

March 1, 2018

Driving Safely: Does Your Doctor Know Best?

One of the most robust findings about aging is that as we get older, we slow down not only in our motor responses, but also in the time it takes us to make decisions. This is especially true in situations (like roundabouts!) where a lot of information needs to be processed quickly. All of us know older people who have changed their driving habits because they no longer see well at night, or they no longer feel confident on crowded highways, using roundabouts, or driving in unfamiliar locations.

Often, families turn to physicians to determine when it is no longer safe for a person to drive. They assume that dad or mom will listen to the doctor more than to adult children. What happens when the doctor knows a person has been diagnosed with Alzheimer's disease or some other form of dementia? Will the doctor be more likely to say the person should not be driving? How accurate is the doctor's evaluation of the potential for driving safely? Researchers in Belgium recently published a paper about a study that tried to answer these questions.

In Belgium, driving assessment experts evaluate people's driving by using on-road tests at fitness-to-drive assessment centers. Doctors send their recommendations to the assessment centers for confirmation. The researchers wanted to know how much agreement there was between the physicians' opinions about fitness-to-drive and the driving assessment experts.

All the drivers in this study had been diagnosed either with Alzheimer's disease (AD) or with AD plus vascular dementia. Physicians were asked to make medical recommendations about the 68 participants by classifying them into one of three categories: favorable (no restrictions for low visibility, distance driven, or speed); reserved (driving allowed but with one or more restrictions); unfavorable (unfit to drive). All 68 persons then underwent testing by the on-road assessors who did not know what the physicians had recommended.

The physicians and the on-road assessors only agreed about 29 of the 68 persons, with the physicians overestimating the driving safety of 35% of the participants and underestimating the safety of 22%. Interestingly, when an individual had a high number of traffic violations, the physicians overestimated their driving safety! The researchers believe this occurred because the physicians did not take traffic violations into account when they made their recommendations. Another interesting finding was that there was higher agreement between family physicians and the on-road assessors (47%) than between specialists (neurologists, geriatricians, internal medicine specialists) and the on-road assessors (37%).

The researchers recommended that the decision about driving safety should come from a combination of standardized road tests, visual, and neuropsychological tests. They concluded the paper by stating that "regular standardized on-road tests should be required for all individuals with mild dementia" so that physicians, families, and diagnosed persons can make good decisions about safe driving. This will be a challenge in the coming years for three reasons: (1) in the U.S. we do not have uniform requirements about on-road tests for adults with driver's licenses; (2) about half of all persons with some form of dementia never receive a formal diagnosis; and (3) we lack good transportation options for people who no longer can drive.

Ranchet, M., Tant, M., Akinwuntan, A. E., Morgan, J. C., & Devos, H. (2017). Fitness-to-drive disagreements in individuals with dementia. *The Gerontologist*, 57, 833-837.

August 1, 2017

Group Singing Programs for People Living with Dementia are Joyful and Accessible

A recent study published in one of the top gerontology journals confirms what many people in the Fox Valley have already learned: group singing has many benefits for people with dementia and their care partners. Researchers in England interviewed seventeen couples who participated in a variety of types of singing groups. Everyone agreed that the group singing experiences were joyful and accessible.

Before describing how they conducted the research and analyzed the results, the researchers began by stating, "The majority of recommended interventions for people with dementia are pharmacological" (p. 469). In England and Scotland, however, another approach has emerged alongside the pharmacological: it is called "social prescribing" (<https://www.kingsfund.org.uk/topics/primary-and-community-care/social-prescribing>). This innovative approach to making life better for people living with dementia has already been embraced by the Fox Valley Memory Project (FVMP). The FVMP has developed "prescription pads" as an easy way to tell people about the many programs and services of the FVMP. With one simple tear off sheet, a health care provider can let patients know that they live in a community that offers joyful and accessible experiences for people with memory loss and other dementia symptoms. Talk to Lynn Ann Clausing Rusch (Lynnann.Clausingrusch@lsswis.org) about getting prescription pads to give to your doctors, dentists, nurses, and other medical professionals.

The research on group singing identified many benefits for people with dementia and care partners. One person said, "It makes one feel more cheerful and happy; yes it gets one out of oneself" (p 473). A significant reward came from the feeling of belonging to a social group and forming relationships with others. Care partners also felt released from caring responsibilities during the group singing programs. For example, one care partner said, "It was something we could do together, where I wasn't responsible."

The researchers stated that one of the most important factors making the group singing joyful and accessible was the leadership of an effective group facilitator. Here is another way people living with dementia in our community are blessed. The professionalism, compassion, and exuberance of Frank Rippl, director of the FVMP's "On a Positive Note" chorus, and of Christy Feuerstahler, leader of the Lyrics & Laughter program offered by Valley VNA Services verify the findings in this research.

Another point emphasized by the people who participated in this research was how the group singing experiences helped them overcome inhibitions about not being able to sing well; some of these beliefs were formed in childhood when people told them they could not "carry a tune." They also talked about how when they were singing, the "differences between the people with dementia, facilitators, and caregivers became less important" (p. 476). The researchers concluded that "this blurring of role identity" (p. 477) served not only the participants in the group singing, but also the wider community by showing how people living with dementia (both those diagnosed and their care partners) can bring joy to others.

In addition to the formal group singing experiences offered in the Fox Valley, many of the FVMP's memory cafés feature sing-alongs. Memory café participants confirm what hundreds of researchers have been learning: making music together is good for the body, the mind, and the spirit.

Unadkat, S., Camic, P. M., & Vella-Burrows, T. (2017). Understanding the experience of group singing for couples where one partner has a diagnosis of dementia. *The Gerontologist*, 57, 469-478.

June 1, 2017

Holding Onto Dignity When You Have Dementia

One of the biggest challenges for people with dementia is retaining a sense of identity and meaning in life. How do people do this when they lose the ability to learn and retain new information, are confused about time and place, and have to rely on others to do things they once did independently? Researchers in the Netherlands conducted interviews with 14 people having mild to moderate dementia in order to answer this question.

Personal dignity reflects people's sense of having value and worth. It comes from our own feelings about the self and it also comes from how we are treated by others. People who say they have lost the feeling of personal dignity say they feel worthless and of no use to others.

What contributes to a sense of personal dignity? The people with dementia interviewed for this research stated that they felt they had lost important parts of their identity, mostly because they no longer felt they could fully exercise autonomy in the way they had before dementia set in. They now needed others for guidance in decision-making and in performing various tasks of everyday living. Nevertheless, most of these individuals with dementia still felt they had meaning in their lives and thus were holding onto dignity, largely because they continued to do some worthwhile activities in their homes. For example, one woman talked about how she could still dig in her garden.

All of the people in this study had experienced growing dependency on others but the ones who maintained a sense of personal dignity had learned to accept and respect the help their partners gave. One man talked about how he uses his wife's memory. He said, "I consciously use her memory, or at least I realize that I make clever use of her memory." Thus, although he recognizes that he is increasingly dependent on his wife, he still is able to maintain his own dignity by describing it as a choice he has made to rely on her memory.

An important component of personal dignity noted in this research was having the opportunity to give back to others. This reminds us that dementia-friendly communities should not just focus on doing things *for* people with dementia and their care partners, but these communities should also enable people living with dementia to feel like they can be helpful to other people. In addition, people commented on how important it was for them to feel that others in their community respect them. Outside of the safety of the home, people with dementia sometimes worry about losing their dignity in front of strangers. This is one reason why it is so important to create dementia-friendly communities that include Purple Angel training so employees in places like restaurants, shops, banks, dental practices, etc., treat people with dementia with patience, understanding, and kindness.

Being able to continue to perform daily routines and chores at home, while feeling safe and comfortable in situations outside the home, all contributed to people's feelings that life still could be meaningful and that personal dignity could be maintained. For most of the people in the study, their partners made a good life possible by keeping some semblance of normalcy even in the midst of the changes and challenges of dementia.

A major take-home message in this research on personal dignity is that it is relational. In other words, the social context in which a person with dementia lives is a key contributor to personal dignity. In order to help the ones they love who have dementia keep their sense of dignity and meaning, care partners need the support of a dementia-friendly community just as much diagnosed persons.

Van Gennip, I. E., Pasman, H. R. W., Oosterveld-Vlug, M. G., Willems, D. L., & Onwuteaka-Philipsen, B. D. (2016). How dementia affects personal dignity: A qualitative study on the perspective of individuals with mild to moderate dementia. *Journals of Gerontology: Social Sciences*, 71, 491-501.

1/26/17

The Healing Power of the Arts

One of the strengths of the Fox Valley Memory Project (FVMP) is its commitment to giving people living with dementia and their care partners opportunities for arts engagement. This includes people still living in their homes, as well as those who have moved to residential care.

Since we began, the FVMP has sponsored annual community events to showcase various forms of creativity. We began with a Poetry Party with Alzheimer Poetry Project founder, Gary Glazner (<http://www.alzpoetry.com/>). Gary has an international reputation and was recently in Wisconsin to do some training in his method, a method still used in some of our residential care facilities.

Our next big project was TimeSlips Town, which featured the creative storytelling of residents of various care facilities. TimeSlips (www.timeslips.org) is a renowned method of engaging the imaginations of people with dementia, regardless of their language ability.

The following year, we had a drumming celebration with Tom Gill who came up from Milwaukee to teach us how to make drums and joyful noises with them. In 2016, for our fourth event, our "On a Positive Note" chorus collaborated with the newVoices choir (<http://newvoiceschoir.org/>) and long-term care residents to present a moving afternoon of varied music.

This year, on May 20, we'll be sponsoring another arts event. Planning is underway for an afternoon of music, poetry, and art by and for persons living with dementia. Our "On a Positive Note" chorus will sing and Wisconsin's Poet Laureate, Karla Huston (who lives in Appleton) will participate.

Why am I telling you all of this? Obviously, I want you to know about the exciting arts events, but I also want to let you know that these events are backed by research showing their positive effects on people with dementia. For example, a paper by geriatric psychiatrist Gene Cohen and colleagues (2006) titled "The Impact of Professionally Conducted Cultural Programs on the Physical Health, Mental Health, and Social Functioning of Older Adults" found that compared to those who just went about their ordinary daily activities, people who participated in a chorale (like our "On a Positive Note") had better ratings of physical health, fewer doctor visits, less medication use, fewer falls, better morale and less loneliness.

A study of nursing homes that engaged in weekly TimeSlips sessions with residents compared to those that presented regular activities showed that those in the TimeSlips facilities were more engaged and alert, interacted more with staff, and staff had more positive views of people with dementia (Fritsch et al., 2009).

Now, there's a new study showing the benefits of painting for people with Alzheimer's disease (AD). The researchers compared participants in an instructed painting session with persons in a noninstructed painting session. People in the latter group, actually spent more time painting! Over time, residents improved their painting, using more colors, more details, and a larger area of the paper. The authors concluded, "people with AD have a preserved capacity to paint, with and without instructions, even those in the later stages of the disease. The results also indicate that an artistic development is possible and that painting can be used and an appreciated and beneficial activity for people with AD" (Miller & Johansson, 2016, p. 1).

You can click on the link below to read the article and see the many paintings produced by the Swedish participants.

Miller, E., & Johansson, B. (2016). Capability to paint and Alzheimer's disease: Relationship to disease stages and instructions. Retrieved from : <http://journals.sagepub.com/doi/pdf/10.1177/2158244016631799>

12/15/2016

What Does the Decline in Dementia Prevalence Really Mean?

A new study of over 21,000 Americans age 65 and older has shown that the prevalence of dementia declined significantly between 2000 and 2012. This sounds like good news—and it is—but you need to dig a bit deeper into the study to see what's really going on.

All the participants in this research are enrolled in a huge study of older adults in the United States called the Health and Retirement Study (HRS). Beginning in 1992, researchers at the University of Michigan have done a biennial survey of a nationally representative group drawing from all regions of the country. As the years have gone by, new groups have been added to the study. You can imagine how much information has been collected since 1992 and the kind of computing power needed to analyze it!

People enrolled in the HRS participate in a telephone interview until they die, quit the study, or are unable to continue (although in the latter case, a care partner may be asked to provide information about the individual). For the study of dementia prevalence, researchers compared the responses of people in the 2000 survey to the responses from 2012. They used the Telephone Interview for Cognitive Status, which categorizes people as normal, having cognitive impairment but no dementia, and having dementia. Obviously this is not the same as having a specific diagnosis of Alzheimer's or some other form of dementia but it provides a general view of the cognitive status of older people in the US.

In 2000, 11.6% of the participants were classified as having dementia, but in 2012, that number had decreased to 8.8%. This might not seem like a huge drop, but it is statistically significant and certainly better news than if the percentage had risen in those twelve years.

What accounts for the change? The authors examined all their data and concluded that having more years of education and higher net worth were the two key factors. This is important given the fact that between 2000 and 2012 there was also a significant increase in cardiovascular risk factors like hypertension, diabetes, and obesity. However, surprisingly, the researchers found that being obese or overweight in later life (the average age in this study was 75) is actually associated with a decreased risk of dementia! Obesity in midlife increases dementia risk.

Obviously, there's a lot more to learn about dementia prevalence. Given the fact that the number of people over 65 will double by 2050, there are still going to be a lot of people with dementia even if the percentage of the population with dementia continues to decrease. Also, the finding that more education and greater net worth protect against dementia has implications for the high number of aging Americans with lower educational attainment and more financial insecurity.

Langa, K. M., Larson, E. B., Crimmins, E. M., Faul, J. D., Levine, D. A., Kabeto, M. U., & Weir, D. R. (2016). A comparison of the prevalence of dementia in the United States in 2000 and 2012. *JAMA Internal Medicine*. Published online November 21, 2016. doi:10.1001/jamainternmed.2016.6807.

7/18/2016

Big Data: Big Possibilities for Understanding the Biological Underpinnings of Alzheimer's Disease

Have you ever wondered what happens to the information your grocery store gets when you scan that little plastic card you carry on your keychain? Or, have you thought about why after doing a search for some item on Amazon, suddenly you get ads for that very item on Facebook? The technological revolutions of the 21st century have brought us into the age of “big data.” Sometimes, that seems scary (like when we worry about privacy and wonder whether the grocery store really needs to know what kind of milk we buy). However, increasingly, data are being collected from many sources in order for scientists to gain a new perspective on complex conditions like late-onset Alzheimer's disease. The technical term for this is “big data analytics” and it's driving some exciting research in many fields.

Basically, big data analytics combine information from many studies in order to uncover relationships among bits and pieces of information that aren't obvious when only a few factors are analyzed. Obviously, marketers value this because they can determine that people who buy a certain kind of milk will be more likely to buy a certain kind of car (though of course, those are only two variables, and big data users analyze 100s of variables).

A recent study using a big data approach has generated a lot of excitement among researchers looking for biological underpinnings of late-onset Alzheimer's disease. The first thing to know about this research is that it required scientists to behave cooperatively instead of “holding their cards” and not sharing their data. This study pulled together data generated by researchers at over 70 research facilities in the US, Canada, England, and Germany. It took thousands of hours of computer time with sophisticated software and huge storage capacity to generate the findings of the study.

The scientists analyzed over 7,700 brain images from over 1,000 people, as well as blood samples and cerebrospinal fluid. These people ranged in age from 30 to 70 and fell into several categories: healthy (no signs of dementia), early mild cognitive impairment, late mild cognitive impairment, and probable Alzheimer's disease. The people with probable Alzheimer's disease were defined as having late-onset Alzheimer's, meaning that symptoms developed after age 65. By analyzing data from so many people, researchers could get a detailed portrait of the biological factors associated with each group.

What they discovered is that even before memory problems and other symptoms became apparent, people had signs of “vascular dysregulation” meaning that blood wasn't getting to the brain efficiently to deliver oxygen, glucose, and other nutrients, nor was it efficiently removing deoxygenated blood and other byproducts of metabolism. This idea about the connection between vascular dysregulation and dementia has been around since the beginning of the 20th century and now there seems to be solid evidence for its early role in producing late-onset Alzheimer's disease. Moreover, the researchers concluded that there was a sequence in changes in the brain leading to overt symptoms, with accumulation of amyloid beta following the vascular dysregulation, then metabolic dysfunction, functional impairment (like noticing memory problems), and finally, atrophy in parts of the brain.

There are many take-away messages from this research. First, we should all remember that “what's good for the heart is good for the brain” and try to maintain cardiovascular health. Another message is that in the 21st century it truly “takes a village” of scientists working cooperatively to answer complicated questions.

Full disclosure: I am a participant in the Wisconsin portion of the study and will have an MRI and PET scan in October, 2016. I've already had a lot of blood drawn and have taken many neuropsychological tests. The final message is that as many of us as possible should step forward to enroll in research programs, a message consistently delivered by the Alzheimer's Association.

Iturria-Medina, Y., Sotero, P. J., Toussaint, J. M., Mateos-Perez, A. C., Evans, A. C., & Alzheimer's Disease Neuroimaging Initiative (2016). Early role of vascular dysregulation on late-onset Alzheimer's disease based on multifactorial data-driven analysis. *Nature Communications*, 7, 1-14. Retrieved from <http://www.nature.com/ncomms/2016/160621/ncomms11934/pdf/ncomms11934.pdf>

5/1/2016

Subliminal Messages about Aging can Help or Hurt You

Remember how you used to hear about theaters flashing messages to "Drink Coke" that would be perceived subliminally? Apparently, the original claim about that practice was invented in 1957 and it never really happened. That hasn't stopped psychologists from studying subliminal perception and its effects on attitudes and behaviors.

Becca Levy, a psychologist at Yale University, and her colleagues have done some fascinating research on what they call "implicit stereotyping" and its effects on older people. These messages about aging can be either positive or negative, and Levy's team has shown that the negative stereotypes delivered below the level of conscious awareness can have detrimental effects on people's self-esteem, memory, and even their physical functioning.

In a recent research study, Levy and colleagues asked whether implicit positive age stereotypes might have positive effects on attitudes and physical functioning. They gathered 100 people 60 and older who came to four weekly sessions with the researchers. The elders were randomly assigned to one of four groups. One group sat in front of computers that quickly flashed positive words associated with old age while another group saw neutral words. An example of a positive age stereotype would be "spry." A third group, called the "explicit positive age stereotype group," wrote short essays about older people who were mentally and physically healthy. The fourth group wrote the essays and also saw the positive words flashed so they were perceived without awareness.

The results showed that after the four weeks of the "intervention," the group that had the positive words flashed quickly had significantly strengthened positive views of aging, more positive perceptions of themselves as older people, and remarkably, significantly improved physical functioning as shown by the time they took to stand up from a chair and sit again, walk 8 feet, and stand with their feet in various positions. Their improvement in physical functioning was better than another group of elders that participated in a 6-month exercise program.

As you consider this research, think about all the negative messages in our culture not only about aging, but also about dementia. Levy's team has not studied how people with dementia are affected by "implicit negative dementia stereotypes" but it wouldn't be surprising to learn that they do absorb these messages and respond

accordingly. Would it not be better for everyone if there were more positive messages about aging and the possibility of living well with dementia?

The brochure for the Fox Valley Memory Project states the goal of helping people live well with dementia by creating a dementia-friendly community. We know that dementia brings huge challenges to people's lives, but we also believe that living in a caring community can help to alleviate some of these challenges. More positive images of aging and dementia could have positive effects on everyone!

Levy, B. R., Pilver, C., Chung, P.H., & Slade, M. D. (2014). Subliminal strengthening: Improving older individuals' physical function over time with implicit-age-stereotype intervention. *Psychological Science*, 25, 2127-2135.

2/1/2016

The Significance of Play and Leisure Activities for Aging Persons

The closing of the Thompson Community Center in Appleton, WI, makes this a good time to consider two recently published articles on play and leisure activities. Researchers who are interested in what contributes to physical, psychological, social, and spiritual well-being in later life are starting to take play and leisure seriously.

Although there has been plenty of research on play in childhood, few people have considered the importance of play for adults. This is an area that needs more attention because of the many positive short-term and long-term outcomes that are theorized to come from play. In considering this topic, first we need to define play—not an easy task! One approach proposes three core components of play: (1) a goal of amusement and fun; (2) an enthusiastic and “in-the-moment” attitude; and (3) being highly interactive either with play partners or with the activity itself (think of playing Solitaire, for example).

Many positive outcomes derive from adult play. On an immediate personal level, people experience positive feelings and stress reduction, as well as feeling accepted and valued by others if their play is social. Over the long-term, regular opportunities to play can contribute to overall psychological and physical health and increase feelings of intimacy, trust, and security with other people.

Not all leisure activities can be called play because they don't all have the goal of amusement and fun. On the other hand, as people age, they become more selective about what they do, and they often withdraw from activities that no longer give them pleasure. This is a normal and healthy response to aging. Nevertheless, participation in leisure activities can become more challenging as people get older.

One study on the “paradox of leisure in later life,” examined over 7,000 people (average age 71) living in eleven European countries. This research was longitudinal, meaning that the researchers studied the same individuals over a period of several years. People were asked about doing volunteer work, attending training or educational events, belonging to a social club, taking part in a religious organization, and participating in community-related activities. The researchers measured four outcomes related to quality of life: having a sense of control, autonomy, self-realization, and pleasure.

The findings indicated as that as people aged, the association between leisure activities and quality of life got stronger. Having the opportunity to participate in enjoyable leisure gave people resilience for coping with physical and personal challenges of later life. However, as stated in the title of the paper, the researchers concluded there was a paradoxical situation presented to aging persons: though leisure became more important to them, there were more constraints on their participation in leisure activities. Clearly, the closing of the Thompson Community Center represents a major constraint for the hundreds of persons who enjoyed various types of play and leisure activities there through the years.

Nimrod, G., & Shrira, A. (2016). The paradox of leisure in later life. *Journals of Gerontology: Social Sciences*, 71, 106-111.

Van Vleet, M., & Feeney, B. C. (2015). Young at heart: A perspective for advancing research on play in adulthood. *Perspectives on Psychological Science*, 10, 639-645.

11/1/2015

Hugging is Good for Your Health!

Cohen, S., Janicki-Deverts, D., Turner, R. B., & Doyle, W. J. (2015). Does hugging provide stress-buffering social support? A study of susceptibility to upper respiratory infection and illness. *Psychological Science*, 26, 135-147.

This recently published paper shows that people who receive hugs and feel like others care about them are less susceptible to upper respiratory infections. When they do get colds and similar illnesses, their symptoms are less severe. Of course, before hugging people, we need to make sure they welcome a hug, and we obviously shouldn't hug someone if we have a cold we might pass along to them.

We now have much research showing that a strong, supportive social network helps people cope with stressful events. This is true for people diagnosed with dementia as well as their care partners. Researchers have also found that "touch from a trusted other" (p. 135) can actually help people feel less physical pain. This touch is defined as "nonsexual, caring physical touch, such as hugging or handholding" and it is "an important means of conveying empathy, caring, and reassurance" (p. 135).

Here's how Cohen and his colleagues did their research. They recruited healthy adults, measured how much social support the participants felt they received, and asked them every day for 14 days whether anyone had hugged them. Then the volunteers were exposed to a common cold virus and the signs of the severity of the cold were measured. (I'll spare you the details on how they measured "nasal mucus production". You can use your imagination.)

The people who were more likely to get the infection were the ones who had lower levels of social support and were hugged less often. People who reported being hugged more frequently and who felt like important people in their lives cared about them had a lower risk of infection. The researchers concluded: "people who regularly receive hugs are more protected than those who do not" (p. 144).

The people who participated in this study did not have dementia, but I can think of no reason why the same results wouldn't be found if people having dementia participated. I did two database searches to see if anyone had researched the importance of this kind of caring physical contact. I used PsycInfo (it lists all journal research articles broadly related to psychology) and Google Scholar. When I entered the words "hugging" and

“dementia” in each database, all I got were articles about sexuality and/or aggression. This clearly shows the limited imaginations of researchers! Not only should they study the effects of hugs and social support on people with dementia; they should also study care partners’ stress levels and risk of infection when they receive hugs and support from caring people.

Too many older people, especially those living in long-term care residences, are “hug deprived”! Some of them may have grown up fearful of caring touch and we do need to be sensitive to that. Nevertheless, for many people, these simple expressions of human caring can have important effects on our daily sense of wellbeing. And, we might even contract fewer colds!

8/1/2015

Who’s Afraid of Getting Alzheimer’s Disease?

You may have heard that older people fear getting Alzheimer’s disease (AD) more than they fear getting cancer. This observation comes from a national study in 2006 conducted by the MetLife Foundation.

Many popular media articles amplify this fear of AD by using disturbing images like “mind-robber” and “the living dead”. One publication about how many baby boomers will likely develop some form of dementia stated that it “robs people of all bodily functions and eventually their humanity.” Really? Whether a person is viewed as meeting certain standards of humanity has more to do with the observer than the person being observed. These all too common images are hurtful to people with the diagnosis and to those who love and care for them.

It’s no wonder, then, that the MetLife Foundation study found such high levels of fear of Alzheimer’s among older persons. However, recently published research by a sociologist presented a more nuanced portrait of Alzheimer’s fear. Steven Cutler analyzed responses from over 1800 people to questions on the University of Michigan’s Health and Retirement Survey (HRS). HRS is administered every two years to the same group of people age 50 and older living all over the United States. Also, every two years, a new group of people age 50 and older is added. Cutler studied responses to questions about people’s worries about developing Alzheimer’s (sometimes called “anticipatory dementia”), their assessments of their own memory, their personal experience with people who have AD, and their beliefs about whether having a relative with AD increases one’s chances of developing it.

There was good news and bad news in Cutler’s findings. The results showed that a little over half of the people surveyed were not worried at all about getting Alzheimer’s. In fact, the level of worry actually declined with age. Cutler believes that as we grow older and experience only the annoying normal memory loss of aging (like forgetting names), we feel relieved and worry less.

However, there was notably more worry among people who thought their own memory had gotten worse in the previous two years. Also, people who had a parent or sibling with dementia worried more as did those who believed having a close relative with AD is a risk factor.

Cutler urges professionals in healthcare and human services to pay close attention to those who are worried about their memory or more specifically, about developing AD. Some research has even shown that high levels of worry about memory might put people at risk of developing memory problems.

Too often we hear about people telling their doctors about their concerns about their memory, only to have the doctor say something like “everyone forgets things at your age.” These worries need to be taken seriously. A brief memory screen should be given yearly to Medicare patients and if there appears to be a problem, a referral should be given to a memory assessment center. The Fox Valley Memory Project (FVMP) collaborates with MOSAIC Family Health on memory assessment and you can find out more about this by clicking on the “memory assessment” button on the FVMP homepage.

Cutler, S. H. (2015). Worries about getting Alzheimer’s: Who’s concerned? American Journal of Alzheimer’s Disease and Other Dementias. DOI:10.1177/1533317514568889.

5/1/15

Is it Possible to Reduce the Risk of Dementia?

Remember the old game show that started on radio in the 1940s as the \$64 Question and morphed into the \$64,000 Question in the 1950s? This question about reducing the risk of dementia is more like the \$64 Trillion Dollar Question!

Two recently published papers cautiously seem to answer “yes” to the question. Here are the modifiable risk factors that are currently being studied:

- Diabetes mellitus
- Midlife hypertension
- Midlife obesity
- Physical inactivity
- Depression
- Smoking
- Low educational attainment
-

Complicating these studies is the fact that these risk factors are interrelated. For example, people with higher educational attainment might have lower risk of dementia not only because they have built up “cognitive reserve” in their brains, but also because better educated people tend to be wealthier and thus have better access to healthcare. They also smoke less and exercise more than people with less education.

One study that accounted for the fact that these risk factors are interrelated found that about a third of all cases of Alzheimer’s disease could be related to these seven potentially modifiable factors. Interestingly, the greatest proportion of Alzheimer’s disease cases (about 13%) in the USA, Europe, and the UK (considered high-income countries) can be attributed to physical inactivity.

There’s good news and bad news in these reports. The good news is that in high-income countries, risk has been dropping in the last 20 years. In one area of England, in 2011, there was a 24% decrease in the number of expected dementia cases. Researchers think this is because of higher levels of education and better care for people with cardiovascular risk factors like hypertension, high cholesterol, and diabetes. The bad news, however, is that among younger adults, obesity and diabetes are increasing.

Both articles conclude that a concerted worldwide effort to address public health issues like diet and exercise could affect the future growth in dementia cases. It now appears that if people can be persuaded to maintain a healthy weight, reduce sugar intake, exercise regularly, stop smoking, and pursue life-long learning, we might be able to reduce the prevalence of dementia in the future.

Langa, K. M. (2015). Is the risk of Alzheimer's disease and dementia declining? *Alzheimer's Research & Therapy*, 7. Retrieved from <http://alzres.com/content/7/1/34>

Norton, S., Matthews, F. E., Barnes, D. E., Yaffe, K., & Brayne, C. (2014). Potential for primary prevention of Alzheimer's disease: An analysis of population-based data. *Lancet Neurology*, 13, 788-794.

2/1/15

Development of Alzheimer's disease drugs

A paper published online last summer reports on drug development for Alzheimer's disease (AD) over a ten-year period (2002-2012). In order to understand the authors' analysis of data from a public dataset of all clinical trials of drugs for all diseases (www.clinicaltrials.gov), we must know about the three phases of drug development and the difference between "symptomatic agents" and "disease-modifying agents."

The Clinical Trials website (managed by the National Institutes of Health) describes the progression of research that must occur before drugs are FDA approved. First, a drug is tested on a small group of people to determine its safety, the range of safe dosages, and possible side effects. Next, Phase 2 involves testing more people to continue evaluating safety and whether the drug is having the expected effect. Finally, before a drug can go to market, it passes through Phase 3 trials that compare it to other approved treatments and continue to assess safety, side effects, and effectiveness. Once a drug is approved, Phase 4 trials examine long-term side effects and the drug's effects on different groups of people.

Drugs for AD fall into two broad categories. The symptomatic agents address the cognitive changes (e.g., memory loss) that come with AD. These are the drugs you've probably heard of and may be taking: tacrine (1993), donepezil (1996), rivastigmine (1998), galantamine (2001), and in a different category, memantine (2004). You'll note that no new drugs for treating symptoms of Alzheimer's disease have been approved since 2004.

In recent years, there's been increased focus on disease-modifying agents. The hope is that biological changes can be identified and treated before symptoms emerge in order to modify—and possibly prevent—the expression of symptoms. Most of the disease-modifying research addresses the accumulation of amyloid beta (A β), which forms the plaques in the brain that interfere with communication among nerve cells.

Here's the bad news from this paper: between 2002 and 2012, 96.6% of all drugs tested for treatment of AD failed somewhere along the way: 72% failed in Phase 1, 92% failed in Phase 2, and 98% failed in Phase 3. The authors of this study expressed concern that there are only a small number of drugs (22) currently being tested in Phase 1. While it may be possible that some drugs developed for other diseases ("repurposed agents") will enter the pipeline at later phases, there aren't many under consideration now.

So where does this leave us? Certainly everyone recognizes the urgency of this situation, but drug development is expensive and time-consuming. With few drugs in the pipeline, and a record of so many

failures, it's easy to get discouraged about the promise of a drug to slow or even prevent the development of symptoms in people we love now. This makes it imperative that communities do more to offer programs and services that have proven positive effects on the well-being of people with dementia and their care partners—programs like those offered by the Fox Valley Memory Project!

Cummings, J. L., Morstorf, T., & Zhong, K. (2014). Alzheimer's disease drug-development pipeline: Few candidates, frequent failures. *Alzheimer's Research & Therapy*, 6:37. Retrieved from <http://alzres.com/content/6/4/37>.

11/1/14

Physical Activity and the Brain

You've probably heard the saying, "What's good for the heart is good for the brain." Much research has shown that healthy brain aging is supported by regular exercise and a healthy diet. Some recent research shows that physical activity can slow damage to the hippocampus in people who may have a genetic predisposition for Alzheimer's disease.

The hippocampus is a structure in the brain that is one of the first to show the pathological signs of Alzheimer's disease (AD). It got its name because early anatomists thought it looked like a seahorse. All mammals have two hippocampi, one on each side of the brain. The hippocampus is involved with coding new information about our experiences into memory. When the hippocampus is damaged, it becomes harder to get new information to "stick" and then we can't retrieve it from memory.

Only one form of AD is definitely inherited. This is the type that is sometimes called familial AD or young-onset AD. People with this very rare type begin to show symptoms in their late 30s or early 40s. The AD we usually think about shows up later in life. There may be a genetic predisposition, but even if you have a genetic predisposition, there are many other factors that will influence whether you develop symptoms. One factor may be physical activity.

Smith et al. (2014) studied healthy adults between 65 and 89. None of them had any form of dementia. Some of them had one or both apolipoprotein-E $\epsilon 4$ (APOE- $\epsilon 4$) alleles, meaning that they got one from their mother or their father, or they got one each from their mother and their father. (An allele is a form of a gene.) These people are considered to be at greater risk to develop AD, but it is not a foregone conclusion. The researchers divided them into four groups:

- Low Risk (no APOE- $\epsilon 4$ alleles)/Low Physical Activity
- Low Risk/High Physical Activity
- High Risk (one or both APOE- $\epsilon 4$ alleles)/Low Physical Activity
- High Risk/High Physical Activity

The researchers measured hippocampal volume with an MRI at the beginning of the study, and again 18 months later. The only group that showed a loss of volume (3%) was the High Risk/Low Physical Activity group. In other words, it appears that the people who were at high risk because of inheriting the APOE- $\epsilon 4$

allele from one or both parents, but who also engaged in moderate to vigorous physical activity three or more times a week, were protected from loss of nerve cells in the hippocampus.

Smith, J. C., Nielson, K. A., Woodard, J. L., Seidenberg, M., Durgerian, S., Hazlett, K. E.,...Rao, S. M. (2014). Physical activity reduces hippocampal atrophy in elders at genetic risk for Alzheimer's disease. *Frontiers in Aging Neuroscience*, 6, 1-7.