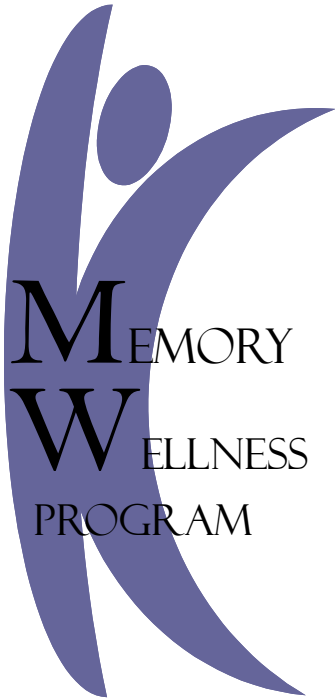


# THE RECOLLECTION CONNECTION



## MEMORY WELLNESS PROGRAM UNIVERSITY OF WASHINGTON VA PUGET SOUND HEALTH CARE SYSTEM



### Help for the Present, Hope for the Future: A Focus On Diabetes.

Suzanne Craft, Ph.D.



Suzanne Craft, Ph.D.  
Professor  
University of Washington  
Director, Memory Wellness Program

Older adults typically face changes in health, social networks, physical activity, and finances. One alarming health challenge is the increasing rate of diabetes among seniors. One in 5 Americans over the age of 60 has diabetes, and 1 in 3 Americans over 60 has either diabetes or a pre-diabetic condition called impaired glucose tolerance. Diabetes is associated with many serious health risks, including high blood pressure, high cholesterol, heart disease, kidney disease, blindness, and sores that will not heal. Clearly, reducing the rate of diabetes among older adults would improve their health and well being.

Why is the Memory Wellness Program interested in diabetes? A large body of research has shown that older adults with diabetes have an increased risk for memory loss. Furthermore, diabetes may increase the risk for Alzheimer's disease and vascular dementia. In one of our recent studies, we showed that improving blood sugar regulation can preserve memory for persons with Alzheimer's disease. In this study, research participants took either rosiglitazone (a medication used to treat type 2 diabetes) or a

placebo. After six months, we saw improvements in memory and attention for participants who took rosiglitazone. It all goes to show that a medication that improves blood sugar regulation can improve memory!

This issue of *The Recollection Connection* focuses on diabetes. Dr. Laura Baker and Dr. Stennis Watson will describe two of our studies that explore how treating diabetes will affect memory. One of these studies asks whether common diabetic medications improve memory for adults with mild diabetes. The other study asks whether exercise will improve memory for adults with impaired glucose tolerance. Karen Enstrom, one of our research nurses, will give you some tips on detecting diabetes.

Finally, I want to thank all of you who make our program possible. We would not be able to carry out our work without our wonderful research volunteers. The small compensation that we give to our participants does not match the great feelings of gratitude that we have for you. Thanks ever so much!



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## Study Update: What Our Research is Telling Us

### *Treating Diabetes: Effects on the Brain*

*Stennis Watson, Ph.D.*

When we eat, our blood sugar levels rise. Then, our bodies release insulin to transform the sugar into fuel. Normally, insulin works effectively, and both insulin and blood sugar levels go back down until we eat again. However, insulin does not reduce blood sugar effectively in persons who have type 2 diabetes or impaired glucose tolerance (a precursor to diabetes). Ineffective insulin action (insulin resistance) is associated with high insulin levels and high sugar levels. We believe that insulin resistance affects the brain as well as the body.

One of our current studies looks at the effect of insulin resistance on the brain. The study will answer three questions: Does improving insulin's effectiveness (1) improve memory? (2) change the brain's sugar use in brain regions that affect memory? (3) change levels of natural chemicals in the brain that are related to memory and to Alzheimer's disease? We anticipate that our study will add to evidence that diabetes has an influence on memory and Alzheimer's disease. Furthermore, our study should contribute to the evidence suggesting that treating diabetes in the early stages can improve memory and attention.

How are we carrying out this ambitious project? First, interested participants take an oral glucose tolerance test, a common procedure used to diagnose diabetes. Then, participants with mild diabetes or impaired glucose tolerance take either a medication used to treat diabetes or a placebo (inactive pill) for four months. We test their memory before and after they start taking medication or placebo. Some participants will also be invited to have PET scans (pictures of the brain at

work) or spinal taps. These procedures will tell us whether treating diabetes affects memory, brain functioning, and brain chemicals. We are also including a control group of participants with normal blood sugar levels. Control group members will not take medications, but they will take the initial memory tests, and some will have a PET scan or a spinal tap. Comparing the control group with other participants will help us to determine the effects of mild diabetes on the brain.

Would you like to hear more about this study? If you live in the North Sound area, call Donna Davis, RN, at (206) 764-2809 (or toll free: 1-888-291-7316). If you live in the South Sound area, call Karen Hyde, RN, at (253) 583-2033 (or toll free: 1-866-638-8813). 🇺🇸



*"You can't help getting older, but you don't have to get old."*

*- George Burns*

## *Nasal News: An Update on Insulin Nose Drops and Memory*

### *Mark Reger, Ph.D.*

In our last newsletter, we wrote about our study that was exploring the use of nasal insulin drops to improve memory. We have now completed that study and would like to describe the results and the follow-up study that now underway.

We are interested in insulin because we know that when the brain receives extra doses of it, memory improves. However, turning this discovery into a treatment for memory disorders is more difficult than it might sound at first. The problem is that insulin typically gets to the brain through the blood. Although insulin is necessary and very helpful in blood in many cases, too much insulin can lower blood sugar to unhelpful levels. Therefore, one of our goals is to deliver insulin directly to the brain without using blood as the pathway.

Recent research suggests that when insu-



lin drops are placed in the nose, the insulin bypasses the blood supply and goes directly to the brain. Therefore, we expected that volunteers who received nasal insulin drops would demonstrate improved memory while blood sugar levels would remain safely unchanged. This is exactly what we found. In a subgroup of volunteers, memory improved on three different tests of memory after receiving insulin drops in the nose. Blood sugar levels remained completely safe.

These results are exciting, and we have already begun a follow-up study. We are now trying to determine what dose of insulin is most helpful for memory. Volunteers come in for 5 visits and at each visit, they receive a different amount of insulin, or on one visit, water drops (placebo) for comparison. Our future newsletters will update you on how this exciting research




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## *Type 2 Diabetes Risk Factors*

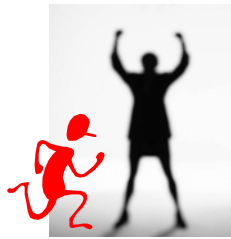
*Karen L. Enstrom, RN, BSN*

Factors that increase your chance of developing diabetes are:

- Having a parent or sibling with diabetes.
- Having a family background of African American, American Indian, Asian American, Pacific Islander, Hispanic or American Latino.
- For females: having a history of gestational diabetes or giving birth to at least one baby weighing more than 9 pounds.
- Being overweight.
- Having a blood pressure of 140/90 or over, OR that you have been told that you have high blood pressure.
- Cholesterol levels that are elevated, HDL cholesterol (good cholesterol) if 35 or lower, OR triglyceride level if 250 or higher.
- Leading an inactive lifestyle, exercising less than three times a week.

Resource material from the National Diabetes Information Clearinghouse (NDIC) at <http://diabetes.niddk.nih.gov/dm/pubs/riskfortype2/>

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# Exercise Your Mind: Exercise Your Body



Laura Baker, Ph.D.

**We all know that exercise is good for the heart.  
But did you know that exercise has many other benefits as well?**

- Exercise improves the body's ability to efficiently use glucose, the fuel needed by the muscles and the brain – an important benefit for adults with metabolic disturbances such as impaired glucose tolerance and type 2 diabetes mellitus.
- Exercise lowers blood pressure.
- Exercise has a beneficial influence on cholesterol.
- Exercise can help reduce stress.
- Exercise protects brain cells from injury and promotes new growth in brain regions that permit complex thought. In other words, exercise increases the lifespan and productivity of brain cells.

The Memory Wellness Program is busy getting ready for a new study to look at the benefits of exercise for not only the body, but also the brain. Older adults will be assigned either to an aerobic exercise group or to a stretching and flexibility group. To ensure that everyone receives ample instruction and supervision, the majority of all exercise and stretching sessions will be completed at one of our facilities under the care of our trained staff. This study will require a time commitment as you will need to exercise 3 to 4 times a week for 6 months. However, given all of the known benefits of exercise, this commitment may be your best investment in **YOURSELF** this year! There are a couple of additional benefits that participants will receive, but you'll have to call us to hear more!

Here are the details of the study:

- Participants must be 55+ years and mostly sedentary (exercising **LESS than 30** minutes twice a week)
- Participants must meet specific medical eligibility requirements
- Several times during the study, thinking and memory tests will be administered and blood will be collected
- Before and after the study, participants will receive an x-ray to measure body fat, a treadmill stress test to measure physical fitness, and a special procedure to measure insulin sensitivity

The results of this study will be important because they will tell us whether regular exercise not only improves the efficiency with which our bodies use glucose as fuel, but also whether exercise can actually improve memory and thinking abilities. If so, the results of this study may elevate the importance of "exercise" as a treatment for older adults with impaired glucose regulation and for older adults with significant memory concerns. 🌈

## Are You Concerned About Your Memory Or the Memory of A Loved One?

Brenna Cholerton, Ph.D.



“Lately, I have been so frustrated. I can’t seem to find the right word in conversations, even though it usually comes to me later.....” “I seem to misplace my car keys much more often now than when I was in my twenties .....”


Sound familiar? Although frustrating, mild changes in memory such as those described above commonly occur with aging. Some people, however, experience symptoms that exceed those expected with age, and these problems may need special attention.

At the Memory Wellness Program, we focus on the identification of early changes in memory. Our clinic consists of a team of experienced neuropsychologists, physicians, and nurses who specialize in memory and aging. We provide free telephone consultation to older adults who have concerns about their memory. For those who qualify, our Memory Disorders Clinic can provide a comprehensive assessment, including memory testing, medical evaluation, interview, lab work, and referrals.

If you or a loved one is experiencing the following, you may want to give us a call:

- Getting lost in familiar surroundings
- Bits and pieces of conversations are repeated more often than usual
- Family members and friends begin to notice a difference
- Difficulty managing finances and other day-to-day tasks
- Trouble remembering time and place

We will collaborate with you and your family to help identify and explain your memory problems and to provide you with important referral information and education.

Our team is committed to developing a greater understanding of memory problems and to identifying potential new treatment options. We are currently enrolling people diagnosed with Alzheimer’s disease or milder memory problems into studies that examine the effects of novel treatments. If you have been diagnosed with a memory disorder or are concerned that you may have a memory disorder and are interested in participating in one of our studies, please give us a call. We look forward to working with you and your family! 


## Karen’s Korner, Karen Hyde, RN



Karen Hyde, RN

**Question:** My mother is beginning to accuse me of stealing the things she has misplaced? What should I do?

**Answer:** In the early stages of Alzheimers Disease, it is not uncommon for an individual to blame someone else for taking the things they have misplaced. Your mother is try-

ing to protect her own dignity as she becomes more forgetful, by assuming someone else has moved them. Offer to help her look for the missing items. Also be creative in setting up systems for storing purses, wallets, keys and other commonly misplaced items. For example: Place a highly visible rack by her entry door and mark it clearly for items such as keys and purses. I know it is difficult, but try not to take the accusations personally as your mother is just doing her best to hold it together and make sense of her surroundings. 

# Maximum Memory: Tips for Using Your Memory To the Max

Mark Reger, Ph.D.

Picture

Boat

Office

Popcorn

Stick

Disease

Broom

Peach

Train

Paper

Region

Memory and thinking skills change for most people with normal aging, and even young people have memory lapses. (Just ask their teachers!). As much as we might want a “memory transplant,” the truth is that most people who appear to have bigger storage containers for their memory usually just approach tasks with helpful strategies. Not sure you believe it? Let’s try it. First, simply read the list of words to the left. Read each word 3 times before moving on to the next. Cover up the list, and write as many words as you can recall on scrap paper. Then read on.

So what are some strategies for using your memory to the max?



### Make information meaningful-

Have you ever gone to the doctor and been told several medical terms that made little to no sense? When you arrive home, your spouse asks, “So what did the doctor say?” You have no idea. Slow the doctor down and ask questions. You are much more likely to recall the medical terms and other important information if it makes sense.

Make a mental picture- Imagery can help you recall information. Try to see a mental picture of your shopping list. Visualize a series of landmarks that will lead you back to your car at the Mariner’s game.

Group information- The more you are able to

group information into “chunks,” the less individual bits of information you will have to recall. For example, when you go shopping, it is easier to recall tuna casserole, meat loaf, and banana splits than it is to recall all the ingredients. When you are running errands, you might want to try to group them: bills (bank and post office), shopping (grocery store, pet store), and personal (barber).

Be silly and use emotion- We remember funny and emotional things better than non-emotional things. If you are having trouble finding a way to group the items you need at the store, force them into a silly group. It is not difficult to remember an ice cream Sundae covered with steel nails! How about a post office where you get your haircut while you seal your envelopes! Taking a moment to be silly before you leave the house will make you less likely to forget!

Put important things first or last in your list- Look back at the word list test earlier. You probably remembered the words *picture* and *region* on your test. We commonly recall the first and last items on any list. If you have something very important like a trip to the bank on a list of non-important items, put the important one first or last.

Review the information- Studying works, but not all studying is equal. If you wanted to remember some of the information in this newsletter for example, it is best to review it in the first hour after you read it; the vast majority of what we forget is lost in the first hour after we hear it. You may also want to read it again before you go to bed. We remember information we review before bed better than information we review at other times. ✚

## Memory Medications: An Update on Available Treatments

*Kristoffer Rhoads, Ph.D.*


Several of the most common questions about Alzheimer's disease are about available treatments. While there is no cure for the memory loss and other problems with reasoning and thinking that accompany the disease, the medications currently available may slow the progression and help minimize symptoms. They can also help people maintain their quality of life and delay the need for more intensive care.

The U.S. Food and Drug Administration (FDA) has currently approved two types of drugs to treat Alzheimer's. The first of these are called "cholinesterase inhibitors," and include drugs like donepezil (Aricept®), rivastigmine (Exelon®), and galantamine (Reminyl®). They work by preventing the breakdown of a chemical messenger in the brain (called "acetylcholine") important for memory and other thinking skills. How well do they work? Compared to people taking a placebo (a pill with no effect), patients with Alzheimer's taking Aricept or Exelon had better performance on tests of memory and thinking after several months on the medication. Similarly, patients taking Galantamine also had modest improvements on these tests. Galantamine may also have added benefits for people with memory problems due to vascular changes in the brain (e.g., strokes). Although

these results are definitely promising, it's important to note that only about half of the people on the medications showed improvements, and even then, they were modest at best.

The other type of medication approved for the treatment of Alzheimer's disease is an "NMDA receptor agonist." Of these, Memantine (Namenda®) is the first to be approved in the United States, becoming available earlier this year. Memantine is different from the cholinesterase inhibitors in that it appears to work by regulating the activity of a specialized messenger chemical in the brain called glutamate. Memantine is also the only medication approved for treatment of people in the mid- to late-stages of the disease.

Two studies have yielded preliminary, but promising results. In the first, patients with more advanced Alzheimer's disease showed improvements in their ability to complete daily activities after taking Memantine compared to patients taking a placebo. Another study found that taking Aricept and Memantine together resulted in greater improvements in memory and performance of daily activities compared to taking Aricept plus a placebo. Unfortunately, similar studies have failed to produce the same results, but the medication is still new on the market and more studies are underway.

Treatments for Alzheimer's are certainly promising and the research continues. We are currently exploring new potential treatments here at the Memory Wellness program, with several studies underway and more ready to begin. Also, keep an eye on the news for the latest updates about new and existing medications! 



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Watson, G.S., Craft, S. Insulin and glucose effects on cognition in Alzheimer's disease. European Journal of Pharmacology, 490, 97-113, 2004.

Burkhardt, M.S., Foster, J.K., Laws, S.M., Baker, L.D., Craft, S., Gandy, S.E., Stuckey, B.G.A., Clarnette, R., Nolan, D., Hewson-Bower, B. Martins, R.N. Oestrogen replacement therapy may improve memory functioning in the absence of APOE  $\epsilon$ 4. Journal of Alzheimer's Disease, 6, 221-228, 2004.

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## *Seattle Staff Highlight: Margaret Grout Research Study Assistant*



Margaret graduated with a Bachelor of Arts degree in Psychology from Lawrence University in 2002. She relocated to Washington after graduation to work as an intern for a research group studying orca whale behavior near the San Juan Islands. She began working as a research assistant for the Memory Wellness Program in the fall of 2003. As a research assistant, Margaret administers memory tests, works in the laboratory, and performs administrative duties including scheduling and data entry. She enjoys working with research participants and their families/caregivers and contributing toward the advancement of clinical treatments for Alzheimer's disease and diabetes.

Margaret's hobbies include traveling, horseback riding, painting, reading, playing piano, and running. She is celebrating her recent engagement and is looking forward to her wedding planned for July of 2005. 🌈

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## Staff Updates: Farewell and Welcome!

### Farewell...

*It is time to say good-bye to two of our staff:*

Pamela Gray, Research Study Assistant, has graduated from nursing school and is working full-time as a nurse.

Michelle Keeling, Research Technician, is attending Graduate School at Emory University in Atlanta.

We wish them all the best in their new adventures.

### Welcome!

*We have also welcomed some new members to our team:*

Donna Davis, RN., joins us full-time as a research nurse. She is taking Darla's full-time position.

Amy Morgan, Research Technician, comes to us from Washington State University in Pullman, WA. She will take over Michelle's duties.

### Welcome back!

Darla Chapman, RN, back from maternity leave. She will be working part-time.

Pam Asberry, RN, from medical leave for back surgery.

### Congratulations!

Laura Baker, Ph.D., has received two new grant awards, one from the Alzheimer's Association, and one from the American Diabetes Association.

Pamela McMillan, Ph.D., has received a grant award from the Alzheimer's Association.

### Newest Arrivals

Calvin , born December 2003, to Darla (and Tom) Chapman, RN.



Emma , born February 2004, to Mark (and Jennifer) Reger, Ph.D.



## American Lake Staff Highlight: Dana Belongia Research Study Coordinator



Dana has been with the Memory Wellness Program since 2001, when she started part time as a research technician. After earning her BA in Psychology from the University of Puget Sound in 2003, she has taken on the full time role of research coordinator at our American Lake clinic. Her duties include scheduling research visits, administering memory tests, and processing lab samples. She is also coordinating our study at the UW involving a brain imaging technique called PET.

When not at work, Dana can be found hunting for a good read at used bookstores, or popping popcorn as a volunteer for Tacoma's non-profit movie theater, The Grand Cinema. Dana is also preparing for a return to graduate school, where she will continue her study of Psychology, building upon all the valuable experience gained at the Memory Wellness Program. 🌈

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Did you know that a researcher from the Memory Wellness Center can give a talk to your group? One of our researchers will be happy to come and visit your group. He or she will tell you about normal changes in memory as we age, how to recognize abnormal changes that may require a doctor's attention, and give you an update on the latest research information.

Groups can be from 30 participants on up. The talks can run from 45 minutes to a couple of hours at conferences. We are also glad to be speakers on panels of experts at various memory-related conferences.

Some of the topics are:

- Memory and Aging: What's Normal, What's not
- The Latest Advances in Alzheimer's Disease Research and Treatment
- How to Keep Memory Sharp for Older Adults

In order to schedule a visit for your group, please contact Donna Davis at 1-888-291-7316 for Seattle's North Sound, or Karen Hyde at 1-866-638-8813 for South Sound locations. 🇺🇸