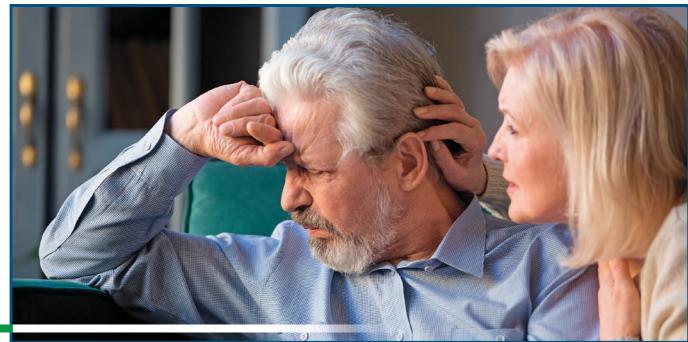


Better Hearing is Better Healthcare



Research indicates those with hearing loss may have increased:

- Risk of hospitalization
- Health care use
- Self-reported poor physical or mental health
- Challenges with health literacy
- Social isolation
- Risk of falls
- Cardiovascular disease risk
- Primary and secondary care visits
- Occupational care visits
- Medical expenditures

By the Numbers, **10** Remarkable Statistics

Peer-reviewed studies and reputable information estimate that...

Up to **35% of dementia** can be attributed to nine risk factors, with hearing loss the most prevalent

Dementia prevalence would be halved if its onset were delayed by five years

17-19% higher rate of hospitalization for those with hearing loss than those with normal hearing

29-52% greater risk of hospitalization for those with health-related oral health literacy challenges

There is **3.1 billion in excess medical expenditures** in the U.S. (2010) for those 65 years or older with self-reported hearing loss

67% of emergency room visits by adults ages 65-85+ are for falls

37 million adults have some degree of hearing loss, while **22 million** suffer from some form of depression

29 million people have diabetes and those that do are almost twice as likely to have hearing loss

Approximately **21.5%** of reviewed audiograms with strial hearing loss showed a highly significant association with **cardiovascular disease**

26 million American adults have chronic kidney disease, **54% of who have hearing loss**

When the numbers speak loudly, we listen closely.
Together, let's help more of those entrusted in our care to know.



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SOUND RESEARCH

Whole Person Care Focus: The relationship between hearing loss and healthcare costs

Reference Terms
HL – hearing loss
HI – health literacy

EXCERPTED HIGHLIGHTS:

Compared with no hearing loss, untreated hearing loss was associated with higher medical costs across all 3 cohorts. Unadjusted total cumulative medical costs were 25.9%, 36.9%, and 46.5% higher over the 2-, 5-, and 10-year periods for individuals with untreated hearing loss compared with that of those without hearing loss. This amounted to a mean difference of \$3,852 (95% CI, \$3,487-\$4,217), \$11,147 (95% CI, \$10,086-\$12,208), and \$22,434 (95% CI, \$18,219-\$26,648) higher total health care costs for the individuals with untreated hearing loss compared with health care costs for those without hearing loss.

Participants with untreated hearing loss experienced significantly more inpatient stays compared with participants without hearing loss at 2 years (incident rate ratio [IRR], 1.20; 95% CI, 1.15-1.25), 5 years (IRR, 1.30; 95%CI, 1.23-1.38), and 10 years (IRR, 1.47; 95% CI,1.29-1.68) following the index date. Moreover, participants with untreated hearing loss spent more days in the hospital on average with 0.26 (95%CI, 0.20-0.33), 0.75 (95% CI, 0.58-0.92), and 2.10 (95% CI, 1.36-2.84) more days spent in the hospital over the 2-, 5-, and 10-year periods, respectively.

Participants with untreated hearing loss had a 16.9% increased risk of an emergency department visit within 2 years (RR, 1.17; 95%CI, 1.15-1.19), a 16.8% increased risk over 5 years (RR, 1.17; 95%CI, 1.15-1.19), and a 17.0%increased risk over 10 years (RR, 1.17; 95%CI, 1.12-1.22).

Participants with untreated hearing loss had a 29% increased risk of a 30-day hospital readmission within 2 years (RR, 1.29; 95% CI, 1.19-1.39), a 28% increase in risk over 5 years (RR, 1.28; 95% CI, 1.16-1.42), and a 44% increase in risk over 10 years (RR, 1.44; 95%CI, 1.14-1.81).

Over a 10-year period, persons with untreated hearing loss incurred an average \$22,434 more in health care costs than persons without evidence of hearing loss. Importantly, the magnitude of most of these associations appears to compound over time. These findings suggest that persons with untreated hearing loss experience significantly higher health care costs and higher health care utilization rates than those without hearing loss.¹

- Our results demonstrate that self-reported **HL** is independently associated with higher total medical expenditures. Applying these results to the population of individuals with self-reported HL in the U.S. population 65 years or older in 2010 (7.91 million) indicates that HL is associated with approximately \$3.10 billion in excess total medical expenditures in the U.S. Importantly, HL was associated with increased odds of office-based, outpatient, and emergency room visits and not only costs that would be directly attributable to HL treatment (e.g., medical equipment expense).²
- For adults aged 70 years or older, HL was independently associated with hospitalization and poorer self-reported health over the past 12 months. Pathways through which HL would contribute to the odds of hospitalization and poorer self-reported health include effects of HL on social isolation, health-related oral literacy, and cognitive decline.³
- Health-related oral literacy is an important component of overall health literacy (also comprising print literacy and numeracy), which is a critical determinant of health outcomes in older adults. Inadequate health literacy has been shown to be an independent risk factor for hospitalization, with reports demonstrating a 29 to 52% greater risk of hospitalization in individuals with inadequate health literacy. **HI** has also been found to be strongly associated with poor cognitive function, which may contribute further to hospitalization risk.⁴
- Adjusted for confounding variables, the group with insufficient hearing had nearly four more primary care contacts and € 187 higher costs than the group with normal hearing status during a period of seven months. For secondary and for occupational care, those with insufficient hearing had 2.09 and 0.38 more contacts, and € 188 and € 28 higher costs respectively.

The findings of this study clearly indicate that people with auditory difficulties call upon various different types of health care when seeking help for their hearing problems. As it is assumed that the number of people with hearing impairment will increase in the near future due to the aging of our societies, identification of help seeking behaviour of people with hearing problems and the related costs are important factors to consider.⁵

- Among the less severe of these chronic illnesses, hearing impairment is particularly important because in addition to its adverse implications for functioning and quality of life, it can affect communication with health care providers in ways that may increase the likelihood of unfavorable outcomes across a variety of conditions.⁶

RESEARCH REFERENCES

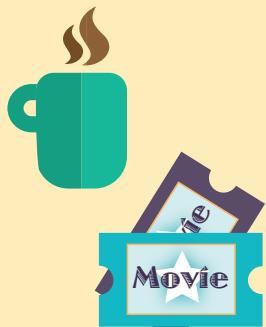
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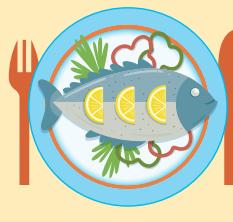
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Untreated Hearing Loss Costs

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Longer in-patient hospital stays

Higher 30-day hospital readmission rate

Increased overall health costs

Elevated risk of falls

More anxiety and social isolation

Decreased earning power

Reduced cognitive function

Poorer physical and psychological health

Inferior patient-clinician communication

More difficulty with activities of daily living

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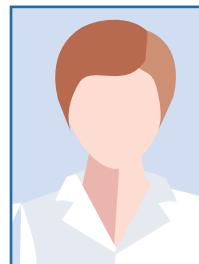


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