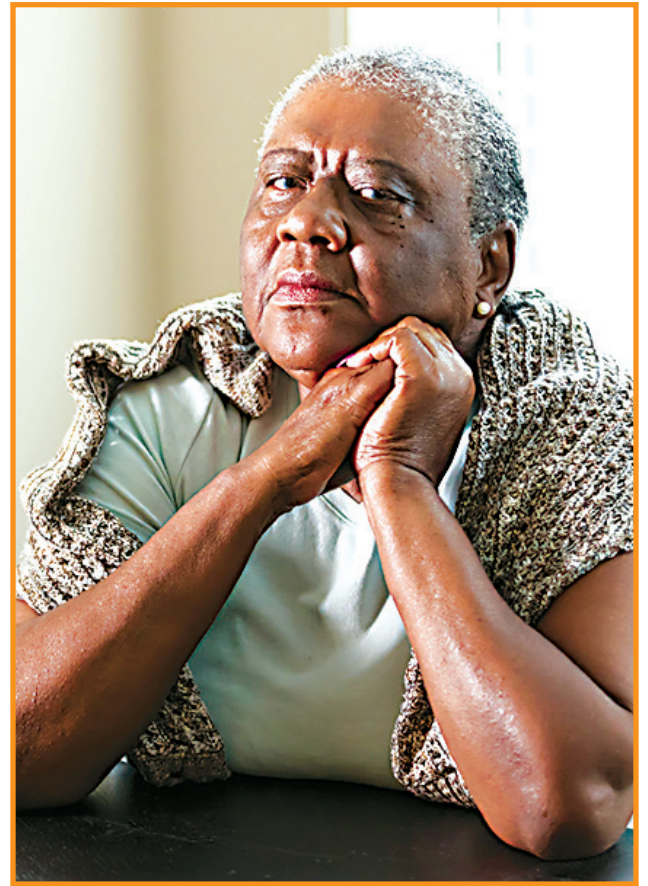
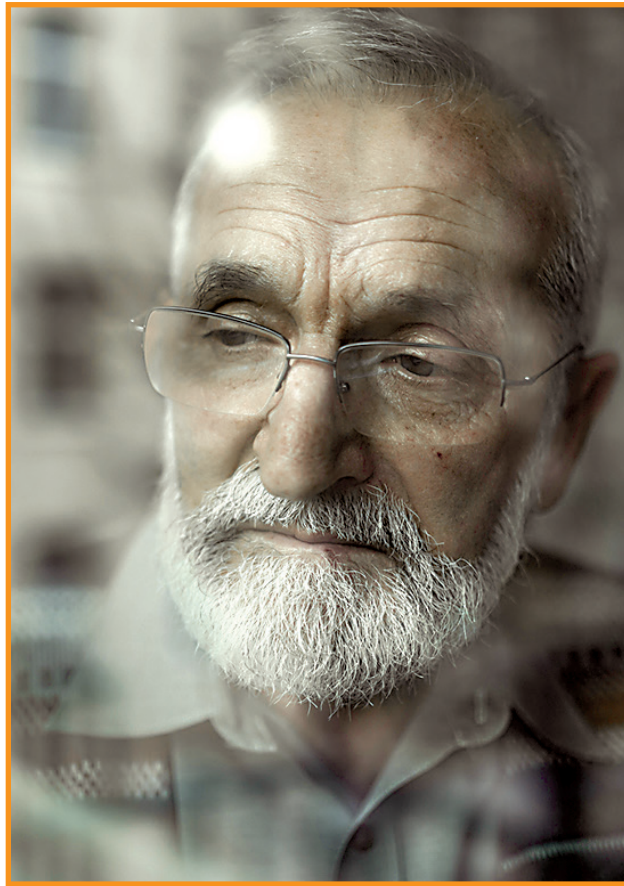


Virtual Reality

**Allows
Seniors to
See the World
without
Leaving Home**

MARCH 3, 2022

TARIK KIZILKAYA / E+



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“The greatest indication of aging is your social support.”

WHEN KYLE RAND WAS YOUNG, he volunteered in a senior living facility in his hometown in upstate New York. The facility had an old-fashioned ice cream parlor, with stools and all, and he scooped out the ice cream for the residents. He got to know his customers, remembered their favorite flavors and always took time for a friendly chat.

Though many years ago, Rand clearly remembers the smiles he helped bring about. “It’s all about the personal connection on a human and social level,” he said.

When some people enter a senior living facility, they quickly make friends, join a card game, strengthen their muscles in the exercise room and look forward to eating their meals at a shared table. But for far too many other new residents, “the trap of social isolation” begins as soon as they walk in the door, Rand said.

They are no longer able to wave a friendly hello to their neighbors of many years. They rarely, if ever, go to the grocery store or mall to do the obligatory people-watching. And all this comes at an age when their friends and relatives have moved elsewhere or are no longer driving and cannot stop by and visit. Gradually, their loved ones are passing on.

In formative years, people associate with coworkers, parents of their children’s friends or members of their religious group. Even if they don’t become the closest of friends, they often chat about their shared interests. But once inside a new residence, it is not as easy for some to spend time with others who live down the hall, especially for those who never really were outgoing. It is not uncommon for some residents to spend most of their

time in their own room, watching television or reading a book by themselves.

According to many health experts, loneliness is a rising epidemic. Studies show it can be as detrimental to your health as smoking 15 cigarettes per day.

Rand decided he could and would do something about that. So in 2016, he became a cofounder and CEO of Rendevar, a company that “is overcoming social isolation through the power of virtual reality and shared experiences,” according to its mission.

Virtual reality refers to computer-generated imagery and hardware specifically created to bring sights and sounds to people in a way that is totally immersive. Virtual reality is often interactive. It enables users to feel like they are swimming with brightly-colored fish without ever learning to scuba dive or snorkel.

Rendevar staff create a large array of videos that can be viewed by putting on a virtual reality headset that they offer to senior living facilities throughout the country. After paying a monthly fee, a facility’s staff is trained in how to use the headsets and programming. They also are trained in facilitating conversations that prod a viewer, including those with a dementia diagnosis, to talk about what they were just totally immersed in. Many computer sites allow people to tour a historic site or a European city, but the scenes are two-dimensional. With virtual reality, the viewer is thrust into the action, virtually stepping closer to what they choose to examine.

Some Rendevar’s videos take viewers through a museum or an outdoor expedition, including hiking up a mountain or skiing down a slope. Viewers can choose to

immerse themselves in totally new adventures or revisit places they enjoyed when they were younger. Through the wonders of mapping and enhancing, Rendevar can enable someone to visit their childhood home as it looked when they lived there.

Rand said his company offers “tons” of different videos to hundreds of senior living facilities, and it continues to reach out to more facilities regularly.

Some viewers choose watching animals every chance they get. Others seek out memories. Still others strive to check items off their bucket list and virtually go sky diving, ride in a hot air balloon or scream their way through a roller coaster ride.

Virtual reality works by making what viewers see and hear track with what they are doing. In a trip to Paris, the virtual tourist turns left to see the Eiffel Tower and right to see a group of performing musicians. If the viewer steps closer to a street performer, the music will get louder, while sound from where they last were will diminish.

Others truly enjoy a trip down memory lane, checking out their home, nearby stores and favorite restaurants. “We tell people we can bring back them back to their childhood home. There is something so tangible about that,” Rand said.

When asked how he knows his videos are working, he has several answers. First, he stressed, all anyone needs to see are the smiles on viewers’ faces. Also, he said, animated conversations following a short video leave no doubt. Some seniors who are reluctant to don a headset can be seen reaching for their own after watching their friends enjoy a video.

And, he stated, his company has a 96 percent retention rate beyond two years from senior living facilities opting into the program.

"We are here to change the way we think about aging," Rand said. "There is tons of research that points to why social interaction is so important." It is as important as a proper diet and exercise. Two weeks of shared socialization is shown to strengthen trust and healthy social connections, he said.

"The greatest indication of aging is your social support," according to Rand. Without a social network, people age more quickly.

Just because someone is living in a large apartment complex or an assisted living development with one or two hundred residents does not mean that a person's social life will be stimulating, especially when they go into their rooms and close their doors behind them for most of the day.

Some widowers are so used to their spouses arranging their social life, planning parties or getting invitations, that they don't know what to do now that they are on their own. They might sit through a talk on current events without socializing any further than a quick nod hello to the person sitting next to them.

COMPUTER OR TABLET

Rendever can help them by personalizing these immersive videos, making sure the viewer is engaged. Also, a friend or loved one can watch the same video, and they can then discuss the shared experience.

After only one month, the emotional health of both the senior and the caregiver improves, Rand said. Just imagining vacationing again – although virtually – and recalling the great times, delicious meals and amazing landscapes. Returning people to their happy place is highly preferable to having them sit in front of a loud television and watch a random program.

For those who are hesitant to put on a headset, and for some who experience motion sickness while doing so, Rendever's videos can be seen via a computer or tablet. In fact, during the pandemic, when staff at senior living facilities was so taxed and often short essential employees due to illness or mandatory quarantining, the company created Rendever Live.

"We started leading programs that get broadcast to all communities," he said. The daily programs include book clubs, trivia contests and Friday music. They recently had an Olympian talk about the power of positivity. Some of those programs are augmented with VR, but not all.

Rendever believes that virtual reality offers the 3Rs for seniors. Not reading, (w)riting and (a)rithmetic, but Relive, Reconnect and Reinspire.

Relive enables residents to revisit where they were married, the school they attended or pretty much anywhere they ask. Reconnect offers the less mobile opportunities to virtually leave their community, something they rarely do, and engage in the world. Reinspire enables seniors to make new friends as they talk about their shared experiences.

"As the shift towards holistic health continues, we need to remember that products should be both accessible and enjoyable!" Rand wrote on the website. They need to always include opportunities for enhancing cognitive skills as well as emotional and physical well-being.

"Research shows that physical activity among seniors can delay the onset of dementia and also reduce the risk of cardiovascular disease, stroke and diabetes. By working with senior living communities and hospice care providers, seniors who physically can no longer take walks or ride a bike now have an alternate, social experience that will keep them moving – and smiling," according to Rand.

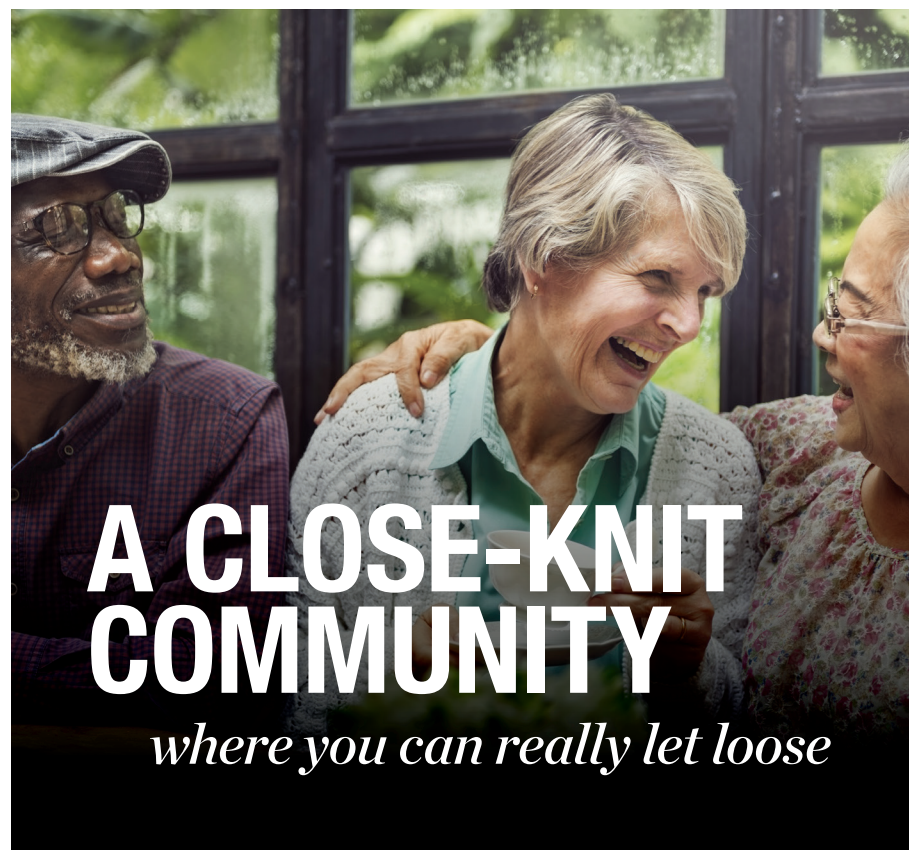
RendeverFit offers three modules within its platform. Users can cycle through beautiful landscape as they reach out and pop balloons and score points. They can paddle a boat to a remote island and then engage in target practice, improving their hand-eye coordination. They also can paint, moving around a virtual canvas.

According to a Massachusetts Institute of Technology study, people that use virtual reality systems reported being less socially isolated and were less likely to show signs of depression. They experienced positive effects and felt better about themselves.

The 2018 study is titled, "Impact of Virtual Reality Experiences on Older Adults' Well-Being." It involved a two-week experiment conducted with assisted living communities that used a VR system with programming for travel and relaxation and another group that watched the same content on a television.

"Feedback collected before and after the intervention showed that the VR application provided more benefits compared to the control condition," according to the study. Participants that used the virtual reality system said they felt less socially isolated and generally better about their overall well-being.

A club in New York offers virtual reality experiences that include 360-degree cinema, gaming and even an immersive



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paint party. YokeyPokey also offers "a gateway to the past" for seniors in assisted living facilities "as a way to keep those living there alert and entertained," according to the company's website.

YokeyPokey works on the idea that as the aging brain slows down, it needs to be stimulated to remain active and responsive. This is why many of these homes offer outings, game nights, art classes and talks.

Nursing homes have begun introducing virtual reality into that regimen, having seniors play brain-stimulating games that require them to move around. They're also introducing unique experiences in virtual reality for seniors.

There are 360-degree movies that the person wearing a virtual reality headset can interact with. The experiences range from walking through a jungle path to sitting in on a jazz concert. Without going outside, the seniors not only exercise their brain, but travel across the world, creating new memories or reliving past ones.

Virtual reality helps seniors not only by boosting their mood, but also by promoting brain activity—both of which reduce overall health care costs over time. Using virtual reality headsets, a senior can experience

many of the same benefits without having to be outwardly social. Residents do not have to come up with topics or speak with people they barely know, which is hard for some. Instead, they bond over a shared experience, like a wine tasting.

"Socialization is vital in older adults, creating a sense of purpose, feelings of belonging, increased self-esteem and improved physical and mental health," according to YokeyPokey's website. Using virtual reality helps promote unity among residents and improves their quality of life overall, the company states.

Ellie Giles, founder of VirtualApprentice, also sees the enormous and positive role virtual reality could play in an isolated senior's life. Her women-owned, small business mainly is geared to using virtual reality to train workers by letting them virtually repair cars and work with various machinery. During the pandemic, she realized what a strong role virtual reality could play for seniors who are isolated.

The idea, she explained, is to have people share experiences to stimulate cognitive skills and social interaction. During the pandemic, "They watched TV, and that's really where they gained their experiences," she said. All of it was two-dimensional and

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One woman was enjoying herself so much she started squealing.

didn't actually bring the viewer into the experience.

With three dimension, users could feel like they are truly part of the experience and not just sitting in their chair, although that is actually what is happening. "This is not passive. It really puts them in the real life situation," Giles said.

Although she has sold her virtual reality headsets and the accompanying programs, her company is still very much in the design phase when it comes to seniors, adding new scenes and videos constantly.

One area she is concentrating on is overcoming nausea or dizziness from motion sickness during the immersive experience. Virtual Apprentice is experimenting with the speed of video. During the Olympics, cameras were attached to a bobsledder or a skier's helmet, enabling television watchers to experience the thrill – and speed – of the athlete. Giles' staff can do the same, but slow down the refresh rate so the action doesn't move as fast, she explained.

She has worked with the National Institute on Aging and Johns Hopkins to study social isolation and cognitive stimulation. "This is in such infancy," she said, of what can be done through virtual reality. She hopes to create numerous folders and store them in the cloud so that anyone purchasing her program could just choose what they feel like virtually viewing at any time. They could go horseback riding one day, visit an art gallery later and then lie on a beach or swim in an ocean.

Giles used her mother, who is in her ninth decade, as an example. Often, when they speak on the phone her mom tells her about such mundane chores as taking out

the trash, which seem to be the highlight of her day. But viewing three-dimensional videos "would change her world," allowing her to take boat rides, something the family used to do regularly.

Sure, those living alone could scroll through Facebook or watch videos on their computer, if they have one. But many seniors don't think to do that, and are too concerned about their privacy and getting scammed to experiment with what is out there, she said.

Creating virtual reality programs for seniors enables Giles "to build a project that makes a difference," she said. During a recent trial of the videos her company has created at an Easter Seals facility, Giles watched as the demeanor of viewers "completely changed. They all came in pretty somber," she said. But once they used the virtual reality headsets, she saw an immediate change. "I was followed into the parking lot. They didn't want me to leave." One woman was enjoying herself so much she started squealing, she said.

UPLIFTED SPIRITS

While the pandemic has worsened isolation issues in many cases, it is not new for seniors. Some are living alone for the very first time and stumbling along with their new life. Others can't go to restaurants, movies and concerts like they used to because they no longer drive or aren't as mobile as they once were. Some are concerned about the spread of COVID-19 and prefer staying home. Others choose to go out and about during the day but stay home after dark.

Instead they watched television or perhaps, for the

more tech-savvy seniors, they played a game, especially solitaire, or followed videos on computers. That was all two dimensional and required very little on the part of the viewer.

Now imagine these same senior adults spending time totally immersed at the Chesapeake Bay, or any other place they spent hours enjoying. Besides uplifting their spirits, it could improve their memory skills as they then talk to a loved one or caregiver about the experience.

Or picture viewers immersed in an ocean scene as they move their arms as if swimming along, helping keep them active when going to the beach is no longer an option.

Giles recommends viewing the same program as a loved one. By sharing the experience, a family member or friend can help jog the memory of someone with dementia. Ask specific questions about what you both just watched, and even ask how it made them feel.

For those without internet or perhaps bedridden, Giles plans to use untethered headsets that don't have to be attached to a computer.

SUPER MARIO AND ANGRY BIRDS

According to research at the National Institute on Aging in Bethesda, stimuli benefits cognition, including memory. National Institute on Aging scientists placed one set of rodents in enriched environments and another in a much sparser setting. Those with things to look at and experience generated nerve cells in regions of the brain critical for memory encoding and retrieval, according to the research.

The scientists noted that video games could support cognitive health in seniors, especially those who are

homebound. The study used people 60 to 80 years old and showed them a two-dimensional card game as well as a three-dimensional Super Mario game. They also experimented with the once-popular Angry Birds game. The study participants played for up to 45 minutes a day for four weeks. Then they gave them memory tests.

Their research showed that Super Mario and Angry Birds did improve recognition memory, especially compared with those who played solitaire. The best results were found in those who played the three-dimensional Mario Brothers, followed by Angry Birds, which while only two-dimensional, it has lots of movement and stimuli.

“These findings suggest that both novel experiences and exposure to rich three-dimensional environments may work together to improve cognition,” according to the study.

A study by the University of California San Francisco showed that playing virtual reality video games could boost seniors’ memory. Scientists at the school’s Neuroscape brain research center are learning how these games could help someone with early-onset dementia.

The immersive game Labyrinth-VR allows users to walk through neighborhoods of increasing size to complete errands of increasing complexity. As they play, users actually walk in place and move their bodies to navigate the game. The increased cerebral blood flow is known to improve general cognitive performance.

Researchers allowed half the study group to play Labyrinth-VR while the others played commercial video



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games not designed to have beneficial effects on a person's memory. They played for 12 hours during four weeks. They were then scored for memory by assessing recollections of objects they saw. Those who played Labyrinth showed significantly better memory, according to the study.

The study focused on high-fidelity memory, which pertains to flexible associations of diverse information that is remembered in distinct and detailed terms, according to the study.

"We didn't train them and then test them on the same highly detailed memory tasks – we trained them on navigating and getting better in moving through this virtual environment and then the benefits we saw were on other tests of high fidelity memory," noted Adam Gazzaley, M.D., Ph.D., founder and executive director of Neuroscape.

"That shows you that memory systems engaged with learning the virtual environment are linked with memory systems we use to discriminate small differences between previous experiences and new ones at hand," he wrote in an article on the university's website.

The participants did not show marked

improvement in other memory tests, like listing the landmarks they saw on their walk around the block.

But video games are not the real world. Still, during the pandemic and issues related to aging create a lifestyle in which video games may be the best way to experience active stimuli.

The next step up is virtual reality, where the participants are totally immersed in the experiences. At Sonida Senior Living, which has facilities throughout the country, "virtual reality allows seniors to experience a whole new world right at their fingertips."

Many a game player uses virtual reality, and they can be seen wearing headsets and seeming to grasp at things in the air, moving their body as they play. While seniors may be less inclined to play fast-moving, elaborate games, they have been found to enjoy virtual experiences that are more relaxing or picturesque.

ALONE AND UNCONNECTED

According to the U.S. Department of Health and Human Services, nearly one in three older Americans live alone. For some, the resulting loneliness and social isolation is as

damaging to their health as many diseases.

The lack of connection could have life-threatening consequences, said Brigham Young University Professor Julianne Holt-Lunstad. She testified before the United States Senate that there has been an increase in people living alone and more than one-quarter of older adults live by themselves. Forming friendships reduces the risk of mortality and could speed the recovery time due to disease and falls, she testified in 2017.

Loneliness and social isolation increases the risk of coronary heart disease and stroke. They have a large financial impact as well, both for the individual as well as this country's health care system.

As we have pointed out, virtually reality could and already does play a positive role. If you don't live in a facility that provides virtual reality programming and headsets, have no fear. Individual headsets are available.

Quest 2, which can be purchased starting at around \$300, is popular among gamers, but it also allows users to sit in the front row of a live concert, climb atop a glacier or hang out with friends for a

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Nearly one out of three older Americans live alone.



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game of ping pong. It doesn't have wires that need to be connected.

Gear VR has more than 1,000 applications and allows viewers to see new lands and magical landscapes. Its tracking through a built-in gyro sensor and accelerometer helps make the ride smooth. This needs a Samsung Galaxy smartphone to operate.

These are just two of the user-friendly virtual headsets, which can be purchased online or at a big-box stores like Best Buy.

Once the headset is purchased, the sky's the limit for choosing experiences. This Senior Guide will mention a few, but by no means is this a complete list and Jewish Council for the Aging is not recommending any particular ones. A lot depends on a viewer's personal tastes and interests. Those listed here are suggested by Sonida Senior Living.

Zen Zone comes with three relaxing meditation experiences. One enables users to feel like they are in the middle of a Zen garden, where they can rake sand, move rocks or just sit back and relax in the peaceful setting.

Alcove is designed for families. It enables seniors to meet with family members in a virtual space to chat, just as they would if they were in the same living room. All family members need to have a virtual reality headset so everyone can share memories, play games, go on an adventure and even watch television together.

Friends and family members can share photographs, travel together or listen to the same music. Viewers can swim in the ocean and then climb a snow covered mountain. They also can play with a virtual pet.

Wander allows those with limited mobility to partake of virtual vacations and travel the world. They can even explore areas at different times in history to see how the area has changed. Just teleport to the Great Pyramids of Egypt or anywhere else on a loved one's bucket list. It could even be a place they have been to so they may recall happier times.

The National Geographic Virtual Reality app, as you would imagine, allows users to see nature with immersive 360-degree videos. Go swim with the sharks, watch a family of gorillas, you name it. A visit to Antarctica includes a kayak ride around icebergs, a climb on an ice shelf and living through a snowstorm in search of a lost emperor penguin. Or visit Machu Picchu in Peru to be immersed in a mummy worship ceremony, sharing a raised cup of sacred chichi and enjoying the alpacas.

AARP has joined the virtual reality world and uses the platform Alcove. Check out

the games on the AARP website, which are available to members. The program is called Staying Sharp and consists of dozens of one-minute games, each designed to challenge a particular skill. Each game has three levels of difficulty. They focus on such things as memory, speed, focus and word skills. There is even a way to track your progress. Have a friend who wants to try with you? Alcove allows you to play a board game together.

Staying Sharp deals with what it calls the six pillars of brain health. Be social. Engage your brain. Manage stress. Ongoing exercise. Restorative Sleep. Eat Right.

According to an AARP blog by Terry Spencer, four seniors took a virtual trip to the International Space Station as part of a Stanford University study on whether virtual reality really could improve the emotional well-being of seniors.

They put on their headsets and began floating weightless with astronauts as they received a 360-degree tour of the station. It was one of many programs in the study, which involved 1,200 seniors living at one residence, including virtual trips to Paris, Venice and Egypt. Others allowed viewers to cheer at a car rally or skydive.

"There is a fair amount of previously published research by academic labs around the world that shows VR, when administered properly, can help reduce anxiety, improve mood, and reduce pain," said Jeremy Bailenson, the Stanford lab's founding director. "This particular study is focused on how using VR might reduce the residents' feelings of isolation from the outside world — all the more important after the isolation we all faced during the pandemic."

Chris Brickler, CEO of MyndVR, the Dallas company that provided the equipment for the Stanford study, said volunteers are screened to ensure they are mentally suited to use virtual reality and each attendant has an abort button if the person becomes overwhelmed by the experience. Participants included individuals and couples who live alone, in assisted living and with full-time nursing.

"As we age, we feel there is a disconnect sometimes that can happen when there is a lack of mobility," Brickler said in the article. "We can't travel as much as we want, we can't connect with nature as much as we want, can't have connections with animals. All sorts of connections get lost and our four walls start shrinking in. What we have tried to do is create a platform where we can bring the world back."

Forbes Magazine published an article by

Sol Rogers on the benefits of Virtual Reality for seniors. While young people enjoy enhancements to their games, seniors are putting on the headsets and looking forward to new adventures.

A Tokyo researcher is capturing made-to-order videos for those in senior facilities. Kenta Toshima was working in a senior facility when one of the elderly residents said she wished she could return to her favorite plum orchard. He was able to help her, virtually.

“By supplementing their physical handicap with technology, the VR travel experiences can help improve the elderly’s motivation for rehabilitation and improve their quality of life. The VR experience makes them feel like they are out of the nursing home and can help ease their anxiety and loneliness,” he said in the article.

OTHER USES OF VIRTUAL REALITY

Virtual reality is also taking the forefront in other areas.

Just like home buyers who Google to see what’s on the market and can check out individual rooms and front- and backyard views, virtual reality also could enable seniors to see immersive views of the residence they may soon call home, enabling them to see themselves in a room. This is a plus for those who no longer have the stamina or physical ability to walk the halls and check out their new home or his children chose where they are moving. They experience the facility as it appears during the day and see what’s offered.

It is being used in medicine as well. At Visualise, virtual reality assists in training doctors on new procedures and also how to ease the minds of patients.

Virtual reality enables medical students to see and access areas inside the body rather than learn on a cadaver, which are not readily available. Medical Realities’ films surgery from multiple angles and combines this with computer-generated models of the human body, enabling medical professionals to see areas not normally accessible and to try several times without damaging anything.

It is easy to see the benefits to surgeons about to operate on a brain. They really get to see what they will encounter in a patient-specific way. Virtual reality could also be a plus during robotic surgery as the device, which is controlled by a surgeon, is guided through the body.

It is also helpful for patients as well, as a doctor could virtually walk them through their upcoming operation so they could better understand what to expect.

Virtual reality is also being used to help people overcome their fears or deal with Post Traumatic Stress Disorder. Imagine someone scared to enter a crowded shopping center, climb a tall structure or get on an airplane. Through virtual reality, the action can be stimulated – over and over again and more gradually – until the person is comfortable enough to actually overcome the fear of flying.

Virtual reality is even being used to deal with pain. According to Visualise, a study by the University of Washington Seattle and the UW Harborview Burn Center showed that when patients are fully immersed in a virtual reality experience following a painful skin graft, they were distracted and the pain didn’t bother them as much. It

“There is a fair amount of previously published research by academic labs around the world that shows VR, when administered properly, can help reduce anxiety, improve mood, and reduce pain.”

JEREMY BAILENSON



helps in physical therapy and could speed up recovery times when patients do their prescribed exercises in a virtual environment that has fellow sufferers sharing those repetitions with them.

In still other cases, medical professionals are strapping on the virtual reality headsets to experience what their patients are going through, from migraine headaches to symptoms of many diseases. This helps them become more empathetic.

Families with a loved one dealing with dementia could view the world through the same senses their spouse or parent are experiencing. Being in a room, listening to a muffled conversation or the intensity of more than one person speaking at time, could be a startling experience for someone with good hearing.

The goal is to both create understanding and empathy when it is easy to become frustrated dealing with someone who used to hold down a job while raising a family and now has trouble setting the table correctly or remembering how to dress. When immersed in that world, it is easier to understand why those formerly able to handle day-to-day crises now become extremely agitated when asked to perform a simple, routine task.

The University of Texas at Dallas is studying the advantages of using virtual reality to see how people handle tasks that tax their memories so they can work on strategies to help make the tasks easier. In one example, the research showed how participants were better able to compile increasingly detailed grocery lists from recipes by eliminating ingredients already in the virtual kitchen.

“VR creates a real sweet spot for us,” said Zhengsi

Change, a psychological sciences doctoral student. “We can generalize findings from this research into many situations in people’s daily activities.”

“We obtained both a quantitative analysis – how much time a subject took, how many errors were made, and so on – and a close look at the participants’ processes, their tactics in completing the task,” Chang said. “Knowing what they did in what sequence provides a better understanding of how they adapt to increasing difficulties and how they overcome memory challenges. It really enriched our understanding of their functional performance.”

According to the study, strategy is important in daily life. How a task is approached can determine its success.

VIRTUAL REALITY OF THE PAST

You may think virtual reality is brand new, but in a sense, it has been around a long time. Early attempts include the drawing of panoramic paintings, 360-degree murals or View-Master, a popular toy that used stereoscopes and cardboard disk reels to let the viewer see three-dimensional landscapes. There is a huge one at the Gettysburg Visitors Center that helps tourists feel like they are part of a Civil War battle and can identify with what the soldiers are going through.

Flight simulators used to train pilots are also an early example of virtual reality. Movies and computer games that offered smells or a moving chair are yet another example. In 1960, Morton Heilig invented the Telesphere Mask, which is believed to be the first head-mounted display. Motion tracking soon followed, according to the Virtual Reality Society.

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In 1965, Ivan Sutherland talked about what is now virtual reality. He envisioned creating a virtual world through head mounted displays with sound and tactile feedback with computer hardware to create a virtual world. It also allowed users to interact with objects in the virtual world.

He explained, "The ultimate display would, of course, be a room within which the computer can control the existence of matter. A chair displayed in such a room would be good enough to sit in. Handcuffs displayed in such a room would be confining, and a bullet displayed in such a room would be fatal. With appropriate programming such a display could literally be the Wonderland into which Alice walked."

Sutherland went on to help in 1968 to create the first head-mounted virtual reality display. It was connected to a computer, not a camera, and was called Sword of Damocles, according to the Virtual Reality Society. It was considered too heavy and primitive, but it was a start.

The following year, technology that allowed people to communicate with each other in a computer-generated environment was developed. Then, in 1972, General Electric produced a computerized version of a flight simulator that included three screens, giving trainees the feeling they were truly flying a plane.

Constantly-improved technology followed quickly from the Massachusetts Institute of Technology, VideoPlace, McDonnell-Douglas, which created a helmet with a head tracker, and Sayre Gloves, which created finger-tracking gloves wired to a computer system that used optical sensors to detect finger movement.

Even NASA got involved and used the technology to train astronauts.

Finally, in 1987, the term virtual reality was coined. A few years later, virtual reality devices became available to the public, mostly in the form of arcade games. Players used special goggles. People generally became more aware of the technology after watching “The Lawnmower Man.” In that 1992 film, a scientist played by actor Pierce Brosnan, used virtual reality therapy on a disturbed man, who later turns into a genius.

Another movie, “The Matrix,” created a simulated world, and some of the characters did not even realize they were not in the real world. More and more people began to be interested in the many uses of virtual reality after viewing this popular movie.

Popular gaming companies, including Nintendo and Sega, jumped in, hoping to take the game-playing world to a new level, but they were met with early failures. Also jumping in were universities with the goal of helping war veterans suffering from PTSD. This technology enabled the patients to see and hear experiences, but in a way that the levels could be controlled.

For the best experiences, users need headsets and special programs. But virtual reality has already seeped into everyday use without any of that. Take Google Maps. It is easy to find a street level view and virtually roam around the neighborhood or city. These 360-degree images are captured by cars equipped with special technology.

Advances continue, especially in the field of gaming.

Also, the price of the headsets has dropped, and the necessary computer hardware is readily available. As this Senior Resources Guide noted, virtual reality can be used in so many fields, and senior adults are surely part of that future. Whether it is used to combat loneliness and social isolation or as part of medical advancements, virtual reality is here to stay and here to help.

It was probably not all that long ago when the idea of moving a mouse around and clicking on a keyboard to email friends, check on your bank balance or keep up on social media seemed daunting. Hopefully, now these tasks are second nature.

In virtual reality, the world viewers enter seems so real that moving around hopefully too will seem natural and easily enjoyable. Whether someday it truly replaces an actual visit to a new city or landmark remains to be seen. But it already comes close. For those who aren't as mobile as they used to be, cannot afford to travel or feel more comfortable in their own environment, virtual reality truly can be transformative, and with all the ongoing research, it is only going to get better. [WJW](#)

This guide was written by Suzanne Pollak, senior editor/writer at the Jewish Council for the Aging of Greater Washington. Learn more about JCA at www.accessJCA.org or call us at 301-255-4200 or 703-425-0999. Follow us on Facebook at <https://www.facebook.com/AccessJCA> or Twitter at <https://twitter.com/AccessJCA>.

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