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RESISTANCE TO COLD IN OLDER ADULTS: COLD WITHOUT KNOWING IT

by Elaine Waddington Lamont

Now that we are entering the cooler days of autumn, and our thoughts turn to falling leaves and carving pumpkins, it's important to remember that staying warm becomes more difficult as we get older. With normal aging comes a lower metabolic rate because of reduced muscle mass, and decreased vasoconstriction (constriction of the blood vessels in the extremities), leading to greater heat loss. This makes it more difficult to maintain body temperature when under cold stress. At its most extreme, it means that older adults are at a greater risk of hypothermia. A number of studies have looked at the effect of severe cold on older adults, with temperatures around 5-10°C. In a recent paper to appear in the *American Journal of Physiology*, DeGroot and Kenney (2006) studied the effects of mild cold stress in young and older adults. With mild cold stress, a person could lose a lot of body heat

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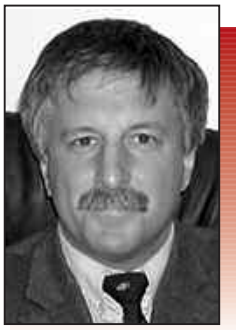

Dr. Jacques Genest knew at the young age of 18 that he wanted to be a cardiologist and he took his first steps in that direction at McGill, where he attended medical school. Upon graduating, he made good on his original ambition and pursued specialty training in cardiology in Boston and while there, he honed his scientific skills

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POLICY AND POLITICS
ARE AGE-FRIENDLY CITIES PART OF OUR FUTURE?

by Tania Elaine Schramek

We have surely all come across the most recurring theme cited in the aging literature. "The world's population is aging…." In fact, the buzz phrase often goes something like this: according to the United Nations, by 2025, demographic ageing will result in the population over the age of 60 doubling from 600 million to 1.2 billion. By 2050, this number will double again to 2 billion."

The question now is: are we prepared for this reality? Most astutely, what does being prepared really mean and how would this impact older adults going about their everyday lives? The larger picture calls for the development and institution of effective/targeted health and social programs for older adults. Accordingly, in 2002, the World Health Organization (WHO) released its Policy Framework on Active Ageing, the goal here being "optimizing opportunities for health, participation and security in order to enhance quality of life as people age."

For the WHO, Active Aging implies recognizing the importance of independence, participation, dignity, care and self-fulfillment for the older population. The general approach to be adopted by institutions and society in general is one that takes into account the multitude of factors that interact over the course of a person's life to determine their health and wellbeing as they age. These include biological, psychological, cultural,

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An interview with Jacques Genest, M.D., of the Royal Victoria Hospital

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as a post-doctoral fellow. In 1990, Dr. Genest returned to Montreal and joined the Faculty of Medicine at the Université de Montréal. In 2000, he crossed over Mont-Royal again and rejoined McGill.

Over the years, in addition to having a busy clinical practice in cardiology, Dr. Genest has maintained a keen interest in research and has extensively published scientific articles that address cardiovascular health. One of his main interests has been the investigation of factors that predispose young individuals to heart disease. The classic example is Arthur Ashe, the 1970s tennis star who had a heart attack in his 30s despite the fact that he was extremely fit. People with such a predisposition clearly have something very wrong with their systems, such as an abnormal gene. Dr. Genest feels that identifying those factors is important for increasing our understanding of cardiovascular disease.

Most recently, Dr. Genest and his colleagues have started out in another direction. In fact, in a certain sense, they are looking in the opposite direction. They are searching for factors that are 'right' for cardiovascular health. Dr. Genest calls it the 'Winston Churchill effect.' The central question is, how did a man like Winston Churchill who had a very bad lifestyle – typified by high stress, smoking cigars, and drinking more than just a little – live to a ripe old age without significant cardiovascular disease? What genes did this man boast that protected his arteries and heart? Dr. Genest believes that by studying people similar to Winston Churchill – whose genetic make-up has blessed them with resistance to cardiovascular disease – scientists have an opportunity to increase their understanding of what is good for our arteries and hearts. These clues will hopefully help us to design better medicines or recognize better lifestyles.

Most of the population possesses something in between the 'good' genes of Winston Churchill and the 'bad' genes of Arthur Ashe. As opposed to these extreme cases, a variety of risk factors explain the occurrence of cardiovascular disease in the majority of people. Age is an extremely important risk factor. In general, as we get older, our risk for cardiovascular disease increases. In men, Dr. Genest says that there is a steady increase in risk as the years progress. Women, on the other hand, are quite different and the risk spikes dramatically at menopause, usually around the age of 50. To put the importance of this into perspective, Dr. Genest indicates that post-menopausal women have a nine-fold higher chance of dying from a heart attack than breast cancer. It appears that in young women, estrogen protects against cardiovascular disease and helps to keep low density lipoprotein (bad fat) low and high density lipoprotein (good fat) high. While it was hoped that hormone replacement therapy (HRT) would help reduce the increase in risk that occurs upon menopause, Dr. Genest says that unfortunately the studies show that it does not prevent the increase in risk for heart disease, even though HRT can help some of the other symptoms of menopause.

Dr. Genest firmly believes that lifestyle is the best way to improve your odds against cardiovascular disease. For many people, however, as they age, physical activity goes down and weight tends to increase. He stresses that maintaining physical activity is one of the most important lifestyle choices anyone can make. He says that daily exercise is best – for instance walking or aquaform for 45 minutes – with exercise only once or twice per week not being ideal. Other good choices include not smoking and maintaining a quality diet with fruits and vegetables. People should also strive to maintain a healthy weight, reflected by a body mass index (a measure of body fat based on height and weight) of less than 25. Moreover, controlling stress by what Dr. Genest refers to as 'serenity' is very important as well. A cornerstone of this includes having a good social network to provide support. Typically, women do a better job of this than men and have much better social support networks. Men, however, could benefit from good support as much as women. The social support network is particularly important following the death of a spouse, when the risk of cardiovascular complications increases.

In terms of drug therapy, Dr. Genest believes that the least amount of medicine required for prevention is the best. Consider, for example, a 65-year old with high blood pressure: equally important additions to any drug therapy include maintaining a good body weight, a good diet and having reasonable salt intake. Moreover, Dr. Genest indicates that the value of treating an otherwise healthy 80-year old with drugs for high cholesterol is unknown, but even at such an advanced age, Dr. Genest believes that being physically active is still very important.

Dr. Genest would like to leave readers with the message that the most important thing they can do to maintain their health as they age is to keep living actively, including keeping interested in things and keeping their participation in activities high. The key is daily intellectual and physical activity, with the bottom line being if you don't use it, you stand to lose it.

ARE AGE-FRIENDLY CITIES PART OF OUR FUTURE?

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behavioural, economic, social, and environmental factors.

In terms of health programs, such an approach means health services that are more accessible and responsive to the specific needs of older adults. We have made some headway in this respect; the Quebec CLSCs for instance, offer a range of services provided in the home by devoted and qualified nurses. More chairs have been added to waiting rooms in our hospitals and adapted transportation is becoming increasingly accessible to a larger proportion of older adults.

In societal and environmental terms what can be done? Here again the WHO has a few recommendations. Given that a majority of older adults remain in their homes and communities, but in environments that have not necessarily been designed with their needs and capacities in mind, the WHO developed the Global Age-Friendly Cities project. This is indeed a welcome endeavour especially when one considers that every day 1 million people turn 60 and that 80% of these people live in urban settings.

Who Decides What Age-Friendly Means?

The policy makers and individuals who will develop and implement the WHO's Age-Friendly Cities project first need to know **how** to make a city age-friendly. For this, the participating cities will directly consult older adults living within their communities to find out what they feel are the major physical and social barriers to Active Aging.

Then, the community leaders and experts will develop community-specific and generally applicable plans to make their cities age-friendly. The Public Health Agency of Canada and the WHO truly want older adults to be full partners in their efforts from start to finish. Once the programs have been implemented and tested in key cities, Vancouver, British Columbia being one of them, the WHO will compile and distribute a practical "Age-Friendly Cities" guide so that cities around the world can follow suit.

Age-Friendly Cities Defined

To date, research coming out of the WHO has come up with the following ways in which an Age-Friendly city can remain true to the tenets of Active Aging (participation, health, independence and security of older persons).

Table taken from a brochure produced by the World Health Organization in collaboration with the Public Health Agency of Canada, the Ministry of Health of British Columbia and 2010 Legacies Now.

AGE-FRIENDLY COMMUNITY

Participation
- Positive images of older persons
- Accessible and useful information
- Accessible public and private transportation
- Inclusive opportunities for civic, cultural, educational and voluntary engagement
- Barrier-free and enabling interior and exterior spaces

Health
- Places and programs for active leisure and socialization
- Activities, programs and information to promote health, social and spiritual well-being
- Social support and outreach
- Accessible and appropriate health services
- Good air/water quality

Security and Independence
- Appropriate, accessible, affordable housing
- Accessible home-safety designs and products
- Hazard-free streets and buildings
- Safe roadways and signage for drivers and pedestrians
- Safe, accessible and affordable public transportation
- Services to assist with household chores and home maintenance
- Supports for caregivers
- Accessible stores, banks and professional services
- Supportive neighbourhoods
- Safety from abuse and criminal victimization
- Public information and appropriate training
- Emergency plans and disaster recovery
- Appropriate and accessible employment opportunities
- Flexible work practices

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Who Benefits from an Age-Friendly City?

The answer is simple. We all would. A safe neighbourhood for an older adult would also be safe for children, youth, women, and men. Improved air and water quality not only protects older adults with environmental sensitivities but people of all ages, especially growing children. We would all worry less knowing that our older loved ones have access to services and the support they require and deserve. By promoting independence through barrier-free buildings and streets we will improve mobility for both younger and older individuals with disabilities. If a greater number of older adults are in a position to volunteer, rejoin the workforce, and participate in civic activities, then we can all benefit from their presence and contributions. And of course, financially, the local economy will only benefit from the patronage of older adults that could not make it out there in the past.

In reality, an age-friendly city is a human-friendly city; we will all age and will surely gain in the process.

Sources:

World Health Organization, Global Age-Friendly Cities Project brochure available at: http://www.phac-aspc.gc.ca/seniors-aines/pubs/age_friendly/index.htm

Public Health Agency of Canada: http://www.phac-aspc.gc.ca/new_e.html

Association québécoise d'établissements de santé et de services sociaux. http://www.aqesss.qc.ca/fr/accueil.aspx

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without even being aware of it. To remedy this problem, they studied 36 young and 46 healthy older adults matched for general health, body fat composition, and muscle mass. They inserted a tube through the nose into the throat to measure mid-body temperature, and asked subjects to relax in a temperature-controlled room set at a toasty 27°C. Then, the temperature was gradually lowered until subjects started shivering. They found that both young and older subjects started to shiver at the same time, at about 21°C. What was surprising was that older adults were already significantly colder than young adults at 23°C, which is a little warmer than most of us keep our homes in the winter. This lower body temperature may have been due to greater heat loss through the extremities in older adults. This may be a good reason for keeping your home a little warmer this winter.

And don't forget to wear your hat and gloves!

Source:

DeGroot, D. W., and Kenney, W. L. (2006). Impaired defense of core temperature in aged humans during mild cold stress.

American Journal of Physiology, in press (http://ajpregu.physiology.org/papbyrecent.shtml, 25 May 2006).

SPICE IT UP! CURRY AND COGNITION

by Daniel Auld

Do you like curry? If so, you might be happy to learn that a recent epidemiological study suggested that curry consumption is probably good for your brain. Indeed, researchers in Singapore compared the self-reported curry consumption of 1,092 people between 60 and 93 years old with their cognitive capacity, as measured by a standardized test. Remarkably, the study showed that 'occasional' consumption – defined as having curry more than once in six months, but less than once a month – or 'frequent' consumption – more than once per month, up to once per day – of curry was associated with better cognitive performance. The researchers caution that larger and more detailed epidemiological studies should be undertaken to confirm and extend their present findings. Nevertheless, one of the main ingredients of curry powder, a spice called turmeric that provides the yellow colour, may be a potent nutriceutical, which is a product or chemical derived from food that has a beneficial effect on health. Indeed, other basic research has shown that curcumin, a chemical constituent of turmeric, alleviates brain pathology in a mouse model of Alzheimer's disease. With respect to these and other evidence suggesting that turmeric/curcumin may have anti-dementia effects, the authors of the Singapore study believe that this spice could be responsible for the positive association with cognition that they observed. So, while more evidence is needed to confirm the positive effect on cognition, if you like curry then eat up, you might be doing something good for your brain!

Source:

Ng TP, Chiam PC, Lee T, Chua HC, Lim L, Kua EH (2006) American Journal of Epidemiology Curry Consumption and Cognitive Function in the Elderly. July 26 [Epub ahead of print]

For more information on positive effects of food on health, please see D Auld (2006) Changing your eating habits could reduce your risk for cancer: Dr. Richard Beliveau, Geronto-McGill 22 (2): 6 (March-April).

LISTEN UP! TALKING FACE TO FACE CAN MAKE A DIFFERENCE

by Tania Elaine Schramek

One all too common perception we have is that loss or decline defines the aging process. To be sure, there is some truth to this notion but could there be some overgeneralization? A group of Toronto researchers thinks so.

Age-related cognitive decline is often cited as the root cause for older adults having difficulty understanding and following conversations relative to their younger counterparts. The University of Toronto researchers sought to probe a little further and see if other factors might help to explain what many chalk up to as being 'senior moments'. Astoundingly they found that slight adjustments in the position and angle in which individuals talk to one another eliminate the differences observed between the two age groups. Why would this be the case?

It's simple. The loss involved here is not the cognitive ability to follow a conversation with two people but rather a loss in one's capacity to hear it from different angles. Age-related hearing loss can make it difficult to perceptually segregate the discourse of two spatially separated talkers. The key therefore is for sounds to come from a more central location.

But the story does not end here. Work from a group of researchers at the University of Virginia School of Medicine showed that embryonic stem cells transplanted into the inner ear had the capacity to stimulate regeneration. Such cell replacement therapy could therefore provide an effective future treatment that could compensate for age-related hearing loss. Until this form of therapy is fine-tuned and proves effective in humans, chat away but be sure to do it quite literally face to face!

Source:

Murphy, D.R., Daneman, M., & Schneider, B.A. (2006). Why do older adults have difficulty following conversations? Psychol Aging. Mar;21(1) 49-61.

Hu, Z. & Ulfendahl, F. (2006). Cell replacement therapy in the inner ear. Stem Cells Dev. Jun;15(3) 449-59.

SCIENCE HERE AND NOW

HOW SLEEP CHANGES OVER THE LIFESPAN: DR. JULIE CARRIER

by Elaine Waddington Lamont

Dr. Julie Carrier is interested in how you sleep. Specifically, in her work as a researcher at the Center for the Study of Sleep and Biological Rhythms at Sacré-Coeur Hospital and Associate Professor in Psychology at the University of Montreal, she is interested in how sleep and the biological clock change across the lifespan. For instance, we know that older adults tend have lighter sleep and to wake up earlier. Dr. Carrier showed that the tendency to become a "morning type" begins in middle age, work that she did as a postdoctoral fellow at the University of Pittsburg. But the questions of how and why these changes occur are difficult to answer. In a recent study, published in 2005, Dr. Carrier and colleagues have shown that aging may cause an advance in the biological clock that controls the timing of sleep and that this could contribute to the early awakening that is characteristic of older adults.

Along with colleagues Daniel Buysse, Timothy Monk, and Amy Begley at the University of Pittsburgh, Dr. Carrier has also looked at sleep, sleepiness, and performance in older and younger adults. They found that the older subjects had a shorter and more disrupted sleep, but that they were no more sleepy than younger adults and their performance after sleep deprivation was as good. This suggests that older adults are doing fine even though they get a little less sleep.

Another interest of Dr. Carrier is the effect of caffeine on sleep. Many of us enjoy our morning cup of coffee or tea, but as we get older we may feel that we have to limit our caffeine to the morning, if we don't want to be kept awake at night. In a study, published this year, Dr. Carrier and colleagues looked at the effect of a moderate dose of caffeine in the evening in young (20-30 years) and middle-aged subjects (40-60 years). For the most part, the results of this study confirm that caffeine in the evening really does affect your sleep, increasing the amount of time it takes to fall asleep and reducing the duration and efficiency of sleep once you finally do. But an interesting finding was that on the whole, both young and middle-aged adults are affected equally.

With this work, Dr. Carrier is helping us to better understand sleep and how it changes as we get older. This will help us not only to sleep better, but also to better plan our day so that we can be alert and prepared to get the most out of our day.

References:

1. Kawinska, A., Dumont, M., Selmaoui, B., Paquet, J. & Carrier, J. Are modifications of melatonin circadian rhythm in the middle years of life related to habitual patterns of light exposure? J Biol Rhythms 20, 451-60 (2005).

2. Buysse, D. J., Monk, T. H., Carrier, J. & Begley, A. Circadian patterns of sleep, sleepiness, and performance in older and younger adults. Sleep 28, 1365-76 (2005).

3. Drapeau, C. et al. Challenging sleep in aging: the effects of 200 mg of caffeine during the evening in young and middle-aged moderate caffeine consumers. J Sleep Res 15, 133-41 (2006).

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