Resonance Audiology
AND HEARING AID CENTER

Good to Hear

How Hearing & Vision Are Related, Plus Their Tie To Dementia

Do you have an FSA account?

If so, you may be able to use your funds for new hearing aids! Does your health insurance plan year start January 1? Make sure you're using your hearing aid benefit to the fullest. Call one of our offices, and we would be happy to check your benefits for you and let you know what you may be eligible for.

Features

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Hearing and Vision Loss Linked to Increased Dementia Risk

Hearing and vision loss are both common disorders of growing older. But a new study says that loss of function in both senses could mean you're at greater risk of dementia and cognitive decline in the future.

Study participants completed a questionnaire about using glasses or hearing aids. The 6,520 participants, who were between the ages of 58 and 101, were asked to rate their hearing on a scale from "normal" to "no hearing at all." They also rated their sight on a scale from "normal" to "no sight at all".

The questionnaire results placed participants into three groups: 932 people had normal seeing and hearing, 2,957 had either visual or hearing impairment, and 2,631 had both impairments. At the beginning of the study, dementia was more than twice as common among participants who had both impairments.

After the initial questionnaire, researchers evaluated the participants' thinking and memory skills every two years for six years, and then analyzed the relationship between having a hearing or vision impairment and dementia, and having both impairments and dementia.

At the end of the six-year follow-up period, researchers had determined that the group with both hearing and sight impairment were twice as likely to develop dementia than those with normal sensory function or just one impairment.

JinHyeong Jhoo, M.D., Ph.D., of Kangwon National University School of Medicine in Chuncheon, Republic of Korea, said that further research may show why people with two sensory impairments are at greater risk of dementia than those with one.

"Older people with only a visual or hearing impairment can usually still maintain social contact, so they may not feel as isolated or depressed as people who have both impairments," Jhoo said. "However, when someone has both impairments, that may increase the risk of isolation and depression, which previous research has found may affect dementia risk and thinking skills later on."

It should be noted that participants in the study completed a questionnaire about their hearing and vision, but did not undergo objective measurements. This could have affected the study results. The study was originally published by the American Academy of Neurology.

The vast majority of people who have vision loss wear glasses or contacts, or undergo surgery such as Lasik. However, only about 20% of people with a hearing loss wear hearing aids. If you think you may have a hearing loss, it's important to get your hearing tested at an independent, local hearing care practice, and if you know you have a hearing loss, it's critical to ensure you're hearing the best you can. Hearing aids can help most people who have hearing loss, and treating hearing loss along with caring for other aspects of your health could stave off cognitive decline.

Ingrao, B. (2022, July 24). Vertigo and dizziness: Causes, treatment and prevention. Hearing Tracker. Retrieved August 31, 2022, from https://www.hearingtracker.com/resources/vertigo-and-dizziness-causes-treatment-and-prevention?q=vertigo%2Band%2Bdizziness

How Your Brain Syncs Hearing and Vision

You already know that sound and light travel at different speeds. So how is it that you can hear a sound (a crash) and see the cause (your cat knocked a drinking glass off the table again) at the exact same time?

It's a "trick" your brain plays called temporal recalibration: altering our sense of time so that our joint perceptions of sound and vision are synchronized. A visual and a sound created at the same time actually reach our brain and are processed by neural circuits at different speeds. If our brains didn't make allowance for the difference between the speeds of sound and light, it would be significantly harder for us to tell where sounds come from and how they're related to what we see.

In a new study published in the journal Communications Biology, researchers find that recalibration depends on our brain signals constantly adapting to our environment to sample, order, and associate competing sensory inputs together.

Participants in the study viewed short flashes of light paired with sounds with a variety of delays, and reported whether they thought both light and sound happened at the same time. The participants performed the task inside a magnetoencephalography (MEG) machine, which recorded and imaged their brain waves. The sound and light changed in random order, either closer or farther apart in time.

Researchers found that the volunteers' perception of the simultaneity of the light and sound (whether they occurred at the same time) was affected by the perceived simultaneity of the pair before it. For example, if a sound was followed by light only milliseconds apart and the volunteers perceived them as asynchronous, the participant was much more likely to report the next light-sound pair as synchronous, even when it's not.

This form of temporal recalibration is one of the "tricks" the brain uses to avoid a distorted or disconnected perception of reality. It helps

establish a causal relationship between visuals and sounds we perceive, in spite of different physical velocities and neural processing speeds.

Based on the results of the study, researchers suggest a new model for understanding recalibration. They found that when an audio signal reaches the auditory cortex in the brain and so does a visual input, a person can perceive the pair of stimuli as happening simultaneously. But in order for this to happen, the brain needs to position the visual time slots a little later than the auditory ones to account for the slower conversion of visual signals. Researchers found that this relative delay between neural auditory and visual time slots is a dynamic process that constantly adapts to each participant's recent exposure to audiovisual perception.

What does this mean overall? The study emphasizes that our brains constantly absorb and adapt to the bombardment of sensory information from diverse sources. To make sense of our complex environments and social interactions, brain circuits actively make adjustments to anticipate and predict the nature and timing of external stimulations. It's important to give our brains as much auditory input as possible, so if our hearing is compromised, improved hearing with help of hearing aids from a local independent provider could help the brain continue to properly calibrate as we age.

Cell Press. (2021, May 26). Embryos of many species use sound to prepare for the outside world. ScienceDaily. Retrieved August 31, 2022 from www.sciencedaily.com/releases/2021/05/210526132128.htm

Featured Recipe: Nutter Butter Peanut Butter Pie with Caramel Drizzle

Ingredients:

- 24 Nutter Butter Cookies (crushed)
- 6 TBS unsalted butter, melted
- 8 oz cream cheese, softened
- 1 cup creamy peanut butter
- 1 cup powdered sugar
- 1 tsp vanilla extract
- 1 cup heavy whipping cream, whipped
- ½ cup caramel sauce for drizzling
- Optional Garnish: whipped cream, chopped peanuts, or Nutter Butter pieces

Instructions:

1. Set out a 9-inch pie dish
2. In a food processor, crush Nutter Butter cookies into fine crumbs and mix with melted butter until well combined
3. Press the crumb mixture firmly into the bottom and up the sides of the pie dish. Chill in the fridge while making the filling
4. In a mixing bowl, beat cream cheese, peanut butter, powdered sugar, and vanilla until smooth. Gently fold in the whipped cream until fluffy
5. Spoon filling into the prepared crust
6. Drizzle with caramel sauce and top with garnish, if desired

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