One patient and panelist suffering from rheumatoid arthritis Huguette Labrie wrote "We as patients all make informed choices in collaboration with our doctors and that should never be taken away from us... Sometimes, quality of life takes precedent over quantity. Let the people that need the drugs decide for themselves, which they prefer. I for one will choose quality over quantity any day".

Panel recommendations

On the day of the hearing, Health Canada was first presented with the scientific evidence from the expert panel and then with the testimonials of arthritis patients and/or their loved ones. In the end, the panel's report consisted of answers to specific questions posed by Health Canada along with their recommendations with respect to the re-entry of COX-2 inhibitors on the Canadian market.

In summary, the panel was convinced that although all COX-2 inhibitors increase the risk of cardiovascular events, the scientific evidence available justifies the marketing of Celebrex (vote: 13 yes 0 no), and Vioxx in Canada (vote: 12 yes, 1 no). They argued that the increased cardiovascular risks caused by Celebrex and Vioxx were similar to that of most NSAIDs, and that the risk of gastrointestinal harm appears to be less than most NSAIDs.

Moreover, patients definitely benefit from having a variety of drugs to choose from for pain relief. Bextra on the other hand, was not approved for marketing in Canada (5 yes, 8 no) because of the paucity of information on the long-term cardiovascular risks associated with the drug and because there are increased risks of severe skin reactions. Thus, they felt that the overall benefits outweighed the risks for most patients but cautioned that "The appropriate use of these drugs must, as with all drugs, be influenced by the individual circumstances of each patient, and how they value the benefits and harms of the drugs. In the end, this decision should be left to informed patients, advised by their well-educated healthcare providers".

The expert panel put forth several recommendations to Health Canada that would ensure the most appropriate use of COX-2 inhibitors. They strongly recommended that complete transparency be implemented at every level, including appropriate warnings about the risks of COX-2 inhibitors added to the product material given to the patient, providing the public with easy access to unbiased information about these drugs (internet, pharmacy, or doctor's office), and a continued ban on direct-to-consumer advertising by those who profit financially from these drugs.

The experts also suggested that individuals buying over-the-counter NSAIDs such as ibuprofen should first meet with a pharmacist so that he/she may explain the risks involved and correct dosage and use of the drugs. Finally, the panel unanimously felt that ALL data related to a drug, both published and unpublished, should be publicly available in an easy-to-access format and that certain Canadian regulations should be modified to ensure that all material submitted to Health Canada surrounding drug licensing requests (as well as Health Canada's assessment of that drug) be made public. Policy changes such as these could make a big difference down the line. As it stands now, drug manufacturers are not held to disclose all the

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AGING INFO ONLINE COURTESY OF THE CANADIAN GOVERNMENT: A GREAT RESOURCE AT YOUR FINGERTIPS

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respective websites, one can find a variety of thoughtful, helpful and very well prepared articles and information sheets on many a topic of interest to Canada's aging population.

For instance, the Aging and Seniors Division publishes information sheets relating to arthritis, stroke, heart disease, vision, diabetes, and osteoporosis, to name a few aging-associated diseases. These sheets provide tips and information tailored to what seniors want to know, and don't beat around the bush. The no-nonsense style is characterized by stating what the disease or condition is, what are its warning signs, what are its risk factors, how it is prevented, how to cope, and where to find more information. In short, the Info-Sheets for Seniors are one stop shopping for aging-related knowledge. Also, it is comforting that the information comes from a trusted source.

But diseases of aging are not the only topics covered by the websites. For example, in the most recent issue of *Expressions*, the bulletin of the National Advisory Council on Aging, there is a great exposé written concerning grandparenting in today's Canadian society. Indeed, as many Geronto-McGill readers are fully aware, the role of the grandparent has shifted as society has changed. The article provides a detailed and practical overview of today's Canadian grandparent and is definitely worth the read. Other issues of this superb publication concern medication use among elders, grieving, and the myths of aging and sex over 60. Clearly, there are a variety of topics to choose from the pages of *Expressions*, and rest assured that all are well researched and clearly presented.

For access to these numerous resources, all one needs is a computer and a connection to the Internet. If you do not have a computer, public libraries often offer such services, and maybe your kids could help out... Otherwise, the Aging and Seniors Division of the Public Health Agency of Canada, as well as the National Advisory Council on Aging, can be contacted directly

by telephone. See below for web and mail addresses, and for telephone numbers. Happy web surfing!

For a list of aging-related documents published by the Aging and Seniors Division of the Public Health Agency of Canada, visit

http://www.hc-sc.gc.ca/seniors-aines/index_pages/publications_e.htm#living

For the Info-Sheets for Seniors, visit
http://www.hc-sc.gc.ca/seniors-aines/pubs/info_sheets/intro_e.html

For a list of aging-related documents published by the National Advisory Council on Aging, visit

http://www.naca-ccnta.ca/publications_e.htm#challenge

For Expressions visit
http://www.naca-ccnta.ca/expression/expintro_e.htm

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emotions. After all, time is precious, why hold a grudge? So, what may appear as a decline in cognitive abilities for some could in fact be evidence that many things get better with age, including emotional memory, which by many accounts, may be more important to many older adults out there.

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CANADIANS MAKING A DIFFERENCE

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information and data they have gathered on a given drug. The Health Canada news release stated: "The Minister has clearly stated his preference for full disclosure, with the exception of legitimate and compelling reasons of privacy or business confidentiality".

Health Canada's response to the report

Canada's Health Minister Ujjal Dosanjh said "We welcome the panel's report and I'd like to thank the public for its contribution... This is the first time that the Canadian public has been invited to participate in a Health Canada expert advisory panel. Health Canada supports the direction of the Panel's recommendations. Openness and transparency will become a way of doing business in the Department". Immediate actions Health Canada promised to take were to ensure that manufacturers of all NSAIDS provide updated patient safety information for these products and promised to issue guidance to these manufacturers by establishing standards for the risk and benefit information that must be included in product labelling. Health Canada will also establish open communication with health care professionals and the public keeping them informed about the safety of the drugs in question. Health Canada also promised to further evaluate issues surrounding the availability of over-the counter medications and their potential inappropriate long-term use. The Minister was also pleased to announce a new Web-based database on adverse drug reactions in Canada: http://www.hc-sc.gc.ca/dhp-mps/medeff/databasdon/index_e.html.

Clearly, Health Canada and the manufacturers of arthritis medications have their work cut out for them but in the meantime, many arthritis sufferers and their doctors have much to celebrate. Indeed, thanks are in order for the outspoken Canadians who, alongside the experts, fought for the return of COX-2 inhibitors. When we really want to, we can truly make a difference.

Sources

Panel report:

http://www.hc-sc.gc.ca/dhp-mps/prodpharma/activit/sci-consult/cox2/index_e.html

CBC news:

<http://www.cbc.ca/story/science/national/2005/06/09/COX2-hearings050609.html>

Health Canada Press Release:

http://www.hc-sc.gc.ca/ahc-asc/media/nr-cp/2005/2005_75_e.html

FIGHTING THE GOOD FIGHT: EVIDENCE FOR WISDOM IN OLDER AGE

by Angela J. Ring

We've all heard the saying that with age comes wisdom, but what does this really imply? One area of life that would certainly benefit from a little bit of wisdom is in our interpersonal relationships, particularly when those relationships are conflictual. With this question on mind, a team of researchers from University of Michigan and Purdue University asked the question "Do we get better at picking our battles" as we age?

The researchers interviewed volunteers between the ages of 13 and 99, and asked them to describe some of their interpersonal relationships and how they reacted to a recent conflict within those relationships. They analyzed what the participants told them using a framework of conflict strategies based on two dimensions. These dimensions include active or passive strategies and constructive or destructive strategies. For example, active constructive (Voice) strategies for conflict resolution might include listening or discussing the problem, while active destructive (Exit) strategies would include yelling, name-calling or physical aggression. In terms of passive strategies for conflict resolution, constructive (Loyalty) ones might include remaining calm and waiting for the situation to blow over, while destructive (Neglect) strategies might include avoiding the person or sulking.

The older adults in this study tended to rely more heavily on "Loyalty" strategies such as remaining calm and waiting for the situation to blow over than were their younger counterparts. In fact, the younger participants were more likely to use "Exit" strategies such as arguing or yelling, which are viewed as destructive interpersonal strategies. In addition, the authors found support for the notion that as we age, we experience fewer interpersonal problems, feel less negative emotions, and are better able to regulate our emotional responses to interpersonal difficulties. Thus, it appears as if we do in fact get wiser with age, and that those of us still in the earlier stages of life might be able to learn a thing or two from those that have walked before us.

Birditt, K.S., & Fingerman, K.L. (2005). Do we get better at picking our battles? Age group differences in descriptions of behavioral reactions to interpersonal tensions. Journal of Gerontology: Psychological Sciences, 60B, 121-128.

SCIENCE HERE AND NOW

GROWTH HORMONE AND AGING: THE PASSION OF PIERRETTE GAUDREAU

by Daniel Auld

Pierrette Gaudreau, Ph.D., is the head of the Laboratory of Neuroendocrinology of Aging at the University of Montreal. When it comes to the basic biology behind aging, her lab is one of Montreal's most active. Dr. Gaudreau is particularly interested in the actions of Growth Hormone (GH), a hormone that promotes growth and helps control the body's metabolism. In addition to well-known roles during development, GH is involved in tissue repair and maintenance in adults.

When the body needs GH, a part of the brain called the hypothalamus secretes another hormone called Growth Hormone Releasing Hormone (GHRH). GHRH tells a gland called the pituitary to make and release GH into the blood. In middle and late adulthood, GH levels drop compared to young adults and children. Scientists believe lowered GH levels contribute to features of aging, including loss of muscle mass and greater fat deposition. Dr. Gaudreau's research team has shown that by giving aged rats extra GHRH, which causes increased GH release, it is possible to have the old rat's hormonal system looking like a young rat's again. Thus, her research is important because it suggests that GHRH might effectively increase GH level in older humans.

Dr. Gaudreau has also studied the effect of aging on diet and eating. As we age, our appetite and food intake typically decrease. A very similar profile of reduced eating occurs in aged rats. Dr. Gaudreau's team found that injecting GH into old rats, in order that they had a level similar to that of young rats, resulted in a drastic improvement in food intake. This suggests that restoring GH levels to similar-to-young levels might help older humans suffering from loss of appetite.

In more recent work, Dr. Gaudreau has shifted her attention to cancer. A protein called insulin-like growth factor-1 (IGF-1) has been linked to cancer progression. It just so happens that the hormone Dr. Gaudreau knows most about, namely GH, increases synthesis and release of IGF-1. Other research has shown that by inhibiting GHRH, which normally increases GH release, cancer progression can be slowed,

presumably by reducing IGF-1 levels. In order to better understand how GHRH might slow cancer growth, scientists need to know in what part of the body the GHRH is acting. Dr. Gaudreau and her colleagues have contributed to this effort by showing that GHRH receptors – which are the site of GHRH action – are present in both human male and female reproductive systems. Given the role of GHRH in prostate and breast cancer progression, knowing its exact sites of action will surely be information that scientists can use to better understand these cancers, and hopefully use it to design cures.

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