

THE SCIENCE OF AGING

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ANOTHER TAKE ON BENCH-TO-BEDSIDE:

Inspired to pursue a career in **medicine and research**

In a recent Penn Medicine News Blog series on Match Day 2020, Sneha Narasimhan, MD/PhD student at the University of Pennsylvania Perelman School of Medicine (PSOM) and researcher in the Center for Neurodegenerative Disease Research (CNDR), shared what inspired her to pursue a career in both medicine and research.

Narasimhan is an aspiring neurologist with a complimentary focus on neurodegenerative disease research.

“ Everyone around the hospital bed looked at me, waiting for my decision — I could feel the palpable tension in the room as I grappled with a true life-or-death situation. I knew my medical school education was supposed to train me for this moment, but never before had I felt so unprepared. My eyes turned to the elderly woman in the bed, watching her grimace, almost as if she were in pain. That was enough to make up my mind, so I said, “It’s time to let her go.” Minutes later, my grandmother passed away peacefully.

In all of my years of medical and graduate school, that was the most difficult decision I had to make. My grandmother had suffered for years with Parkinson’s disease: the disease first took away her ability to use her hands, then her ability to walk, and finally, her ability to think. Watching this neurodegenerative disease completely devastate a once lively and personable woman was painful enough, but even worse was watching how much it tore through the seams of my entire family. By the time we got to her last day, no one felt strong enough to accept that this was the end; as the future doctor, everyone looked to me for that strength. Even though as a medical student I had helped countless patients and families talk through similarly difficult decisions, it was so much worse when it was my own family. It was only then that I realized how vulnerable my patients’ families must have felt in those same moments.

The experience cemented my desire to help people navigate the complexities of living with neurodegenerative diseases. As a future neurologist, I hope to help families find that strength to support their loved ones through these devastating illnesses, while also relieving the burden on caregivers. More importantly, I want to initiate those tough conversations about end-of-life care early, so families can be as prepared as possible when the end inevitably comes. While some say neurology is a challenging specialty because we cannot cure many diseases, my own family’s experience made me realize how even a small gesture can have a huge impact on patients’ lives.

Yet, as a scientist, I would never be satisfied if I had to watch people suffer the way my grandmother did and never have any curative treatments to offer. When I started the MD/PhD program at Penn, I knew I wanted to blend a career in both medicine and science, with the goal of making discoveries that would directly benefit patients. I quickly realized the best field for that was neurology, with a focus on neurodegeneration: despite decades of research, there were still no treatments that could slow down or halt the progression of these diseases. I felt particularly drawn to Dr. Virginia Lee’s lab not just because she studies neurodegenerative diseases, but also because her lab has one mantra:

“We are searching for a cure.” ”

— excerpt via Penn Medicine News Blog



IN THIS ISSUE

COVID-19: Why Older Adults Are at Higher Risk

Keeping Connected While Keeping Your Distance | Social Distancing and Telemedicine

Common Muscle Relaxant Shows Potential to Treat Neurodegeneration

... and more!

In a recent article, the Administration for Community Living (www.acl.gov) explains that one reason why older adults are more likely to suffer serious complications related to the novel Coronavirus, COVID-19, may be because as we age, our immune systems change making it harder to fight off diseases and infection. Additionally, older adults are more likely to have underlying health conditions which naturally make it harder to recover from other illnesses.

However, there are other factors that can increase risk even further. These include:

- Living in a nursing home or long-term care facility
- Chronic lung disease or moderate-to-severe asthma
- Compromised immune systems due to cancer treatment, smoking, bone marrow or organ transplant, etc...

As we continue to learn more about COVID-19 and search for treatment, it is important for everyone to take the known precautionary steps to lower their chances of exposure and to stop the spread of the disease.

- Social distancing
- Frequent hand washing
- Avoid touching your face
- Properly cover coughs and sneezes
- Frequently clean and disinfect homes and work areas



For more information, visit the Centers for Disease Control and Prevention (CDC) website at: www.cdc.gov

KEEPING CONNECTED WHILE KEEPING YOUR DISTANCE

While researchers tirelessly search for cures and healthcare heroes selflessly care for the sickest patients, it's easy for the rest of us to feel a little helpless in the fight against COVID-19, but that is not the case. We all have a role to play in flattening the curve, and for those of us who are not on the frontlines, our job is a simple, yet important one: social distancing.

As we all fall into our new – and temporary – routines to help slow the spread of this disease, it is critical to remember that distancing does **not** mean disconnecting.

At this strange time in our lives when we can't meet a friend for coffee, have Sunday dinner with our family, or even visit a loved one in a care facility or hospital, one of the best ways to stay connected with those outside of our home is through video-calling.

With ever-emerging platforms like Skype, Zoom, and FaceTime, it is easier than ever to get face time without being in the same room. Unfortunately, it is not so simple for everyone. Seniors, the most at-risk group for COVID-19 who are also particularly vulnerable to becoming isolated due to social distancing, often struggle the most with adapting not only to new routines, but also to new technology.

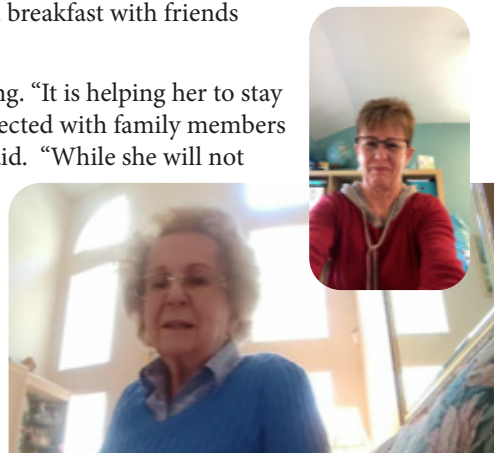
In a recent Philadelphia Inquirer article, Tobey Gordon Dichter, founder and CEO of Generations on Line – a Philadelphia-based nonprofit working to help older adults with digital literacy – shared

some tips for helping older adults become more comfortable and tech-savvy:

- Always opt for the most user-friendly options, not just what you personally use
- Be patient and provide step-by-step instructions
- If you are providing them with a device, pre-install and set up necessary applications before dropping it off to them

Katie Burke, administrator and project leader at Generations on Line, is practicing what she preaches to stay in touch with her 89 year old mother with vascular dementia and short-term memory loss. “She is confused and a bit angry at times,” Katie explained. “She does not understand why she cannot go out and do her normal daily routine of mass at church, breakfast with friends and more.”

Instead, she is video-calling. “It is helping her to stay more grounded and connected with family members across the country,” she said. “While she will not remember speaking with me, it breaks up her day and raises her mood in a positive way.”



HEALTHCARE AT A DISTANCE // TELEMEDICINE

Social distancing not only keeps us from our friends and family, it can also keep us from our healthcare providers. To navigate the challenges that the COVID-19 pandemic poses to routine care, providers are turning toward telemedicine.

According to a recent article in Penn Today, telemedicine provides virtual, remote encounters for routine care to avoid unnecessary in-person contact. As we're encouraged to continue with social distancing, providers at Penn Medicine are quickly rolling out new approaches to care for their patients.

Pre-Screening Calls

- Prior to an appointment, automated calls screen patients for possible risk factors for Covid-19, including symptoms, recent travel, or possible exposure, and determine whether the appointment should be postponed or offered remotely.

Virtual Visits

- Previously scheduled one-on-one discussions with a primary care or specialty doctor are simply moving from in-person visits to ones conducted virtually, via web or phone.
- For more unexpected issues, Penn Medicine on Demand, a virtual care telemedicine practice available 24/7, can address your immediate care needs such as sore throats, earaches, muscle or joint pain, and other minor injuries, via video visit.

According to some providers making use of these approaches at Penn Medicine, these changes may have a ripple effect on health care moving forward.

“There are a lot of reasons outside of this crisis that we'd like to be able to offer this care online,” said Jeremy Tyler, PsyD, assistant professor of clinical psychiatry at Penn Medicine.

“There are people who live in rural communities who could benefit from this; there are issues of cost and accessibility that this could help address. I think in the long run we're going to look at telehealth as not just something we need in a crisis but something we offer as a standard.”

Common Muscle Relaxant Shows Potential to Treat Neurodegeneration

The medication dantrolene is a common muscle relaxant used to prevent or treat muscle stiffness or spasm. However, Penn Medicine researchers have recently shown that it also has the potential to treat neurodegeneration.

In a first-of-its-kind study led by Huafeng Wei, MD, PhD, an associate professor of Anesthesiology and Critical Care, findings reveal that delivering the medication through the nose rather than the mouth may help it to penetrate the brain more effectively, potentially maximizing its therapeutic effects in neurodegenerative conditions such as Alzheimer's disease.

Previous research has shown that dantrolene -- when given orally or intravenously -- can slow the progression of many neurodegenerative diseases in animal models, but it had limited penetration into the central nervous system when using this method. In hopes of discovering a more viable long-term treatment option, Dr. Wei and his team examined two groups of mice -- one receiving the oral form and the other receiving the intranasal form. Results showed that mice who received the medication through the nose had a much higher concentration in their brain for a much longer period of time.

“While more research in animal models is needed to further evaluate the safety and effectiveness of this approach, our hope is that this will ultimately lead to a new therapeutic approach that can be studied in patients with various neurodegenerative diseases, including Alzheimer's,” Wei said in the Penn Medicine News Release highlighting the study.

For more information, the full Penn Medicine News Release is available online.

IMPORTANT EVENT INFORMATION

Due to the current COVID-19 outbreak, the Institute on Aging (IOA) and Center for Neurodegenerative Disease Research (CNDR) has canceled their newly combined IOA & CNDR Research Retreat originally scheduled for May 15, 2020. Please stay tuned for the new date.

Penn Medicine's 9th Annual 5K for the IOA & The Memory Mile Walk | October 11, 2020 | Event details are subject to change.

Event information will be updated online as it becomes available at: www.med.upenn.edu/aging/events.html

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The mission of the Institute on Aging (IOA) at the University of Pennsylvania is to improve the health of older adults by increasing the quality and quantity of clinical and basic research as well as educational programs focusing on normal aging and aging-related diseases across the entire Penn campus.

www.med.upenn.edu/aging | 215-898-7801 | aging@pennmedicine.upenn.edu

