

Annual Report 2013

VU University Medical Center Amsterdam, The Netherlands

**Otolaryngology-Head and Neck Surgery
sections Audiology and Otology**

Part of the EMGO Institute for Health and Care Research (EMGO⁺)



*fundamentally curious
knowledge makes us better*

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www.ac-vumc.nl/onderzoek/onderzoek.htm

www.emgo.nl

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Preface

We hereby proudly present the 2013 annual report of the research sections Audiology and Otology at the department of Otolaryngology-Head and Neck surgery of the VU University Medical Center in Amsterdam. With this report, we present an overview of our recent work. Our focus was and is on a better understanding of the origin and effects of hearing impairment, the development of methods to reduce activity limitation and participation restriction of those with hearing loss, and the improvement of quality of care and cure. This report reflects what we do and what we have accomplished. Our research is covered in five main area's: 'Epidemiology', 'Listening Effort & Cognition', 'Innovation & Evaluation of Hearing Health Care', 'Speech Recognition & Clinical Research in Audiology' and 'Clinical Research in Otology'. All the projects are embedded in the program *Quality of Care* of the EMGO Institute for Health and Care Research (www.emgo.nl).

The year 2013 was one with a few notable events. The first is the official retirement of Prof. dr. ir. Joost M. Festen on June 1st, after 38 years of dedicated service to the section of Audiology at VUmc. In his farewell speech on December 20th, Professor Festen looked back at the past 7 years of working at the department as head of the research program Audiology. Joost is greatly acknowledged for his efforts in supervising the team. We sincerely appreciate everything he has done for us and wish him all the best.



Inaugural speech Joost M. Festen, May 30th 2007



Validictory speech Joost M. Festen, December 20th 2014

On October 25th, Marieke Pronk successfully defended her thesis entitled 'When your hearing fails you''. She continues working as post-doc within our research group.

In November, Sophia Kramer was awarded a University Research Chair. As of January 1st 2014, she is appointed full professor. The title of her chair is: Auditory Functioning and Participation. Her inaugural lecture will follow on September 12th 2014.

Further, our group has established a firm scientific contribution ([pages 21-23](#)) with many papers being published in the top-10 journals of Audiology and Otology. Besides publications, our group also succeeded in obtaining prestigious grants ([page 24](#)). Grant writing is a critical ingredient of our work since funding is our most important resource to continue and expand our research activities. Many of

our projects involve (longstanding) collaborations with research groups elsewhere (page 25), with which we are very pleased.

This report takes a slightly different form than the previous annual reports from our group. Per project, some highlights are given, each referring to the progress that was made over the last year (pages 7-20). Interesting and novel findings are presented and it is encouraging to see that some of the findings were picked up by the media. In 2013 the collaboration with the otolaryngologists, subdivision Otology, has become more prominent and our combined scientific output and projects now is and will be a permanent part of this annual report.

The full details of each project are presented on our website, <http://www.ac-vumc.nl/onderzoek/onderzoek.htm>. You are kindly invited to visit the site for further reading.

Finally, we are grateful for Marieke Pronk's editorial efforts in assembling this report and taking care of the layout. We hope you will enjoy reading it!

Prof. Sophia E. Kramer, PhD
Theo Goverts, PhD, medical physicist-audiologist
Cas Smits, PhD, medical physicist-audiologist
Erik F. Hensen, MD, PhD
Paul Merkus, MD, PhD

Staff

See picture on next page.

From left to right (back row):

- | | |
|-------------------------|--|
| - Thomas Koelewijn, PhD | Postdoctoral researcher |
| - Marieke Pronk, PhD | Postdoctoral researcher |
| - Niek Versfeld, PhD | Medical physicist-audiologist, researcher |
| - Cas Smits, PhD | Medical physicist-audiologist, researcher |
| - Theo Goverts, PhD | Medical physicist-audiologist, head University Audiological Center, researcher |

From left to right (middle row):

- | | |
|----------------------------|---|
| - Yvonne Simis, PhD | Medical physicist-audiologist, researcher |
| - Arjenne Gussenhoven, MSc | PhD student |
| - Hans van Beek, BSc | Technician |
| - Jana Besser, MSc | PhD student |
| - Mariska Stam, MSc | PhD student |

From left to right (bottom row):

- | | |
|------------------------|--------------------------------|
| - Adriana Zekveld, PhD | Senior researcher |
| - Sophia Kramer, PhD | Professor, neuropsychologist |
| - Elke Huysmans, MSc | PhD student, clinical linguist |

Not on picture:

- | | |
|---------------------------|--|
| - Paul Merkus, MD, PhD | Otolaryngologist, senior researcher |
| - Erik Hensen, MD, PhD | Otolaryngologist, senior researcher |
| - Joost Festen, PhD | Professor emeritus, medical physicist-audiologist |
| - Marre Kaandorp, MSc | PhD student, medical physicist-audiologist |
| - Maarten van Loon, MD | Researcher |
| - Wiepke Koopmans, PhD | Medical physicist-audiologist resident, researcher |
| - Tim Bost, MSc | Medical physicist-audiologist resident, researcher |
| - Krista Jansen, PhD | Medical physicist-audiologist resident, researcher |
| - Peter Jan Laverman, MSc | Medical physicist-audiologist resident, researcher |
| - Elske Bolk, MSc | Clinical linguist, researcher |
| - Marlies Klein | Research assistant |
| - Daphne Hobé, MSc | Research assistant |



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Project: Longitudinal assessment of psychosocial consequences of hearing impairment and possibilities of interventions following screening



Marieke Pronk, PhD
postdoc researcher



HIGHLIGHTS

25-10-2013 Thesis defense: When your hearing fails you- Hearing loss determinants, psychosocial consequences, and possible interventions following screening in older adults.

11- 2013 Publication in Ear and Hearing: Decline in older persons' ability to recognize speech in noise: The influence of demographic, health-related, environmental, and cognitive factors

11-06-2013 Interview local radio station (RTV-Noord-Holland): Thesis findings

"We took a really multidisciplinary approach in my PhD project, and combined various research methods to gain better insight into hearing loss in older age. A really rewarding journey."

"We showed that older adults' slowing of information processing partly explains their declining ability to recognize speech-in-noise. This finding once again underlines the importance of cognition for speech recognition."

"The listeners and the DJ were mainly intrigued by the subgroup-specific findings of our studies. Why for instance would hearing loss only cause loneliness in men and not in women?"

Project: PredictEAR- Prediction of hearing help seeking and hearing aid uptake: Do new predictors and subgroup effects hold the key to success?



HIGHLIGHTS

2013 Project start-up

09-08-2013 Visit to Eriksholm, Denmark: Meeting with Graham Naylor, Thomas Lunner, and Ariane Laplante-Lévesque to discuss and fine-tune the study design.

"The reasons why so few hearing-impaired older adults seek help or take up hearing aids are still largely unknown. In this project, we aim to identify key predictors. Exciting times are ahead of us, as we will start collecting data by the beginning of 2014."

Project: National Longitudinal Study on Hearing (NL-SH study) – second wave



*Mariska Stam, MSc
PhD student*

HIGHLIGHTS

February / March 2013 Work visit in Switzerland: One month work visit to the headquarters of Phonak AG to further strengthen the collaboration.

During 2013 Publicity about the NL-SH study: In February an article about the NL-SH and our future plans was published in “HOREN”, the magazine of the Dutch society for people with hearing impairment. We also attended the “Weekend of Science”-festival to promote participation into our web-based study.

Summer / Autumn 2013 Finalization of sub studies about medication use, and publication of our sub study about hearing status and work participation: Two interns worked on the topic of hearing status and medication use. Our study about the relationship between hearing status and participation in different categories of work was published in a special issue of a the WORK-journal about hearing in the workplace.

For more highlights, check our regular newsletters on www.hooronderzoek.nl

“We further discussed new research questions and worked together on some manuscripts. I got so inspired by all their input and enthusiasm. It was a great learning opportunity.”

“The NL-SH is an ongoing study, meaning that new participants are still welcome. In 2013, we celebrated a milestone: since I started as a PhD we welcomed 600 new participants. Although we are very happy with this number, our goal is to further enlarge the dataset as we want to study changes in hearing over a period of time.”

“With our large longitudinal NL-SH dataset, consisting of many variables reported by more than 2000 participants, it is possible to study a variety of topics. Student interns are very helpful for the NL-SH team to explore these and to develop new ideas. Together we aim to determine the consequences of hearing impairment in daily life. Participation in the work force is an important topic herein as our study population consists of adults under the age of 70 years”.

Project: Auditory and cognitive contributions to speech understanding in adverse conditions

HIGHLIGHTS

06-2013 ICA/ASA Young Scientist Conference Attendance Grant for a poster presentation at the 21st International Congress on Acoustics

08-2013 Publication in Trends in Amplification: How linguistic closure and verbal working memory relate to speech recognition in noise – a review

10-2013 Poster presentation at the 5th International and Interdisciplinary Conference on Aging and Speech Communication: Effects of age, hearing acuity, auditory temporal processing, and cognition on the ability to use voice and spatial cues in speech-in-speech listening.



*Jana Besser, MSc
PhD student*

“We presented preliminary results showing that age influences the ability to segregate talkers with different voices and/or different locations when controlling for hearing acuity.”

“We found that there is an important difference in how cognitive capacity versus cognitive ability measures relate to speech recognition in adverse conditions in people of different ages with normal hearing or a hearing loss.”

“We found that next to age, also cognition and hearing acuity at very high frequencies play a role for the use of spatial cues and voice differences in speech understanding by older adults. For younger listeners, linguistic processing is a determining factor.”

Project: The effect of top-down control of attention on speech perception and effort in adverse listening conditions

HIGHLIGHTS

26-01-2013 Visit Boston: Visit to Boston for collaboration on VENI project.

01-03-2013 Start VENI project: The effect of top-down control of attention on speech perception and effort in adverse listening conditions.



*Thomas Koelewijn, PhD
postdoc researcher*

“I visited the lab of Barbara Shinn-Cunningham in Boston for a one month period. We started collaborating on a study that will be part of the VENI project.”

“In this project we will investigate the effect of attentional processes on cognitive load during listening to speech in noise. Cognitive load will be measured by means of pupillometry in both people with normal hearing and people with hearing impairment.”

Project: LISTEN. Listening Effort: an innovative program of research and training

LISTEN is an EU FP7 European Industrial Doctorate (EID) project, with VU University Medical Center, Amsterdam (Sophia Kramer & Adriana Zekveld) as Coordinating Partner and Oticon's Research Center Eriksholm Denmark (Graham Naylor and Thomas Lunner) as the Private Partner. The Institute of Physiology and Pathology of Hearing, Warsaw (Artur Lorens) is Associate Partner.

HIGHLIGHTS

01-10-2013 Start of LISTEN: In 2013 we have secured the funding from the EU. The official start of the project was on the first of October. The project will continue until 2017.

12-2013 Recruitment of two Ph.D. students: Barbara Ohlenforst from Germany and Yang Wang from China. They will start their PhD trajectories in March 2014.



BEELD: STUDIOVU/YVONNECOMPIER

Sophia E. Kramer, PhD – Professor Auditory Functioning and Participation

“The LISTEN project will build on the VUMC group’s long experience with pupillometry (measuring the size of the eye pupil) as a way to record a person’s cognitive effort from moment to moment..”

“We will examine the effect of alternative signal processing schemes in hearing aids on objective listening effort, and consider a new dimension potentially accessible via pupillometry, namely the long-term stress induced by hearing loss”.

Project: What the eyes tell us about listening: The neural and cognitive correlates of pupil dilatation as measure of listening effort



HIGHLIGHTS

30-10-2013 Start data collection: Inclusion of first participant with hearing loss in the study. We will simultaneously collect fMRI and pupillometric data while participants listen to speech in noise.



*Adriana Zekveld, PhD
senior researcher*

“This is the last study of my VENI project. We’ll compare the influence of speech degradation on speech perception in listeners with and without hearing loss using behavioral measures, pupillometry, and fMRI.”

“The picture shows part of the test set-up at the MRI department. We score the verbal responses of the listeners, and collect pupil and fMRI data. Hans van Beek (foreground) provides technical support.”

August 2013 Publication in Journal of Speech, Language and Hearing Research: Task difficulty differentially affects two measures of processing load: The pupil response during sentence processing and delayed cued recall of the sentences

“We observed a consistent effect of masking level on the pupil response during listening and reading, which supports the validity of the pupil response as a measure of processing load. Cued recall is not directly related to processing load, as reflected by the pupil response.”

Project: Mismatch in the brain

04-04-2013 Start data collection: The study focuses on the influence of spatial and voice cues (part 1) and semantic cues (part 2) on speech perception and pupil dilation.

30-10-2013 Submission of manuscript: Cognitive processing load during listening is reduced more by decreasing informational masking than by increasing spatial separation between target and masker speech

“The first part of this study revealed that although both gender and location differences between target and masker facilitate speech perception, only gender differences lower cognitive processing load. This once again demonstrates that the pupil response provides information about speech perception that complements performance data.”

Highlights: Innovation & Evaluation of Hearing Health Care Support

Project: Evaluation of the Vocational Enablement Protocol (VEP) for employees with hearing impairment: A cost-effectiveness study



Arjenne Gussenhoven, MSc
PhD student

HIGHLIGHTS

01-2013 Publication in Work: Vocational rehabilitation services for people with hearing difficulties: A systematic review of the literature.

03-2013 Book chapter in Adult Audiologic Rehabilitation: Vocational Issues for persons with hearing loss, Kramer SE & Gussenhoven AHM.

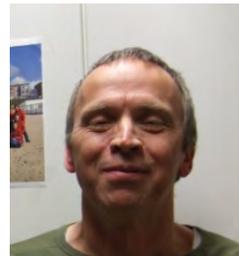
21-06-2013 Poster presentation EFAS congress Budapest: Design and preliminary results of the randomized controlled trial of the VEP.

“We finalized the recruitment of participants this year and included 136 employees for this study.”

“In a systematic review study we screened more than 2300 articles of different databases, resulting in a total of 9 studies worldwide which described a vocational rehabilitation program for people with hearing difficulties”

Support

Technical support and development for the research group



Hans van Beek, BSc
research technician

HIGHLIGHT

February 2013

Completion of the interface between a new pupillometer and our existing software.



“I couldn’t have developed it without my loyal assistant Molly (see pictures). It was never too much for her to sit in front of the pupillometer for hours... ;)”

“I support many of the researchers in our department by programming software for their experiments and by helping them build their experimental set-ups. Further, I host the websites of the NL-SH study and that of the research department in general.”

Project: Speech recognition and temporal resolution in listeners with unilateral hearing loss; intra- and inter-individual differences



*Tim Bost, MSc
medical physicist -
audiologist resident*

HIGHLIGHTS

Spring 2013 Developing research proposal: How do we define our hypothesis? How do we measure speech recognition or temporal resolution?

October 2013 Submission research proposal to scientific committee EMGO+: The scientific committee of EMGO+ institute advised on the methodological quality of our study.

“We want to find answers to questions like: Does the unaffected ear of a patient with unilateral hearing loss (UHL) perform as well as the ear of a normal hearing listener?, and: Is there top-down compensation for UHL, or does the abnormal ear also affect performance of the better ear?”

“In the end, we want to know what we should advise patients with UHL in terms of care.”

Project: A detailed look at speech recognition in realistic dynamic listening scenarios



*Theo Goverts, PhD
medical physicist-
audiologist,
head of University
Audiological Center*

HIGHLIGHT

10- 2013 Grant Hearing Industry Research Consortium: Together with Steve Colburn, Hearing Research Center, Boston University, a proposal was submitted on the 2013 call of the Hearing Industry Research Consortium on “The perception of dynamic spatial listening scenarios”. In October 2013 this proposal entitled “A detailed look at speech recognition in realistic dynamic listening scenarios” was granted.

“In this project we aim to identify and characterize realistic dynamic scenarios in which speech communication takes place and we will investigate speech recognition performance in those realistic dynamic listening situations for individuals with normal and impaired hearing.”

Project: Child, Language and Hearing

HIGHLIGHT

fall- 2013 Collaboration on VU campus: Together with Martine Coene and colleagues, Faculty of Arts, a Minor course was set up on "Child, Language and Hearing", including a series of guest lectures and bachelor research projects. Theo Goverts, Elske Bolk, Elke Huysmans and Cas Smits contributed to the course program.



De cursus Kind, Taal & Gehoor actualiseert en vergroot uw kennis op het gebied van de taalontwikkeling bij kinderen met gehoorproblemen. In een reeks lezingen gaan ervaren audiologen, klinisch linguïsten, logopedisten en onderzoekers in op actuele en relevante thema's binnen het audiologische vakgebied. De thema's hebben betrekking op de behandeling en diagnostiek van taalproblemen bij dove/slechthorende kinderen.

Inschrijving & Informatie
Meer informatie over de cursus en inhoud van de lezingen kunt u opvragen bij de coördinator van de cursus dr. Annemiek Hammer (a.hammer@vu.nl).

Programma
31 oktober opening door prof. dr. Paula Fikkert

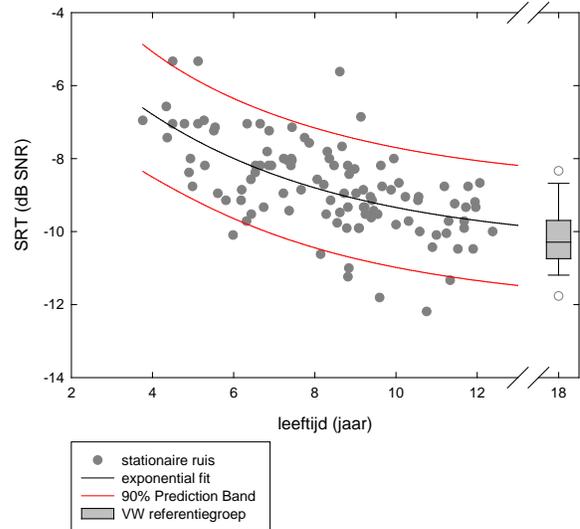
7 november drs. Elke Huysmans
'Van gehoor naar taal: de invloed van aangeboren gehoorverlies op taalvaardigheid'

14 november prof. dr. Paul Govaerts
'Wanneer zijn we tevreden over het gehoor van onze patient?'

21 november dr. Theo Goverts & dr. ir. Cas Smits
'Sprakeverstaan in ruis en de invloed van taalvaardigheid'

Doelgroep
De cursus is relevant voor professionals die werkzaam zijn in het veld van de audiologie en/of logopedie. Dit kunnen audiologen zijn, maar ook logopedisten en klinisch linguïsten die werken binnen een audiologisch centrum of dove en slechthorende kinderen behandelen binnen een revalidatie dienst of universiteit. Meer informatie op de

"Students of VU University Amsterdam and Rotterdam School of Speech and hearing Therapy were enthusiastic about this new Minor course."



Project: Determining normative data for the Digits-in-Noise test for children in complex acoustical conditions

HIGHLIGHTS

18-02-2013 METc approval: the amendment to our research proposal was approved

01-05-2013 Test software accepted: our technician made a speech-in-noise test module that extended the Digits-in-Noise test to complex acoustical conditions

01-09-2013 till 01-11-2013 On site data collection: We tested speech perception in noise for 112 children at a local primary school, using the DIN-test



*Wiepke Koopmans, PhD
medical physicist-
audiologist resident*

"Speech perception in noise testing for children is feasible using the Digits-in-Noise test."

"Young children need a better signal-to-noise ratio for speech intelligibility in noise . They use fluctuations and spatial cues less effectively than adults"

Project: The influence of linguistic skills on speech understanding in noise

HIGHLIGHTS

June 2013 Online publication in Lingua

‘Long-term effects of congenital hearing impairment on language performance in adults’

13-06-2013 66th participant tested for second study

An extensive period of recruiting and testing adult participants with normal hearing, acquired hearing impairment, or congenital hearing impairment is finalized in June 2013.

17-06-2013 Presentation of two posters at the CHSCOM conference in Linköping, Sweden

‘Spoken and written linguistic performance of adults with congenital hearing impairment’ and ‘Using the distortion-sensitivity approach in studying the role of auditory and non-auditory factors in speech recognition’

Project: Prediction of speech recognition for cochlear-implant users

HIGHLIGHTS

18-06-2013 Poster presentation CHScom in Sweden: The influence of linguistic skills on speech recognition in noise in normal hearing listeners.

June 2013 Start data collection: We measured auditory and visual lexical access speed in cochlear implant users.

16-09-2013 Submission of manuscript: Assessing speech recognition abilities with digits in noise in cochlear implant and hearing aid users.



*Elke Huysmans, MSc
PhD student
master of audiology,
clinical linguist*

“Moderate to severe congenital hearing impairment affects morphosyntactic correctness of spoken language production in adults.”

“Hearing impaired participants report experiencing comparable linguistic processes in the speech recognition tasks used in this study as in daily life .”



*Marre Kaandorp, MSc
PhD student
medical physicist-
audiologist*

“Speech recognition in noise is related to lexical-access speed and to a lesser extend to vocabulary size for normal hearing listeners with various levels of proficiency in Dutch.”

“In the assessment of speech recognition in noise of aided hearing-impaired listeners with hearing aids or cochlear implants, the DIN test is a feasible, reliable and valid test.”

Project: The digits-in-noise test

Cas Smits, PhD
medical physicist-audiologist

HIGHLIGHT

03- 2013 Publication in the Journal of the Acoustical Society of America: The digits-in-noise test: Assessing auditory speech recognition abilities in noise

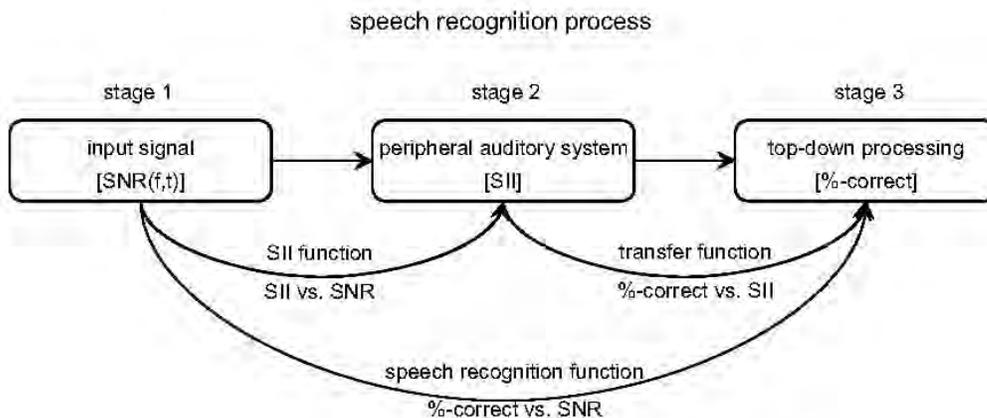
“The test measures primarily the auditory, or bottom-up, speech recognition abilities in noise. The digits-in-noise (DIN) test can be used in virtually the entire population of hearing-impaired adults, from normal-hearing listeners to listeners with severe to profound hearing losses who are CI candidates”

Project: The interpretation of speech reception threshold data

HIGHLIGHT

05- 2013 Publication in the Journal of the Acoustical Society of America: The interpretation of speech reception threshold data in normal-hearing and hearing-impaired listeners: II. Fluctuating noise

“Much of the reduction in fluctuating masker benefit (FMB) for hearing-impaired listeners may be attributed to the higher SRTs in steady-state noise for these listeners.”



Projects:

- Cochlear implantation in adults with asymmetric sensorineural hearing loss
- Magnetic resonance imaging in the evaluation of patients with sensorineural hearing loss caused by meningitis
- Stapedotomy in cochlear implant candidates with far advanced otosclerosis



Maarten van Loon, MD
researcher

HIGHLIGHTS

05-2013 Oral presentation: MRI in the evaluation of patients with sensorineural hearing loss caused by meningitis: Implications for cochlear implantation. 11th European Symposium on Paediatric Cochlear Implantation, Istanbul, Turkey.

“The preliminary results suggest that cochlear implantation is a successful method to rehabilitate subjects with asymmetric sensorineural hearing loss. It seems that the current criteria for CI in the Netherlands are too stringent and are not appropriate for patients with asymmetrical hearing loss.”

11-2013 Publication in Otology & Neurotology: Magnetic resonance imaging in the evaluation of patients with sensorineural hearing loss caused by meningitis: implications for cochlear implantation.

“MRI is crucial for decision making in patients with sensorineural hearing loss following meningitis. Cochlear inflammation, seen as enhancement on MRI, is associated with the occurrence of sensorineural hearing loss.”

12-2013 Publication in Audiology & Neurotology: Cochlear Implantation in Young Post-Meningitis patients: Decision Making Based on Hearing Evaluation and Imaging.



MRI of cochlear
postmeningitis
inflammation

12-2013 End of inclusion: Prospective study: cochlear implantation in adults with asymmetric sensorineural hearing loss.

04-2013 Publication in Hearing Research: Spiral ganglion cell morphology in guinea pigs after deafening and neurotrophic treatment.



Far-advanced otosclerosis
on CT-scan

Projects:

- Cochlear Implantation and Auditory Implants
- Otology Questionnaire Amsterdam (OQUA)



Paul Merkus, MD, PhD
ENT surgeon
senior researcher

HIGHLIGHTS

December 2013 International CI Book Completion:

“Surgery for Cochlear Implantation and other Auditory Implants” authors: Sanna, Merkus, Free, Falcioni in a Thieme world-wide educational full color book. [market release 2014]

This year, the efforts of the past years paid off. The collaboration with the Gruppo Otologico has resulted in several papers and the state-of-the art book on Cochlear Implantation has still yet to come. ”

May 2013 Invited Instructional CI Course, Istanbul:

Decision making in acute post-meningitis pediatric patients: a key role for hearing evaluation and imaging.

“MRI evaluation of post meningitis patients has shown us to true value of this investigation. Without MRI, decision making in these children would be a shear guess, and some would have had a deaf ear without the option of a successful cochlear implantation ”

November 2013 Presentation of OQUA: The 2nd version of the Otology Questionnaire Amsterdam was presented at the Dutch ENT society meeting.

“With OQUA we confirmed that the majority of the patients visiting an ENT clinic with an ear complaint always have a combination of complaints in different domains. ”

Autumn 2013 International Cochlear Implant projects published: In 2013 five papers concerning Cochlear Implantation were published in collaboration with three different groups of authors [VUmc, Gruppo Otologico & European Multicenter trial].

Projects:

- Cochlear implantation in non-standard cases
- The role of imaging in patients with sensorineural hearing loss caused by meningitis
- Evaluation of the etiology of congenital sensorineural hearing loss



Erik F. Hensen, MD PhD
ENT surgeon
senior researcher

HIGHLIGHTS

April 2013 Award: ‘2e KNO jaarprijs’ for best Dutch thesis in otorhinolaryngology and head and neck surgery.

July 2013 Publication in Otology and Neurology:

Magnetic resonance imaging in the evaluation of patients with sensorineural hearing loss caused by meningitis: implications for cochlear implantation. MC van Loon, EF Hensen, B De Foer, CF Smit, BI Witte, P Merkus.

“With the advancing performance of radiological modalities such as MRI we are getting better in understanding etiological processes, essential for accurate clinical decision making.”

Highlights: Clinical Research in Otology

November 2013 Publication in Otology and Neurotology:

Cochlear implantation in young post-meningitis patients:
decision making based on hearing evaluation and imaging
P Merkus, MC van Loon, EF Hensen

November 2013 Presentation of OQUA: The 2nd version of the Otology Questionnaire Amsterdam was presented at the Dutch ENT society meeting.

December 2013 Publication in BMJ Case Reports:

Schneiderian papilloma of the temporal bone.
L van der Putten, E Bloemena, P Merkus, EF Hensen.

“The creation of a tool that evaluates the signs, symptoms and quality of life of otologic patients by using words and phrases that reflect the patients’ perception will truly help improve the care for this patient group”

List of Publications

1. Besser, J., Koelewijn, T., Zekveld, A. A., Kramer, S. E., & Festen, J. M. (2013). How Linguistic Closure and Verbal Working Memory Relate to Speech Recognition in Noise-A Review. *Trends Amplif*, *17*, 75-93.
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Grants

1. Ambient Assisted Living (AAL)
Supporting Hearing in Elderly Citizens
 - Project leaders: Cas Smits en Theo Goverts
 - Partners: Oorgroep (Prof. Paul Govaerts, PhD), Cochlear Technology Center (Filiep Vanpoucke, PhD), OPCI (Inge Doorn, MSc), Cochlear Bone Anchored Solutions (Mark Flynn, PhD)
 - €487.000
 - Start date: 1-4-2014
2. Hearing IRC
A detailed look at speech recognition in realistic dynamic listening scenarios
 - Project leader: Theo Goverts
 - Partner: Boston University, Hearing Research Center (Prof. Steven Colburn), Boston, MA, USA
 - \$151.000
 - Start date: 1-4-2014
3. EMGO⁺ travel grant
Work visit to Phonak AG, Switzerland
 - €2.000
 - Project leader: Mariska Stam
 - Partner: Phonak AG, Switzerland (Ulrike Lemke, PhD)
 - Start date: 1-4-2013
4. Heinsius Houbolt Foundation
An integral ICF intake for Otology and Audiology
 - Project leaders: Sophia E. Kramer, Paul Merkus, Theo Goverts
 - Also involved: Cas Smits, Erik Hensen, René Leemans
 - €75.000
 - Start date: 1-12-2013
5. Marie-Curie FP7-PEOPLE-2013-ITN (EC grant)
LISTEN Listening effort in the European population: A new innovative programme of research and training
 - Project leader: Sophia E. Kramer
 - Also involved: Adriana A. Zekveld
 - Partner: Eriksholm Research Centre-Oticon, Denmark (Graham Naylor, PhD and Prof. Thomas Lunner, PhD)
 - €480.000
 - Start date: 1-10-2013

Partners in Research

International

1. Advanced Bionics
2. Boston University, Hearing Research Center, Boston, USA
3. Boston University, Auditory Neuroscience Lab, Boston, MA, USA
4. Cochlear
5. Eargroup, Antwerp, Belgium
6. Eriksholm Research Centre- Oticon, Snekkersten, Denmark
7. Gruppo Otologico, Piacenza-Rome, Italy
8. Indiana University/CDT, Bloomington, IL, USA
9. Linköping University, Linnaeus center HEAD, Linköping, Sweden
10. Örebro University, Swedish Institute of Disability Research (SIDR), Örebro, Sweden
11. Phonak AG, Stäfa, Switzerland
12. Queen's University, Kingston, ON, Canada
13. University of Toronto Mississauga, Dept. Psychology, Mississauga, ON, Canada
14. Western University, Faculty of Health Sciences, School of communication sciences and disorders and National Center for Audiology, London, ON, Canada

National

1. Nationaal Programma Gehooronderzoek (consortium)
2. Schoonenberg Hoofcomfort B.V., Dordrecht
3. VU University Amsterdam, Faculty of Arts
4. VU University Amsterdam, Faculty of Psychology and Education
5. VU University Amsterdam, Medical Natural Sciences
6. VU University Medical Center Amsterdam, Dept. Epidemiology and Biostatistics, Longitudinal Aging Study Amsterdam