Economic Impact of hearing loss: the different systems of hearing management

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www.aea-audio.org
Self-Reported Hearing Loss

- Includes Awareness: *If you experience and report hearing problems – you’re more unlikely to take action*
- Available for more countries – EuroTrak – JapanTrak – MarkeTrak
- Empowers people – your experience & your needs

Measured Hearing Loss

- The Audiogram: *Assess when you start to hear soft pure tones*
- Many different definitions of hearing loss: Mild Hearing Loss – Disabling Hearing Loss – WHO – EC – ASHA ... Can leads to confusing numbers

+/- 10%  
7 < > 12%

+/- 16%  
3 < > 27%
% Self Reported Hearing Loss $\leftrightarrow$ Population 65 years and older

% of people reporting hearing problems (EuroTrak 2015 green - Projected red)

Population 65 years and older in % (Eurostat 2015)

10.2% = 52 Mill

People in Europe aged 65 years and older

Number of people age 65 years and older (in million)

2015: 94
2025: 114
2050: 148

People in Europe with Self-Reported Hearing Loss

Number of people with self reported hearing loss (in million)

2015: 52
2025: 61
2050: 80

Source of basic data:
EuroTrak 2015/18
South America ▼
2015  Population: 418,447,195
South America ▼
2025  Population: 455,735,482
South America ▼
2050  Population: 507,222,725

https://www.populationpyramid.net/south-america/2017/
Source of basic data: EuroTrak 2015/18
Source of basic data:
EuroTrak 2015/18
Best Estimate - Uptake Hearing Aids (Self Reported Hearing Loss)

United States: Uptake 30%
Europe: Uptake 29%
South America: Uptake 15%

Source of basic data: EuroTrak 2015/18
Prevention
- Avoid Noise
- Promote safe listening
- Protect your ears
- Prevent and treat ear infections …

Do you use earplugs when you know that that sound level is so loud it can create hearing loss?

DIRECTIVE 2003/10/EC
85 dBA
Hearing Protection Required

From MP3 players towards Smart Devices
**Awareness**

- **Hearing Screening**
  - National paediatric screening
  - School children screening
  - Adult screening (from 50 years onwards)
- **Information Campaigns**

**Newborn and infant hearing screening**

Current issues and guiding principles for action

**Adult Hearing Screening: Can we afford to wait any longer?**

Brian Lamb OBE, Sue Archbold PhD

Report and resources supported by a grant from Advanced Bionics.

The report is the work of the authors.
Intervention
- Rehabilitation
- Hearing Systems & ALD’s
  - Hearing Aids
  - Cochlear Implants
- Professional Hearing Care

Why do we need to invest in Hearing Care?

The cost of untreated hearing loss!

Communication
- Spoken language
- Ability to communicate

Education
- Increased need for assistance
- Fewer learning opportunities

Employment
- Higher unemployment rates
- Lower wages

Social and emotional
- Social exclusion
- Dependence and dementia

World Health Organization

$750 billion annually

[Image of the World Health Organization logo]

[Image of an egg with a dollar symbol and the text "$750 billion annually"]

European Association of Hearing Aid Professionals

[Logo of the European Association of Hearing Aid Professionals]
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Why do we need to invest in Hearing Care?
Communication and Education

Otolaryngology–Head and Neck Surgery

Communication
- Spoken language
- Ability to communicate

Education
- Increased need for assistance
- Fewer learning opportunities

Quality of Life in Children with Hearing Impairment
Systematic Review and Meta-analysis
Lauren Roland, MD, MScI, Caroline Fischer, Kayla Tran, more...
First Published April 26, 2016 | Review Article | Check for updates
https://doi.org/10.17770/0194599816640485

Conclusion:
Our analysis reveals that decreased QOL in children with HL is detected in distinct domains of the PedsQL. These domains “school activities and social interactions” are especially important for development and learning.
Why do we need to invest in Hearing Care?

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**Employment**

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People with untreated Hearing Loss have a significant disadvantage in communication jobs!
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People with untreated Hearing Loss experience significantly more listening effort … this increases the risk of “burnout” in communication jobs.

Research Article
Relation Between Listening Effort and Speech Intelligibility in Noise
Melanie Krueger, Michael Schulte, Melanie A. Zokoll, Kirsten C. Wagener, Markus Meis, Thomas Brand, and Inga Holube

Hearing Research 351 (2017) 68–79

Contents lists available at ScienceDirect
Hearing Research
journal homepage: www.elsevier.com/locate/hearingresearch

Research Paper
Impact of stimulus-related factors and hearing impairment on listening effort as indicated by pupil dilation
Barbara Ohlenforst, Adriana A. Zekveld, Thomas Lunner, Dorothea Wendt, Graham Naylor, Yang Wang, Niek J. Versfeld, Sophia E. Kramer.
Intervention

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Hearing Loss in the Workplace

- 3.7m working age people with hearing loss in the UK.
- 4,000 member responses and 27 in depth case studies.
- Less than half people told their colleagues, only 37% told their employer.
- 14% changed jobs as a result of their hearing loss.
- 36% who retired early did so directly because of their hearing loss.

36% of the people who retired early in the UK, did so because of their hearing loss!
Hearing Loss is the modifiable risk factor for Dementia with the highest impact!

Hearing Care = Prevention
Why do we need to invest in Hearing Care?

Dependence and dementia

Self-Reported Hearing Loss, Hearing Aids, and Cognitive Decline in Elderly Adults: A 25-Year Study

Hélène Amieva, PhD, Camille Ouverard, MSc, Caroline Giordoli, MSc, Céline Meillon, MSc, Laetitia Ruizier, PhD, and Jean-François Dartigues, MD, PhD

JAGS 63:2099–2104, 2015

p = 0.01**

This team follows a cohort of 3777 subjects in Bordeaux for 25 years (they started in 1989 and will end in 2015. Every two years the run a full evaluation done by a psychologist.

- Cognition (MMS & other) significantly poorer for subjects with hearing loss (p 0.01 – adjusted for age, gender and educational level)
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**Why do we need to invest in Hearing Care?**

**Dependence and dementia**

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- They also find a long term positive effect of hearing aids – For the hearing impaired subjects not using hearing aids there was a clear Cognitive Decline (p < 0.001) and **Hearing Impaired Hearing Aid Users did not present Cognitive Decline (p=0.08)**

**Social and emotional**
- Social exclusion
- Dependence and dementia

Hearing Impaired Hearing Aid Users did not present Cognitive Decline (p=0.08)
Intervention

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Why do we need to invest in Hearing Care?

Dependence and dementia

- IADL Independence significantly lower for subjects with hearing loss

Social and emotional

- Social exclusion
- Dependence and dementia

IADL scale: phone, shopping, housekeeping, meals, laundry, domestic finances, transports, medication

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- IADL Independence significantly lower for subjects with hearing loss (p 0.01 – adjusted for age, gender and educational level)

Lawton Instrumental Activities of Daily Living (IADL) Scale
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**Why do we need to invest in Hearing Care?**

**Dependence and dementia**

Hearing Impaired Hearing Aid Users did not present decreased IADL (Independence)

- They also find a long term positive effect of hearing aids – For the hearing impaired subjects not using hearing aids there was a clear decrease of IADL Independence ($p < 0.001$) and Hearing Impaired Hearing Aid Users did not present decreased IADL ($p = 0.59$)

**Social and emotional**
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**Why do we need to invest in Hearing Care?**

**Cost-effectiveness of interventions**

- Interventions in Hearing Care (Hearing Aids & Cochlear Implants) have a return on investment of 10 to 1 (L. Hartmann – 2017)

- Cochlear implants are shown to be most cost-effective when fitted unilaterally and at an early age. (WHO report – 2017)

- Use of hearing aids is shown to be cost-effective, especially use is continuous and accompanied by audiological rehabilitation. (WHO report – 2017)

*Global costs of unaddressed hearing loss and cost-effectiveness of interventions A WHO Report, 2017*

*World Health Organization*
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State Organised versus Free Market Hearing Care?

State Organised (Mix): Denmark – UK – Sweden – Norway
Free Market (Refund): France – Switzerland – Germany - Italy

State Organised Systems lead to more people having hearing aids
Free Market Systems lead to more active use of hearing aids
Free Market Systems lead to higher satisfaction with hearing care

Source of basic data: EuroTrak 2012 - 2018
Intervention
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State Organised versus Free Market Hearing Care?
State Organised (Mix): Denmark – UK – Sweden – Norway
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Involvement of the user
Freedom of choice
Selection to cover real needs

Easy Access to Quality Hearing Care
Avoid long waiting lists
Continued Quality Service

Take the time and listen to the user
Counselling and empathy
Combine psychology & technology

Source of basic data:
EuroTrak 2012 - 2018
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**Conclusions**
- A lot of standards and laws are in place or in development
- But we need to change behaviour!
- Basis for the Safe Listening WHO action
- All hearing care professionals need to be promoters

- Pediatric Screening needs to get the highest priority
- School screening can also be organised as self-test
- Adults screening is the new challenge … also here self-test could be a very cost-effective intervention
- WHO – World Hearing Day – is a great opportunity!

- Hearing care is cost-effective. 10 to 1 return on investment
- Education and Language development is improved
- Finding and Keeping a job is improved
- Hearing Care has to be seen as modifying a high risk factor for Dementia and Dependence