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PROMOTING HEALTHY AGING: LIVING YOUR BEST LIFE LONG INTO YOUR GOLDEN YEARS

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PROMOTING HEALTHY AGING: LIVING YOUR BEST LIFE LONG INTO YOUR GOLDEN YEARS

WEDNESDAY, SEPTEMBER 25, 2019

U.S. SENATE,
SPECIAL COMMITTEE ON AGING,
Washington, DC.

The Committee met, pursuant to notice, at 10:17 a.m., in Room 562, Dirksen Senate Office Building, Hon. Susan Collins (Chairman of the Committee) presiding.

Present: Senators Collins, Hawley, Braun, Rick Scott, Casey, and Sinema.

OPENING STATEMENT OF SENATOR SUSAN M. COLLINS, CHAIRMAN

The CHAIRMAN. The Committee will come to order.

Good morning. First, let me thank our witnesses for accommodating our change in schedule. There happens to be quite a bit going on—on Capitol Hill today, as you may have heard, but I think it is important that we continue with important work that we are doing on this and other committees as well.

By the year 2030, one out of five Americans will be over the age of 65. These Americans represent the fastest-growing demographic segment of our population. They are independent. They are diverse and they are often still working.

Today the Aging Committee is convening this hearing, during Healthy Aging Month, to make healthy aging a goal that all Americans can strive to achieve.

Hospitals are required to conduct community health needs assessment surveys every 3 years to identify priorities. Last week, the MaineHealth hospital system, my State's largest health care network, published a report with the results from the 2019 survey. Five local health care systems identified "healthy aging" as a top priority for the coming years. For MaineHealth, this means improving access to quality health care as well as the physical and social environment that promote healthy lifestyles. While this may come as no surprise to the State of Maine, where older adults outnumber children, healthy aging ought to be a priority for every State.

Healthy aging starts with community. Last Congress, we held a hearing on the increasing epidemic of social isolation among older adults and uncovered the startling fact that prolonged isolation and loneliness are comparable to smoking 15 cigarettes a day. Staying connected with family and friends helps to stave off physical illness and mental decline. It adds years to life and life to years.

Aging with community means staying engaged, physically, socially, and cognitively. Mounting evidence indicates that this trifecta can help reduce the risk for serious age-related diseases from Alzheimer's disease to cardiovascular conditions. Physical activity, for example, promotes healthy aging and fights chronic diseases from the cellular to the systems levels. During exercise, mitochondria, the energy powerhouses within cells, grow stronger and proliferate, improving the function of the entire body from head to toe. While we have long known the benefits of exercise, today's research is shedding new light on the mechanisms through which exercise supports healthy aging, and the results are truly impressive. Exercise can actually change the way that genes are regulated, reducing risk for age-related degenerative diseases.

In fact, growing research shows that several lifestyle factors can modify gene expression. Today we will learn that approximately 95 percent of gene mutations linked with certain age-related diseases can be modified in their expression through changes in lifestyle. This gene modification can decrease the risk of certain diseases. In addition to physical, social, and cognitive activity, other key factors include diet, sleep, and stress management, so I am in real trouble.

A new study published this month in the Proceedings of the National Academy of Sciences found another remarkable lifestyle factor that promotes healthy aging, and that is optimism. In this study, researchers followed more than 70,000 seniors for 10 to 30 years and found that the most optimistic demonstrated on average an 11 to 15 percent longer life span. Research has already shown that optimistic individuals tend to have a reduced risk of depression, heart disease, and other chronic illnesses. This new report shows that people who "usually expect to succeed in things that they do" tend to live longer, too. The more we learn about healthy aging, the more we can do to help make it possible.

Routine preventive and maintenance care is another important part of healthy aging. The Medicare annual wellness visit provides critical screenings from cardiovascular health to cognitive function, as well as medication reconciliation. With more than 42 percent of seniors taking five or more prescription drugs, reconciling these medications can help to reduce adverse drug events, such as dizziness, which can lead to falls and injuries.

From the individual to the community level, from the doctor's office to the home, there are steps that we can take right now to improve prospects for healthy aging. Today we will hear from a great panel of experts on how to add health and well-being to life's golden years.

I want to thank all of our witnesses for being here today. I will introduce them shortly, but now I would like to turn to our Ranking Member, Senator Casey, for his opening statement.

OPENING STATEMENT OF SENATOR ROBERT P. CASEY, JR., RANKING MEMBER

Senator CASEY. Chairman Collins, thank you for holding this hearing, and thank you for your opening statement.

When it comes to healthy aging, we have news to celebrate. On average, people are living longer and as life expectancy has increased, health has improved. We can attribute much of this suc-

cess to advances in medical research and treatment, dedicated health professionals, and, of course, programs like Social Security, Medicare, Medicaid, and the Older Americans Act.

I spent a significant amount of my time thinking about how these federally funded programs promote health security and financial security and even more time fighting for policies to protect and strengthen them.

During our hearing today, I would like to highlight the important role of Medicare and discuss ways that we can improve the program in order to further promote healthy aging. Medicare is the only game in town when it comes to health insurance for most people 65 years of age and older. In Pennsylvania, for example, over 2.7 million people receive their coverage through Medicare. It ensures that individuals have coverage for preventive care, necessary medical care, and prescription drugs.

However, Medicare is not required to cover dental, hearing, or vision services. To expand upon a tweet from Gretchen Jacobson, a Medicare expert from the Kaiser Family Foundation, while every single individual on Medicare has teeth and/or gums, eyes, and ears, they do not—they do not—all have insurance to help cover the cost of dental, vision, and hearing services. This is a barrier to healthy aging.

I received a letter recently from Helen Sheehy of Tyrone, Pennsylvania, about this very issue. Chairman Collins, I would ask consent to have this letter from Helen Sheehy entered into the record.

The CHAIRMAN. Without objection.

Senator CASEY. Thank you. Helen's letter begins, "I am writing to you about serious gaps in Medicare coverage that I hope you, through the Special Committee on Aging, could begin to address."

Helen goes on to write about how Medicare covered the care her husband, Jim, received following a cancer diagnosis: surgery, chemotherapy, and radiation. As a result of Jim's treatment, his teeth were seriously damaged, and most of them had to be removed. Helen goes on to explain that the medical bill for this care was $31,000.

Helen Sheehy closes the letter to me by writing as follows: "Apparently, the dental exclusions have been in place for decades. We now know that there is a direct connection between dental health and an individual's overall health, I am hoping that you will think the time is ripe to rethink these provisions."

I agree with Helen. The time is ripe to rethink these provisions. It is for this reason that I have introduced legislation, the Medicare and Medicaid Dental, Vision, and Hearing Benefits Act to expand Medicare and Medicaid coverage not just for dental services but for hearing and vision care as well.

We can find story after story about the need for these basic benefits. We know that a simple eye exam can lead to early detection of hypertension and high cholesterol. If someone has trouble conversing with others due to hearing loss, research tells us that there will be a greater likelihood of mental health issues, dementia, and social isolation and the list of examples goes on from there.

We have a responsibility to ensure that our aging loved ones receive the critical health care services they need to lead the most active and healthy lifestyle possible.

Again, I look forward to hearing from our witnesses today, thank them for their testimony, and also look forward to a discussion about this important topic.

Thank you, Chairman Collins.

The CHAIRMAN. I now would like to turn to our panel of witnesses. We have a great panel of witnesses today.

First, I would like to introduce Dr. Rudolph Tanzi, the co-director of the Center for Brain Health and vice chair of neurology at Massachusetts General Hospital. He is also a professor of neurology at Harvard Medical School. Of particular interest to me, Dr. Tanzi discovered several Alzheimer's disease genes, and he serves as director of the Alzheimer's Genome Project. He has published more than 500 scientific papers and co-authored several New York Times best-selling books, including "Super Brain," "Super Genes," and "The Healing Self." I had the pleasure of meeting Dr. Tanzi when I went to Harvard to learn more about the work that its laboratory was doing on Alzheimer's research, and I remember leaving not only impressed but encouraged at the research that is ongoing. I appreciate your being here today, Doctor.

Our second witness will be Dr. Susan Hughes. She is the co-director of the Center for Research on Health and Aging at the University of Illinois at Chicago. She is also the principal investigator of the Midwest Roybal Center for Translation and a founding member of the Evidence Based Leadership Collaborative. Her research focuses on physical activity to help older adults maintain individual functioning and age well.

Next, I am delighted that we will hear from Diane Dickerson, who is the CEO of the Bangor, Maine, YMCA. Diane came to the Y with a lifetime of business experience and community building. Prior to coming to Maine and leading the Y in 2013, she held a variety of responsible leadership positions for three decades in Nevada and California. We are glad she has finally gotten to the State where she belongs. At the Bangor Y, she has been instrumental in developing programs designed to support healthy aging in Bangor and across the State. We are very proud that you could be with us today.

I would now turn to our Ranking Member to introduce our final witness on the panel.

Senator CASEY. Thanks, Chairman Collins. I am pleased to introduce Brian Long of West Hempfield Township, Pennsylvania. West Hempfield Township is in the western part of Lancaster County. Brian Long is the lead coordinator for the Pennsylvania Link to Aging and Disability Resources—did I get all that right?—for the Berks, Lancaster, and Lebanon service area. That is three of our counties in the south-central part of our State. He is also a volunteer representative for Pennsylvania's Southcentral Regional Council on Aging.

Brian is no stranger to service. He is a veteran of the United States Army. He also has served in the U.S. Army Reserve and in the Pennsylvania Army National Guard. Mr. Long is a proud parent to two adult children and grandparent to three grandchildren.

Brian, thank you for your service to our Nation and older residents of Lancaster, Berks, and Lebanon counties and for your willingness to testify today.

Thank you.

The CHAIRMAN. Thank you very much.

We will begin with Dr. Tanzi.

STATEMENT OF RUDOLPH TANZI, Ph.D., DIRECTOR, GENETICS AND AGING RESEARCH UNIT AT MASSACHUSETTS GENERAL HOSPITAL, AND PROFESSOR OF NEUROLOGY, HARVARD MEDICAL SCHOOL, BOSTON, MASSACHUSETTS

Dr. TANZI. Thank you. Good morning. I want to thank Chairman Collins, Ranking Member Casey, and other members of the Special Committee on Aging, including Senator Warren from my home State of Massachusetts, for the opportunity and privilege of discussing the role of genetics and lifestyle in promoting healthy aging into our golden years.

My name is Rudolph Tanzi. I serve as the Joseph P. and Rose F. Kennedy Professor of Neurology at Harvard Medical School, vice chair of Neurology, and co-director of the McCance Center for Brain Health at Massachusetts General Hospital, and serve as the director of the Alzheimer's Genome Project supported by the Cure Alzheimer's Fund, one of the highest impact Alzheimer's disease research foundations in the world.

I have dedicated my entire career to studies aimed at preserving and promoting brain health and preventing brain disease. Over the past four decades, my lab has discovered and characterized numerous genes influencing susceptibility for Alzheimer's disease, including the first three and we have used knowledge gained from these genes to develop new therapies for treating and preventing Alzheimer's disease. Some of these new drugs are already in clinical trials in Alzheimer's patients. We have also published over 500 original research papers on Alzheimer's disease and brain health and have written three best-selling books on brain health, genetics, and immunity.

I will focus my remarks today on how we can best maintain brain health and resilience against age-related diseases, including neurological diseases such as Alzheimer's, as well as other chronic diseases including diabetes, heart disease, and cancer. Approximately 8 in 10 older adults in the United States have a chronic disease, and 7 in 10 have two or more. Chronic diseases are the leading cause of death and disability and the leading drivers of the Nation's $3.3 trillion in annual health care costs. Alzheimer's, the most common form of dementia in the elderly, currently affects nearly 6 million Americans. The cost of this disease to our country is approaching $300 billion per year. Half of Americans over 85 years old exhibit Alzheimer's symptoms; two-thirds are women. With the American life span now nearly up to 80 years, this disease is a burgeoning epidemic that will someday single-handedly collapse our health care system if we do not do something about it.

As modern medicine has extended life span, unfortunately, our health span has not kept up, and this has resulted in rampant increases in the incidence of age-related diseases. How can we stem the tide of Alzheimer's and other chronic diseases? The research is promising and has turned traditional notions about disease upside down. Not too long ago, we were taught that the effects of the genes you inherited from Mom and Dad were fixed, unchangeable,

but new research in the burgeoning field of epigenetics has demonstrated that the activity of the genes or, as we call it, the "expression" of the genes is fluid, dynamic, and responsive to everything we do and think.

Every choice we make leads to experiences that change the expression of our genes, and gene expression is actually controlled by our habits. A healthy lifestyle of good habits leads to beneficial gene programs and good health. The opposite is also true. You may currently have bad habits, like too much junk food, which induce gene expression programs that promote risk for age-related disease, but with repetition, the establishment of new, "good habits," like a plant-rich diet, will change gene expression programs that promote health and I wrote about this at length in my books "Super Genes" and "The Healing Self."

At the end of the day, by altering our gene expression programs through our daily conscious choices, we have the power to slow the aging process, improve our mood, stave off anxiety and depression, aches, pains, get better sleep, et cetera.

The genetics of Alzheimer's disease is very interesting. It exhibits a clear dichotomy. On one hand, we first discovered these gene mutations that guarantee the disease, usually under 60 years old. Fortunately, these so-called fully penetrant gene mutations only account for 3 to 5 percent of Alzheimer's. Meanwhile, we also found 30 other genes where the mutations do not guarantee the disease, so lifestyle interventions make a difference in 95 percent of those at risk for Alzheimer's. In support of this statement, a large study was recently published by Lourida et al. in JAMA that concluded: "A favorable lifestyle was associated with a lower dementia risk [even] among participants with high genetic risk."

The same is true for other age-related chronic diseases, and it is generally the case that on common, age-related, complex genetic disorders such as Alzheimer's disease, heart disease, diabetes that 3 to 5 percent involve mutations that guarantee the disease, but 95 to 97 percent are genetic factors that are modifiable by lifestyle.

I will now conclude with brief recommendations for lifestyle that have the potential to reduce age-related chronic diseases. For this I use the acronym SHIELD, which has gotten a lot of popularity lately. It was just on the "Today" show and "NBC Nightly News" a couple of weeks ago, so, briefly, S stands for sleep, 7 to 8 hours sleep, helps clean the brain.

H is handling stress, taking on a meditation practice, also great for the brain and body.

I is staying interactive with friends, staying socially engaged with friends.

E is for exercise, which induces new nerve cell growth to strengthen brain regions affected in Alzheimer's.

L is for learning new things, not just playing brain game but learning new things and making new synapses. The more synapses you make in your brain, the more you can lose before you get into trouble.

Finally, D is for diet. The Mediterranean diet has been shown to be most advantageous for preventing Alzheimer's disease. It feeds your gut microbiome with plant fiber, and your gut microbiome helps keep your brain healthy from inflammation.

In summary, while we await the medicines that will prevent and treat Alzheimer's disease and other chronic diseases, it is my hope that research will be accelerated into lifestyle interventions. I also hope that we can proactively educate the American public about using plans like SHIELD to improve their brain health and reduce risk for brain disease and we need to let the American population know that, despite their family history and personal genetics, in the vast majority of cases, lifestyle and behavioral changes have the potential to preserve and promote brain health and prevent age-related diseases—not only Alzheimer's, but also heart disease, diabetes, and cancer.

Thank you for your attention.

The CHAIRMAN. Thank you, Doctor.

Dr. Hughes, welcome.

STATEMENT OF SUSAN HUGHES, Ph.D., DIRECTOR, CENTER FOR RESEARCH ON HEALTH AND AGING, UNIVERSITY OF ILLINOIS AT CHICAGO, CHICAGO, ILLINOIS

Dr. HUGHES. Good morning. I am Dr. Susan Hughes. I direct the Center for Research on Health and Aging at the University of Illinois at Chicago. Am I on?

The CHAIRMAN. Doctor, forgive me. If you could just——

Dr. HUGHES. Talk into——

The CHAIRMAN. Right, just bring it in a bit.

Dr. HUGHES. All right. I also direct our Midwest Center for Health Promotion that is funded by the National Institute on Aging, and I am a founding director of the Evidence Based Leadership Collaborative. I would like to thank you so much for this opportunity to talk with you today about healthy aging.

Today I would like to address physical activity, describer our Fit & Strong! exercise program, our experience translating Fit & Strong! into practice, and the importance of the Older Americans Act renewal for maintaining advances in healthy aging.

Substantial evidence currently supports the importance of physical activity for healthy aging, yet engagement in exercise among older adults is still sub-optimal. Currently, 35.8 percent of seniors engage in recommended levels of aerobic exercise and 16.7 percent in resistance training. Engagement is considerably lower in minority seniors.

We also know that 27.5 percent of older adults are sedentary, a development that is highly correlated with increased levels of obesity, incidence of Type 2 diabetes, cardiovascular disease incidence and mortality, and all-cause mortality.

On a more positive note, a recent meta-analysis found that any physical activity, regardless of intensity, is associated with a lower risk of mortality. We also know that short bouts of exercise are as effective as spending hours on a treadmill. Both findings matter because the current CDC physical activity guidelines may be daunting for older adults.

What can we do to change the situation? Understanding why older adults are sedentary could help. I began my research career working with homebound older adults in Chicago who reported that arthritis was their most common chronic condition and the condition that interfered most frequently with their functioning. I then examined the relationship between joint impairment and function

over time in 600 older adults and found that lower-extremity joint impairment was the pathway through which disability developed.

To disrupt this cycle, we designed Fit & Strong! for persons with lower-extremity osteoarthritis, or OA. The program meets three times a week for 90 minutes. Each session incorporates flexibility, aerobics, and lower-extremity strength training, followed by health education to help participants manage OA with physical activity. Our clinical trial of Fit & Strong! found that it improved physical activity engagement at 8 weeks, the end of the program. Participants maintained this improvement at 6, 12, and 18 months, and also experienced improved joint pain and function as well as improved mobility and strength. These effects matter because impaired lower-extremity strength is a major risk factor for falls, and impaired mobility is a risk factor for both falls and mortality.

These findings indicate that persons with OA clearly benefit from the program. They raised the question of a possible impact on hip and knee total joint replacement surgery on which we currently spend $72.5 billion annually. If we could delay the surgery, this could potentially save millions of dollars and keep people with OA active. Fit & Strong! is now being offered in 32 States. This happened because of health promotion funds in the Older Americans Act.

Title III D funding is vital and should be increased in the future, if possible. Unlike chronic disease management or falls prevention programs, physical activity programs do not have designated funding and must compete for Title III D funds. I recommend, given the fundamental power of physical activity programs to improve healthy aging, that they be assigned their own funding stream in the future.

To summarize, physical activity is essential for healthy aging. I urge you to support the reauthorization of the Older Americans Act with increased funding for Title III D and new set-aside funds for evidence-based physical activity programs. I know that you are both strong supporters of the renewal legislation, and I want to thank you for your leadership.

The CHAIRMAN. Thank you very much, Dr. Hughes. I was going to point out that I am the chief sponsor of the reauthorization of the Older Americans Act, and I very much appreciate having your specific recommendations.

Ms. Dickerson, welcome.

STATEMENT OF DIANE DICKERSON, CHIEF EXECUTIVE OFFICER, BANGOR REGIONAL YMCA, BANGOR, MAINE

Ms. DICKERSON. Thank you, Chairman Collins and Ranking Member Casey, for the honor of speaking to you today on a subject that is very near and dear to my heart, both personally and professionally, and that is for three specific reasons.

Number one is that I lived with aging parents up until 6 months ago when they passed away at 91 and 96 years old. I know the joys of the aging process. I also know the heartache of the aging process. They passed away 18 days apart from each other after 70 years of being married.

My second reason is because, as of 2 days ago, I turned 65, and so I am now a legitimate card-holding member of the aging popu-

lation, and number three, and most importantly for today, is I am the proud CEO of the Bangor Region YMCA, and I am honored each and every day to serve the community, from babies all the way to our senior citizens. It is absolutely joyous to see our multigenerational efforts at our Y and watch a 2-year-old shuffle across our lobby to the pool for a swim lesson while passing a 92-year-old shuffling across our lobby going the other way to a chair yoga and balance class and they smile at each other and literally give each other a high five along the way. It is quite an experience to watch.

As you know, Maine is the oldest State in the country, and so all of our YMCAs throughout the State have a social responsibility to the needs of our senior community. Our Y serving the Bangor region is focused on the mental, the physical, and the spiritual side, and how all are interconnected to the aging process.

We have more than 100 group fitness classes a week on land and in our pools that will keep seniors feeling physically healthy, increase their strength, improve their mobility and their balance and their flexibility and decrease their stress and certainly encourage a very important social network.

We also offer programs for individuals with specific conditions and ailments. Our Phase III Cardiac Rehab Program is a community-based program in partnership with our local hospital, Northern Light Eastern Maine Medical Center, and is for those who have been affected by a cardiac event and is designed to further strengthen their aerobic capacity, their flexibility, and overall movement for participants. We have had this program for over 45 years, as I said, and it has been extremely successful.

Our LIVESTRONG program is an evidence-based fitness program to promote the importance of physical activity with those with a cancer diagnosis. This is a free 12-week program that we provide to people, and it truly increases their ability to deal with the cancer diagnosis and the medication that they must go through along the way. The best news about that is that after the 12-week program is over, 98 percent of them join the Y to continue that process because they felt and lived the positive impact of it.

For those seniors suffering with arthritis or similar conditions that may limit their movement, we have a joint venture class and others that are designed specifically to reduce pain and increase the range of motion through all the joints in the body in an effort to improve overall wellness.

Then we have our Pedal for Parkinson's and other special programs that are designed for this very devastating disease. It is a debilitating disease that we really work to increase the activity and stimulate the movement, increase their balance, and help them live as normal a life as possible. I submitted to Senator Collins' staff a video of a gentleman who has Parkinson's in our Y, and he expresses how much the Y has changed his life in that process.

Our newest addition, one that I am very, very close to, is our Alzheimer's Program. We are in partnership with the Alzheimer's Association of Maine and Jackson Lab who is doing amazing work on the Alzheimer's process, thanks to you, Senator Collins, for your funding efforts, so we at the Y will be introducing in 2020 The Bangor Y's Brain Health Initiative. This will be designed to help the person afflicted with this disease, as well as the caretakers and the

families. I know firsthand how devastating this disease is to a family. As I told you earlier, I lost my Mom 6 months ago, but I did not tell you that I lost her to Alzheimer's and the truth is that I really started losing her 6 years ago when this disease took away the strongest, the kindest, the funniest, and the most engaging person that I have ever known in my life whom I so honored and proud to call my Mom.

All of these health initiatives cannot stand on their own, however. We must have the social and educational component to really maximize what we provide to our seniors. We have a Second Wind Social Club that does all kinds of things from parties to card playing to movie nights to dinners to special excursions to our national parks and so on. We work with our Bangor Historical Society, and they provide tours and special events and, most recently, we have just aligned with the Senior College of Maine so that our seniors will be able to take classes right at our Y and to expand their knowledge base.

We at the Y believe that aging is not losing your youth but, rather, a new stage of opportunity and strength. We believe that it is our duty to provide that opportunity, to relish and to flourish, to move and to dance, to laugh and to learn, and, most of all, to know how important they are and how valued they are as members of our Y family.

Thank you so much.

The CHAIRMAN. Thank you very much for sharing your personal story and for the great job you do at the Bangor Y.

Ms. DICKERSON. Thank you.

The CHAIRMAN. Mr. Long.

STATEMENT OF BRIAN L. LONG, LEAD COORDINATOR, PENNSYLVANIA LINK TO AGING AND DISABILITY RESOURCES SERVICE AREA 13, AND VOLUNTEER REPRESENTATIVE, SOUTHCENTRAL REGIONAL COUNCIL ON AGING, LANCASTER, PENNSYLVANIA

Mr. LONG. Well, good day, Chairman Collins, Ranking Member Casey, and members of the Committee. My name is Brian Long. I serve as the lead coordinator for the Pennsylvania Link to Aging and Disability Resources in the service area of Berks, Lancaster, and Lebanon counties in south-central Pennsylvania.

Pennsylvania calls its Aging and Disability Resource Center Program the "Link to Aging and Disability Resources," but you all have it in every State in this country, thankfully.

Thank you for the opportunity you are giving me to testify before the Committee about my experiences and observations about "healthy aging" issues.

I am one of the coordinators of the 15 service areas who is in regular contact with persons who are age 60 and older, persons with a disability, veterans, family members, and caregivers.

I am also a volunteer on one of the regional councils of the Pennsylvania Council on Aging, which serves as an advocate for older individuals and advises the Governor of the State and the Department of Aging on planning, coordination, and delivery of services to older Pennsylvanians. In these roles, I listen to people's stories. I ask for their opinions. I connect with them, and I connect them with resource providers in our ADRC network.

As a person over age 60 by a long shot, a person with a disability, and a veteran, I feel I relate and empathize with persons who need long-term living resources and information.

I am more fortunate than many of the people I work with. The cases that are most challenging for me are the ones also where I have limited ability to help.

Most of the time, if someone requires additional help like putting food on the table or getting a ride to the doctor, I can help connect that person with resources, but there are certain barriers that make it difficult for me to do my job of helping others.

Hearing loss, for one, is faced by nearly two of three older Americans. Many returning veterans have or will have hearing loss, as I do, but the Veterans Affairs Medical Center in Lebanon provided hearing devices, hearing assistance for me. That is not the case for so many people over age 60. I always will remember the face on the gentleman, a 60-something-year-old guy, when a senior center manager called me and said, "Can you help us by getting hearing aids for this person?"

Well, one of our ADRC partner agencies provided a set of previously owned hearing aids, and the senior center manager and I went outside with him and put the hearing aids in. He said, "I can hear the birds." He said, "I can hear you breathe." I mean, it was so emotional for all of us. We went outside because we did not want to be in the senior center with other people as well. Hearing aids are out of reach for so many people because there is no coverage requirement in Medicare or Medicaid.

Vision acuity is another disability that many people reckon with as they age. I know a 76-year-old woman who lives on minimum Social Security. She needs cataract surgery, but she cannot afford it, and Medicare will not cover all of the surgery charges, and she does not have the finances to do it, so many seniors struggle to afford vision care. Our eyes are our windows to the world. We should not be shuttered in old age.

Partial and total tooth loss affects a larger number of people, particularly if they come from disadvantaged populations. We know that the absence of regular dental care and treatment can lead to disastrous health consequences.

Again, affordability is the factor.

The issue of coverage for dental, vision, and hearing services is about healthy aging. Without access to these services, we know that older adults have a greater likelihood of experiencing social isolation or connected mental health issues, becoming a victim of scams, having difficulty accessing transportation resources, struggling to adhere to their prescription medicines, encountering hazards in the home. Every contact between a person with a disability, every conversation with somebody about aging challenges, every call, every email, or every text message from a family member looking for resources presents an opportunity for one of our ADRC partners, a Council on Aging volunteer, or an ADRC coordinator to step up and find the resources that will help people with healthy aging assistance. I can only do so much from where I work, but there are changes that can be made at the Federal level that would help me serve older Americans and people with disabilities.

I know that Senator Casey has introduced legislation that would expand Medicare and Medicaid coverage to include dental, hearing, and vision care. This, in my judgment, is a must-do. There is no reason to delay. With the growing baby boomer population, as you identified, Senator Collins, these issues are going to become more and more prevalent.

We must also ensure that the network of ADRCs have the resources necessary to serve everyone. Most people have never really heard of ADRCs, but they are so thankful to know that there is a network out there that can help. ADRCs are a lifeline to healthy aging for millions of people across the country. I know for sure that is true in Pennsylvania.

In closing, Chairman Collins and Ranking Member Casey, I am honored to have had the opportunity to present this testimony before the Committee today. I am happy to respond to any questions or concerns you may have. Thank you.

The CHAIRMAN. Thank you very much.

Dr. Tanzi and Dr. Hughes, let me start with both of you. Biomedical research funding has been a real passion and priority of mine. Over the last 4 years, Congress has increased funding by 30 percent for the National Institutes of Health. Building on that success, this year's appropriations bill, which we have approved in the Appropriations Committee, would increase NIH funding by another $3 billion.

Could you explain to us why this investment is so important? I know you get other sources of funding as well, but if you could talk about NIH funding and what it means to your ability to come up with the extraordinary findings that you have outlined for us today. Dr. Tanzi and then Dr. Hughes.

Dr. TANZI. Yes, you know, in research, we learn as we go. We are challenged by a lot of unknowns, and so we make a lot of mistakes and a good scientist learns from mistakes.

For example, in Alzheimer's disease, the first genes we found all told us amyloid was the target, the plaques and they still are, but over the last two decades, we targeted them too late. They initiate the disease 10 years before symptoms. By the time a person has symptoms of dementia, it is neuroinflammation that is killing most of the neurons, and you are trying to put out a forest fire by blowing out the match that started it. We had to learn that along the way with many trials and lots of research.

I think cancer, heart disease, and AIDS has shown us that the more money you put into research on a disease, the faster you will beat it and for a long time, for example, Alzheimer's was, you know, very underfunded and we are so grateful that now funding is almost up to $3 billion and we are seeing the differences, because now we are seeing the research that looks into neuroinflammation and other pathways so that we do not throw amyloid away, we will target that early, but what can we do with patients right now? We are learning from genes we discovered for neuroinflammation how to track that.

I think it is very important to have funding for many, many backup plans so that we have as many shots on goal as we can.

The CHAIRMAN. Thank you.

Dr. Hughes?

Dr. HUGHES. Thank you. I am delighted to have this opportunity to respond to that question. I think it is important for everybody to understand that the National Institutes of Health are basically our engine in the United States for innovation and, you know, without the funding for those institutes, all of the incredible research that we are currently doing would stall, you know, and it would be disastrous.

We have been very fortunate to have our Roybal Center re-funded five times by the National Institute on Aging. We develop evidence-based health promotion programs with those funds. Some of them include—one is Fit & Strong! Another one is Health Matters. That is for people with intellectual disabilities. It is currently also being offered all over the country and in many countries outside the U.S.

The funding that we provide to young investigators at UIC from the Roybal Center is absolutely pivotal to getting them interested in aging and launching them on a lifetime career of commitment to and engagement in aging research, so it is incredibly important. The ADRC, no funding for it. The National Institute on Aging is incredible. We got a supplement to our Roybal Center, and it basically has enabled us—we now do physical activity programs. We look at the impact on cognition. We are also now able to do MRI imaging so that we can compare, you know, what is happening in terms of function to what is actually happening, you know, in the brain. It is just kind of a leap forward, and it would not have been possible without that increased funding.

The CHAIRMAN. Thank you.

Ms. Dickerson, I feel like you are on the front lines. You are translating the research into practice in many ways. By giving seniors the opportunity to participate in physical and social activities in an enjoyable, safe, and friendly environment, the Y represents all that we are talking about with healthy aging and it also represents community.

In Maine, like many other States, we have a lot of seniors who are isolated. They may live alone. Their health may not be very good. They may be on a back road. How do you reach those seniors who are living alone who may have limited mobility?

Ms. DICKERSON. One of the things that I can say is that word spreads fast amongst seniors. Giving you an example, I was having a focus group and chose 15 seniors, and all of a sudden, 75 showed up because they all wanted to tell me what they needed to say.

What we have started was a buddy system amongst our seniors, and we have also incorporated our teen center into that and what that is - is that another senior will make the effort to bring another senior into the YMCA.

We also have vans that we will pick up those seniors that are in isolated areas because, you are so right, transportation is a critical issue and we even now have been having our teenagers go through a training program so that they know how to drive the buses so that they can also pick up seniors, so that they have that multigenerational mentoring aspect along the way.

We reach out to doctors. We reach out to every senior group possible. We reach out to churches and other groups to get the word out there that we have these programs to offer at the Y and that

we will absolutely get them there one way or another to serve their needs.

The CHAIRMAN. That is great. Thank you.

Senator CASEY. Thank you, Chairman Collins. I will start with Brian Long.

Brian, your work connecting older adults and people with disabilities to the services and supports they need is critically important. We commend you for that work. In your very moving story about that one older adult who received the hearing aid for the first time, saying, "I can hear the birds. I can hear you breathe," it must have been a powerful moment for you and it was a moving story for us to hear, and we need stories like that to bring—it becomes much more than a policy discussion when you talk about that kind of reaction. I guess you probably bring similar success stories along the way, and your work at the Council on Aging is important for us to learn more about.

I guess I wanted to stay with that issue of just hearing loss. Can you share with us more about that issue itself as discussed through the council?

Mr. LONG. Sure. I think that what happens with hearing loss, as a person who has hearing loss, I had known I had hearing loss for years; it is just that I chose to ignore it, because if you are in a big room and there are a lot of people talking, you do not really hear. You just nod your head and agree, so many people really live that life.

I talked with a guy just last week, actually, who was in a car crash, and he asked me about hearing loss because he lost hearing in one ear as a result of a car crash, going through his life, and it is just like that, but we talk with so many people in municipal meetings, school board meetings. The people who attend, for the most part, are older Americans—in Pennsylvania, anyway, that is true and many of them just cannot hear what is happening because you know what the council chambers are like in school boards. They are cavernous things, and they do not have audio systems.

I find that people do not go out as a result of having hearing loss. They do not go places because they do not want—they do not want to appear to be looked at or looked down on. It is a stigma that is attached with hearing loss in many cases.

Senator CASEY. I guess the other part of it is it can lead to other issues. I do not know if you want to highlight that, but that is significant as well, that it is not just something isolated to that one problem. It can lead to other issues.

Mr. LONG. Yes, what happens—I mean, I visit and we do trainings for a number of—for any population, frankly, but I visit a lot of affordable housing units; I visit a lot of personal care homes and nursing homes and one of the things that we find with folks there is they do not want to go out. They do not even want to go out of their rooms sometimes because they feel embarrassed because they have got no teeth. I talk with so many people who do this all the time and these physical handicaps that come into play for people at later points in life, they are debilitating, and they are also embarrassing for many of them.

We want to make sure that we—nobody should have to live sequestered in a cave or a cavernous environment because they can-

not participate. I look at hearing and I look at vision and teeth as participative assets.

Senator CASEY. Dr. Tanzi, I want to go back to your SHIELD model. You mentioned the importance of staying socially active and keeping one's mind engaged. However, as people are losing their hearing, they may be less able to converse with others, as I just highlighted.

The same is true for people who have a vision loss. That as well can lead to other issues, including social isolation, and it is also connected to higher rates of depression and dementia.

I wanted to ask you to speak about the intersection between the three—dental, vision, and hearing loss—and cognitive function.

Dr. TANZI. Yes, the connection is huge. If we think about hearing loss, I cannot tell you how many talks I give when I give public lectures. After I give the lecture, folks will come up to me from the audience and say their loved one has Alzheimer's and it began with hearing loss and you try to think about. I have talked about that connection for years, and then it comes down to what you just pointed out and Chairman Collins pointed out earlier in the opening remarks, that loneliness—not being alone. If you are alone and like it, that is fine. Loneliness is a stress, and it increases risk for Alzheimer's disease twofold and that has been shown in meta analyses. It is a pretty valid result. If you cannot hear very well—and I think, you know, Mr. Long made the point—you are less likely to be social. You do not want to go out. You are in a crowd; you feel isolated and now you are not getting that stimulation and intellectual input to build new synapses.

When we think about what Alzheimer's disease is, we talk about plaques and tangles and inflammation. What correlates with the degree of dementia is loss of the connections between nerve cells, the synapses, so you have 100 billion neurons and about 10 trillion synapses. I tell people, "When you are going to retire, do not just think about your financial reserves. Think about your synaptic reserves. Build more synapses, learn new things," because that reinforces your brain and neural networks, and that means that, you know, when you start to lose synapses, you have more in the bank, so to speak.

Now, if you cannot hear very well or you are being socially isolated and you are not engaging with others, you are not going out to the local community center to be stimulated, that is bad for the brain, and a lot of people do not realize that.

You also mentioned about dental care. Well, you know, our mouth is the main source of pathogenic bacteria in our body, and there is a clear link between periodontal disease and heart disease. Now, as we have learned, much of the pathology in Alzheimer's, our lab has shown, particularly the work of Rob Moyer, that the plaques and the tangles, why are they forming in the first place? It is looking like they may be trying to fight infection in the brain. We think about our brains as sterile, but if you look in the brain, there is actually bacteria there, viruses, fungus and it looks like the plaques and tangles are trying to fight that and it is possible for periodontal bacteria to make its way not only down to your heart and cause cardio issues, but into your brain and now you

have to make more of that Alzheimer's pathology to fight it that is eventually going to trigger inflammation and lead to symptoms.

I think the points you raise are not really stressed enough or really understood enough, and we need to make people understand them more in this country.

Senator CASEY. Thanks very much.

Dr. TANZI. You are welcome.

The CHAIRMAN. Senator Braun.

Senator BRAUN. Thank you, Madam Chair, and thanks for another great topic of discussion.

I want to make a statement about health care in general and why this is important to me. I am now in that category of being somewhat aged, and what a blessing it is when you have taken a holistic approach to life to where somewhere back in the distance I knew how you treat your body and how you feed it is going to be an investment for when you have the time to enjoy life, you are able to do it.

I want to also talk about the fact that our health care system in general is broken. It is monopolized by an industry that has evolved not toward well-being but toward remediation and until we change the whole mind-set, we are going to sadly be spending so much money remediating to where the single biggest thing we could do is to preach at an early age, you know, what you are talking about.

I will give you a little example of how it works. For me, I was still trying to play basketball into my early 30's and popped up with a form of arthritis, and I knew that was the vector of what was making me feel pain each evening, but then I quit doing that, was attentive to mild exercise every day and healthy eating, and knock on wood, you know, it has put me in a place now where I feel as good as I did in my 20's.

Let us get back to the industry itself. Until we start at an early age promoting a holistic way, I do not think we are ever going to break the cost curve that currently besets everyone's well-being. In my own company, 11 years ago I drastically changed how we address health care, and that was to change it from remediation to prevention, and also in no other way to get my employees engaged in their own well-being, created the incentive so that they do have some skin in the game from dollar one in the system that I built.

In that system, my employees have not had a premium increase—I had to resign as CEO, by the way, on December 31st of 2018, but that is the experience I bring here to talk about every day, whether it is in agriculture, health care, infrastructure, or whatever. We found a way to cut costs, and by doing it and having our employees engage in their own well-being, there has not been a premium increase in now 11 years. We cut costs out of the gate roughly 50 percent. I require that you take a free biometric screening, or you are going to pay more for your health insurance and I discourage you from doing bad things like smoking; you are going to pay more for your health insurance.

I would like the opinion of—I think I want to start with—first of all, Mr. Long, thank you for your service. I notice that you served your country and then segued into an important category. How do we keep people healthy into their later years?

My question is for Dr. Hughes. Do you think we have got enough time to change the system to do the things you are talking about to where the industry itself will embrace prevention, not remediation?, because in a sense it shrinks the size of what we have got in terms of the health care industry. Do you see inroads being made?

Dr. HUGHES. I think we have the time and I think we have an imperative. I mean, we absolutely have to do this, and we have to do it now. We do not have an alternative. With all of the people who are coming down the pike and aging, we absolutely have to keep people healthy. We have to shift our focus. You are tracking somebody who is in a school of public health, so no question but prevention is the answer.

Just look at arthritis. We are spending $73 billion on total hip and knee replacement surgery that helps people, but why let them get to that point, you know, where they need that when we can give them preventive services like physical activity programs that can really help them maintain their functioning at an incredibly lower cost?

At the same time, we are not investing in these exercise programs. The amount of money that is currently going into Title III D, when you look at it on a per State basis, is very small, certainly very small compared to what is happening with respect to, you know, the Medicare funding that goes into acute care.

No question, we have to turn the system around. We have to fund prevention first, and we have to do it now. You know, we have to really work on this now because—yes.

Senator BRAUN. The main stakeholder should be the individual, and I found until we changed our insurance system and basically radically changed how we deliver it to emphasize that, we were not getting people to do it naturally. Employers, who are the biggest financial stakeholders in the whole current health care system, have got to wake up and start doing things that are different from what they are being sold by an industry that is increasingly dominated by large corporations that I do not think really have the incentive to change the dynamic. I know when I wrestled with it, I did not see that happening. I just have got to vent that because I think we have got a long way to go. I see them digging in here through all the committees that are trying to fix the current system to where it is going to be a battle.

Dr. HUGHES. I think Medicare Advantage programs could definitely be encouraged in terms of incentives, regulations, whatever; they can be encouraged to cover programs like Fit & Strong!, other evidence-based programs. It is a win-win in terms of, you know, they save money; their beneficiaries have better outcomes. They can use it for marketing purposes, and it is such a win-win. They can get a gold star for quality.

Senator BRAUN. Thank you.

Madam Chair, I have got to jump to another committee meeting. Anybody else want to jump in?

Dr. TANZI. Yes, a quick comment. You know, when I meet with insurance companies about the importance of lifestyle interventions, for example, along the lines of SHIELD, they say, "Where are the clinical trials?" and, you know, we have a lot of biological data

about what exercise does for new neurons being born in the brain and all of these things, but who is going to do the clinical trials on a lifestyle intervention?

At McCance Center, we are doing an exercise and sleep trial, but we really need NIH funding to start funding trials no one else is going to do to show the evidence to health insurance companies. Yes, in a clinical trial, sleep, meditation, exercise, diet does make a difference, and that is something you are not going to get companies to do, and so I think the Government maybe could pick that up and help us to do it.

Senator BRAUN. Go ahead.

Ms. DICKERSON. One of the reasons why we are working so closely with Jackson Lab and putting together this Alzheimer's Initiative at the Bangor YMCA is because we have been told that the Alzheimer's actually started 20 years before it becomes apparent. We want to be able to do whatever we can with our community during that 20-year period of time to find out what can we do differently. We know exercise can help. We know diet can help. We know socialization can help. We know optimism can help. We want to be a part of that during that period of time, and so we need to work together as a group—the Jackson Lab, the Alzheimer's Association—to try to find every way possible to curb what can happen during that 20-year period of time.

Senator BRAUN. Thank you. Brian?

Mr. LONG. As an older American, I have tried to practice and I try to encourage people I talk with that they can do anything. We are just going to do it a little slower than we did before, but we try to get our—I work with a group of people at one facility where we used a tai chi video, and I engaged in tai chi with them just to get them started on this thing, because some of these folks had a difficult time walking 10 feet.

Now, you know, you can say, can we undo some of the things? Yes, we can. We can undo things with coaching, with positive messages for many of the people who are there right now and have these difficulties, I think. I agree with you, when it comes to the imperative that employers have to use with their staff, that if we are going to have substance abuse—and that includes tobacco—then insurance is just not going to be there for you, or it is going to be really expensive.

Senator BRAUN. Thank you, all of you. Keep up the efforts.

The CHAIRMAN. Thank you, Senator. I know that you have to leave, so I tried to give you a bit more time since you will not be here for the second round. Thank you for being here.

Dr. Tanzi, in your book "Super Genes," you challenge the conventional wisdom that genes are your destiny, and you wrote, "In the vast majority of cases, your genetic destiny is not set in stone." That idea challenges the basic biology that a lot of us were taught over the years.

In light of the growing evidence that you have accumulated, I want to probe more deeply on this issue. If an individual is genetically predisposed to an age-related disease like Alzheimer's due to carrying a specific gene, to what extent do you believe that lifestyle factors can delay the onset? Are we talking about just changes

around the edges, maybe a little bit of a delay? Or is this really a significant breakthrough that that senior should adopt?

Dr. TANZI. Yes, so the idea behind "Super Genes" was to explain to the public about epigenetics, and that means that, you know, you are not going to change the DNA you are born with and you are inheriting around 50 or 60 million variations in the DNA versus everyone else from your Mom and Dad, and some of those will directly cause disease, so about 2 or 3 percent of disease gene variation is causative. We say "fully penetrant." It guarantees disease, and those are the very unfortunate cases in Alzheimer's and heart disease. It means you are going to get onset earlier, too, usually under 60. It has a familial pattern.

The vast majority of genes we have discovered—for example, all the ones we discovered for neuroinflammation, which is the biggest killer of nerve cells in the brain, those gene variants do not guarantee the disease. They just kind of put the immune system in your brain on a hair trigger or the knife's edge, so they are ready to—your threshold is lower, so that once you eat too much junk food or do not get enough sleep or you are not exercising, those genes will say you are more likely to now get inflammation and start to go downhill, but you can do something about it. It is good to know that you are on the knife's edge, and you get the kick in the pants to say, "Wow, I do need to exercise more. I do need to get 7 to 8 hours of sleep," even if it with naps during the day. "I need to change my diet to be more healthy."

When we started the Cure Alzheimer's Fund, for example, our mantra then and now is: Early prediction of disease, early detection, early intervention. Early prediction means know your family history, know your genetic risk so you know what you are up against. Early detection, know at what age you need to start looking at where the pathology is creeping up, for example, as Ms. Dickerson said, about 20 years before symptoms Alzheimer's begins. Then early intervention, so hopefully someday we will have the meds for our lab and other labs that will nip this pathology in the bud, but in the meantime, it is lifestyle that will make a difference for 95 to 97 percent of gene variants that you inherit from Mom and Dad that says the disease runs in your family, and if the American public knows that, they will not give up hope. They will be incentivized to do what they need to do to stave off disease.

The CHAIRMAN. Well, that is just an extraordinary statistic and is one of the reasons we wanted to hold this hearing today to get the word out.

You made a comment about amyloid plaque earlier, and, you know, so much of the research has focused on amyloid plaque and tau, and I think we need to broaden the horizon, which we are able to do now because, when I first founded the Alzheimer's Task Force in the Senate, we were spending only $400 million a year on the most costly disease that we have, not to mention one of the most devastating. If this bill goes through, the appropriations bill goes through, we will be up to almost $2.7 billion a year, and what a difference I think that will make.

I also cannot help but think that a lot of those clinical trials might not have failed if the pharmaceutical drug were tried much earlier in the disease——

Dr. TANZI. Yes, that is right.

The CHAIRMAN [continuing]. rather than with people who already had so much cell death in their brains and were at the stage of moderate to severe, but I am not a scientist, obviously, but I do think that we can make a difference.

Ms. Dickerson, I am curious because, as you know, we share a common commitment to defeating Alzheimer's disease. How did you decide to develop an Alzheimer's Program at the Y?, and how do you envision it working?

Ms. DICKERSON. Again, being in a State with such an older population and we do know that Alzheimer's can come to those that are older, and we also are in a State that in the past—I like not to say in the present or the future, but I do not think that healthy diet was a real long suit of the State of Maine. We are just seeing more and more of our population leaning toward that Alzheimer's direction.

Of course, my own personal experience certainly gave me the fire and the passion, and I have several members on our board of directors, one of them Mary Hart, who I know spoke to you as well, whose husband has early onset Alzheimer's. There is a fire in all of us to try to bring more knowledge and information and education to this process.

The reason we are partnering with Jackson Lab and with the Maine Alzheimer's Association is because we are not the scientists and we are not the brains behind this disease, but we want to work with them to help us know what we can do every single day to try to bring a reduction of the onset of Alzheimer's in our individuals.

We know that physical activity is critically helpful. We do that so well. We know that socialization is critical. We do that so well. We know that diet is to helpful. We do seminars all of the time about this area of focus. We believe that this is one of the most important things that we can be doing in our Y to help serve our community.

The CHAIRMAN. Thank you.

Senator CASEY. Thanks so much.

Dr. Hughes, I wanted to start with you. The Chairman and I represent States that have a high senior population. Her State of Maine is a little bit ahead of Pennsylvania, but we are not far behind. We encounter a lot of these issues on a regular basis, even if we were not members of this Committee.

One thing we know—and we all experience this or see this no matter what State we are from—is that seniors as they age are more likely to develop issues with both hearing and vision, as we have highlighted today. We are told that something like one-third of Americans 65 to 74 have hearing loss. In a future hearing, we hope to hear from a Pennsylvanian who is in her 80's and who is legally blind. She will explain to us that she is very physically active through programs like Fit & Strong! As you outline in your testimony, research shows that people with vision and hearing loss have lower levels of physical activity. You have developed a model of your own specifically for people with low or no vision.

Here is my question: If Medicare offered a standard hearing and vision benefit to seniors, do you think that more people would participate in evidence-based programming like Fit & Strong!?

Dr. HUGHES. I do not think there is any question but, you know, that there would be greater participation. When we developed the low-vision/no-vision version of Fit & Strong! working with the Lighthouse for the Blind in Chicago, the first thing we did was to do focus groups with potential users, and when we did the focus groups, we found that the folks with low vision felt very, very challenged by existing physical activity programs. They would go to senior centers. None of the staff there would pay any attention to them. Nobody helped them to use the equipment. They were basically just kind of—they would stumble around, and they even had difficulty getting to the senior center in the first place because even negotiating their neighborhoods and traveling and so on and so forth is a huge access issue. We asked them, you know, where do they usually exercise, and usually they exercise in the hallways of their apartment buildings because they are safe.

We think that vision loss is a very, very important barrier. No question, it should be included—we should be addressing it. These are very, very basic impairments—vision, hearing, dental—that should be included in Medicare going forward.

Senator CASEY. Doctor, thanks very much.

Mr. Long, I wanted to come back to you. I do not want to take you through a geographic recitation of the parts of our State you work in, but if you are traveling through Berks County, Lebanon County, and Lancaster County, you have got serious territory to cover and a lot of diversity. We have got significant-sized cities in those communities like Reading in Berks County and Lancaster in Lancaster County. Lebanon County has smaller towns, but still Lebanon itself, the city, is significant and then you also have vast rural areas, a lot of agricultural communities, and a lot of small towns.

When you are traveling through that vast region of Pennsylvania and you are delivering presentations on healthy aging, can you share with us some of what you both hear and what you talk about, the topics that you talk about and how they are related to promoting healthy aging, and what you hear in response?

Mr. LONG. I hear things from people talking about affordability of medication for one. I just heard that one yesterday a couple of times.

I hear things, particularly in the rural parts, about the absence of reliable transportation, particularly for people who have vision loss or mobility loss or hearing loss, because it is really difficult to get to services and to get to providers of services. I mean, in our partners, we have YMCAs, YWCAs, rec centers as partners, but, you know, if you just do not feel comfortable or you cannot get there, you cannot participate. That is the killer in rural parts of the world and as you know, I mean, Lancaster and Berks counties have been high-growth, and it is difficult getting from one to the other. I now allocate almost an hour just to get to meetings.

I hear all of those things, and I hear—I go to a great deal of Alzheimer's support meetings, too. I need to hear what people are saying all the time. In fact, 1 day I went to volunteer at a memory care unit just to help and find out what people are dealing with and talk with people. I have a number of friends who have dementia, so I hear all of the things, but I hear the things that lead up

to these things—access and hearing loss and vision loss. These are things that are impediments that are out there that will lead to a worsening outcome as you age. They just do.

I would like to find transportation assistance, I would like to find medication assistance, I would like to find hearing and vision and dental assistance for the folks that talk with me. I am kind of nosy. I ask everybody questions all the time.

Senator CASEY. Thank you for that.

The CHAIRMAN. Thank you, Senator Casey.

I want to once again thank all of our witnesses for sharing your expertise and experience with us today. We have learned a lot about the importance of living and maintaining a healthy lifestyle to stave away declines associated with aging. We have also learned the critical importance of having resources to support that mission.

I find it so exciting to learn that each of us controls our own destiny to a certain extent, and that the programs, whether it is Fit & Strong! or the Y's programs or Mr. Long's programs, can really make a difference in our communities.

I do not think, however, that most Americans know that, and that is why during Healthy Aging Month, which this is, I wanted to hold this hearing. Awareness is increasing, but I hope as the BOLD Act, which is a bipartisan law that I wrote, goes into effect and gets funded with grants to State public health departments, that we can have more public education around the country on the need—on what we can do to stave off these degenerative diseases and live healthier lives, but also the importance of early diagnosis, treatment, assistance to caregivers, all of that I believe is so important and will be enhanced by our taking a public health approach to what is a real crisis since Alzheimer's, if we go on the current trajectory, is going to bankrupt our country, and not to mention the devastation that it causes for so many families. Like Diane, I lost my father last year to the ravages of that disease, and it runs very heavily in my family, having lost my grandfather and two uncles to Alzheimer's also. As you poignantly put it, it really starts many years before that you start losing your loved ones. It has been interesting to do comparisons in my own family and differences in diet and the age of onset, and there does seem to be a link there since they all exercised.

I think we can learn so much from the research that is ongoing, and the programs that you are doing at the State and local level are just so important.

This also is important given the aging trends in our population. Maine is the oldest State by median age in the country. As you mentioned, Pennsylvania is not far behind, but that is true of virtually every State except Utah, which has a very young population. We need to accept that this is a challenge that is going to affect our entire country as people are living longer, which is a good thing.

Thank you for increasing our understanding. Thank you for the work that you are doing. It really matters.

Senator CASEY. Thank you, Chairman Collins. I want to thank you for holding this hearing, and we all received reminders, and certainly reminders that I needed, about, just by way of example, diet and exercise. I was——

The CHAIRMAN. Sleep.

Senator CASEY. And sleep. I was paying attention to all of them, so I have got to try to get a head start here, but we are grateful because we know the challenges that folks face when we are aging, and we also know what we can do to provide opportunities for healthy aging. Part of that is programmatic and policy in terms of Medicare, Medicaid, Social Security, and the Older Americans Act, as I mentioned, how important that programs are for healthy aging, but this is not the case for everyone. Our witnesses today have given us evidence that we need to support policy improvements that will allow even more individuals to reach that milestone age of 100. May it be said that we have—we are having more people reach that age. I hope we are able to turn these policy recommendations into reality.

I think, Ms. Dickerson, you said it well in the last part of your testimony when you said, "Aging is not losing your youth but, rather, a new stage of opportunity and strength." That is a darn good summation of, I hope, the work that we do in this Committee and the work that we should be doing going forward, not just on aging itself but, of course, on healthy aging, approaching these issues with that attitude, that it is a new opportunity, a new stage of life.

Madam Chair, thank you for this hearing, and I thank our witnesses.

The CHAIRMAN. Thank you.

Committee members will have until Friday, October 4th, to submit questions for the record, so you may find some additional questions coming your way.

Again, my thanks to our great witnesses, to the Ranking Member, and to the Committee members who were able to come today. Unfortunately, there was an awful lot going on today, but I can assure you that many of them will look at your testimony and have received the materials.

I also want to thank our staff without whose assistance we would be unable to put on these hearings and do these investigations. Thank you.

This concludes the hearing.

[Whereupon, at 11:42 a.m., the Committee was adjourned.]

APPENDIX

Prepared Witness Statements

Testimony of Dr. Rudolph Tanzi
Joseph P. and Rose F. Kennedy Professor Neurology
Harvard Medical School

Vice-Chair, Neurology
Co-Director, McCance Center for Brain Health
Massachusetts General Hospital

Promoting Healthy Aging: Living Your Best Life Long Into Your Golden Years
U.S. Senate Special Committee on Aging
September 25, 2019

I want to thank Chairman Collins, Ranking Member Casey, and other Members of the Special Committee on Aging, including Senator Warren from my home state of Massachusetts, for the opportunity and privilege of discussing the role of genetics and lifestyle in promoting healthy aging into our Golden Years.

My name is Rudolph Tanzi. I serve as the Joseph P. and Rose F. Kennedy Professor of Neurology at Harvard Medical School and Vice-Chair of Neurology and Co-Director of the McCance Center for Brain Health at Massachusetts General Hospital. I also serve as Director of the Alzheimer's Genome Project supported by the Cure Alzheimer's Fund, one of the highest impact Alzheimer's disease research foundations in the world.

I have dedicated my entire career to studies aimed at preserving and promoting brain health and preventing brain disease. Over the past four decades, I have discovered and charactering numerous genes influencing susceptibility for Alzheimer's disease, including the first three. I have used knowledge gained from these genes to develop new therapies for treating and preventing Alzheimer's disease. Some of these new drugs are already in clinical trials in Alzheimer's patients. I have also published over 500 original research papers on Alzheimer's disease and brain health and have written three best-selling lay-level informational and self-help books on brain health, genetics and immunity.

I will focus my remarks today on how we can best maintain brain health and resilience against age-related diseases, including neurological diseases such as Alzheimer's disease, as well as other chronic diseases including diabetes, heart disease, and cancer. Approximately 8 in 10 older adults in the United States have a chronic disease, and 7 in 10 have two or more. Chronic diseases are the leading cause of death and disability and the leading drivers of the nation's $3.3 trillion in annual health care costs. Alzheimer's disease, the most common form of dementia in the elderly, currently affects nearly six million Americans. The cost of this disease to our country is approaching 300 billion dollars per year. Half of Americans over 85 years old exhibit Alzheimer's symptoms, 2/3's of which are women. With the American lifespan now up to nearly 80 years, this disease is a burgeoning epidemic that could someday single-handedly collapse our healthcare system.

As modern medicine has extended lifespan, unfortunately, our healthspan has not kept up, resulting in rampant increases in the incidence of age-related diseases. How can we stem the tide of Alzheimer's and other chronic diseases? The research is promising and turns traditional notions about disease upside down. Not too long ago, we were taught that the effects of the genes you inherited from Mom and Dad are fixed and unchangeable. But new research, in the burgeoning field of epigenetics has demonstrated that the activity, or, as we call it, the "expression" of our genes is fluid, dynamic, and responsive to everything we do and think.

Every choice we make leads to experiences that change the expression of our genes. Gene expression is actually controlled by our habits. A healthy lifestyle of good habits leads to beneficial gene programs and good health. The opposite is also true, You may currently have bad habits, like a little too much junk food, which induce gene expression programs that promote risk for age-related disease. But, with repetition, the establishment of new, "good habits", like a plant-rich diet, will change gene expression programs that promote health. I wrote about this at length in my books "Super Genes" and "The Healing Self" At the end of the day, by altering our gene expression programs through our daily conscious choices, we have the power to slow the aging process, improve mood, staving off anxiety and depression, reduce persistent aches and pains, improve quality of sleep, and even decrease risk or age-related chronic diseases including cancer and neurodegenerative diseases.

Besides the nearly 6 million currently afflicted with Alzheimer's dementia, it is estimated that another 30 million Americans harbor brain pathology, such as amyloid plaques and tangles, that substantially increases their risk for symptoms of dementia over the next 5-15 years. Like heart disease and diabetes, Alzheimer's disease actually begins a decade or more before symptoms arise. We routinely diagnose other age-related diseases prior to symptoms, by checking, for example, blood cholesterol and glucose levels, and then treating them early on to prevent onset of symptoms. However, we do not diagnose Alzheimer's disease until a patient's brain has already degenerated to the point that it causes cognitive dysfunction and dementia. And, worse, clinical trials aimed helping these patients treat the brain pathology, such as plaques and tangles that, based on brain imaging studies, had initiated the disease a decade or more before symptoms. Treating these pathologies in patients with dementia is simply "too little, too late". Thus, trial after trial has failed. Going forward, we will need to treat this disease following a mantra with which the Cure Alzheimer's Fund was founded: "Early prediction, detection, early detection, early intervention".

In the future, we will therapeutically address Alzheimer's disease by first determining one's genetic risk based on family history and polygenic risk scoring, and then use this information to guide *when* early detection of pre-symptomatic disease pathology, with, for example, brain imaging blood tests, should first begin, certainly no later than 50 years old. Once the earliest signs of brain pathology are detected, therapeutic intervention would be warranted, similar to how we take a cholesterol drug to stave off heart disease. Unfortunately, analogous drugs for Alzheimer's disease are still in development, but should be available for early intervention in the future.

Importantly, the successful development of preventative drugs will require innovative and progressive thinking by the FDA that would allow trials and potential approval of drugs that can reduce early initiating brain pathology in a pre-symptomatic person, even if they do not reverse symptoms of dementia. If such a drug were sufficiently safe, it could be approved for use in early prevention in at-risk individuals. We would then rely on "real world evidence" to determine whether the drug reduces the incidence of symptomatic Alzheimer's disease over the next 5-10 years. This prevention strategy is in line with the FDA draft guidelines for Alzheimer's released in February 2018. But, now we must push the FDA to see them enacted. Otherwise, the alternative is 10-year prevention clinical trials aimed at the early initiating Alzheimer's pathology, such as plaques and tangles, and then waiting to see if dementia is averted. Such prevention trials are highly unlikely given the prohibitive cost of many billions of dollars and limited patent life.

While we wait for effective drugs, we must in parallel consider whether we can stave off Alzheimer's via lifestyle and behavioral interventions. Along these lines, the genetics of Alzheimer's disease, for example, exhibits a clear dichotomy. On one hand, we first discovered gene mutations in three genes that virtually guarantee early-onset familial Alzheimer's disease. Fortunately, these *fully penetrant* gene mutations account for only 3-5% of Alzheimer's. Meanwhile, while we have also found over 30 genes associated with risk for sporadic Alzheimer's disease. In contrast, their mutations do not guarantee the disease in the span of a normal lifetime. So, lifestyle interventions *will* make a difference in over 95% of those at risk for Alzheimer's disease. In support of this statement, a large study was recently published by Lourida et al. in JAMA (2019), that concluded: "A favorable lifestyle was associated with a lower dementia risk [even] among participants with high genetic risk."

The same is true for other age-related chronic diseases. It is generally the case that on common, age-related, complex genetic disorders such as Alzheimer's disease, heart disease, diabetes, that only 3-5% involve genetic mutations that guarantee disease (fully penetrant) and that 95-97% involve genetic factors that are modifiable by lifestyle.

I will now conclude with brief recommendations for lifestyle that have the potential to reduce age-related chronic diseases. These factors in particular have been shown to prevent the three major hallmarks of Alzheimer's-related brain pathology: plaques, tangles, and neuroinflammation. For this purpose, I have created the acronym, SHIELD, which has now been featured frequently in popular media, for example on the NBC Nightly News and just this past weekend on the Today Show.

S stands for 7-8 hours sleep, which serves to clear away Alzheimer's pathology.

H is for handling stress, for example, with a meditation practice.

I is for interaction with friends. Loneliness increases risk for Alzheimer's by two-fold.

E is for exercise, which induces new nerve cell growth to strengthen brain regions affected in Alzheimer's disease.

L is for learning new things, which increases the number of synapses in your brain, the connections between nerve cells storing your memories. Synapses loss correlates most with the degree of dementia. The more you make, the more you can lose, before you lose it.

D is for diet. The best diet for the brain is the Mediterranean diet, which minimizes red meat and is rich in fiber from fruit and vegetables that strengthens bacteria in your gut, or your gut microbiome. And, by the way, a healthy gut microbiome has been shown to reduce brain neuroinflammation, the biggest killer of nerve cells in the brain.

In summary, while we await the medicines that will prevent and treat Alzheimer's disease, it is my hope that research will be accelerated on lifestyle interventions. I also hope that we can pro-actively educate the American public about using plans like SHIELD to improve their brain health and reduce risk for brain disease. We should also let the American population know that despite their family history and personal genetics, in the vast majority of cases, lifestyle and behavioral changes have the potential to preserve and promote brain health and prevent age-related diseases – not only Alzheimer's, but also heart disease, diabetes, heart disease and cancer.

Thank you for your attention.

Testimony of Susan Hughes, PhD
Director, Center for Research on Health and Aging and
Director, Midwest Roybal Center for Health Promotion and Translation,
Institute for Health Research and Policy and
Professor, School of Public Health,
University of Illinois at Chicago

Senate Special Committee on Aging
September 25, 10:15 am
Dirksen Senate Office Building, Room 562
Hearing: 'Promoting Healthy Aging: Living your Best Life Long into Your Golden Years"

Madam Chair and Committee Members:

I would like to first extend my sincere gratitude for this wonderful opportunity to talk with you today about promoting healthy aging; a topic that is near and dear to me.

I direct the campus-wide Center for Research on Health and Aging at the University of Illinois at Chicago. Our mission is to foster the development of the high-quality research that is translatable to practice to help older adults and families in communities where they live. I am also privileged to have served as the Director of our Midwest Roybal Center for Health Promotion and Translation that has been funded multiple times by the National Institute on Aging and to be a founding director of the Evidence Based Leadership Collaborative in the U.S.

The topics that I would like to cover today include the importance of physical activity, the implications of our Fit & Strong! physical activity/ behavior change program for the maintenance of healthy behaviors, our experience translating Fit & Strong! into practice, and the importance of the Older Americans Act renewal for maintaining and accelerating advances in healthy aging.

Everyone who works in the field of aging knows that physical activity is incredibly important for healthy aging. Dr. Tanzi did an excellent job of describing the benefits of PA on sleep, strength, mobility, mood, cognition and multiple other outcomes for older adults. These benefits apply to older adults with almost all chronic conditions (DHHS, 2018; Bauman et al., 2016). Despite the fact that these benefits are well understood among professionals who care for older adults, levels of engagement in exercise among older adults are still sub-optimal. Currently, 35.8% of seniors are estimated by CDC to engage in recommended levels of aerobic exercise and 16.7 % in resistance training, with levels of engagement being considerably lower in ethnic and minority seniors (Keadle et al., 2016). More recently, we have also become aware of the terrible risks that derive from sedentary behavior. We have new evidence that 27.5 % of older adults are sedentary, a development that is highly correlated with increasing levels of obesity as well (Watson et al., 2016). If inactivity is bad, sedentary behavior in layman's terms is 'awful' and is associated with increased CVD incidence and mortality, all-cause mortality, and incidence of type 2 diabetes (Biswas et al., 2015).

That's the bad news. On a more positive note, a new meta-analysis by researchers in Denmark has found that *any* physical activity, regardless of intensity, was associated with a lower risk of mortality (Ekelund et al., 2019). We are also beginning to understand that exercise that is accomplished in short bouts can be just as effective as spending hours at the gym or on a treadmill (Saint-Maurice et al., 2018).

Both findings are important because the current CDC physical activity guidelines for frequency and duration of physical activity may be quite daunting for many older adults to meet.

Given this context, how can we change the situation and make our later years "golden"? I believe we need to mount a sustained, multi-pronged campaign to combat inactivity. First, we need to mount a major messaging and communications campaign to get the word out to seniors that any activity that they engage in, even if it involves standing up and moving from the TV to the refrigerator in the kitchen, or doing the laundry downstairs, or walking upstairs instead of using an escalator counts and is a huge improvement over sedentary behavior.

Second, we need to understand and address the myriad reasons why older adults are sedentary. My research involves work with older adults who have osteoarthritis (OA) in their lower extremity joints. I began my research career working with 300 homebound older adults in Chicago. I asked them about their chronic health conditions and found, to my surprise, that arthritis was their most common chronic condition *and* the condition that interfered most frequently with their functioning. We followed that study up with a study that examined the relationship between presence of joint impairment and function over time. We measured all of the joints in the body at baseline and disability outcomes for 600 seniors two and four years later. We found that presence of joint impairment in their *lower extremity joints* was the pathway through which disability developed (Dunlop et al., 2002). Multiple studies have since confirmed that pain and stiffness in these large, weight-bearing joints is a major barrier to engagement in activity and leads many persons to be sedentary (Szoeke et al., 2006; Silverwood et al., 2015). This issue matters because we know that many persons with OA also have heart disease and/or diabetes. We also know that if people have heart disease or diabetes and their doctor recommends that they exercise, those who *also have arthritis* fail to follow that recommendation because they fear it will just make their arthritis pain worse (CDC, 2011).

When we discovered the relationship between lower extremity OA and disability, we worked with rheumatologists and physical therapists to develop an intervention to break the chain. We designed Fit & Strong! which is a physical activity/behavior change program for persons with lower extremity OA. The program lasts 90 minutes and meets three times a week for eight weeks. When we designed the program, the existing literature showed the persons with OA had significant aerobic and strength deficits compared to age-matched controls (Minor et al., 1989; Semble et al., 1990; Slemenda et al., 1997). Therefore, the first 60 minutes involve flexibility (warming up stiff joints), sustained aerobic activity, and systematic lower extremity strength training. The final 30 minutes use health education, group problem solving and goal setting to help participants understand what OA is, why it is painful and how they can use a safe and tailored physical activity program to manage it. We ask participants to work with the instructor to develop an individualized plan for follow up maintenance when the program ends. The plan must meet minimum criteria for physical activity dose and frequency but is tailored to their preferences with respect to site, time of day, day of week, type of exercise and use /no use of equipment, work alone or with a buddy, etc. We tested Fit & Strong! for efficacy and effectiveness and found that it improved multiple outcomes at the end of the program (8 weeks) that were maintained at 6 months with substantial effect sizes for physical activity engagement, self-efficacy for physical activity and self-efficacy for adherence to physical activity (Hughes et al., 2004; Hughes et al., 2006). We then examined outcomes over time with a larger sample and found enhanced engagement in physical activity (8 weeks), the end of the program. We continued to assess participants at 6, 12 and 18 months and found that if older adults adhere to exercise good things happen. Specifically, increased physical

activity was accompanied by diminished joint pain, improved joint function, improved mobility and strength (timed performance measures) as well as improved anxiety and depression at the same timepoints (Hughes et al., 2010). Why do these effects and their maintenance over time matter? They matter because impaired lower extremity strength is a major risk factor for falls and impaired mobility is both a risk factor for falls and an independent risk factor for mortality (Studenski et al., 2011; Pahor et al., 2014)

Fit & Strong! was originally targeted to persons with painful OA which is now a known barrier to exercise participation. Another important reason why seniors do not exercise relates to sensory deficits. We know that persons with vision and hearing loss also engage in lower levels of physical activity (Gispen et al., 2014; Loprinzi et al., 2013; Loprinzi, 2013; Nguyen et al., 2015; Ong et al., 2018). We recently piloted an adapted version of Fit & Strong! with persons with low or no vision (DeMott & Hughes, 2018). We first conducted focus groups with potential users and found that they experienced substantial challenges trying to access physical activity programs in the community. We have also tested a Hispanic version of Fit & Strong! and developed a new version (Fit & Strong! Plus) that combines physical activity with health education for healthy eating and weight loss (Der Ananian et al., 2017; Fitzgibbon et al., 2018; Mears, et al., 2018; Vergis et al., 2018). Our trial of Fit & Strong! Plus version found that participants who were overweight or obese and also had OA lost a modest amount of weight (2.3%) at 8 weeks that was maintained at 6 months. We also found that this modest amount of weight loss was accompanied by clinically and statistically significant improvements in lower extremity joint pain and function (Hughes et al., 2018).

These consistent and strong findings from the Fit & Strong! trials indicate that persons with OA clearly benefit from the program and beg the question of its possible impact on use of total joint replacement (TJR) surgery in this population in the future. We currently spend $72.5 billion for total hip and knee replacement surgery in the U.S (HCUP, 2016). If we could delay the need for the surgery and/or help persons who have had the procedures attain maximum function in the community we could potentially keep millions of persons with OA healthy and active into their golden years and we might see a spillover effect on common OA comorbidities like heart disease and diabetes.

We are currently actively engaged in translating the Fit & Strong! into communities. The program Is now being offered by more than 300 instructors in 32 states plus the District of Columbia. How did that happen? We, along with several other high-quality evidence based physical activity programs like A Matter of Balance and EnhanceFitness, benefited from Congressional funding for arthritis management programs at CDC and from Title III D funding in the Older Americans Act for falls prevention programs. These funds are the only sources in the U.S. that currently exist that help providers in the field to mount these programs. Therefore, these funding sources are *vital* and need to be continued with *increased funding levels going into the future if possible*. Currently, physical activity programs have to meet standards for inclusion into care management and falls prevention programs. I strongly recommend, given the fundamental power of physical activity programs to improve healthy aging, that they be assigned their own additional funding stream in the future.

What else do we need? We need to make exercise easy, we need to make engagement in physical activity a cultural norm and we need to start early. We need to use a life-course perspective wherein engagement in physical activity is encouraged at every stage of life starting with toddlers; this effort involves a culture shift that is starting to happen and should be supported every step of the way.

Currently, NIA is funding researchers to develop and test excellent programs. We need the capacity to bring these programs to scale more rapidly. We need a clearinghouse that will set standards for safe and effective programs and that will provide assistance to investigators who are struggling to identify ways of scaling up their programs. We need to embrace and commit to the growth of evidence-based programs that are proven, translated, replicable, use limited resources, and have measurable health outcomes.

We need to engage the health care system in the battle. Medicare Advantage plans should be strongly encouraged if not required to reimburse community-based organizations that provide evidence-based programs. We should use the Medicare wellness visit to ask about physical activity engagement and use the electronic health record to link patients to community providers. The National Recreation and Parks Association is already piloting this effort with CDC funding in Colorado and Louisiana (NRPA, 2019). Physical activity should be considered to be a fifth vital sign that should be monitored in regular checkups (Golightly et al., 2017). Congress should support efforts of the Evidence Based Leadership Collaborative and others to disseminate information on program availability using web-based program locators that can be easily accessed by physician assistants, patients and/or their family caregivers.

To summarize, physical activity matters and is essential for healthy aging; we therefore need to make it a *top national priority for older adults*. The best way to do this is to build on and expand our network of proven programs and increase access to them. For this reason, I urge you strongly to support the re-authorization the Older Americans Act and increase funding for Title III D with possible new set aside funds for evidence based physical activity programs in the future. I know that Senators Collins and Casey are strong supporters of the Senate renewal legislation and want to thank you both for your outstanding leadership on this issue.

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Prepared Statement of Diane Dickerson

CEO, Bangor Regional YMCA

Before the

United States Senate Special Committee on Aging

September 25, 2019

Good Morning. Thank you. Chairman Collins and ranking member Casey, for the honor of speaking to you today on a subject that is professionally and personally near and dear to my heart.

As the proud CEO of the Bangor Region YMCA, I am honored each and every day to serve the needs of our entire community, from babies to seniors. It is joyous to see our multi-generational efforts at our Y and watch a 2-year-old shuffle across our lobby to the pool for a swim class, while passing a 92-year-old shuffling the other way to a chair yoga and balance class. The Y as an organization is most recognized as an advocate for our children across the globe, and that assessment is very true. Our three areas of focus are Youth Development, Healthy Living, and Social Responsibility. So, of course, we are well-known for our youth programs such as Early Childhood Education, Before and After School, Youth Sports and Activities, Camps, Teen Centers and much more. But what is less known, and what I want to focus on today, is our concentration on Healthy Living and Social Responsibility as it is linked to our senior population.

Maine is the oldest state in the country, so all of our YMCAs throughout the state have a social responsibility to serve the needs of our senior community. Our Y serving the Bangor region is focused on the mental, physical, and spiritual side, and how all are inter-connected to the healthy aging process. We formulate programs that are designed to stimulate all three factors because we absolutely know that each is needed to positively impact the aging process. We have more than 100 group fitness classes a week on land and in the pools that will keep our seniors feeling physically healthy, increase strength, improve mobility, balance and flexibility, decrease stress, and encourage a strong social network. Our Senior Friendly classes are at levels of intensity appropriate for older adults and our

trainers and instructors are well-suited to modify specific exercises appropriate for an individual's conditioning level.

We also offer programs for individuals with specific conditions. Our Phase III Cardiac Rehabilitation Program is a community-based program in partnership with Northern Light Eastern Maine Medical Center and is for those who have been affected by a cardiac event and is designed to further improve strength, aerobic capacity, flexibility, and overall movement for participants. Our instructors are CPR/AED certified and are assisted by volunteer medical professionals who are ACLS-certified.

In cooperation with the LIVESTRONG Foundation, Y-USA has developed an evidence-based fitness program to promote the importance of physical activity after a cancer diagnosis. This 12-week program is led by specifically trained instructors to individualize the training regime for each participant. This is a free program for the 12 weeks, and then they can join the Y at a discount to continue their efforts.

For those seniors suffering with arthritis or similar conditions that may limit movement, our joint venture class and others are carefully designed to reduce pain and increase range of motion through all the joints in the body in an effort to improve overall wellness.

Our Peddle for Parkinson's and other carefully choreographed programs allow those with this debilitating disease to be active, stimulate movement, increase balance, and help live as normal a life as possible.

And, our newest addition that is in the development stage is one near and dear to my heart and that is our Alzheimer's Program. We are in partnership with the Alzheimer's Association of Maine and Jackson Lab who is doing amazing research on the Alzheimer's process. We will be introducing in 2020 The Bangor Region Y's Brain Health Initiative. This program will be designed to help the person afflicted with this disease, as well as their caretakers and families. I know first-hand how devastating this disease is to a family. I lost my mom six months ago to this disease. The truth is, I really started losing her six years ago when Alzheimer's took away the strongest, kindest, funniest, and most engaging person I ever knew, and was so blessed to call her my mom.

All of the above health initiatives, however, cannot stand on their own. We must have the social and educational component to our efforts in order to serve our seniors to the maximum degree. That is why we have created our SECOND WIND SOCIAL CLUB, which organizes and initiates lots of social gatherings and excursions for our aging friends. We have potluck dinners and movie nights. We have arts and crafts, bingo, card playing, book clubs and more. We do excursions to national and state parks, as well as special plays, concerts, and seasonal events. We have monthly seminars covering topics of interest such as nutrition for older adults, and specific nutrition courses for those afflicted with certain diseases and ailments. We partner with our Bangor Historical Society to provide historical tours, lectures, and events. And, most recently, we became the Home of our Senior College of Maine to hold classes and training of all types for our senior community.

We also know that many seniors, especially those whose families are not close by, want to have a sense of being needed and playing an important role in the lives of others. I can certainly say that every one of our senior members play a huge role in my life and the lives of my staff just through their wisdom, joy of being at the Y and a part of our Y family, and watching their interaction with each other and our children of all ages. Therefore, we created a volunteer program that provides our aging adults to read to children in our Early Childhood Education Program, or teach a skill to our Middle School Clubs, or mentor a teen in need at our Teen Center. The benefits of these multi-generational efforts are huge on both ends of the spectrum, from the child or teen receiving the support to the senior providing it which fills their heart and spirit.

We at the Y believe that aging is not losing your youth, but rather a new stage of opportunity and strength. Plato said, "He who is of a calm and happy nature, will hardly feel the pressure of age." It is our goal to make the aging population of our wonderful state calm and happy at our Ys so they will not just feel the pressure of age, but will relish and flourish, will move and dance, will laugh and learn, and most of all, they will know how important they are to all of us who are so proud to call them Family at our Y.

Thank you for you listening.

Written Testimony of Brian L. Long
Promoting Healthy Aging: Living Your Best Life Long Into Your Golden Years
Senate Special Committee on Aging
United States Senate
September 25, 2019

Chairman Collins, Ranking Member Casey and members of the Committee, my name is Brian L. Long and I serve as the Lead Coordinator for the Pennsylvania Link to Aging and Disability Resources in the service area that consists of Berks, Lancaster, and Lebanon Counties located in the southeastern part of the Commonwealth. The Pennsylvania Link to Aging and Disability Resources is our state's Aging and Disability Resource Center (ADRC).

Thank you for the opportunity to testify before the Committee about my experiences and observations about "healthy aging" issues.

I am one of the coordinators of the 15 service areas who is in regular contact with persons who are age 60 and older; persons with a disability, veterans, family members, and caregivers. In this role, I listen to people's stories; ask for their opinions, and connect them with resource providers.

I am also a volunteer on one of the regional councils of the "Pennsylvania Council on Aging," which serves as an advocate for older individuals and advises the governor and the Department of Aging on planning, coordination, and delivery of services to older individuals. The 21 members who make up the council (the majority of whom are required to be age 60 or older) are nominated by the governor and subject to Senate confirmation.

As a person over age 60; a person with a disability, and a veteran, I feel I relate and empathize with the persons who need long-term living resources.

But I am more fortunate than many.

The cases that are the most challenging for me are the ones where I have limited ability to help.

Most of the time, if someone requires additional helping putting food on the table or getting to their doctor, I can connect the individual with resources.

But there are certain barriers that make it difficult for me to do my job of helping others.

Hearing loss, faced by nearly two of three older Americans, is something many returning veterans have, as do I. But the Veterans Affairs Medical Center in Lebanon, Pennsylvania provided hearing devices for me. That's not the case for so many persons over age 60. I'll always remember the face on a 60-something year-old man who was homeless when a senior center manager asked me if the Pennsylvania Link to Aging and Disability Resources could assist him.

One of our ADRC partner agencies provided a set of previously owned hearing aids for him. I was with the senior center manger when we showed him how to wear the hearing aids.

He blinked and smiled and said, "I can hear the birds. I can hear you breathe."

Each of us teared up.

We all know the statistics shared by the National Institute of Health: "About one-third of people in the United States between the ages of 65 and 75 have some degree of hearing loss. For those older than 75 that number is approximately 1 in 2." Yet, Medicare and Medicaid do not typically cover services for hearing loss.

Access to care and affordable hearing assistance devices can provide a form of hope and social interconnectivity for many vulnerable older Americans.

Vision acuity is another disability that many people reckon with as they age. I have early age-related Macular Degeneration and glaucoma. Again, VA and Tri-Care, added to Medicare, enable someone as fortunate as I to access quality vision care. But I've spoken with so many older persons not so lucky. A 76-year old woman I know lives on minimum Social Security and needs cataract surgery. Medicare will not cover it and she doesn't have the finances for the surgery. Further, she is fearful of surgery because she plays piano for several churches and doesn't want to have to miss the services that pay $50 a week.

Visual acuity alone is not a good predictor of a person's degree of visual difficulty. Someone with relatively good acuity (e.g., 20/40) can have difficulty functioning, while someone with worse acuity (e.g., 20/100) might not experience any significant functional problems. Other visual factors, such as poor depth perception, limited side vision, extreme sensitivity to lights and glare, and reduced color perception, can also limit a person's ability to do everyday tasks.

So many seniors struggle to afford vision care. Our eyes are our windows to the world. We shouldn't be shuttered in old age.

Partial and total tooth loss is something that a larger share of older persons deal with, particularly if they are from disadvantaged populations. We know that older seniors, women, persons of color, current smokers, and those with lower incomes and less education are more likely to have fewer or no remaining teeth. Missing teeth and gum disease are prevalent among many older people in those demographics. Earlier lifestyle choices and forgoing dental treatment, perhaps, have contributed to this, but we know that the absence of regular dental care and treatment can lead to disastrous health consequences.

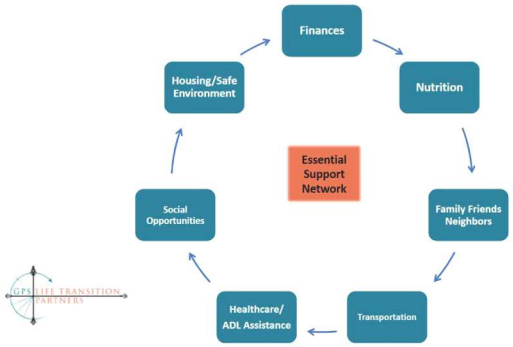
Again, affordability is a huge contributor.

The issue of coverage for dental, vision and hearing services is about healthy aging. Without access to these services, we know that older adults have a greater likelihood of:

- Experiencing social isolation or mental health issues

- Becoming the victim of a scam
- Having difficulty accessing transportation resources
- Struggling to adhere to their prescription medicines
- Encountering hazards in the home

One of our ADRC partners provided a graphic that displays some of these and how they all interact:



These are some of the issues in the complex web that older persons contend with as they age. These are the issues that Council on Aging volunteers, ADRC coordinators, and aging services providers are challenged by every day.

Healthy aging is a target that everyone sets.

Every contact between a person with a disability, every conversation with someone about aging challenges and every call, email or text message from a family member looking for resources presents an opportunity for one of our ADRC

partners, a Council on Aging volunteer or an ADRC coordinator to step up to find resources or information that will help people with healthy aging assistance.

I can only do so much from where I work, but there are changes that can be made at the federal level to help. I know that Senator Casey has introduced legislation that would expand Medicare and Medicaid coverage to include dental, hearing and vision care. This is a must-do. There is no reason to delay. With the growing baby boomer population, these issues are going to become more and more prevalent.

We also must ensure that the network of people who help connect seniors to services and supports and assist older adults in navigating these complex systems have the resources necessary to serve everyone. ADRCs are a lifeline to healthy aging for millions of people across the country. I know that is the case in Pennsylvania from personal experience.

In closing, Chairman Collins and Ranking Member Casey, I am honored to have had the opportunity to present this testimony before the Committee today. I am happy to respond to any questions or concerns you may have.

Questions for the Record

U.S. Senate Special Committee on Aging
"Promoting Healthy Aging: Living your Best Life Long into Your Golden Years"
September 25, 2019

Questions for the Record
Dr. Rudy Tanzi

Senator Doug Jones

Question:

Your testimony spoke to the dangers of social isolation and loneliness, including a more than doubled risk of Alzheimer's. Multigenerational programs, which bring together older adults and younger generations, can help to combat these risks. To expand access to such activities, I have introduced the *Aging Together Act* with Senator Casey and the *Care Across Generations Act* with Senator McSally. Can you share a bit more about why reducing social isolation is important – not just for one's emotional and cognitive well-being, but also for one's physical health? How can engaging with younger generations help to achieve this?

At this time, responses are not available for printing. Please contact the U.S. Special Committee on Aging for further updates and to perhaps obtain a hard copy, if available."

U.S. Senate Special Committee on Aging
"Promoting Healthy Aging: Living your Best Life Long into Your Golden Years"
September 25, 2019

Questions for the Record
Dr. Susan Hughes

Senator Doug Jones

Question:

As you noted, many individuals who lead a sedentary lifestyle may know they should increase their physical activity, but feel overwhelmed and unsure about how to begin that process. I think this is especially true for seniors living in rural areas, who may have less access to fitness centers and exercise programs like "Fit & Strong!". Can you share some ideas for how individuals in such areas can begin to increase their physical activity? What are some easy changes that all older adults can make to improve their lifestyle and health?

At this time, responses are not available for printing. Please contact the U.S. Special Committee on Aging for further updates and to perhaps obtain a hard copy, if available."

Statement for the Record

Mrs. Helen Sheehy
Tyrone, PA

Dear Senator Casey

I am writing you about serious gaps in Medicare coverage that I hope you through the Special Committee on Aging could begin to address. While, overall Medicare has done much to shield seniors from the most devastating effects of serious medical problems we recently encountered an unexpected hole in the Medicare coverage for oral surgery.

I am retired from Penn State University and my husband and I are covered by Highmark Freedom Blue through their retiree benefits program. My husband has had serious health issues and in 2016 had cancer surgery and two rounds chemotherapy and two rounds of radiation therapy to his head and neck. As a result of the therapy his teeth were seriously damaged and most of them had to be removed in November of 2018. And, because of his health problems the surgery had to be done under general anesthesia.

Unfortunately, Highmark has denied all the claims for his oral surgery because it generally only covers oral surgery needed as the result of an injury. The amount they have billed the provider (Geisinger Medical Center) is over $31,000. We have appealed their decision, and are hoping for a better outcome, but are not hopeful.

Apparently, the dental exclusions have been in place for decades. https://www.cms.gov/Medicare/Coverage/MedicareDentalCoverage/index.html. Because we now know there is a direct connection between dental health and an individual's overall health, I am hoping that you will think the time is ripe to rethink those provisions. The debate over the possibility of Medicare for All also argues for reviewing the overall coverage under the current program.

My husband and I are fortunate that we can pay this bill if necessary---although it will substantially cut into our retirement savings. But there are many other seniors who aren't as fortunate.

Thank you for your time and for considering this issue.

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