

# Praxis2Practice Consulting

Carolyn L. Winsor, BMus, BEd  
Biological Healing Consultant



P.O. Box 100  
Penticton  
British Columbia  
V2A 6J9 CANADA

**Website:** <https://praxis2practice.com/>  
**E-Mail:** [carolyn@praxis2practice.com](mailto:carolyn@praxis2practice.com)



Representing all previous  
OIRF publications.

*An exclusive translated **article for Praxis2Practice Supporters**,  
published February 2024 by Praxis2Practice Consulting . . .*

## Geriatric Medicine

# Slow Down Dementia!

## Hearing and Cognition as the Key

**Understanding Connections, Recognizing Differences  
and Avoiding Misinterpretations**

By Dr.rer.nat. Juliane Dettling-Papargyris

**From an article in Der Heilpraktiker, Volume 90, December 2023**

**Machine Translation by Lernout & Hauspie, & Prompt**

**Translation & redaction by: Carolyn L. Winsor, P2P Consulting**

© Copyright 2023, Dr. Dettling-Papargyris, Sonnenberg, Germany

At the end of 2021, the German Alzheimer's Society estimated the number of patients with dementia illnesses living in Germany at almost 1.8 million <sup>[1]</sup>.

As a result of demographic change, this will inevitably continue to increase. On the other hand, there is a no less large number of people who are affected by hearing loss. The intersection – and thus a difficult demarcation – of the two diseases: impairments of cognition and communication.

### **Further Reading**

Would you like to learn more about hearing in naturopathy?

In our article database on med-search.info you will find the following articles, among others:

- **Der Heilpraktiker 02/2023** Understanding hearing as a joint effort of the ears and the brain
- **Der Heilpraktiker 02/2023** Improving your hearing – these five tips you should know
- **Der Heilpraktiker 11/2016** Relaxation and Dynamization via the Hearing Organ

We are getting older and older. Which is generally joyful, however also has challenges and unpleasant accompanying symptoms, such as the increase in age-related chronic diseases. In order to treat these diseases in the best possible way, to recognize correlations and to avoid misinterpretations, a deeper therapeutic view is often required – in itself one of the core principles of holistic patient-centered medicine. However, even therapists are often not aware of the similarities between dementia and hearing loss, or only to a limited extent.

### **Hearing Loss and Dementia: Different and Yet Similar?!**

We hear with our ears, but we understand with our brains. In the brain, what is heard is processed and interpreted. It is also spoken of as central auditory processing, which only allows for effortless understanding if it functions properly. Measured against the psychological effects of hearing loss and dementia, there is a clear parallel between auditory and cognitive impairment: the limited ability to communicate.

In both cases, this results from disrupted information processing in the brain, combined with diminished cognition. Similar to the breakdown of nerve cells in dementia, our brain in particular suffers from hearing loss because neuronal structures in auditory processing are broken down based on lack of use. This can become apparent in many ways: For example, inadequate reaction, mistrust, emotional instability, monologues, hostile behavior, psychosis, lack of concentration, social withdrawal and up to isolation and depression <sup>[2]</sup>.

### **Hearing Loss and the Incidence of Dementia Illnesses**

The fact that untreated hearing loss can accelerate the decline of cognitive abilities, thus the mental fitness, has been scientifically known for some time <sup>[3,4]</sup>. The fact that hearing loss is a contributing factor to the development of dementia illnesses has also been the subject of numerous scientific studies. According to the findings of a recent study published in the Lancet <sup>[5]</sup>, hearing loss is one of the twelve potentially modifiable risk factors for dementia.

The study estimates that modifying these risk factors could prevent or at least delay 40% of dementia cases worldwide. Hearing loss is considered to be the single most significant factor in this risk reduction model, accounting for about 20.5% of the changeable influences.

According to that, people who have hearing loss (perhaps unnoticed) between the ages of 45 and 65 and do not receive early hearing aid care double their risk of developing dementia illnesses. The connection between increasing hearing loss and increasing risk of developing dementia has also been explored in at least one other study: It is assumed that even a slight hearing loss of 10 dB, which corresponds to only mild hearing loss, increases the risk of dementia by 20% <sup>[6]</sup>.

### **The Search for the Connection**

Research has already investigated various possible mechanisms to explain the connections between hearing loss and dementia illnesses. A more practical explanation could be in the fact that hearing impairment affects the testing procedure that is often used to diagnose dementia. These tests are often carried out with the help of verbal instructions, which, if a hearing impairment is present, are poorly understood by those affected, thus hindering the correct execution and response to the test.

The "deprivation hypothesis" provides another explanation for the development of dementia from hearing loss and the associated cognitive decline <sup>[7]</sup>. According to this, hearing loss probably impairs brain functions – a number of MRI studies confirm this assumption. For example, a study of 126 subjects aged 56 to 86 years showed that those with hearing loss had accelerated brain atrophy compared to subjects with normal hearing <sup>[8]</sup>.

At the end of 2022, speech comprehension in background noise was considered for the first time as an indicator of the development of dementia within an English study <sup>[9]</sup>. For the first time, it was shown that a disorder of speech comprehension in background noise is associated with an increased risk of dementia: Over a long period of eleven years, the ability to understand speech in background noise was observed in more than 80,000 participants. Nearly 1,300 of the observed participants developed dementia over the course of these eleven years. Insufficient and poor comprehension in background noise was associated with an increased risk of developing dementia.

### **Beware of Misinterpretations**

As we age, the likelihood of hearing loss increases. From the age of 60, the hearing threshold decreases by an average of 1 dB each year <sup>[10]</sup>. Despite the undisputed and clear facts, hearing loss is still misunderstood in many older and younger people. In older people, it is also often misinterpreted as a decline in mental abilities. Indeed, there are numerous tests available to determine cognitive status.

The problem is that most dementia testing procedures do not sufficiently take into account the frequent link between cognitive and sensory disorders in older age. This increases the risk of false-positive results, possibly from verbal communication difficulties, because the patient is already unable to follow the instructions auditorily and thus cannot act correctly. In view of the well-known difficulties of being able to measure hearing and cognition cleanly separated from each other via tests, more attention should be paid to the influence of sensory impairments when testing neurocognitive abilities <sup>[11]</sup>.

Important in this context: A hearing test alone is not sufficient to obtain a meaningful picture of the hearing status. Also, hearing filter activity should also be determined by means of hearing filter measurements. This allows a statement to be made about how well spoken words can be understood in background noise. The better this functions, the better the hearing filter function is still in sync and as a result can help to communicate calmly in noisy environments.

### **Preventing Dementia with Hearing Health**

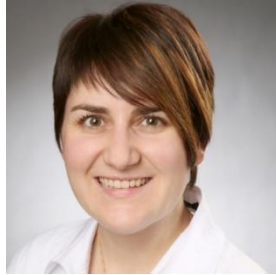
Hearing health is brain health! And can prevent or delay dementia. This is also shown by the recently published data of the ACHIEVE study <sup>[12]</sup>: *"In healthy older adults who have an increased risk of dementia, a hearing intervention reduces cognitive decline by almost 50% within 3 years. That's a huge reduction in risk,"* summarizes lead author **Frank R. Lin**, adding: *"Hearing loss is [...] highly treatable, making it an important public health goal to reduce the risk of cognitive decline and dementia"* <sup>[13]</sup>.

### **Result**

There are definitely possibilities to counteract dementia. In addition to a healthy, active lifestyle – in the sense of naturopathic dynamic equilibrium – the main key, according to the current state of knowledge, seems to lie in healthy hearing. Investing time in hearing health is therefore undoubtedly worthwhile! In concrete terms, this means that it is essential to know about one's hearing status – even in the middle years of life between the ages of 45 and 60.

Because regular preventive care is the safest way to react quickly in the event of limitations. Hearing health means brain health and thus provides the best conditions for good mental fitness and consequently to be able to freely shape life into old age. That's what we all wish for ourselves and our patients!

**Keywords:** geriatric medicine, dementia, hearing impairment, prevention



**The Author:**

**Dr. Juliane Dettling-Papargyris** holds a doctorate in biology and is scientific director of the Terzo Institute for Applied Hearing Research. For over 10 years, she has dedicated herself to the subject of hearing research and hearing health in all its facets. As a doctoral student and employee of the Hearing Research Center Tübingen, she laid the foundation for her professional expertise. Her credo: Hearing health equals brain health.

**Literature**

- 1) Deutsche Alzheimer Gesellschaft, Infoblatt 1; (2022); Die Häufigkeit von Demenzerkrankungen
- 2) Lerch M, Decker-Maruska M. The importance of Hearing for older adults: A geriatrician's perspective. *Journal of Hearing Science*. 2012;2(4):40-42.
- 3) Amieva H, Ouvrard C, Giulioli C, Meillon C, Rullier L, Dartigues JF Self-Reported Hearing Loss, Hearing Aids, and Cognitive Decline in Elderly Adults: A 25-Year Study. *J Am Geriatr Soc*. 2015 Oct;63(10):2099-104. doi: 10.1111/jgs.13649. PMID: 26480972.
- 4) Lin, ER.; Yaffe, K.; Xia, J.; Xue, Q.-L.; Harris, TB.; Purchase-Helzner, E.; Satterfield, S.; Ayonayon, H.N.; Ferrucci, L.; Simonsick, E.M.; et al. Hearing loss and cognitive decline in older adults. *JAMA Intern. Med.* 2013, 173, 293-299
- 5) Livingston G, Huntley J, Sommerlad A, Ames D, Ballard C, Banerjee S, Brayne C, Burns A, Cohen-Mansfield J, Cooper C, Costafreda SG, Dias A, Fox N, Gitlin LN, Howard R, Kales HC, Kivimäki M, Larson EB, Ogunniyi A, Orgeta V Ritchie K, Rockwood K, Sampson EL, Samus Q, Schneider LS, Selbaek G, Teri L, Mukadam N. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. *Lancet*. 2020 Aug 8;396(10248):413-446.
- 6) Lin FR, Metter EJ, O'Brien RJ, Resnick SM, Zonderman AB, Ferrucci L. Hearing loss and incident dementia. *Arch Neurol*. 2011 Feb;68(2):214-20. Doi: 10.1001/archneurol.2010.362. PMID: 21320988
- 7) Wahl, H.-W; Heyl, V Connections Between Vision, Hearing, and Cognitive Function in Old Age *Generations* 2003, 27 39-45
- 8) Lin, ER.; Ferrucci, L.; An, Y.; Goh, J.O.; Doshi, J.; Metter, El; Davatzikos, C.; Kraut, M.A.; Resnick, SM. Association of hearing impairment with brain volume changes in older adults. *NeuroImage* 2014, 90, 84-92
- 9) Stevenson JS, Clifton L, Kuźma E, Littlejohns TI. Speech-in-noise hearing impairment is associated with an increased risk of incident dementia in 82,039 UK Biobank participants. *Alzheimers Dement* 2022 Mar;18(3):445-456. doi: 10.1002/alz.12416. Epub 2021 Jul 21.
- 10) Fischer N, Weber B, Riechelmann H. Presbyakusis – Altersschwerhörigkeit. *Laryngorhinootologie*. 2016; 95:497-510.
- 11) Völter, C., Götze, L., Bruene-Cohrs, U. et al. Hören und Kognition: neurokognitive Testbatterien in der HNO-Heilkunde. *HNO* 68,155-163 (2020).
- 12) [www.achievestudy.org/key-findings](https://www.achievestudy.org/key-findings)
- 13) [https://aaic.alz.org/releases\\_2023/hearing-aids-slow-cognitive-decline.asp](https://aaic.alz.org/releases_2023/hearing-aids-slow-cognitive-decline.asp)

**Published by Praxis2Practice Consulting**  
P. O. Box 100, Penticton, BC V2A 6J9 Canada  
Website: <https://praxis2practice.com/>  
Email: [carolyn@praxis2practice.com](mailto:carolyn@praxis2practice.com)

