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THE RISK OF DEMENTIA

DIABETES & DEMENTIA

TIPS FOR HEALTHY LIVING

Issue 2020-2021

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"Very thorough with his testing. Been a patient for over 10 years and have always met my hearing needs."

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– James A.

I've known Tom McCarty for years and have found him to be a great provider, he provides the best technology for a fair price. Love his team and would highly recommend him."



- Kevin S.

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Dr. Thomas A. McCarty, Au.D.

Doctor of Audiology Founder

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Aging Is Inevitable; Decline Is
Uptional!

8 Tips Proven to Reduce

THE RISK OF DEMENTIA

The #1, single most modifiable factor for preventing Dementia is the treatment of hearing loss. It is also important to increase social activity, enhance our education, and supplement our nutrition.

1 – Active Aging: stay young, stay smart, and stay engaged!

Active Aging – the process of optimizing opportunities for better health, continuing development of knowledge, and increasing security in order to maximize quality of life as you age. The word 'active' is used to describe a person's involvement with social, physical, economic, spiritual and civic affairs. We all share the same goal to maintain autonomy and independence as we age, and thus we must rely on preserving the tenants of interdependence (socialization and reliance on family and loved ones) and intergenerational solidarity (maintaining companionship with age-matched peers) to insure active aging.

Both Social Isolation and Depression are major risk factors for the development of Dementia, and both increase as we age. Being a lifelong learner and staying active is important to maintain a healthy, active brain, and can also reduce your risk of cognitive decline and dementia. Some studies have shown that social activities, larger social networks, and a history of social contact are associated with better cognitive function and reduced risk for cognitive decline.

2 – Eat Better

We all know that we can eat better, but very few of us know that certain foods may significantly reduce your risk of developing Dementia. And while there are many readily available supplements, research shows that the body does not absorb supplements as effectively as it does natural foods.

The American Brain Council estimates that 80% of people understand what it takes to maintain a healthy lifestyle – yet, it is also estimated that only 20% actually live a healthy lifestyle. Dietary patterns have long been associated with decreasing cognitive decline and reducing your risk of dementia and researchers have now suggested that those who follow certain diets can lower their dementia risk by as much as 50%.



3 - Treat Your Hearing Loss

Recent research has found that hearing loss can increase the risk of developing Dementia by 200-500%. This report, from researchers at Johns Hopkins Medical Center and the National Institute on Aging found that individuals with hearing loss (when compared to participants with normal hearing) are at a significantly higher risk of developing Dementia over time. The more hearing loss they had, the higher their likelihood of developing the memory-robbing disease. "A lot of people ignore hearing loss because it's such a slow and insidious process as we age," Dr. Frank Lin (of Johns Hopkins



Medical Center) says. "Even if people feel as if they are not affected, we're showing that it may well be a more serious problem."

Promising new research, from multiple studies, has indicated that treating hearing loss can provide 2 major benefits:

- Significant improvement in cognitive function
- Treating hearing loss may reduce, or even eliminate their risk of developing cognitive decline and Dementia.

4 - Get Your Eyes Checked!

Elderly people with untreated poor vision are significantly more likely to suffer from Alzheimer's disease and other forms of dementia than their normal seeing counterparts, according to a study published in the American Journal of Epidemiology. According to Dr. Mary Rogers of University of Michigan, "Visual problems can have serious consequences and are very common among the elderly, but many of them are not seeking treatment." Poor vision, like poor hearing, can reduce the amount of social and physical activities in adults – thus increasing the risk of developing Dementia. Early treatment of visual problems may delay the onset of Dementia.

5 - Exercise... it does a body and mind, good!

Exercising regularly will make your heart and blood circulatory system more efficient. It will also help to lower your cholesterol and keep your blood pressure at a healthy level, decreasing your risk of developing some kinds of dementia. Research from Dr. Kramer, at the University of Illinois, found that brain volume (as measured in an MRI) actually increases in people who regularly exercise. For most people, a minimum of 150 minutes (2 hours and 30 minutes) of moderate-intensity aerobic activity each week, such as cycling or fast walking, is recommended.



6 - Stop Smoking

If you haven't already done so... put down the cigarette! If knowing the risk of getting lung cancer and other significant pulmonary disease hasn't got you to stop smoking, than perhaps this will - Stopping smoking could reduce dementia risk!

Smoking can cause your arteries to narrow, which can lead to a rise in your blood pressure. It also increases your risk of developing cardiovascular diseases, cancer and dementia.



7 - Reduce Stress

We can all use less stress and more time to meditate... now more than ever. Many studies have linked anxiety with the development of Alzheimer's, especially in people who are already at risk for the disease. A recent study from the Rotman Research Institute in Canada showed that people who had mild cognitive impairment and reported high levels of anxiety were 135% more likely to develop Alzheimer's.

Chronic or persistent stress can take a heavy toll on the brain, leading to shrinkage in a key memory area, hampering nerve cell growth, and increasing the risk of Alzheimer's disease and dementia. Yet simple stress management tools can minimize its harmful effects.

8 – Sleep Better

Lack of sleep has been linked to a myriad of health problems including stress and increased cortisol, both of which are risk factors for Alzheimer's. In addition, a waste-draining system that clears the brain of beta-amyloid is more active while we sleep.

If you cannot sleep eight continuous hours, then spread it out

Sleep in four hour chunks – Take naps



The quality of the sleep you get is the most restorative, not the quantity of it. Do whatever

it is that is most natural for you or your loved one.

V Test Your Knowledge

- 1. Hearing Loss is _____ (#) most common chronic condition affecting seniors in the United States. This statistic comes from the Department of _____
- 2. It is estimated that approximately ______(#) people live with untreated hearing loss in the US.
- 3. The Top 5 Reasons people avoid seeing the Audiologist to seek treatment for their hearing loss is:

I.	
11.	
III.	
IV.	
V.	

- Traditional Hearing aids simply ______ sounds, including annoying ______ noise.
- 5. NeuroTechnology™ is designed to treat the ______ aspects of hearing loss

hearing aids, 4) Amplify, Background, 5) Cognitive

ANSWERS: 1) 3rd, Health and Human Services, 2) 40 Million, 3) 1. The patient already knows the diagnosis, 2. Unsure of Insurance Coverage for Procedures and Treatments, 3. Patients are afraid of being sold something, 4. The cost, 5. Everybody hates

REVEALED: HEARING LOSS THE #1 MOST MODIFIABLE RISK FACTOR OF DEMENTIA

Hearing Loss and Dementia: The Science

Hearing Loss impacts over 48 Million people in the U.S. and is listed by the Department of Health and Human Services as the 3rd most common chronic disorder affecting today's seniors. Unfortunately, for most of us, agerelated hearing loss is inevitable; impacting nearly 50% of seniors between the ages of 60-70, almost 2/3rd of people between the age of 70-80, and nearly 80% of individuals over the age of 80. Age-related hearing loss is characterized by the progressive loss of receptor (hair) cells in the ear, that consequently reduces the quantity of neural connections from the ear to the brain. This slow-onset degenerative disease can have a significant impact on several key brain areas including the memory, hearing, speech and language portions of cognition. Several key research studies have pointed to the potential links of hearing loss and Dementia, including the groundbreaking work from Dr. Lin and his colleagues at Johns Hopkins Medical Center that indicates hearing loss can increase the risk of Dementia by 200-500% (see summary data in Figure 1).

Three risk factors associated with hearing loss and Dementia include Social Isolation, Cerebral Atrophy and Cognitive Overload.

1. Social Isolation. Withdrawal from social situations is common in individuals with hearing loss. Many studies cite feelings of embarrassment, fear of making mistakes in conversations, and feeling like you are not part of the conversation. This retreat from social activity is a significant risk factor for the development of Dementia.



Summary data of relationship of hearing loss and increased risk of developing dementia.

2. Cerebral Atrophy (aka Brain

Shrinkage). The association of a shrinking brain, resulting from the loss of neurons, with Dementia has been long documented. Even people with MCI (Mild Cognitive Impairment) show signs of cerebral atrophy. In recent years, scientific studies using advanced brain imaging techniques have demonstrated that hearing impairment is associated with accelerated brain atrophy in both the overall brain, as well as even more advanced reductions in volume associated with the memory, hearing, speech and language portions of the brain (see Figure 2).

3. Cognitive Overload (i.e. Working Your Brain Too Hard To Hear). Hearing loss is not normal, and neither is the excess strain that is puts on your brain. With hearing loss, the brain is constantly on 'overload' trying to fill in the missing pieces, and follow the conversation. Increased cognitive load is considered a risk factor for developing Dementia.

Early Signs of Hearing Loss and Dementia – What to *LISTEN* for

Hearing loss and Dementia typically follow a slow, gradual onset that is often hard for the patient, and family, to pick up on. Most people who experience the initial symptoms of both disorders do not even realize it is happening. It is far easier to blame the acoustics of the room, the volume of the background noise, or the person speaking (i.e. "they mumble") than it is to accept that one is dealing with memory and/or hearing loss problems. It is also difficult for many patients to rationalize the need for medical treatment because it seems like 'a normal part of aging.' Neither Dementia nor hearing loss, are a normal part of aging.

The first symptom of hearing loss, for most patients, is difficulty hearing in complex listening environments. If you take the time to reflect truly and deeply on your communication breakdown, I believe you will begin to recognize some of the initial symptoms of hearing loss. Are you having any difficulty when there are a few people at the kitchen table? Or when the kids come over? Or when communicating with your grandchildren? Or when you are at a social



Schematic representing the potential cerebral atrophy in an individual with age-related hearing loss.

gathering (i.e. sharing a meal with friends and vou can't seem to follow the conversation, yet all the other people seem to be sitting around enjoying and following the conversation)? It is in these types of scenarios when hearing loss becomes apparent and you realize that you are no longer an active part of the conversation. The result is a slow retraction from contributing to the conversation because you may feel embarrassed, and thus you continue to further isolate yourself and find yourself not truly engaging in conversations and relationships. And this is how even a mild hearing loss can really begin to impact your quality of life and relationships with others. Many of these issues are found in patients with hearing loss and patients with Dementia.

"The benefits of correcting hearing loss on cognition are twice as large as the benefits from any cognitive-enhancing drugs now on the market. It should be the first thing we focus on." – Dr. Doriaswamay, Duke University

Managing Dementia and Hearing loss

A recent report published by a European Dementia Commission has determined that the treatment of hearing loss is the single most modifiable factor for preventing Dementia.

Both Dementia and hearing loss place a significant strain on the ability to communicate with loved ones. They can also both lead to increased social isolation, loss of independence, and problems with everyday activities, and as a result make the person's dementia seem (and even be) worse.

However, there are things that can help.

Having regular hearing evaluations,



starting at the age of 50 years young, is important.

- Following a treatment plan as laid out by the Hearing Care Specialist.
- Improving the environment, for example by reducing background noise and distractions and making sure the area is well lit.

Find these words associated **RD SEARCH** with hearing loss. Е В A Т D D GLICHWN ALTD NEARF HEALTH BRAIN G R R М F Ν EUXSTTNGP ΖN Е Ν 0 G Х SURS HEARING CARE N T O I C D R V T O V Z P R E M M O A O R K I D X E LOSS AUDIOLOGY KCI ΖY С Т EANOBZLGJ Е TIGFYAQZCURDTHAASNFXT 0 SGRODA S L COGNITIVE ASSESSMENT NUGNOIECSOS G 0 K R DECLINE RESTORED XOIF AEAEDEIQEIGI Y W V Т S V V C L A T Z E B M S A R I A O O B ZEGUE DEMENTIA EARS М OIRHOPPSLPLORCN 0 Y DIABETES VISION AAS LAEHTSMYFAVLYUTIBAL М G Т Y W SOCIAL DIET OGYVRHACNAXR S 0 J R L N G Y A T X B T H G K L T B А L DI H R **ISOLATION** EXERCISE G N I T I V E D E C L I N E O P T A S **CLARITY** QUALITY O B N Y H V H L R I V Z Z C C Y С E х РН F Ν L V G N L A H Y Z L A S Y C A H N S B NEUROTECHNOLOGY ΖO Q J B A A W C O O N G Y D C A G N B X P X C R C B W Z O Z I

Pickled jalapeños, cilantro and avocado perk up convenient canned salmon for a quick tostada topping. Skip storebought and make your own crispy shells in the oven. Serve with: Brown rice cooked with diced tomatoes and onions or salsa.



Brain Healthy Recipes BLACK BEAN & SALMON TOSTADAS

Ingredients:

- 8 6-inch corn tortillas
- Canola oil cooking spray
- 1 6 to 7-ounce can boneless, skinless wild Alaskan salmon, drained
- 1 avocado, diced
- 2 tablespoons minced pickled jalapeños, plus 2 tablespoons pickling juice from the jar, divided
- 2 cups coleslaw mix or shredded cabbage
- 2 tablespoons chopped cilantro
- 1 15-ounce can black beans, rinsed
- Bush's Best Canned Black Beans 15 Oz
- 3 tablespoons reduced-fat sour cream
- 2 tablespoons prepared salsa
- 2 scallions, chopped
- Lime wedges (optional)

EARS EMIT SOUND

Did you know that healthy ears actually emit sounds? These sounds are usually very soft, but can occasionally be heard by others. Surprisingly, the sounds are rarely heard by

the person whose ear is emitting the sounds! The cause of these sounds is still under debate, but is thought by some to be due to input from the central nervous system.

Directions:

Step 1: Position racks in upper and lower thirds of the oven; preheat to 375°F.

Step 2: Coat tortillas on both sides with cooking spray. Place on 2 baking sheets. Bake, turning once, until light brown, 12 to 14 minutes.

Step 3: Combine cabbage, cilantro and the pickling juice in another bowl. Process black beans, sour cream, salsa and scallions in a food processor until smooth. Transfer to a microwave-safe bowl. Cover and microwave on High until hot, about 2 minutes.

Step 4: To assemble tostadas, spread each tortilla with some bean mixture and some salmon mixture and top with the cabbage salad. Serve with lime wedges, if desired.



delicions HEALTHY BRAIN Recipes

What You Must Know Before

CHOOSING AN AUDIOLOGIST

Just like every ear is different, audiology practices are different too. In your search for finding the right hearing health care professional, you will most likely find there are several options available, but it is important to know that all hearing loss treatment options are not created equal.

1 – Are They a Specialist?

Audiologists are specially trained hearing health care specialists that take on several extra years of training in order to provide the most thorough diagnostic evaluation and to complete the most comprehensive treatment plans aimed at restoring hearing clarity. Audiologists also perform auditory rehabilitation, that is likely to include the use of NeuroTechnology™ hearing devices that provide proper stimulation to the auditory system. This is a fancy way to describe how we normalize the way our brains process the incoming sounds in order to achieve maximum clarity, especially in background noise. All audiologists are hearing specialists, but only 1% of hearing specialists belong to Excellence in Audiology. Only approved audiology specialists can belong to the Excellence in Audiology movement.

Excellence in Audiology doesn't just treat hearing problems; we also teach audiologists across the country how to become

better audiologists. In fact, Dr. Darrow shares his knowledge and teaches hundreds of audiologists throughout the world. By teaching and interacting with many audiologists, we stay at the cutting edge with the best treatment options for our patients.

Another sign of a great specialist is they can show you a before and after of a similar case that they have previously helped. We know all ears are different, but in the 100,000+ lives and ears we have restored clarity to, we can show you a similar case to your specific hearing situation.

Below you will see what life looks like Before and After our treatments.

2 – Do They Have a Medical Office (or a sales office)?

In the audiology world it is not hard to open up shop on a shoe-string budget and call yourself a specialist. When you are searching for an audiologist make sure you understand the clinicians credentials and medical affiliations. Often times, smaller offices with limited staff and Audiology providers are somewhat limited in their service offerings and stability.

If you find an audiologist with the best credentials and an office that is inviting and in a medical setting, you have found a specialist who understands the importance of hearing health care and will be around for years to come to help you and your family best understand and address your hearing needs.

Excellence in Audiology has locations across the country with Audiologists of the highest caliber that insist on best practices for their patients and loved ones.

3 – Do They Think Brain First?

Everybody thinks 'we hear with our ears' While that is partially correct, the process of hearing actually happens at the level of the brain. Today's hearing loss treatments are far more than a simple 'amplifying' device behind your ear. The Neuroscience behind modern treatments is focused on the brain, cognition, and the comorbidities of untreated hearing loss (comorbidity is defined as a disorder that co-occurs / is correlated to hearing loss). If your audiologist thinks hearing first, and not Brain First in his/her treatment plan, you are missing out on many long-term lifestyle benefits. NeuroTechnology[™] designed with cognitive aspects of hearing loss in mind, is aimed at restoring the loss of clarity, providing noisecanceling filters for noisy background situations, and soft-speech enhancers that emphasize the speech of those soft-speakers in your life.

When searching for your audiologist make sure you find a NeuroTechnology™ specialist that understands the significant negative impacts of untreated hearing loss on your brain. You can visit www. ExcellenceInAudiology.org to find a local audiologist who has been recognized for their commitment to thinking brain first in treatment plans, prescriptions, and protocols.

4 - Do They Provide the First Visit Free of Charge?



Most audiologists offer free consultations for new patients so that you and your family can get expert advice about treatment needs, options, and timing before making this important investment.

Alaska's **AUDIOLOGIST**

During your first evaluation and consultation be sure your questions are being answered, concerns addressed, and you are being educated about all of your treatment options. The audiologist should include a comprehensive written report during the evaluation at nocharge.

Call your nearest Excellence in Audiology Office to schedule your FREE Evaluation, complimentary consultation, and comprehensive written report (a \$249 Value) right away.



5 – Do They Offer Guarantees? If So, What Are They?

No matter which audiologist you choose, ultimately you are not making a small investment – in both time and finances. That being said, it is important to know that your audiologist is going to stand behind their medical treatment plan. Every Excellence in Audiology provider offers multiple guarantees.

In addition to our ClarityRestored[™] 100% Money-Back Guarantee, we offer a lifetime guarantee on our service and prescription programming.

6 – Are They Using the Latest Technology & Treatment Options Available?

Audiology today differs a great deal from years past. Computer-designed NeuroTechnology[™] and wireless technologies dramatically increase

the precision with which we restore clarity and boost hearing ability. Scientific verification of your NeuroTechnology™ prescription, while in your ear (referred to as 'Real Ear Measurements') maximize the precision of clarity restored. As an added incentive, today's NeuroTechnology™ are discrete and virtually undetectable to the user and others. In fact, a new category of hearing aids, referred to as 'NeuroTechnology™ ' can offer the most discrete cosmetically pleasing option placed deep in your ear canal to make the entire treatment a well-kept secret!

Audiology is a rapidly changing field. Our Excellence In Audiology specialists are constantly researching which new treatment options will provide our patients with the most benefits and which won't be helpful. Ultimately, you get the best treatment available when you choose an Excellence in Audiology approved Audiologist.

7 – Does Their Quoted Fee Include Supplies?

Each audiology office has its own fee schedules, and specialists often charge differently for procedures. All audiologists should offer you a contract that clearly spells out the expenses for your spouse's treatment before it begins.

Throughout the audiology industry, it is common to find out about service/supply fees after you start treatment. Since you are reading this report, you can ask your audiologist about what services/supplies cost and also if there are any other hidden fees you need to be aware of.

An important part to achieving restored clarity is keeping it that way. Each Excellence in Audiology provider offers a simple, up-front, pricing schedule. Your NeuroTechnology™ will require regular maintenance (both at home, and at the office), they will require simple cleaning tools, and perhaps some simple at-home changing of tips and filters – thus you need to understand in the beginning what expected costs are.



Fortunately, many Excellence in Audiology approved clinics provide all NeuroTechnology™ cleanings, parts, and even batteries at little or no charge!

8 – Do They Charge for Follow-up and Emergency Appointments?

Each time a patient embarks on the journey of improved hearing, there is an adaptation period for the user's ears and brain to adjust. This period can take 30 days, and is individual to each patient. In addition to the complex cognitive changes that happen when restoring hearing clarity potential, patients will notice significant improvement in some hearing situations, and perhaps not as much, in some other situations. This is common in the beginning process of hearing loss treatments. In addition, as your ear gets accustomed to wearing NeuroTechnology[™] some patients will notice some itching and an even slighter chance of some very minor discomfort (it's like wearing a new pair of shoes, or even a new pair of glasses). Excellence in Audiology providers offer free customizations for NeuroTechnology™ prescriptions (i.e. changing the sound output to meet your hearing needs). While many of our providers offer these services at no charge within the adaptation and warranty periods it is important you ask about customization costs with your audiologist before you start treatment.

If your NeuroTechnology[™] is broken or damaged due to non-compliance with care, protection, and maintenance, this may result in repair charges. As a simple rule – if you do your best to care for and clean your NeuroTechnology[™] regularly, you should have no additional costs. There is never an additional cost for the customization of the prescription.

9 – Do They Make You Feel Special and Comfortable?

Regardless if you are reading this report for your own treatment, for a spouse or another family member, when you meet with your audiologist, you should be made to feel comfortable and welcome. Each Audiology practice affiliated with Excellence In Audiology understands the importance of hearing and the distress that can be involved with making the decision to treat one's hearing loss. That is why each of our partner offices in the Excellence in Audiology network must meet a very high standard for setting a welcoming and comfortable environment, including a welcoming staff, which will alleviate a person's feeling of anxiety or grief.



10 – Do They Have a Great Reputation?

With the Internet today, it is extremely easy to pull up ratings and reviews from patients. Simply go to Google and search for audiology reviews and ratings within your town. At the time of this report, Excellence In Audiology practices across the country have amassed over



1000+ five-star reviews on Google, Facebook and HealthyHearing.com. No other network even comes close to this number of reviews. In fact, most of our offices have other providers in their area that have either no ratings or many poor ratings.

And don't be shy about asking for references – and go directly to the source! You have the right to call any Audiologist office and ask for a list of references. Each Excellence in Audiology office has a readily available list of references of local physicians that understand the importance of early hearing loss detection and treatment. These physicians have seen the benefits that NeuroTechnology™ provides to their patients.

Finally, you should make sure your audiologist is a member of the ExcellenceInAudiology.org movement and has a great rating with them. Being a member of ExcellenceInAudiology.org shows you that the audiologist takes pride in providing great customer service and treats patients the way they should be treated.

V Test Your Knowledge

- 1. Age-Related hearing loss is a ______, ____, disorder.
- 2. List the statistic (in percentage) of people who suffer with hearing loss between the age of:
 - I. 60-70 years old. _____%
 - II. 70-80 years old. _____%
 - III. 80+ years old. _____%
- 3. NeuroTechnology[™] provides improved auditory stimulation to the brain. The three most significant benefits of NeuroTechnology[™] are:
 - I. _____
 - II. _____
 - III. _____
- The two most 'costly' (in dollars) concerns for a patient who opts not to treat his/her hearing loss can be:
 - I. _____, which costs _\$____/ per year
 - _____, which costs _\$_____/ per incident

hearing, 3. Reduced background noise, 4) 1. Dementia, 57,000, 2. Falling, 30,000

ANSWERS: 1) Progressive, Degenerative, 2) 1. 50, 2. 66, 3. 80, 3) 1. Enhanced Clarity, 2. Improved localization of sound with 360 degrees

These spring rolls are filled with smoked salmon, tender-crisp asparagus and plenty of fresh herbs. Spring rolls look impressive when you put them out for a party, but they are actually easy to make. To simplify the process, lay out all the ingredients you need to make the rolls near your work surface before you begin.



Brain Healthy Recipes ASPARAGUS & SALMON SPRING ROLLS

Ingredients:

Spring Rolls

- 24 thick or 36 thin asparagus spears (about 2lbs)
- 2 3- to 4-ounce packages smoked wild salmon
- 12 8-inch rice-paper wrappers (see Notes)
- 1 ripe avocado, cut into 24 slices
- 1 cup shredded carrot
- 1/2 cup chopped fresh basil
- 1/2 cup chopped fresh mint

Dipping Sauce

- 1/3 cup reduced-sodium soy sauce
- 2 tablespoons orange juice
- 2 tablespoons lemon juice
- 2 tablespoons mirin (see Notes)
- ¼ teaspoon crushed red pepper, or more to taste

Directions:

Step 1: To prepare spring rolls: Bring 1 inch of water to a boil in a large skillet. Trim asparagus spears to no longer than 6 inches; add to the boiling water. Partially cover and cook the asparagus until tender-crisp, about 3 minutes. Drain; refresh under cold water. Cut each spear in half lengthwise. Cut salmon slices into 12 strips no longer than 6 inches each.

Step 2: Soak one wrapper at a time in a shallow dish of very hot water until softened, about 30 seconds. Lift out, let excess water drip off and lay on a clean, dry cutting board.

Step 3: Center a strip of smoked salmon in the bottom third of the wrapper, leaving a 1-inch border on either side. Arrange 4 thick (or 6 thin) asparagus spear halves (overlapping as necessary) over the salmon. Top the asparagus with 2 avocado slices, 1 tablespoon shredded carrot and about 2 teaspoons each basil and mint. Fold the wrapper over the filling and roll into a tight cylinder, folding in the sides as you go. Repeat with the remaining wrappers and filling. Cut each finished roll in half.

Step 4: To prepare dipping sauce: Whisk soy sauce, orange juice, lemon juice, mirin and crushed red pepper in a small serving bowl. Serve the rolls with the sauce.

Note: Make Ahead Tip: Individually wrap in parchment or wax paper and refrigerate for up to 4 hours. Ricepaper wrappers are translucent, round sheets made from rice flour. They need to briefly soak in warm water to make them soft and pliable before using. Find them in the Asian section of large supermarkets or at Asian food stores. Mirin is a low-alcohol rice wine essential to Japanese cooking. Look for it in the supermarket with other Asian ingredients. An equal portion of dry sherry or white wine with a pinch of sugar may be substituted. People with celiac disease or gluten-sensitivity should use soy sauces that are labeled "gluten-free," as soy sauce may contain wheat or other gluten-containing sweeteners and flavors.

DIABETES & DEMENTIA The Hearing Loss "X" Factor

Diabetes is a disease that affects your body's ability to produce or use insulin. Insulin is a hormone. When your body turns the food you eat into energy, insulin is released to help transport this energy to the cells. Insulin acts as a "key." Its chemical message tells the cell to open and receive glucose. If you produce little or no insulin, or are insulin resistant, too much sugar remains in your blood – and this is where the problem begins!

One of the most devastating effects of Diabetes is its impact on small blood vessels throughout the body. Each cell, tissue, muscle, nerve and organ in our body relies on proper blood supply to keep our internal components working properly. Blood carries the most important ingredients for life to all of our organs: oxygen and glucose. Too much glucose in the blood leads to the symptoms of diabetes.

Blood vessels can be damaged by the effects of high blood glucose levels and this can in turn cause damage to organs, such as the heart, eyes, and ears! High blood glucose levels over long periods of time are known to lead to the blood vessels becoming damaged and destroyed. How the damage occurs is not so well understood, but it's impact on people is well understood, and is very real.

You are more likely to develop diabetes if you have a family history of diabetes, are overweight, or are over age 45. Physical inactivity, race, and certain health problems also affect your chances of developing diabetes. A history of gestational diabetes is an additional risk factor for women.

Depending on the type of Diabetes, symptoms can start quickly, in a matter of weeks, or develop slowly, over the course of several years. Many people with Type 2 diabetes have no symptoms. Some people do not find out they have the disease until they have the effects of diabetes and the related health problems such as blurred vision, heart trouble, and/or decreased hearing clarity.

Diabetes can be the result of a number of factors, including genetics and lifestyle. Scientists believe that Type 1 Diabetes is caused by genes and environmental factors, such as viruses, that might trigger the disease. Many current studies are working to pinpoint causes of Type 1 Diabetes and possible ways to prevent or slow the disease.

Type 2 Diabetes is the most common form of Diabetes and is caused by several factors, including lifestyle factors and genes.

Overweight, Obesity, and Physical Inactivity

You are more likely to develop Type 2 Diabetes if you are not physically active and are overweight or obese. Extra weight sometimes causes insulin resistance and is common in people with Type 2 Diabetes. The location of body fat also makes a difference. Extra belly fat is linked to insulin resistance, Type 2 Diabetes, and heart and blood vessel disease. To see if your weight puts you at risk for Type 2 Diabetes, check out a Body Mass Index (BMI) chart to find your risk.

Insulin Resistance

Type 2 Diabetes usually begins with insulin resistance, a condition in which muscle, liver, and fat cells do not use insulin well. As a result, your body needs more insulin to help glucose enter cells. At first, the pancreas makes more



insulin to keep up with the added demand. Over time, the pancreas can't make enough insulin, and blood glucose levels rise.

Genes and Family History

As in Type 1 Diabetes, certain genes may make you more likely to develop Type 2 Diabetes. The disease tends to run in families and occurs more often in certain racial/ethnic groups. Genes also can increase the risk of Type 2 Diabetes by increasing a person's tendency to become overweight or obese.

Symptoms

Signs and symptoms of Type 2 Diabetes often develop slowly. In fact, you can have Type 2 Diabetes for years and not know it. Here are some of the 'symptoms' and things to look for:

- Increased Thirst and Frequent Urination. Excess sugar building up in your bloodstream causes fluid to be pulled from the tissues. This may leave you thirsty. As a result, you may drink — and urinate more than usual.
- Increased Hunger. Without enough insulin to move sugar into your cells, your muscles

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and organs become depleted of energy. This triggers intense hunger.

- Fatigue. If your cells are deprived of sugar, you may become tired and irritable.
- Blurred Vision. If your blood sugar is too high, fluid may be pulled from the lenses of your eyes. This may affect your ability to focus.
- Loss of Hearing Clarity Diabetes can compromise the blood flow to the auditory system, and thereby decrease hearing clarity, especially in background noise.
- Slow-Healing Sores or Frequent Infections. Type 2 Diabetes affects your ability to heal and resist infections.
- Areas of Darkened Skin. Some people with Type 2 Diabetes have patches of dark, velvety skin in the folds and creases of their bodies — usually in the armpits and neck.

Diabetes & Hearing Loss: The Connection

There are a vast number of scientific studies that have explored the connections of Hearing Loss and Diabetes. These studies have found that Diabetes can cause profound damage to the inner ear (the organ of hearing), and thus result in decreased hearing clarity – especially in background noise!

Our ears are very delicate structures, and we depend on them in nearly everything we do. There is rarely a task, a job, a relationship we have (at home, at work, at play) that does not involve our sense of hearing. Hearing never stops – it is even on when we are sleeping! Our ears never get a rest. Perhaps Helen Keller, who was both deaf and blind, said it best when she said,

'Blindness separates us from things, Deafness separates us from people'.

When Diabetes, especially with poorly controlled blood sugar, takes its toll on the small blood



vessels throughout your body, your ears are very susceptible to damage too. Fortunately, some parts of your body can accommodate for damaged blood vessels by depending on alternative blood supplies, but unfortunately our ears lack that option – and the resulting hearing loss is permanent.

"There's no redundancy in the blood supply to the inner ear," explains hearing loss researcher and otolaryngologist Yuri Agrawal, MD, assistant professor of otolaryngology at Johns Hopkins University in Baltimore. This means that once a blood vessel is damaged, there's no back-up blood supply — and your hearing clarity will decrease accordingly.

Regrettably, as the hearing loss increases as a result of the Diabetes, your risk factor for other debilitating diseases will also increase. For example, individuals with hearing loss will experience an increased risk of falling because your inner ear not only helps manage your hearing but also your sense of balance. When you combine this fact, with the loss of nerve endings in the periphery of people with Diabetes (i.e. sensation in the hands and feet), the increased risk of falls is frightening!

Another 'downside' to hearing loss, is the increased risk of developing Dementia. Reports from John's Hopkins (and others) have shown that hearing loss can increase the risk of developing cognitive decline and Dementia by as much as 200-500% (depending on the degree of hearing loss). More on this in the next section. Some adults live with Pre-Diabetes, whose blood glucose is higher than normal but not high enough for a Diabetes diagnosis. These individuals are also at increased risk of hearing loss and its associated cognitive and overall health deficits. Studies have found that Pre-Diabetes presents individuals

Diabetes presents individuals with a 30 percent higher rate of hearing loss compared to those with normal blood sugar tested after an overnight fast.

Diabetes & Dementia: A Common Link

Diabetes Increases the risk of developing Dementia and Alzheimer's. Dementia and Diabetes starve your brain and

tangle and twist vital cells. Alzheimer's Disease is the 5th leading cause of death in the elderly in North America. And the devastating disease of Dementia shares a strong link with another sickness that wreaks havoc on millions of



individuals in North America — Diabetes.

As mentioned previously, individuals affected by Type 1 and Type 2 Diabetes have a notable resistance to insulin. Type 1 is caused by the body's inability to produce insulin, and Type 2 is caused by the deterioration of the body's insulin

receptors and is associated with the consumption of too much refined carbohydrates like processed grains and sugar. When studies began to appear in the 2000's that indicated an alarming correlation between insulin and brain cell deterioration, major breakthroughs were made around Alzheimer's and

Dementia prevention. This spurred many health practitioners to ask a critical question — could Alzheimer's Disease simply be Type 3 Diabetes?

Multiple studies have shown that Type 2 Diabetes is a risk factor for Dementia, including

PHYSICAL EXERCISE FOR BRAIN HEALTH

Tips for Choosing The Right Physical Exercise

- In general, anything that is good for your heart is great for your brain.
- Aerobic exercise is great for body and brain: not only does it improve brain function, but it also acts as a "first aid kit" on damaged brain cells.
- Exercising in the morning before going to work not only spikes brain activity and prepares you for mental stresses for the rest of the day, but also produces increases retention of new information, and better reaction to complex situations.
- When looking to change up your work out, look for an activity that incorporates coordination along with cardiovascular exercise, such as a dance class.
- If you like crunching time at the gym alone, opt for circuit work outs, which both quickly spike your heart rate, but also constantly redirect your attention.
- Hitting a wall or mentally exhausted? Try rebooting with a few jumping jacks for your brain improvement exercises.



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Alzheimer's Disease, Vascular Dementia and other types of Dementia. Cardiovascular problems that are associated with diabetes are also associated with Dementia, including:

- Obesity
- Heart disease or family history of heart disease
- Impaired blood vessels
- Circulation problems
- High cholesterol
- High blood pressure

Research has also proved that, similar to Diabetes, glucose is not used properly in the brains of people with Alzheimer's Disease. This causes nerve cell death, which reduces the brain's ability to interpret messages. In the case of Vascular Dementia, brain cells die due to lack of oxygen, preventing brain cells from communicating with each other.

Beta amyloid plaques, which build up in the brains of people with Alzheimer's Disease, have also been shown to prevent insulin receptors in the brain from doing their job. This can impact insulin production and cause brain cells to become insensitive to insulin.

Is Alzheimer's Disease "Type 3 Diabetes"?

It is scary to think that Diabetes and Dementia may be so strongly connected, that many scientists have proposed a 'Type-3 Diabetes'. Several studies suggest that the brains of people with Alzheimer's Disease are in a 'diabetic state', partly due to the decrease and insensitivity to insulin. There are many similarities in the brains of people with Diabetes and the brains of people with Alzheimer's Disease; however, Diabetes only remains a risk factor. Some people with Diabetes may go on to develop Dementia, but some will not.

It is already known that diabetics are at least twice as likely to experience Dementia. The cells of your brain can become insulin-resistant just like other cells in the body. What was once considered a mysterious accumulation of beta amyloid plaques characteristic in the Alzheimer brain is now associated with the same lack of insulin that negatively affects cognition.



Reducing Your Risk for Diabetes and Dementia

This is easy to remember, and easy to do: What's good for your heart is good for your brain! Living a healthy lifestyle that promotes cardiovascular health will benefit your brain, your body, and your ears!

- Eat a healthy diet rich in vitamin D, folate, and B6 and B12 vitamins
- Exercise regularly both your body and mind
- Stay socially active and challenge yourself daily

Your hearing loss directly impacts these factors. People with hearing loss tend to have a poorer diet, exercise less, become less socially active, and are highly susceptible to depression. If you or a loved one are experiencing signs of hearing loss (issues with clarity, difficulty hearing in background noise, tinnitus), showing signs of cognitive impairment (confusion, poor motor coordination, loss of short-term or long-term memory, identity confusion, and/or impaired judgment) and/or dealing with Diabetes, speak to your physician and seek treatment with an Excellence In Audiology hearing health care specialist.

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This Publication Written in Coordination with: Dr. Keith Darrow, PhD, CCC-A M.I.T. and Harvard Medical Trained Neuroscientist and Clinical Audiologist

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FDA Approved TINNITUS TREATMENT Now Available

It is currently estimated that nearly 50,000,000 American adults live with Tinnitus. Tinnitus is simply described as the experience of hearing a sound in your ears, sometimes in your head. Tinnitus is also experienced by approximately 80% of people living with hearing loss. Some people only notice their Tinnitus in a quiet room, whereas many others experience the sound all day long – and it can interfere with daily life. In some people, the sound can cause depression, anxiety and affect concentration.

Nearly every patient will ask me "What is causing the ringing in my ears?". Admittedly, that is not the easiest question to answer. However, it can be answered once the Doctor of Audiology is able to dig deeper into the symptoms, recognize the individual's Tinnitus triggers, and have a full understanding of the patient's hearing profile and results of a complete audiological evaluation that includes cognitive function testing. The most common cause of Tinnitus is damage to the sensory organ of hearing, the cochlea (i.e. the inner ear). The cochlea is to hearing what your eyes are to vision. Within the cochlea are tiny 'hair-like' cells, called hair cells. When these cells are damaged, the nerves that connect the hair cells to the brain (and give us the ability to hear), become permanently damaged; and often times the ringing will ensue.

The most common cause of damage to our hair cells is aging. Think about it – as we get older, we tend not to see as well or see as sharply as we used to; especially in low-light environments. Unfortunately, the same process happens in our ears as we age; we tend not to hear as clearly, especially in noisy situations.

Other causes of Tinnitus that result in hair cell damage include excessive noise exposure – either a single intense noise (like a shotgun blast) or long-term exposure either from work or play (e.g. musicians, concert attendees, carpenters, machinist, landscapers, etc.).

Tinnitus can also result from physical trauma to the head or neck. Physical trauma to the head that can impact hearing and Tinnitus is commonly found in individuals that have been in a car accident or for those who have had a slip and fall.

A smaller percentage of Tinnitus cases are the result of other medical conditions that include: hypertension (high blood pressure), acoustic neuroma (tumor on the hearing nerve), thyroid disease, vascular disorder, temporomandibular joint (TMJ) disorder, ear infection, impacted cerumen (ear wax), nutritional deficiency, aneurysm, multiple sclerosis and other disorders. In some patients, prescription and over-the-counter drugs can result in damage to the auditory system and cause or exacerbate Tinnitus. Ironically, several hundred drugs listed in the Physician's Desk Reference ("PDR") cite Tinnitus as a side effect! In some, but very few, of these cases, the Tinnitus may reduce or disappear when the prescribed medication is discontinued.

I hope you can understand and appreciate why I would say it is rather difficult to answer the question 'What is causing my Tinnitus?' as it can be the result of any number of medical conditions, or by something as simple as 'too much wax in your ears'. I also hope you have come to realize the seriousness of experiencing Tinnitus and the urgency with which finding the answer to the question must be pursued with your Doctor of Audiology.

The Theory of Tinnitus:

Tinnitus is most often the result of a 'Central Gain' in neural activity that occurs when there is a loss of proper neural stimulation from the ear (i.e. after there is damage to the hair cells and nerves connecting the ear to the brain). More simply - when the brain is not properly stimulated in individuals with hearing loss (even a mild hearing loss), the brain will increase activity to make up for the missing input. This 'Central Gain' is neurologically analogous to 'Phantom Limb' phenomenon studied in Neuroscience. In cases where damage occurs to the peripheral nervous system, e.g. when a soldier loses a limb in battle, the central nervous system (aka the brain) will undergo adaptive changes that can often result in the perception of pain.



Our ears do not have traditional 'pain receptors', rather the perception of 'pain' that results from damage to the hair cells and nerves of the auditory system are perceived as a 'phantom sound' (i.e. Tinnitus). As the brain tries to adapt to the lack of proper stimulation from the ears, it will begin to experience a gain of activity that results in our perception of sound.

Understanding Tinnitus: Triggers

For many patients, the ringing can be virtually undetectable until a certain 'trigger' ramps up the volume of the sound. Below is a list of the most common triggers patients report as influencing their Tinnitus:

Loud noise. Avoid loud sounds at all costs! The use of power tools, guns, motor cycles, noisy vacuum cleaners, etc., must require the use of hearing protection. While the ringing that occurs after exposure to loud sounds and concerts may seem temporary (often referred to as the 'hearing hangover', the damage is PERMANENT. For more information, please request a copy of

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the research report: "What's All the Noise About Hearing Loss!" Hearing protection comes in all shapes and sizes, and they are not all created equally. Ask your Doctor of Audiology which is best for you and your hearing needs.

- Excessive use of alcohol or so-called recreational drugs can exacerbate Tinnitus in some individuals. Toxins introduced to the body can have a range of effects on our nervous system. Alcohol and drugs exert their effects on people by influencing neural activity; thus, Tinnitus is a potential side-effect of these toxins.
- Caffeine, found in coffee, tea, chocolate and some cola drinks, can also increase Tinnitus. Like most things in life, nothing is that bad for you in moderation. However, when most things are taken in excess, they can have adverse side effects. Caffeine, a nervous system stimulant, can ramp up neural activity and lead to the brain's perception of sound. Fortunately, when Tinnitus results from the ingestion of caffeine, the simple fix is to reduce your intake.
- Nicotine has a direct effect on our vascular system. Changes to our vascular system, which are often times permanent from nicotine and smoking, can influence blood flow to the ears – which will have a direct effect on the health of the cochlea and hair cells. This impact can lead to a 'suffocation' of required oxygen to the ear, and thereby compromise neural connections to the brain; thus, resulting in Tinnitus.
- Aspirin, quinine, some antibiotics and hundreds of other drugs are causative Tinnitus agents and can make existing Tinnitus worse. If you are prescribed medication, always inform your physician and pharmacist of your Tinnitus and discuss the drug and dosage options. Even with Tinnitus, it always makes sense to ensure that your doctor and pharmacists

are always in the 'know' about you and any issues you may be dealing with as that information will help them best serve you.

Stress. Managing stress is certainly easier said than done for most of us – but that doesn't take away the importance of learning how to manage and reduce our stress. While we understand very little about 'how' stress impacts the body, we do know that stress can be the root cause for many medical conditions, including Tinnitus.



Understanding Tinnitus: Treatment Options

Unfortunately, too many patients have said to me 'I have Tinnitus, and I've been told there is nothing that I can do about it'. I emphatically say to each of these patients, and to you – that is not true! Is there a cure for Tinnitus? No. Are there valid, F.D.A. approved treatment options available to reduce, and in some cases, eliminate, the ringing? YES!

Below are some of the most often asked about treatment options available for managing Tinnitus. I have categorized them based on their scientific findings and effectiveness in research studies.

Tinnitus and NeuroTechnology™

The single most effective treatment option available for patients suffering with Tinnitus is NeuroTechnology™. The FDA has approved treatment that reduces Tinnitus by restoring proper stimulation of the brain. And while most people with Tinnitus also suffer with hearing loss, that is not always the case. Fortunately, newly available NeuroTechnology™ has been designed for people with hearing loss and with audiometric 'normal hearing'. Many studies show that patients who use this Tinnitus support technology have a significant reduction in their daily Tinnitus experience – with some even reporting that 'the ringing is gone all day.'

Tinnitus and Brain Training:

Tinnitus can plague patients... and few patients may not perceive a significant difference with the use of NeuroTechnology™ to restore stimulation to the auditory system and brain. Fortunately, exciting new research was recently published in the Journal of American Medical Association (JAMA) that indicates a new BrainHQ game can significantly reduce a patient's perception of Tinnitus.

This study found that using certain brain exercises on the BrainHQ platform can help patients cope with Tinnitus. Yes, the results are the first of their kind, and need more investigation, but the results are promising! On the behavioral and cognitive self-report instruments, researchers reported no significant differences between the group who did the exercises and the control group that did not. But when asked if their Tinnitus had changed since the start of the study, 50% of people who had used the BrainHQ exercises said it had improved, with 30% saying it had much improved.

The scientists also looked at the brains of the study participants with MRI imaging. These MRI images showed significant differences between

the two groups: those who used the Brain- HQ exercises showed strengthening in areas of the brain associated with control and attention.

There is still significant research to be done in this area, there needs to be new exercises and improvements to the existing set, but seeing brain plasticity in patients with Tinnitus is a great start!

Tinnitus and Surgery

Many patients that are desperate to reduce their Tinnitus will ask if cutting or severing the hearing nerve will eliminate their Tinnitus. This permanent, deafness-producing procedure is not a dependable means of reducing Tinnitus. In fact, the surgical destruction of a person's hearing nerve can often times leave the Tinnitus as the only sound heard (see my notes above about the analogy to 'Phantom Limb').

Tinnitus and Medication

Put bluntly - there are currently NO FDAapproved drugs specifically for treating Tinnitus. However, there are pharmacological options to address the stress, anxiety, and depression that are caused by (and can sometimes exacerbate) Tinnitus.

As noted earlier in the 'Triggers' section, for some people, stress can be a source of Tinnitus. Thus, for some people, treatment with low doses of anti-anxiety drugs -- such as Valium or antidepressants such as Elavil – can help reduce Tinnitus. In limited cases, the use of a steroid placed into the middle ear along with an anti-anxiety medicine has been shown to be effective for some people.



'Researchers found that patients with tinnitus, in the group with tinnitus, had improvements in tinnitus perception, memory attention, and concentration as compared with patients in the control group'.

> Dr. Piccirillo. Journal of American Medical Association, Otolaryngology

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5 Reasons Why Seeing the Audiologist is So Important for Your Spouse

Early Intervention Can Prevent Bigger Problems Later in Life

Your spouse should see the audiologist by their 50th birthday, or whenever the first hearing struggles begin. Usually around 50 years of age, we begin to struggle in noise. Your spouse should see the audiologist to establish an audiology home, to receive a hearing evaluation and to start preventive care that can protect your spouse's hearing and cognition well into the future.

Cognitive Decline can happen very early in life (especially in those with hearing loss)

After the first hearing struggles begin, atwill social isolation should be avoided and

30

additional sources of auditory stimulation should be started. Avoid allowing your spouse to become disconnected, or unengaged. Hearing compensation efforts, like increasing TV Volume, should be avoided as this is only a crutch that delays crucial treatment of auditory deprivation. Acting as your spouse's 'human ear' dramatically increases the risk for delayed treatment...resulting in detrimental consequences to their brain health.

Untreated Hearing Loss can lead to cognitive decline, brain atrophy, and other health conditions

Although hearing struggles increase with age, untreated hearing loss can lead to Dementia, Cognitive Decline, Social Isolation, and a myriad of other health issues. Some seniors wait up to 7 years to seek treatment, often times setting them behind in the treatment process and ignoring the cognitive impact. We recommend evaluation by a audiologist at the age of 50 to establish a baseline. The audiologist can educate, diagnose, and treat hearing loss before its long-term effects set in.

Good auditory health starts now!

One of the most common questions I receive as

an audiologist is "when should I start tracking my hearing ability?" Good auditory Health Starts Now. Schedule a FREE Hearing Screening with the audiologist. Studies show your best interest lies in having your hearing checked annually. Besides being able to hear well, having your hearing checked may help identify any potential cancers on or in the ear, recognize depression caused by the social isolation of hearing loss, and help you better understand the comorbidities of hearing loss.

Your audiologist can help with many potential problems

Early detection and treatment is the key concept in all medical conditions; hearing loss is no different. Social Withdrawal,



Cognitive Decline, and Dementia are significant concerns and major cause of stress amongst aging adults. After your spouse's hearing begins to diminish and is left untreated, their health begins to suffer.

THE "LITTLE BRAIN"

The human cerebellum, or "little brain", weighs about 150 grams. Located at the lower back of the brain, the cerebellum is key to maintaining posture, walking, and performing coordinated movements. It is also thought to play a role in olfaction or smell.

BRAIN USES 20% OF OXYGEN BREATHED

Although the brain accounts for only 2% of the whole body's mass, it uses 20% of all the oxygen we breathe. A continuous supply of oxygen is necessary for survival. A loss of oxygen for 10 minutes can result in significant neural damage.

NO PAIN IN BRAIN

There is no sense of pain within the brain itself. This fact allows neurosurgeons to probe areas of the brain while the patient is awake. Feedback from the patient during these probes is useful for identifying important regions, such as those for speech, that are spared if possible.

TIPS FOR HEALTHY HEARING

Be sure to protect your hearing and take part in regular (annual) hearing evaluations once you reach the ripe old age of 50, unless, of course, you suspect a problem at an even younger age.

If you think about it, your hearing is always on! You can't 'shut off your ears'. Our hearing is our lifeline to communicating with others at home, at work, at home, at church, in the car, etc., and if your hearing is compromised (by age, or noise exposure) you may be afflicted with a variety of associated health conditions, including increasing the risk of developing Dementia. Losing your hearing capabilities can be quite embarrassing and very limiting. When you are no longer part of the conversation, or you can't communicate freely with your spouse, grandchildren, co-workers and loved ones, for example, not much else seems to matter! Because of this, and so much more, having healthy hearing is essential to your wellbeing, confidence, and overall cognitive (brain) health.

Benefits and Beyond

Like all medical conditions, with hearing loss it is important to catch it early and treat it early! Simply put - a mild hearing loss is a major problem. Age-Related Hearing Loss, the third most common condition afflicting today's seniors, is a progressive degenerative disorder that can significantly impair cognitive function. Healthy hearing can help to prevent cognitive decline (i.e. Dementia) and other disorders associated with hearing loss, (i.e. diabetes, cardiovascular disease, etc.).

There are various tips for people of all ages to help keep your ears young and healthy:

When you turn 50 years young, have your hearing evaluated. Diagnosing hearing loss early puts you in the best position to begin treatment and maintain healthy cognitive function. If it helps, remember 'Ears and Rears' when you turn 50! Protect your Hearing, NOW (before its too late)! Recent reports from the Massachusetts Eye and Ear Infirmary provide overwhelming evidence that noise exposure throughout life can cause debilitating Age-Related Hearing Loss to occur at much younger ages.



Once your hearing is damaged, there is no getting it back! That is why it is mission critical to protect your ears and begin medical treatment at the first signs of loss.

The most common symptoms of early hearing loss include:

- Difficulty hearing conversation in social situations (most common symptom!)
- Asking people to repeat themselves
- Turing up the TV louder than others
- Tinnitus (ringing / sounds in the ears)
- Social Isolation and Depression
- Difficulty on the phone

Fortunately, new medical treatment options are available. NeuroTechnology[™], which is more affordable and more discrete than traditional hearing aids, has rapidly changed the way medical professionals treat hearing loss. Even more important, patient satisfaction with NeuroTechnology[™] is over 96%!

Protect Your Ears

The harmful impact of loud noise on the ears is real and its permanent; yet loud noises are everywhere around us, at restaurants, weddings, concerts, lawn and construction equipment, at work and even at professional sporting events. I encourage you to make the small investment in custom ear plugs (some even come with special filters for listening to music). And NEVER go above 75% volume on your personal music player.

Also, please stop sticking things in your ears – yes, I'm talking to you! Even the most popular cotton swabs carry a warning on them "Do Not Insert Swab into Ear Canal". Your mother wasn't kidding when she said 'don't stick anything in your ear smaller than your elbow!' Your ears will naturally remove the 'wax' from the ear canal. By using a cotton swab you can actually push the wax deeper into the ear canal, which can cause pain, discomfort, damage to the eardrum, and even hearing loss. I have worked with countless patients that have ruptured their eardrums by using cotton swabs. If moisture in your ears is bothersome, my best advice it to place a clean piece of tissue paper around your finger and wick out the moisture. Or visit your Audiologist for regular removal of ear wax.

Medicines And Your Hearing

There are common medications that can have an adverse side-effect on hearing. Some





antibiotic medications, several chemotherapies and even aspirin can be toxic to your ears and result in significant hearing loss. If you take any of these medicines, it is important that you begin regular evaluations to monitor potential changes in hearing and to begin treatment at the earliest signs of hearing loss.

Healthy hearing is a vital part of healthy living and healthy hearing can keep you active, engaged and independent. Certain cardiovascular exercises such as running, walking or cycling can keep healthy oxygenated blood flowing to all parts of the body, including your ears! These exercises can also help you manage stress better, and less stress can help reduce tinnitus (sounds or ringing in the ear). Finally, be sure to incorporate annual hearing evaluations into your overall healthy living plan. You can ask your primary care physician for a local provider or visit www. ExcellenceInAudiology.org to find the most qualified hearing health care specialist in your area.

Having healthy hearing is important for having a healthy brain and a healthy physical body and for achieving optimal wellness. It is also essential for feeling comfortable and confident in your surroundings, with your family, at work and in your community.

DID YOU KNOW?

Healthy hearing is a vital part of healthy living; and healthy hearing can keep you active, engaged and independent.

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How Hearing Works

While our brains provide us with a tremendous amount of information about the sounds we hear and what they mean to us. At the most basic level our auditory system answers two major questions about any sound. First, what is the sound? The auditory system must identify what tones or frequencies we are hearing. And second, where is the sound? We must be able to locate the origin of the sound in space. Once we know what sounds we are hearing and where the sounds are coming from, our brains can begin the complex task of assigning meaning to the sounds we hear.

The process of determining what a sound is begins at a flat sheet of tissue (in the cochlea of the inner ear) called the basilar membrane. The basilar membrane detects the component frequencies, or tones, of incoming sound. The special physical properties of the basilar membrane make it particularly good at frequency detection. The membrane is flexible, and vibrates when sound hits it - but it doesn't vibrate evenly all over. One end of the basilar membrane vibrates most at low frequency tones, and the other end of the membrane vibrates most at high frequency tones. This gives the basilar membrane tonotopic organization or organization by tone, similar to a xylophone: tones are arranged from low frequency on one end to high frequency on the other (Figure 1). On a xylophone, if you know which bar is vibrating and where the bar is in the instrument, you can tell what note you will hear. Similarly, if you know that a group of neurons in the basilar

membrane is active, and you know where those neurons reside in the membrane, then you can tell what tone you have heard.



Figure 1: Tonotopic organization in the basilar membrane. Like a xylophone, the ear's basilar membrane is organized tonotopically, with high frequencies at the base and low frequencies at the apex. When you strike the middle 'A' bar on the xylophone a 440 Hertz tone sounds, causing the basilar membrane to vibrate. The region of the membrane whose resonant frequency is 440 Hertz vibrates the most, and a group of hair cells in that region send a 440 Hertz signal into the brain. When you play an "A" note on a xylophone, the air pulsates 440 times per second, a frequency of 440 Hertz (Hz). Those pulses trigger 440 vibrations per second along the length of the basilar membrane, with the largest vibrations occurring somewhere just past the middle of the membrane - the region of the membrane whose resonant frequency is 440 Hz. Within the resonant region, a group of neurons will begin a chorus of activity, each signaling in turn so that the group collectively



signals 440 times a second. This marvelous synchronization of vibrations in the air, in the basilar membrane, and in the activity of neurons in the resonant region is called phaselocking. Phase-locking is an important response mechanism in the auditory system. As we will see, perfect synchronization is critical to detect where a sound came from.

Locating sounds in space, the other fundamental task of the auditory system, is no mean feat; but our brains can determine the origin of a sound with astonishing accuracy, even when we cannot actually see the source. That ability depends on three independent methods for locating sound: a timing method, an intensity method, and a frequency filtering method. By using the results from all three methods, we are able to very accurately pinpoint the origin of sounds in space.

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Prain Myth #1: You only use 10 percent of your brain.

Brain Fact: You use your entire brain.

At some point in your life, you have probably heard this myth. But the truth is that we use virtually all of our brain every day--not just 10%. For example, just reading this article involves engaging your frontal and occipital lobes to see and comprehend and your hippocampus to remember, all while your brainstem and cerebellum help you remain seated, breathing, circulating blood, and digesting your food. And of course your pituitary gland and hypothalamus are regulating hormones, temperature, and much more.

- Prain Myth #2: Doing crossword puzzles can keep your brain young.
- Brain Fact: Crosswords are fun and may improve your ability to find words, but they don't help your brain's overall cognition or memory.

Many people believe that a crossword puzzle a day will help stave off dementia or Alzheimer's--but there is no evidence to support that claim. That's because crossword puzzles only flex one part of your brain, which is word finding (also called fluency.) So they might help you get better at word finding, but not keep your brain sharp in any general sense. In fact, a recent study with over 600 participants pitted crossword puzzles against one of Posit Science's BrainHQ exercises and found that BrainHQ improved cognitive function in subjects of all ages, while doing crosswords offered no brain benefits.

SEEING AND HEARING: How Your Senses Leave You At Risk for Dementia

People living with both Dementia and vision loss are more susceptible to experiencing disorientation, greater problems with mobility and an increased risk of falls.

Vision Loss and Dementia: The Science

Recent reporting in major scientific journals, including reports from the National Institutes of Health, has made significant strides in understanding the links of vision loss and cognitive decline. Although much work is still to be done, scientists and medical clinicians accept data that indicates people with distance vision problems are 2-3 times more likely to develop cognitive impairment (compared to those with normal vision).

The prevalence of blindness and vision impairment increases rapidly with age among all racial and ethnic groups. Cases of early age-related macular degeneration and diabetic retinopathy are expected to double and quadruple, respectively, in the next 20-30 years.

National studies indicate that vision loss is associated with higher prevalence of chronic health conditions, death, falls and injuries, depression, social isolation, and cognitive decline. When combined with chronic health conditions such as diabetes, vision loss is associated with overall poorer health among people aged 65 or older. Vision loss compromises an individual's quality of life because it reduces their capacity to read, drive a car, watch television, or keep personal accounts. Often, it isolates older people and keeps them from friends and family.

Elderly people with untreated poor vision are significantly more likely to suffer from Alzheimer's disease and other forms of dementia than their normal seeing counterparts, according to a study published in the American Journal of Epidemiology. According to Dr. Mary Rogers of University of Michigan, "Visual problems can have serious consequences and are very common among the elderly, but many of them are not seeking treatment." Poor vision, like poor hearing, can reduce the amount of social and physical activities in adults – thus increasing the risk of developing Dementia.

In addition, according to the American Optometric Association, significant near-vision loss in older age may correlate with increased dementia risk. According to this study from researchers at the Univ. Bordeaux in France, moderate to severe near vision loss can double an individual's chances of developing dementia.

Early Signs of Vision Loss and Dementia – What to look for.

It is often hard to separate the signs of vision loss from those of dementia – as the two can mask each other. Having difficulty with any of the following may suggest a person is having problems with their vision:

- Reading.
- Recognizing people.
- Coping with low light, bright light or both.
- Finding things.
- Avoiding obstacles.
- Locating food on their plate.
- Seeing well even with glasses on.

Note – many of these issues are common in both vision loss and in individuals living with Dementia. Despite the many cognitive difficulties associated with Dementia, vision testing can be adapted for individuals with such cognitive decline.



EARLY TREATMENT OF VISUAL PROBLEMS MAY DELAY THE ONSET OF DEMENTIA.

Managing Dementia and vision loss

People living with both Dementia and vision loss are more susceptible to experiencing disorientation, greater problems with mobility and an increased risk of falls. They are also likely to have more difficulties with communication, understanding and learning new tasks, loss of activities and increased social isolation.

Living with these conditions in tandem can also make it harder to use some of the coping strategies and techniques that can help people with communication or memory problems, such as visual prompts or notes.

Given the difficulty of managing the two disorders, there are a number of strategies that can help the person, and his or her family, manage both vision loss and Dementia. Including:

- Proper eye care (regular eye exams, maintaining up-to-date vision prescriptions, and assuring glasses are clean).
- Adjusting living surroundings, including improved lighting (preferable automatic lighting), removing clutter, removing area rugs (they can be easy to trip and fall over!)
- Improving communication for example, getting the person's attention before speaking to them, introducing yourself, letting them know what is happening (e.g. 'I'm leaving the room now').
- Enroll in vision rehabilitation courses.



Recommended Brain Books

A Calm Brain: How to Relax into a Stress-Free, High-Powered Life

By Gayatri Devi, M.D.

In this high-stress, fast-moving, 24/7 world, it can be hard to get the brain to be quiet even for a minute. In A Calm Brain, Gayatri Devi unravels the neurology of stress and discusses how we can teach our brains to relax and calm down. Devi, a neurologist and professor, combines scientific knowledge with stories and practical, useful tips for seeking more calm in your life.





Brain Bugs: How the Brain's Flaws Shape Our Lives

By Dean Buonomano, PhD

The brain is an amazing machine, but it has its flaws. Why, for example, do we so often choose short-term gratification over long-term stability? In Brain Bugs, Dean Buonomano, a professor of neurobiology and psychology at UCLA, argues that such flaws are the result of a still-evolving brain confronted with the rapidly changing complexities of the modern world. Our brains still have "bugs" inherited from our ancestors—processes and reactions that may have served humanity well in a different age, but no longer apply today. Understanding these brain bugs and where they come from can help us escape their influence and make smarter choices.

Consciousness and the Brain: Deciphering How the Brain Codes Our Thoughts

By Stanislas Dehaene

Have you ever wondered how your brain creates a conscious thought, or how it's possible to store so much unconscious knowledge? In Consciousness and the Brain, Dehaene delves into his own lab's work and the work of other neuroscientists to share what we do and don't know about our minds and our consciousness.



Treating the **Cognitive Aspects** of Hearing Loss

Dr. Thomas A. McCarty, Au.D. Doctor of Audiology Founder, Audiology Associates, Inc.

Alaska's Highest Rated Hearing Health Care Office



Treatment Methods by: Dr. Thomas A. McCarty, Au.D.



Our Hearing Healthcare Specialists and Board-Certified Audiologist have helped over 100,000 people in Alaska with their more than 50 years of combined service. In fact, Dr. Thomas A. McCarty, Board-Certified Audiologist was the very first Doctor of Audiology in Alaska! Your hearing health is paramount to us, and our team is passionate about helping as many people as possible to restore clarity to their sound experience, including you. Our Ear Doctor and Hearing Aid Specialists are seasoned, well trained, and constantly continue their education, too. We always strive to keep up-to-date with the latest, most innovative ways to provide you with exemplary care that meets your unique hearing needs.

WHAT OUR PATIENTS ARE SAYING

Have been seeing Dr. McCarty, since 2008. He was very helpful in helping me with extreme tinnitus and hearing loss in both ears. From the hearing loss, I couldn't go back to my employment. Dr. McCarty helped me through really difficult times. There was certain tests that could not be done in Anchorage. I was flown out of state for additional testing. In the end, I received my medical retirement. Thanks to Dr. McCarty help, I'm living a productive life. The staff there was very kind, helpful with my needs in getting the right testing done and hearing aids. Thanks again.

– Michael R.

I've known Tom McCarty for years and have found him to be a great provider, he provides the best technology for a fair price. Love his team and would highly recommend him.

– Kevin S.

Dr. McCarty and his staff took great care of my mother. The hearing exam went seamless and his recommendation was great. Highly recommend!

Elizabeth, who I always deal with in, is friendly, patient and professional. The ladies in the front are friendly and helpful too. 5 stars for me.

- Roy E.

- A. M.

They are knowledgeable, friendly, and always fit you in. Always great service! My hearing aides made in the USA.....

– Jacqueline M.

Caring, patient and thorough with my 87-yearold mother with not just hearing loss, but memory loss as well. (constant retraining) So glad they're there.

- Spaeth Family

I stopped in to Audiology Associates last Friday at noon. They were prompt from the getgo. Both the assistant and The doctor were exceptional. They took whatever time I needed to explain to me the process and were very thorough in their evaluation. I have had pretty severe tinnitus since 2005. They fitted me with a set of hearing devices that have changed things for me dramatically, already. Yes, they were expensive. Yes! They are absolutely worth it! For the first time in many years I could actually clearly understand what people were saying to me, even in public areas with background noise. The cost is for a four year plan. Well worth it in my book.

– Joey C.

Everything was excellent, very nice kind people, proud to share my experience to anybody. Thank you for helping me, God bless you guys.

– James H.

He is the very BEST!

– Gus W.

Very thorough with his testing. Been a patient for over 10 years and have always met my hearing needs.

– James A.

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You're Invited... to get the hearing clarity you had 20 years ago!

Start Treatment Today

If you have been living in isolation because you just can't hear clearly enough to understand, now is the time to change that! Get started on restored clarity, that will improve your social life, reduce your risk of Dementia, and mitigate any Tinnitus you might be experiencing with a FREE clarity and cognitive assessment from Audiology Associates.

Faster.

With over 15,000 satisfied patients, our tested and proven clarity restoration system restores your hearing clarity in less time, drastically reducing your number of follow up visits.

Guaranteed.

We stand behind our treatment - the only Audiologist in Alaska with a Lifetime ClarityGuaranteed[™] Promise.

Personalized.

Choose from NeuroTechnology™, Invisible NeuroTechnology™, or traditional hearing aids. Whatever your prescription, we work with you to treat your hearing loss within your budget and cosmetic needs.

Experience the Dr. McCarty Difference



Free Follow-Up Care for Life



Flexible payment plans as low as \$263/mo



Convenient Appointment Times



Dr. Thomas A. McCarty, Au.D. Doctor of Audiology



Lifetime ClarityGuaranteed[™]

Get a FREE Rebate on First Months Treatment *New Patients only. See office for details.

Make your appointment today! EarDocAK.com or call (907) 917-3304

ASSOCI Ear, Tinnitus & Brain Centers of Alaska

Eat for a sharper mind with these healthy dinner recipes to boost brain power. Adding omega-3rich ingredients, such as oily fish, to your diet, as well as iron-rich foods, such as beans, and waterrich foods, such as leafy salad greens, can support healthy cognitive function.



Brain Healthy Recipes MANCHEGO TORTILLA

Ingredients:

- 1/3 cup spicy extra-virgin olive oil
- 1-1/2 cups chopped leeks, white part only
- 1 teaspoon minced garlic salt and pepper
- 3 cups roughly chopped well-drained artichoke hearts (jarred, canned, or thawed frozen)
- 8 large eggs
- 3/4 cup chopped manzanilla olives
- 6 ounces thinly sliced manchego cheese

Directions:

Step 1: To prepare spring rolls: Bring 1 inch of water to a boil in a large skillet. Trim asparagus spears to no longer than 6 inches; add to the boiling water. Partially cover and cook the asparagus until tender-crisp, about 3 minutes. Drain; refresh under cold water. Cut each spear in half lengthwise. Cut salmon slices into 12 strips no longer than 6 inches each.

Step 1: Preheat the oven to 350°F.

Step 2: Heat the olive oil in a 12-inch nonstick oven-safe frying pan over medium heat. Add the leeks and garlic. Season with salt and pepper to taste and sauté just until the leeks are softened, about 4 minutes. Add the artichoke hearts and cook for an additional 2 minutes.

Remove from the heat and, using the back of a spatula, pat the artichoke mixture evenly into the pan.

Step 3: Combine the eggs and olives, whisking to blend very well. Pour half of the egg mixture over the artichoke mixture; it should just barely cover it. lay about two-thirds of the cheese over the top and then pour the remaining egg mixture into the pan. Transfer to the preheated oven and bake until well set and beginning to brown, about 15 minutes.

Step 4: Remove from the oven and cover the top with the remaining cheese. Return to the oven and continue to bake until the cheese has melted and browned, about 15 minutes more.

Step 5: Again, remove the pan from the oven and place it on a wire rack to rest for 5 minutes. Then, invert the tortilla onto a serving plate, cut into six wedges, and serve hot or at room temperature.



Read More From Alaska's Highest Rated Office



audassociatesreports.com



3500 LaTouche St Suite 310 | Anchorage, Alaska 99508

Don't toss all that excess oil—it contains a lot of the vitamin D and omega-3 fatty acids from the fish. We use this nutrient-dense oil rather than mayo to dress the salad, then pile it on a smear of avocados, which are packed with monounsaturated fats that encourage blood flow and boost brain activity. We love this combination on wholegrain toast but you can also toss it over pasta, greens, or grains.



Brain Healthy Recipes TUNA, EGG, AND AVOCADO TOAST

Ingredients:

- 8 ounces canned or jarred sustainable albacore tuna packed in oil
- 1/2 cup chopped celery
- 1/4 cup chopped fresh basil, divided
- 2 tablespoons minced red onion
- 2 tablespoons fresh lemon juice
- 1 tablespoon Dijon mustard
- 1/4 teaspoon kosher salt
- 1/4 teaspoon freshly ground black pepper
- 2 hard-cooked large eggs, coarsely chopped
- 4 (1-oz.) slices crusty whole-grain bread, toasted
- 3/4 cup thinly sliced avocado
- 1/2 cup baby arugula

Directions:

Step 1: Drain tuna, reserving 2 tablespoons oil.

Step 2: Combine tuna, reserved oil, celery, 3 tablespoons basil, and next 5 ingredients (through black pepper) in a medium bowl; toss to coat.

Step 3: Fold in eggs.

Step 4: Top each bread slice with about 3 tablespoons avocado, 2 tablespoons arugula, and 3/4 cup tuna mixture.

Step 5: Garnish toasts with remaining 1 tablespoon basil.

WORKING MEMORY STORES SEVEN DIGITS

It's no accident that telephone numbers in the United States are seven digits long. Our working memory, a very short-term form of memory which stores ideas just long enough for us to understand them, can hold on average a maximum of seven digits. This allows you to look up a phone number and remember it just long enough to dial.





HEARING YOUR WAY TO A LONG, HEALTHY AND MORE FULFILLING LIFE

Here is a fascinating statistic. Centenarians, people who live to be 100 years young or more, embody a fairly small percentage of the total U.S. population. In fact, only approximately 1 out of every 10,000 Americans are 100 years or older.

This small slice of the population who are surviving to extreme old age lures the attention of not only researchers but also the general public, as we attempt to recognize and learn from the experiences of those who beat the odds of environmental and biological hindrances to which most of us tend to fall prey. Why do some live such long, fulfilling lives, while others don't? Good question, and one that needs to be addressed!

Your first thought may be 'perhaps these individuals are in some way genetically unique'. But no, the truth is, genetics only play a 25% part in their endurance. Guess what the other 75% is? **Lifestyle!**

So, what do we need to do to live to 100, or beyond? What are we doing right? What are we doing wrong?

Alaska's AUDIOLOGIST

Urban priorities transformed as we moved towards the industrial revolution due to the fact that infectious disease became such a great risk at that time. How about today though? Well, today, social isolation is the health risk of our time. Nowadays, 1/3 of the population claims to have 2 or less individuals who they can actually go to for comfort or help.

In researching centenarians, I swiftly discovered that as people age, and, quite frankly all through their lifespans, they are constantly surrounded by extended family, friends, neighbors, spiritual advisors, even the mail carrier. The fact is that people are always either with them or dropping by. They are not left to live lonely lives. Living a solitary life seems to be the norm in the developed world as we age. But, it doesn't have to be and shouldn't be! Happiness is having a large, loving, caring family and circle of friends.

The numerous stories that I've read about centenarians, together with the science that reinforces those stories, inspired me to ask some questions of my own. How am I best able to put off the day that I die? The answers that I discovered may not be what you expect. A researcher at Brigham Young University, Julianne Holt-Lunstad, addressed this very question in a succession of studies of literally tens of thousands of middle aged people. Holt-Lunstad observed each and every facet of their life including: marital status, exercise, diet, how frequently they went to the doctor, and whether or not they drank or smoked. She kept track of every record and then sat back and waited for 7 years to see who would still be around and doing well. Of the individuals left standing, her next feat was to find out what reduced their chances of dying the most.

Predicting How Long You Will Live

Let's take a look at the data, going from the least commanding predictor to the **strongest**.

- The Air You Breathe: Clean air is great, but it does not predict how long you will live.
- Your Blood Pressure: Treating your



Hypertension is good, but still not a strong predictor.

- Your Weight: Whether you are slender or heavy, you can stop feeling guilty, because it's only in 3rd place.
- Exercise: How much exercise you get is still only a moderate predictor.
- Your Heart: Whether you have had a cardiac incident, getting higher.
- The Flu! Whether you've had a flu vaccine.
- Recreational Drugs: Whether you were/are a drinker or smoker, getting closer.
- Your Ears: Hearing loss is at the top of the list! Why?

How Treating Your Hearing Loss Can Help You Live A Longer Life

Ready for this? The top two predictors of your longevity (i.e. how long you will live) both pertain to features of your social life.

The first one is **Close Relationships.** Your close relationships consist of the folks that you can call on for the following and more:

Alaska's AUDIOLOGIST



an emergency loan when needed

- someone who will call the doctor for you when you aren't feeling well or will take you to the hospital
- someone who will sit with you if you are in the middle of an existential crisis or just simply in despair

These people, if you have them, are a strong predictor of how long you'll live.

Second, **Social Integration.** Social Integration is the amount of time you interact with people as you move through your day.

- How many people do you talk to? Both weak and strong bonds, not just the folks you are really close to, but, for instance, the barista who makes your coffee every day.
- Do you talk to the mailman/woman?
- Do you talk to the man who walks by your house every day with his dog?
- Do you play bridge/poker?
- Do you attend a book club?

These types of interactions are some of the strongest indicators of how long you will live.

Over my many years of experience in my field, and reported in countless research reports, I have come to find that the biggest factor for missing out on social interaction is **Hearing Loss.**

How can you socialize when you can't understand the conversation?

Most people with hearing loss tend to retract into social isolation to avoid uncomfortable situations where they can't understand what is going on around them because of significant, or even slight, hearing loss. **Social isolation is a significant factor for depression**, **and plays a significant role in the development of cognitive decline and Dementia.**

Real Vs. Virtual Friends: The Neuroscience of Real Friendship

This leads me to question the distinction between interacting in person and interacting through social media (i.e. on the computer), something that is so extremely prominent currently. Is it just as good to keep in touch with your children/family/friends through text, for instance? The short answer to this question is a resounding **NO**, it is not just as good. Why?

Physical contact and face-to-face interaction have a profound effect on our body. When surrounded by loved ones, our body releases an entire torrent of neurotransmitters which protects us now and well into the future. Basically, simply making eye contact with others, shaking hands, and giving a high-five is sufficient to release oxytocin. Oxytocin – a hormone produced by our body and found in our brains – is essential to increasing your level of trust and it lowers your cortisol levels (**stress**). In addition, dopamine is produced, which gives us a bit of a high and dulls pain. Dopamine is our bodies naturally produced morphine. Who wouldn't want that?

All of these things pass under our conscious radar, hence why we think of online activity as

being close to the real thing. However, there is concrete evidence that there is a huge difference.

Hearing And Aging:

Why do females live longer than males? By the way, they do. A key reason is that females are much more likely to prioritize their face-toface relationships over their lifetime. Recent research has shown that in-person relationships generate a natural force field against disease and decline, especially when it comes to hearing and Dementia. It's been proven, in fact, that animals who have a



core of contacts to hang out with show lower levels of stress, and they live longer. The magic number seems to be 3 stable relationships. And, it is my hope that you all have at least three.

The lowest rates of Dementia amongst individuals who are socially involved is due to the power of face-to-face contact. Hence, **why proper hearing health care as we age is so vital to our longevity.** It's extremely difficult to cultivate relationships when you can't understand what is being said. Face-to-face interaction delivers spectacular benefits, yet nearly ¼ of the population state that they have no one to talk to.

We CAN do something about this. It is a biological must to know that we belong. Seeing your local audiologist **NOW** and properly treating your hearing loss will set you on a path to building and maintaining in-person interaction with friends, family and even strangers. Doing so will not only boost your immune system, but it will also send all those

'feel-good' hormones rushing through your bloodstream and brain and afford you the opportunity to live a longer life.

Helen Keller is credited with saying, **'blindness separates us from things, but deafness separates us from people'**. So, how are we to live longer lives if we leave our hearing loss untreated?

Again, a sense of belonging is important to not only our mental health, but also our ability to live a long, fulfilling life. Hearing loss creates a feeling of psychological solitary

confinement. Still, many folks with hearing loss deny the influence it exerts on their quality of life. Hearing loss causes communication difficulties and will ultimately affect our thinking and concentrating abilities. What happens next - inattentiveness, distraction, boredom and withdrawal.

Most will think "I cannot contribute, so I'll just give in to a life of loneliness. What good am I?" Hearing loss creates the same fears for all involved – anxiety about loss of relationships or a job or even being seen as 'useless'.

The bottom line: Do you foresee yourself living a long, healthy and fulfilling life? Facts show that the top predictors to doing so are *close relationships and social interaction.* That begins with proper hearing health care. Today is the day to get back on track. See your local hearing health care specialist, treat your hearing loss, avoid developing Dementia, increase your cognitive power, and build your relationships to achieve that dream!



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