Impact of CI on Quality of Life and Mental Comorbidity in Patients 80+

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Does the proportion of older CI patients increase?

At present 25% of our adult CI users aged > 70 years

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Speech performance

Depressive and anxiety disorders

Quality of life

Effects of CI

Stress Coping- strategies

Tinnitus
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<th>Berlin test battery...</th>
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<td>Perceived Stress Questionnaire (PSQ) Brief cope</td>
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<td>Generalized Anxiety Disorder</td>
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<td>GAD-7</td>
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<td>General Depression-Scale</td>
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<td>ADSL</td>
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Elderly Patients Benefit From Cochlear Implantation Regarding Auditory Rehabilitation, Quality of Life, Tinnitus, and Stress

Heidi Olze, MD, PhD; Stefan Gräbel, Dr rer medic; Ulrike Förster, MD; Nina Zirke, Dipl Psych; Laura E. Huhnd, cand. med.; Heidemarie Haupt, Dipl Eng (FH); Birgit Mazurek, MD, PhD

**Objectives/Hypothesis:** To determine the effect of cochlear implantation on quality of life, speech performance, tinnitus, perceived stress, and coping strategy in patients aged ≥70 years in comparison with younger patients.

**Study Design:** Retrospective study.
Study population

Prospective clinical study 2013-15
Setting: Cochlear Implant Program Charité
Postlingually deafened adult subjects

Pre CI/ 6 month following CI
Patients n=79

Patients characteristics
Patients ≥70 years n=61
Gender: 28 males/ 33 females
Age at CI: 70-79 years

Patients ≥ 80 years n=18
Gender: 7 males/ 11 females
Age at CI: 80-88.8 years
Effects of CI

Quality of life
NCIQ
SF 36

Speech performance
OI
FMS/OLSA
Significant increase in the HRQoL in patients 80+

NCIQ Subdomain:
1 Basic s. perception
2 Adv. s. perception
3 Speech production
4 Self-esteem
5 Activity
6 Social interactions

** p<0.01
* p<0.05
SF 36: Social Functioning also improved in patients 80+

* p<0.05
Significant improvement of auditory abilities in patients 80+

Oldenburg inventory score

** p<0.01

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Speech performance
Depressive and anxiety disorders
GAD-7, ADSL

Perceived Stress
Coping- strategies
PSQ/Brief Cope

Effects of CI

Tinnitus impairment
TQ
Reduction of tinnitus scores following CI

**Tinnitus pre CI**  
*n*=12  
(70%)

**Distressing Tinnitus**  
(TQ > 47)  
pre CI  
*n*=2  
post CI  
*n*=1

**Tinnitus Score post CI**  
reduced  
*n*=8  
const.  
*n*=2  
increased  
*n*=2

* p<0.05
Low level of stress in patients 80+

Mean PSQ Score: 0.30 to 0.25

Mean values in different subgroups
- Psychosomatic hospitalized patients: 0.52
- Females after miscarriage: 0.41
- Healthy adults: 0.33

*(Fliege et al. Psychosomatic Medicine, 2005)*
Low level of depressive symptoms following CI

Depressive disorder (ADSL-Score >23)

80+ group
Pre CI
n=4
22%

Mean ADSL-Score 16.7 to 18.2

Mean ADSL value general population 14.3
Low level of anxiety symptoms in both age groups following CI

Moderate/severe anxiety disorder (GAD-7 ≥10)

80+ group
Pre CI  n= 2
11%

Mean GAD-7-Score 4.9 to 4.2
Summary
CI is a very successful procedure of auditory rehabilitation even for patients over 80 years.

The benefit of CI further ranged over social and psychological areas and is reflected by a significant improvement of HRQoL.

CI has a positive effect on psychological comorbidities also in the 80+ group of patients.

Conclusion
The age should not be an essential factor during the selection of CI candidacy.

There is a need for increased awareness about hearing impairment and its impact on communication in the aging society.
And … in patientes 80+ ???

Prospective clinical study

Setting: Cochlear Implant Program Charité
Postlingually deafened adult subjects

Patients characteristics

Patients \( \geq 80 \text{ years} \) (n=18)
8 males/ 10 females
Age: 80-88 years (Mean 82,9 y)
Cochlear Implant Rehabilitation in Older Adults: Literature Review and Proposal of a Conceptual Framework

James H. Clark, MB, BCh¹, Jennifer Yeagle, M.Ed, CCC-A¹, Alicia I. Arbaje, MD, MPH², Frank R. Lin, MD, PhD¹, John K. Niparko, MD¹, and Howard W. Francis, MD¹

Quality of life (HRQL) and resulting estimates of associated costs. There is accumulating evidence of a potential role for cochlear implants (CI) in older adults with poor word understanding despite conventional hearing aid (HA) usage. In our review of the literature we identify strong evidence for the restoration of communication capacity in the deaf and hard of hearing geriatric population, little published work on communication performance in the real world and HRQL, and significant gaps of knowledge regarding how CI rehabilitation interacts with changing psychosocial and functional status. We therefore propose a broader conceptual framework than is currently available for the role of CI rehabilitation in the management of severe-to-profound hearing loss in older adults.
Auditory performance: both patient groups improve to a similar extent

Speech performance

Speech perception [%]

Freiburg monosyllabic words

pre CI
with CI

p<0.05
Low stress level, depressive and anxiety symptoms before and following CI

in Patients 80+

ADSL-Score >23
pre CI    n=4 (27 %)
post CI    n=2

GAD-7 >10
pre CI    n=2 (13 %)
Post CI    n=0
Summary
CI is a very successful procedure of auditory rehabilitation even for patients over 70 and 80 years.

The benefit of CI further ranged over social and psychological areas and is reflected by a significant improvement of HRQoL.

CI has a positive effect on psychological comorbidities also in the 70+ group of patients.

Conclusion
The age should not be an essential factor during the selection of CI candidacy.

There is a need for increased awareness about hearing impairment and its impact on communication in the aging society.
Conclusion

The age should not be an essential factor during the selection of CI candidacy.

Duration of deafness negatively correlates with the CI outcome. Therefore, we recommend routine hearing screening of individuals over 60 years.

There is a need for increased awareness about hearing impairment and its impact on communication in the aging society.

Specialized units and the primary care centers should increase the level of information to the general public about current technologies available and all their advantages.
Impact of Cochlear Implantation on Quality of Life and Mental Comorbidity in Patients Aged 80 Years

Steffen Knopke, MD; Stefan Gräbel, Dr. rer. medic.; Ulrike Förster-Ruhrmann, MD; Birgit Mazurek, MD, PhD; Agnieszka J. Szczepak, PhD; Heidi Olze, MD, PhD
Summary
CI is a very successful procedure of auditory rehabilitation even for patients over 80 years. The benefit of CI further ranged over social and psychological areas and is reflected by a significant improvement of HRQoL.

There was a clear reduction of tinnitus impairment and stress in patients 70+, who were severely affected with these symptoms.

CI has a positive effect on psychological comorbidities also in the 70+ group of patients.

Conclusion
The age should not be an essential factor during the selection of CI candidacy.

There is a need for increased awareness about hearing impairment, tinnitus and comorbidities in the aging society.
Summary

CI is a very successful procedure of auditory rehabilitation even for patients over 70 years. The patients 70+ benefit from improvement in hearing and speech understanding to a similar degree as younger patients.

The benefit of CI further ranged over social and psychological areas and is reflected by a significant improvement of HRQoL.

There was a clear reduction of tinnitus impairment and stress in patients 70+, who were severely affected with these symptoms.

CI has a positive effect on coping strategies and psychological comorbidities also in the 70+ group of patients.
Conclusion

The age should not be an essential factor during the selection of CI candidacy.

Duration of deafness negatively correlates with the CI outcome. Therefore, we recommend routine hearing screening of individuals over 60 years.

There is a need for increased awareness about hearing impairment and its impact on communication in the aging society.

Specialized units and the primary care centers should increase the level of information to the general public about current technologies available and all their advantages.
Hearing Loss and Depression in Older Adults

David J. Mener, M.D. M.P.H. ¹, Joshua Betz, M.S. ²,³, Dane J. Genther, M.D. ¹, David Chen, B.S. ¹, and Frank R. Lin, M.D Ph.D. ¹,³

TO THE EDITOR

Hearing loss (HL) is a common, but underappreciated health issue affecting older adults. The functional consequences of HL for older adults are now surfacing in epidemiological studies demonstrating that HL may be independently associated with depression¹ and loneliness.² Compared to other medical co-morbidities, HL is more strongly associated with the development of depression in older adults.¹ Whether hearing rehabilitative treatment may mitigate the possible effects of HL on depression remains unclear. We investigated the association of HL and hearing aid use with major depressive disorder (MDD) in a nationally representative study of older patients.
INTRODUCTION

Elderly Patients Benefit From Cochlear Implantation Regarding Auditory Rehabilitation, Quality of Life, Tinnitus, and Stress

Heidi Olze, MD, PhD; Stefan Gräbel, Dr rer medic; Ulrike Förster, MD; Nina Zirke, Dipl Psych; Laura E. Huhnd, cand. med.; Heidemarie Haupt, Dipl Eng (FH); Birgit Mazurek, MD, PhD

**Objectives/Hypothesis:** To determine the effect of cochlear implantation on quality of life, speech performance, tinnitus, perceived stress, and coping strategy in patients aged ≥70 years in comparison with younger patients.

**Study Design:** Retrospective study.

**Methods:** A total of 55 postlingually deafened adults who were unilaterally implanted with a multichannel cochlear implant for at least 6 months were included in the study. Twenty patients were aged ≥70 years (70–84 years), and 35 patients were <70 years (19–67 years). Speech perception was measured using the Freiburg monosyllable test in quiet and the Hochmair-Schulz-Moser sentence test. In addition, the patients filled in six validated questionnaires.

**Results:** Speech perception and subjectively assessed auditory ability were similar in the two age groups after implantation. Disease-specific quality of life was improved in patients aged ≥70 years and even to a higher extent as compared to younger patients. Tinnitus annoyance and perceived stress were reduced in elderly patients to the same extent as in younger patients in the case of high initial severity level. The scores for the coping subdomain “seeking support” were reduced in elderly patients.